Annals of Spiru Haret University

Economic Series

Volume 13(22), issue 2, 2022
ISSN: 2393-1795 | ISSN-L: 2068-6900

ashues

2022

EDITURA FUNDAȚIEI *ROMÂNIA DE MÂINE*

Annals of *Spiru Haret* University

Economic Series
Volume 13(22), issue 2, 2022

Publishing House of *România de Mâine* Foundation
Bucharest, 2022

SCIENTIFIC TEAM

ANNALS OF SPIRU HARET UIVERSITY
ECONOMIC SERIES

ADDRESS OF EDITORS AND PUBLISHERS
Editorship:
Office Address: Bucharest, Romania, District 6, Postal Code: 060821, 46 G Fabricii Street, Building B, 2nd Floor
Phone number: +4021 316 97 83/85/88/89 - ext. 151
Phone/Fax number: +4021 316 97 93
E-mail: ashues@spiruharet.ro
Website: http://anale-economie.spiruharet.ro/index.html

Deputy Chief Editor:
Elena GURGU, Associate Professor Ph.D., Department of Economic Sciences, Spiru Haret University, Bucharest, Romania
Office address: 46 G Fabricii Street, Building B, 2nd floor, Room 23, District 6, Bucharest, Romania
Office Phone: +4021316.97.85/88/89 - int. 152
VPN: +04021.455.10411, Fax: +4021316.97.93
E-mail:elenagurgu@yahoo.com, maei_elenagurgu@spiruharet.ro; se_egurgu@spiruharet.ro; elenagurgu@profesor.spiruharet.ro
ResearcherID: E-8516-2014
Publons: https://publons.com/a/1437881
ORCID:https://orcid.org/0000-0001-6964-8516
SSRN: http://ssrn.com/author=1307203
ResearchGate:https://www.researchgate.net/profile/Elena_Gurgu
Linkedin: https://www.linkedin.com/in/elena-gurgu-5099b494/

Journal's INDEXING:
This journal is indexed in the following databases:

Annals of Spiru Haret University. Economic Series is both an online journal and a printed one, which is committed to publish quality research papers submitted by professors, researchers and Ph.D. students in the economic field. It is an **OPEN ACCESS** journal.

The papers should be the results of original research, theoretical and empirical approach under the form of research articles, case studies, and essays.

We welcome papers from professors, researchers and Ph.D. students from all over the world in the attempt of serving as a forum of discussion and a diverse knowledge hub for students and teachers.

Young researchers as Ph.D. students are encouraged to express their views in a special section dedicated to them.

This journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge. The ***Annals of Spiru Haret University. Economic Series*** allow the author(s) to hold the copyright without restrictions.

Each paper has a unique Digital Object Identifier. **DOI prefix: 10.26458**

PUBLISHER

The publisher is Publishing House of *România de Mâine* Foundation: www.edituraf rm.ro

COVERAGE

The areas covered by ***Annals of Spiru Haret University. Economic Series*** include topics related to Economic Sciences, such as: marketing, management, finance, banking, accounting, audit, international economic relations, trade, business, tourism, administrative data processing, politic economy, commercial law, cybernetics, environmental economics, statistics, ethics in economics, insurance, advocacy & lobby, economic philosophy, econometrics etc.

Each issue has a specific topic that is a subtopic of major journal coverage.

FREQUENCY

The frequency of the journal ***Annals of Spiru Haret University. Economic Series*** is quarterly.

JOURNAL HISTORY

The journal ***Annals of Spiru Haret University. Economic Series*** was founded in 2000 at the initiative of two professors from Spiru Haret University: professor Ph.D. Gheorghe Zaman – also corresponding member of the Romanian Academy and professor Ph.D. Constantin Mecu – one of the University's founders and vice-rector.

Between 2004-2010, the journal is headed by professor Ph.D. Constantin Mecu, as editor-in-chief, and associate professor Ph.D. Aurelian A. Bondrea, as deputy editor, both of them vice-rectors of the university.

In 2011, associate professor Ph.D. Aurelian A. Bondrea, rector of the university, takes over the presidency as editor-in-chief and leads the journal until present.

The ***Annals of Spiru Haret University. Economic Series*** was issued annually, once a year, starting 2000, until 2009.

Since 2010, the ***Annals*** have a new format, with a four-annual issuance exclusively in English, with both redaction and review conditions comparable to the most rigorous international requirements.

In 2007, ***Annals of Spiru Haret University. Economic Series*** obtained the B+ quotation from The National Council of Research in Higher Education in Romania, becoming a publication of real scientific interest.

Starting 2009, the review is indexed in REPEC, SSRN and Google Scholar and beginning with 2016 our Journal is under a process of rebranding, the new team trying to rethink the journal indexing strategy in international databases, suggesting a greater external visibility.

Along the years, in the journal pages, the members of the teaching personnel – professors, associate professors, lecturers and teaching assistants – active in six economics faculties and distinct specialty departments, as well as in the Central Scientific Research Institute, functioning within Spiru Haret University, present the results of their scientific research. The journal also hosts many studies of professors, researchers or Ph.D. students from other universities and research institutes all over the world.

The subject of the publication firstly reflects the concern for the modernization of teaching economic science in University: marketing, management, finance, banking, accounting, audit, international economic relations, trade, business, tourism, administrative data processing, politic economy, commercial law, cybernetics, environmental economics, statistics, ethics in economics, insurance, advocacy & lobby, economic philosophy, econometrics etc.

In the published materials, there are analyzed theoretical and practical issues of edification and consolidation of the Romanian market economy, as well as the fundamental directions of the technical and scientific progress, the actual state and ways of its promotion in the Romanian economy, the issue of developing the new world economy, the directions of globalization and contemporaneous economic integration and Romania's participation to these processes. Also, there are hosted articles that refer to different aspects of economic phenomena from all over the world.

The editing team and the scientific advisors are Romanian intellectual personalities – members of the Academy, professors, and specialists in different fields of the practical economic and social activities. In scientific committee have been engaged as reviewers different professors and personalities in economic field coming from economics and academic institutions in our country, such as Academy of Economic Studies Bucharest, West University from Timisoara, The National Scientific Research Institute for Labour and Social Protection Bucharest, The Romanian Court of Auditors, The Body of Expert and Licensed Accountants of Romania – CECCAR, Institute of National Economy and The Economic and Legal Sciences Department from Romanian Academy, etc. Among them, we also find members of the academia, professors and researchers from other countries of the world: Australia, Azerbaijan, Bosnia & Herzegovina, Bulgaria, France, Germany, Greece, Iceland, India, Indonesia, Italy, Lithuania, North Ireland, Norway, Poland, Republic of Macedonia, Republic of Serbia, Russia, Slovenia, The Netherlands, Turkey, Ukraine, United Kingdom, etc.

As a response to the public interest, the publication is sent to the libraries in Bucharest and Romania, as well as to other universities and economic faculties abroad.

www.edituradfrm.ro

Publishing House recognized by the *Ministry of Education, Research, Youth and Sports* through the *Higher Education National Council of Research (CODE 171)*

ISSN: 2393-1795
ISSN-L: 2068-6900

For the journal's cover we used photos from the following sites:

https://pnl-portugal.com/

www.shutterstock.com

www.wordclouds.com

CUPRINS

TABLE OF CONTENTS

TABLE DES MATIÈRES

Articles académiques

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

FOREWORD

How to cite: GURGU, E. (2022). "Foreword." *Annals of Spiru Haret University. Economic Series, 22*(2), 15-26, doi: https://doi.org/10.26458/2220

War in Ukraine was leading to higher inflation and tighter financial conditions in all world economy. Stagflation risk rises amid sharp slowdown in growth. According to The World Bank's latest Global Economic Prospects Report**,** appeared in a Press Release from Washington on the 7th of June 2022, compounding the damage from the COVID-19 pandemic, the Russian invasion of Ukraine has magnified the slowdown in the global economy, which is entering what could become a protracted period of feeble growth and elevated inflation. This raises the risk of stagflation, with potentially harmful consequences for middle- and low-income economies alike.

Global growth is expected to slump from 5.7 percent in 2021 to 2.9 percent in 2022, significantly lower than 4.1 percent that was anticipated in January 2022. It is expected to hover around that pace over 2023-24, as the war in Ukraine disrupts activity, investment, and trade in the near term, pent-up demand fades, and fiscal and monetary policy accommodation is withdrawn. As a result of the damage from the pandemic and the war, the level of per capita income in developing economies this year will be nearly 5 percent below its pre-pandemic trend.

"The war in Ukraine, lockdowns in China, supply-chain disruptions, and the risk of stagflation are hammering growth. For many countries, recession will be hard to avoid," said World Bank President, David Malpass. "Markets look forward, so it is urgent to encourage production and avoid trade restrictions. Changes in fiscal, monetary, climate and debt policy are needed to counter capital misallocation and inequality."

The June 2022 Global Economic Prospects Report of The World Bank offers the first systematic assessment of how current global economic conditions compare with the stagflation of the 1970s—with a particular emphasis on how stagflation could affect emerging market and developing economies. The recovery from the stagflation of the 1970s required steep increases in interest rates in major advanced economies, which played a prominent role in triggering a string of financial crises in emerging market and developing economies.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

"Developing economies will have to balance the need to ensure fiscal sustainability with the need to mitigate the effects of today's overlapping crises on their poorest citizens," said Ayhan Kose, Director of the World Bank's Prospects Group. "Communicating monetary policy decisions clearly, leveraging credible monetary policy frameworks, and protecting central bank independence can effectively anchor inflation expectations and reduce the amount of policy tightening required to achieve the desired effects on inflation and activity."

The current juncture resembles the 1970s in three key aspects: persistent supply-side disturbances fuelling inflation, preceded by a protracted period of highly accommodative monetary policy in major advanced economies, prospects for weakening growth, and vulnerabilities that emerging market and developing economies face with respect to the monetary policy tightening that will be needed to rein in inflation.

However, the ongoing episode also differs from the 1970s in multiple dimensions: the dollar is strong, a sharp contrast with its severe weakness in the 1970s; the percentage increases in commodity prices are smaller; and the balance sheets of major financial institutions are generally strong. More importantly, unlike the 1970s, central banks in advanced economies and many developing economies now have clear mandates for price stability, and, over the past three decades, they have established a credible track record of achieving their inflation targets.

Global inflation is expected to moderate next year, but it will likely remain above inflation targets in many economies. The report notes that if inflation remains elevated, a repeat of the resolution of the earlier stagflation episode could translate into a sharp global downturn along with financial crises in some emerging market and developing economies.

The report also offers fresh insights on how the war's effects on energy markets are clouding the global growth outlook. The war in Ukraine has led to a surge in prices across a wide range of energy-related commodities. Higher energy prices will lower real incomes, raise production costs, tighten financial conditions, and constrain macroeconomic policy, especially in energy-importing countries.

Growth in advanced economies is projected to sharply decelerate from 5.1 percent in 2021 to 2.6 percent in 2022—1.2 percentage point below projections in January 2022. Growth is expected to further moderate to 2.2 percent in 2023, largely reflecting the further unwinding of the fiscal and monetary policy support provided during the pandemic.

Among emerging market and developing economies, growth is also projected to fall from 6.6 percent in 2021 to 3.4 percent in 2022—well below the annual average of 4.8 percent over 2011-2019. The negative spillovers from the war will more than offset any near-term boost to some commodity exporters from higher energy prices. Forecasts for 2022 growth have been revised down in nearly 70 percent of EMDEs, including most commodity importing countries as well as four-fifths of low-income countries.

The report highlights the need for decisive global and national policy action to avert the worst consequences of the war in Ukraine for the global economy. This will involve global efforts to limit the harm to those affected by the war, to cushion the blow from surging oil and food prices, to speed up debt relief, and to expand vaccinations in low-income countries. It will also involve vigorous supply responses at the national level while keeping global commodity markets functioning well.

Policymakers, moreover, should refrain from distortionary policies such as price controls, subsidies, and export bans, which could worsen the recent increase in commodity prices. Against the challenging backdrop of higher inflation, weaker growth, tighter financial conditions, and limited fiscal policy space, governments will need to reprioritize spending toward targeted relief for vulnerable populations.

In the current context, the authors found forums for discussions and debates and have written articles for the current issue trying, as far as possible, to look at some solutions for the problems facing the new world state of economy. Whether or not they succeeded in responding to the challenges, we leave it to you to determine.

The first scientific paper published in our present issue named **Modern Learning Improvements Supported by It Solutions – Slido Case Study for Better Engagement** written by **Dušan STOJAKOVIĆ**, explains that according to a study published by UNESCO at the beginning of the coronavirus pandemic, about 84% of the world's population studying some of the educational programs (including formal education through primary, secondary and higher education, and university undergraduate and postgraduate studies) is affected by prevention and social distances. Experts estimate that such disability and absenteeism will cause a significant and noticeable lack of theoretical knowledge and practical skills at the global level for several generations, the study of which was lacking in the process of switching from physical to online teaching and digital study of the material. for studying in the physical environment of a classroom, amphitheatre, laboratory, or similar educational facilities.

One of the ways to partially alleviate this process of not studying the entire prescribed material and accredited curricula on time relies on more intensive application of IT technologies, innovations, and solutions, with a special focus on increasing the degree of student involvement in active learning. One of such IT solutions is SLIDO, an online software, primarily aimed at use for business purposes but certainly and unstoppably finding its way to improve education. This paper aims to explore potentials of increasing students' engagement through IT solutions like SLIDO.

Roxana PAUN wrote the second article entitled **The Role of Blockchain Technology in the Universal Metaverse from the Perspective of Competitive Relations in Business. Challenges and Uncertainties** and is telling us that Blockchain technology is becoming one of the most prominent trends in finance and digital innovation since the creation of the Internet. Blockchain technology makes data private, permanent, and verifiable. Data and transaction logging is public, but encryption protects them from prying eyes and tampering. The architecture of the blockchain database and the associated protocols provide a solid foundation for creating new classes of applications. This is just the theory. In practice, however, blockchain technology has proven to be somewhat less miraculous. It is powerful and effective in a wide range of areas, but in addition to the well-publicized benefits of blockchain, experts have discovered a set of disadvantages of blockchain technology. That's why the Bitcoin blockchain is often referred to as the "open register" of Bitcoin. Experts around the world, except for a few sceptics, see blockchain as a high-impact technology that has the potential to revolutionize the world of finance, gaming, entertainment and more.

Starting from the analysis carried out by specialists in the field on their website, and from information on this technology, the present study brings some arguments to draw the attention of the informed reader to the risks and dangers to which they are exposed and to whom this technology is applied in sensitive areas regarding the life, health, freedom and privacy of the citizens of this planet.

Even if the role of this technology in some fields is undeniable, it must still be treated with great care from the perspective of respecting the fundamental rights and freedoms of human beings, the universal values that mankind has gained in centuries of human effort and sacrifice for current and future generations to evolve without repeating the mistakes of history.

Authors **Mariana IATAGAN, Raluca ZORZOLIU and Elena GURGU** wrote in their article entitled **Using Big Data in Business Management**, about digitalization who is fundamentally changing companies and other organizations. Changes also take place on the financial and accounting side of a company. Future digital advancements are a necessity because providers use this type of systems. The use of new technologies in business management is expected especially in terms of document recognition, data exchange, receipt and payment transactions, communication, excel replacement, text recognition. Big Data is becoming an indispensable resource for many organizations. Digitalization is fundamentally changing companies and other organizations, just as the business world has never seen before. The term Big Data has evolved in a flash to take into account the rapidly expanding quantities of digital information systems that are generated, the hard work of creating that information that can be analysed, and the actual use of that data as capital to increase efficiency, create and enable innovation, and improve decision-making.

Dragos Mihai UNGUREANU, in his paper entitled **Digital Euro as Next Evolution of the European Currency**, will explain the fact that digitalisation has spread to every corner of our lives and transformed how we pay. In this new era, a digital euro would guarantee that citizens in the euro area can maintain costless access to a simple, universally accepted, safe and trusted means of payment. A digital euro would not replace cash, but rather complement it. The Euro system will continue to ensure the access to cash across the euro area. A digital euro would give an additional choice about how to pay and make it easier to do so, contributing to accessibility and inclusion. It would support the digitalisation of the European economy and actively encourage innovation in retail payments.

Umid VALIZADA, in his paper named **The Effect of Digital Leadership Practice and Learning Organization Relationship on Individual Performance** will discuss about the fact that human life is like swimming against the current. If a person is not trying to move forward, the current will undoubtedly drag him further back at any moment. This is true for every area touched by human hands. In business life, institutions must swim against the current, just like people. Today, digital transformation and its effects emerge as a topic that is discussed extensively in academia and practice and constitutes the business agenda of companies. The digital age changes not only the way of doing business, but also customer relations, service models, product styles and most of all, the perception of "talent". This rapid transformation in business strategies has led to the emergence of digital leaders with new and different skills in the short term. These leaders focus on different points than traditional leaders. The aim of this study is to examine the effects of the digital age on leadership theory, how the new leadership model is defined, and the studies carried out in the relevant period in order to reveal its dimensions.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

The authors **Raheem Akanni Adewale OKEWALE** and **Abolaji Jamiu ATOBATELE**, in their paper entitled **Smart Cities and Socio-Economic Development in Nigeria: Evidence from Some Selected Countries,** are talking about the fact that the rate at which cities are growing over decades with unprecedented increase in the use of utilities such as water, energy, education, housing, sanitation etc. calls for concern. The unprecedented population growth has led to the agitation for smart cities where little efforts will be utilized to achieve maximum output. However, the government of Nigeria has put in place some measures to achieving smart city concept that will assist the citizens to live better life that will lead to a robust socio-economic, despite this feat the country has not explored the concept maximally to increase better living that will engender a robust socio-economic development. Sequel to this background that this study examines the role plays by smart cities in ensuring socio-economic development in Nigeria. The secondary data used in this study was gathered from existing publications. Being a qualitative research, content analysis was employed in the interpretation of the data. It was revealed that smart city arrangement in Nigeria is poor, hence this affects socio-economic activities most especially in the areas of trade and commerce, education, security, health to mention but a few. The study therefore recommends that government should encourage private sector through public private partnership to achieve this feat.

Bianca RUSU, Lăcrămioara HURLOIU, Iulian HURLOIU and **Marinela GEAMANU,** in their paper entitled **Big Data: A Source of Competitive Advantage** are talking about the fact that in a business environment that constantly and rapidly changes, future prediction becomes more important than the simple visualization of historical or current perspectives. For effective future prediction, data analysis using statistical and predictive modelling techniques may be applied to enhance and support the organization's business strategy. Therefore, the effective use of data is becoming the basis of competition. Big data fundamentally change the way businesses compete and operate. Companies that invest in and successfully derive value from their data have a distinct advantage over their competitors. This performance gap will continue to grow as more relevant data is generated and the technologies that enable faster, easier data analysis continue to develop.

The study named **International Financial Reporting Standards (IFRS) and Financial Performance of Selected Money Deposit Banks in Nigeria** and written by **Dorcas Adebola BABATUNDE,** the author of the study examined International Financial Reporting Standards (IFRS) and financial performance of selected money deposit banks in Nigeria. Specifically, the study analysed the effect of adoption of IFRS on profit after tax (PAT), return on asset (ROA) and return on equity (ROE) of 10 randomly deposit money banks over the period of 14 years covering Pre-IFRS and IFRS era. Data used for the study were collected from the financial statements of the selected banks. Panel estimation techniques including pooled OLS, fixed effect and random effect estimation were employed, after which the most consistent and efficient estimation result was evaluated using restricted F-test and Hausman test. Result showed that adoption of international financial reporting standards has positive effect on all the measures of performance, starting from profit after tax, return on asset and return on equity with reported coefficient estimate of 24.8241 ($p < 0.05$) for PAT model; 3.566556 ($p > 0.05$) for ROA model and 232.5723 ($p > 0.05$) for ROE model respectively. This study established that adoption of international financial reporting standard explains a notable percentage of systematic variation in the performance of deposit money banks especially when measured in terms of profit after tax and concluded that adoption of international best practices of reporting (IFRS) promoted improved performance of firms in Nigeria banking industry view from the perspectives of profitability as well as return on investment of asset and equity. Hence, regulatory authorities in Nigeria banking industries should devise a mechanism for evaluation consistency of deposit money banks as torching adherence to international standards of reporting. Management and auditors of accounting report need to work together at tightening compliance to ensure better performance impact of IFRS adoption. Also, Financial Reporting Council of Nigeria should further harmonize their operation in the bit to sustain proper check and balances needed to ensure coherence in the regulatory framework necessary for proper adoption of IFRS in the country.

Rafiyat Bosede OLANIYI, Kayode Peter ABILORO and **Niyi Oladipo OLANIYAN**, in their paper entitled **Capital Structure and Firm Performance of Listed Manufacturing Firms in Nigeria Stock Exchange** studied the link between capital structure and financial performance of Nigerian manufacturers. It evaluated the nexus between total debt and financial performance of listed manufacturing companies in Nigeria, the nexus between equity and financial performance of listed manufacturing firms in Nigeria Stock Exchange.

The study used ex-post-facto data to investigate variable relationships. Nigerian manufacturing firms were studied. The data was taken from the company's (2005-2020). Both descriptive and inferential statistics, such as Pearson correlation and panel regression, were used to examine the data.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Return on equity, equity capital has a substantial influence on the performance of Nigerian manufacturing companies. 6.34 and 0.26 Total debt assessed by asset debt-to-equity ratio has no influence on stock market performance (p>0.6580). Sand return on equity has a positive significant influence on financial performance of Nigerian manufacturing firms by 6.331 (p=0.0000.05) and 0.117 (p=0.0070.05); long-term debt also has a positive significant effect.

The study found that equity capital, total debt, and long-term debt have the potential to influence the financial performance of manufacturing firms positively and significantly in Nigeria, whereas short term debt has the potential to influence financial performance positively and insignificantly. Total asset has the potential to influence financial performance positively and significantly.

Godwin Emmanuel OYEDOKUN, Richard O. AKINGUNOLA and **Russell O.C. SOMOYE**, in their paper entitled **Effect of Pension Investment on Financial Depth in Nigeria: Empirical Investigation** are telling us that their study examined the effect of pension investment on financial dept in Nigeria. The study adopted an *ex-post facto* research design. The population of the study is 14 years of Nigeria economy from the year 2007-2020. Time-series data were sourced for this study which are entirely secondary data from the Pension Commission and the Central Bank of Nigeria (CBN) statistical bulletin, and the World development indicator (WDI) of the World Bank Database. Autoregressive Distributed Delay Limitation (ARDL) bounds testing approach was adopted to examine the long- and short-term relationships between the series, using Eview 12 version. The result of the hypothesis shows that there is evidence that pension investment in equities has positive relationship with financial deepening. This implies that increases in pension investment in equities will lead to increase in financial depth in Nigeria. In sharp contrast, pension investments in FGN securities, local money market securities and mutual funds have a negative relation with financial depth. This implies that increases in pension investments in FGN securities, local money market securities and mutual funds will lead to decrease in financial depth in Nigeria. The result also shows that in the short run that pension investments in equities and mutual funds have positive but insignificant relationship with financial depth, while FGN securities and local money market securities have negative and insignificant relationship with financial depth. The study then recommended that, to accelerate financial sector depth, it is necessary for the financial sector regulators and policymakers to strengthen the depth of banks asset, other financial institutions and financial markets through policies and reforms to attract more pension investment that will contribute to the development of Nigeria's financial stance.

Samuel C. UGOH, Kahinde Abiodun ISINKAYE and **Wilfred I. UKPERE**, in their paper named **Strategies to Enhance Local Government Finance in Nigeria** are telling us that their study adopted historical approach to political research and used secondary sources of information. This paper focuses on assessing financial challenges facing local governments in Nigeria. The study observed that insufficient allocation from the federation account, lack of effective revenue generation drive, mismanagement of funds, intrusion of the state government into local governments use of funds, amongst others are the major challenges confronting local governments. Nevertheless, if right strategies such as effective planning, accountability, transparency, curbing of financial mismanagement, sound business undertaking, increased fund allocation from federation account are adopted, local Government may be in better position to accelerate the pace of infrastructural development in Nigeria.

Liana GĂDĂU, in her paper entitled **Accounting in the New Age of Digitization. Cloud Accounting** is telling us that in the recent years, there has been substantial progress in the field of Cloud Computing. The changes brought about by digital technologies are felt in all areas, including in accounting. Currently, in business, the transfer of accounting systems in the Cloud is a new solution used by more and more companies that believe that, in this way, they will improve the economic efficiency of their business activity, performance and competitiveness of the company. The purpose of her article is to analyse the implementation of Cloud technology in the organization's accounting, how it influences the flow of accounting processing, and accounting results. She wants to investigate whether Cloud technology is a solution for the future of accounting, or whether there are important impediments that make us susceptible and cautious as users.

The research methods used consist in the analysis of the specialized literature by applying different techniques of analysis of works based on qualitative, quantitative research but also comparative analysis.

Nevenka POPOVIC SEVIC, Milica SLIJEPCEVIC and **Ivana RADOJEVIC,** in their paper entitled **Practical Implementation of Neuromarketing in Different Business Industries: Challenges and Trends** are telling us that over the last decade, new technological progress has enabled the researchers to use neuroscience not only for scientific but also for marketing studies, so they can explore, at the same time, conscious and unconscious drivers of consumer behaviour in real daily situations. Applying brain science to consumer behaviour, neuromarketing—a new innovative marketing research discipline—examines consumers' response (sensory, motor, and cognitive) to advertising stimuli. This article focuses on three key areas: literature review, challenges and limitations of neuromarketing, and neuromarketing trends, with several concrete real-life examples in different business industries. Practical challenges and limitations within the neuromarketing research, such as ethics, accessibility, costs and timing, but also side effects, are discussed. At the end, this article emphasizes many practical implementations of neuromarketing in different business branches, with the adoption of academic and scientific neuroscience research to commercial purposes.

Elena GURGU, Raluca ZORZOLIU, Ioana-Andreea GURGU and **Maria Gabriela ILISIE**, in their scientific paper named **Creativity and Innovation in Public Relations, as an Important Tool in Assisting Managerial Decisions** they write with regard to creativity and innovation in public relations, of which it is evident that we need as a necessary means in supporting managerial judgments. For us, creativity in public relations can be a new way to achieve a goal easier, more efficient, and faster. It is evident that every client acknowledges creativity, but in frequent situations, it does not convert into evident cases or messages for a mass audience and then is not visible. We also discuss in our study the profile of a ingenious public relations professional, who must be: engaged, instructed, ambitious for performance, having logical knowledge, having malleable and decisive judgment, being an idealist. In this analysis we will investigate to show that ingenuity can appear in one of the subsequent positions at the corporate administration zone: either in planning (positioning, outlining) or implementation (technique, presentation information, knowledge).

Aderemi Daniel ADEKANMI, Babatunde Moses OLOLADE, Ebunoluwa Tokunbo ADEOYE, and **Mustapha BOJUWON**, in their paper entitled **The Relationship Between Corporate Social Responsibility and Market Share: Evidence from Nigeria in West Africa** are telling us that the study examined the effect of corporate social responsibility on market share of listed manufacturing firm in Nigeria. It specifically examined the effect of internal environmental cost on market share of listed manufacturing firms in Nigeria, it also examined the effect of external environmental cost on market share of listed manufacturing firms in Nigeria. The study predicated of stakeholder's theory.

The study adopted Ex post facto research design and secondary data was gathered to analyse the relationship between the variables. The population of the study consisted of forty-two manufacturing listed in the Nigeria Stock Exchange, while ten samples were collected from the population. The data collected were analysed through descriptive statistic, Error Correction MODEL (Long and short run relationship), and correlation matrix regression analysis.

The result of the findings revealed that internal environmental cost has positive and significant effect on market share of listed manufacturing firms in Nigeria (p= 0.1.454 > 0.05) and external environmental cost has positive and significant effect on market share of listed manufacturing firms in Nigeria (p=0.6757 > 0.05)

The study concluded that CSR activities such as internal environmental cost and external environmental cost through donations to the society where they operate their business and other social and infrastructural facilities reflect in their annual financial statement as external cost incurred during the year.

The study recommended that Nigerian manufacturing firms take advantage of external environmental costs by investing more on the business's environment, notably via corporate social responsibility

The authors **Foluso Philip ADEKANMBI, Steve Olusegun ADEGOKE** and **Wilfred Isioma UKPERE**, in their paper entitled **Work Stress, Risk-Taking Propensity, and Resilience as Determinants of Psychological Wellbeing in the Police Force** evaluated the impacts of work stress, risk-taking propensity, and resilience on psychological wellbeing in Nigeria's Police Force. Its sample was extracted from four (4) police stations in Ibadan, Oyo State of Nigeria. They are the Iyaganku, Eleyele, Orita Challenge, and Iwo Road testing ground police stations. This study has adopted a cross-sectional survey method, where the current scholar randomly distributed the study's questionnaires. Nonetheless, from the 350 questionnaires floated, 319 were suitable for study and analysed using Statistical Packages for Social Sciences (SPSS version 27). The present study conducted standard and hierarchical multiple regression analysis in testing the stated hypotheses and concludes that work stress and risk-taking propensity significantly reduce psychological wellbeing. In contrast, resilience increases it in Nigeria's Police Force. It further settles that work stress, risk-taking propensity, and resilience significantly and jointly determine psychological wellbeing. Work stress, however, determines more significantly the psychological wellbeing of police officers than risk-taking propensity, resilience, and their combination matrix. Consequently, this paper advocates the need to reinforce stress management training among police officers to promote healthy lifestyles and improve psychological wellbeing. Also, Nigeria's Police college should incorporate risk-taking concepts on the job to help them exhibit

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

better risk-taking behaviours and maintain improved psychological wellbeing. Moreover, Nigeria's Police Force should adopt strategies for promoting resilience levels, raising police officers' positive emotions to recover from their adverse experiences. Besides, there is a severe need for psychological interventions to prepare police officers for the hurdles ahead. So, it is required that government make provisions for a salary increase, incentives, organizational support programs, and initiatives that can strengthen the coping styles of police officers for better psychological health and wellbeing.

Tural AKBARZADA, in the paper entitled **Cultural Differences in Business Values Perspective and Manager-Employee Harmonization** is talking about the manager-employee harmony, who is examined in the perspective of business values. Since manager-employee compatibility is the subject of study in the perspective of work values, the values that emerge because of the work values of the managers and employees and the work values of the employees regarding their managers are also determined as a prerequisite, since the fit can be determined and guides the research.

We hope that our journal issue caught your attention and made you read it. Also, we strongly believe that all the articles are interesting and deserve to be appropriated by those who are interested in understanding the specific issues of the global economy.

If you've liked our articles, please visit our website at **http://anale-economie.spiruharet.ro/**. If you want to write an article in our journal, we invite you to expose your ideas in new studies published by us.

Finally, hoping that you found interesting Issue no. 2/2022, I strongly invite you to address your comments and suggestions at *ashues@spiruharet.ro* and, of course, to submit your own paper via online submission system, using the following link: **http://anale.spiruharet.ro/index.php/economics/login**.

Research is the breath of the future. Let's shape the world together!

Associate Professor Elena GURGU, Ph.D. in Economics
ASHUES Deputy Chief Editor

ACADEMIA PAPERS

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

MODERN LEARNING IMPROVEMENTS SUPPORTED BY IT SOLUTIONS – SLIDO CASE STUDY FOR BETTER ENGAGEMENT

Dušan STOJAKOVIĆ
University Business Academy in Novi Sad, Faculty of Contemporary Arts Belgrade, Svetozara Miletića 12, Belgrade, 11000, Serbia,
Email: dusan.stojakovic@fsu.edu.rs

How to cite: STOJAKOVIĆ, D. (2022). "Modern Learning Improvements Supported by It Solutions – Slido Case Study for Better Engagement." *Annals of Spiru Haret University. Economic Series, 22*(2), 29-37, doi: https://doi.org/10.26458/2221

Abstract

According to a study published by UNESCO at the beginning of the coronavirus pandemic, about 84% of the world's population studying some of the educational programs (including formal education through primary, secondary and higher education, and university undergraduate and postgraduate studies) is affected by prevention and social distances. Experts estimate that such disability and absenteeism will cause a significant and noticeable lack of theoretical knowledge and practical skills at the global level for several generations, the study of which was lacking in the process of switching from physical to online teaching and digital study of the material. for studying in the physical environment of a classroom, amphitheatre, laboratory or similar educational facilities.

One of the ways to partially alleviate this process of not studying the entire prescribed material and accredited curricula on time relies on more intensive application of IT technologies, innovations and solutions, with a special focus on increasing the degree of student involvement in active learning. One of such IT solutions is SLIDO, an online software, primarily aimed at use for business purposes but certainly and unstoppably finding its way to improve education. This paper aims to explore potentials of increasing students' engagement through IT solutions like SLIDO.

Keywords: *modern learning; IT; IT in learning; engagement; SLIDO.*

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

JEL Classification: I25, O31, O33

Introduction

In the disruptive world of today, due to the exponential expansion of new technologies, combined with the COVID-19 crisis, a significant number of challenges emerged [Meinck *et al*, 2022]. Information technologies (IT) has become an essential part of a new world affecting all the segments of life, work and education. Quite paradoxically, IT has also challenged itself, as a function in terms of potential to initiate changes, constantly transform to the next development phase, while simultaneously keeping the business or education continuity [Jovanovic *et al* 2022]. Global educational system is under high pressure to overcome post pandemic social distances and gaps on one side, followed by new teaching modes like hybrid or online learning methods and resistance of recipients to use them with full potential on the other [Stojakovic, 2021]. Despite the many negative aspects of the impact of the coronavirus pandemic on education, positive innovations are also noticeable, which were inevitable in conditions of the "new normality". One of them is digitalization and the transition to online teaching. At the same time, it is evident that students become less engaged while attending online classes fully remote [Burch, 2021].

When the online teaching is analyzed, opinions are divided and still do not exist a clear view of whether it is better or worse than the physical presence of the teaching and lectures. There are numerous strong arguments pro et contra, but this paper would focus on the positive innovations brought about by digitalization and online teaching. In the end, the results of online learning (either positive or negative) depend on the motivation and responsibility of the individual, as on the side of the teaching staff, as well as on the side of those who study some educative program, pupils, students, etc.

One of the key challenges of modern learning is how to increase engagement of students in everyday teaching in an agile but still qualitative way. New IT solutions could play vital role in this process by adapting business solution to the new purposes like supporting online education. SLIDO is yet one example to support this concept.

Background

This section presents (if the case) the used theoretical tools: models, calculation formula. Also, any potential statistic data will be referred to, as well as their source and processing manner.

Technology has impacted almost every aspect of life today, and education is no exception. In some ways, education seems much the same as it has been for many years.

Classrooms today do not look much different, though you might find modern students looking at their laptops, tablets, or smart phones instead of books (though probably open to social media). opportunities for communication and collaboration have also been expanded by technology. Traditionally, classrooms have been relatively isolated, and collaboration has been limited to other students in the same classroom or building. Today, technology enables forms of communication and collaboration undreamt of in the past. Students in a classroom in the rural U.S., for example, can learn about the Arctic by following the expedition of a team of scientists in the region, read scientists' blog posting, view photos, e-mail questions to the scientists, and even talk live with the scientists via a videoconference. Students can share what they are learning with students in other classrooms in other states who are tracking the same expedition. Students can collaborate on group projects using technology-based tools such as wikis and Google docs. The walls of the classrooms are no longer a barrier as technology enables new ways of learning, communicating, and working collaboratively. [Bajraktari, 2019]

Technology has also begun to change the roles of teachers and learners. In the traditional classroom, the teacher is the primary source of information, and the learners passively receive it. This model of the teacher as the "sage on the stage" has been in education for a long time, and it is still very much in evidence today. However, because of the access to information and educational opportunity that technology has enabled, in many classrooms today the teacher's role shifting to the "guide on the side" as students take more responsibility for their own learning using technology to gather relevant information. [Bajraktari, 2019] Schools and universities across the country are beginning to redesign learning spaces to enable this new model of education, foster more interaction and small group work, and use technology as an enabler.

Technology is a powerful tool that can support and transform education in many ways, from making it easier for teachers to create instructional materials to enabling new ways for people to learn and work together, while providing unlimited options of engagement [Stojakovic, 2021]. With the worldwide reach of the Internet and the ubiquity of smart devices that can connect to it, a new age of anytime anywhere education is dawning. It will be up to instructional designers and educational technologies to make the most of the opportunities provided by

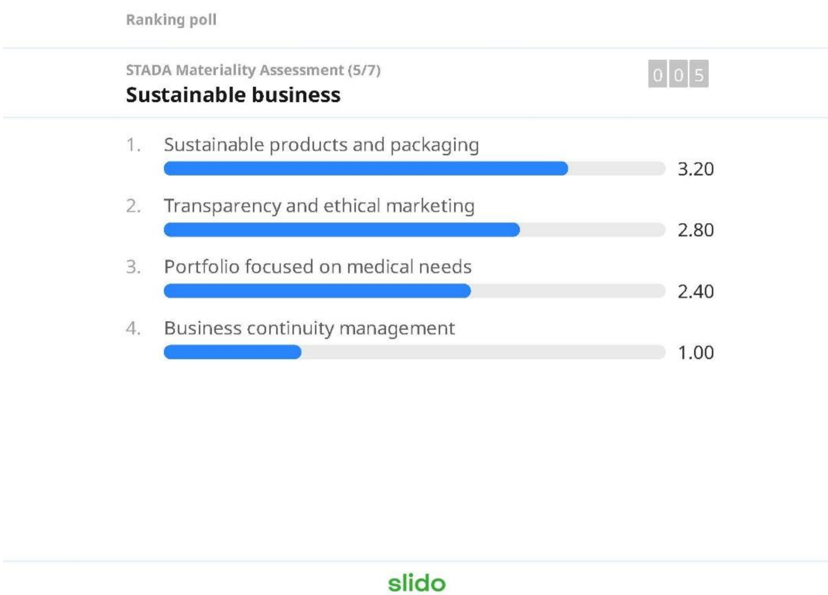
Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

technology to change education so that effective and efficient education is available to everyone everywhere.

Adapting the existing IT technologies and solutions, like SLIDO, to support learning is a cost-effective way to provide sustainable solutions within modern education. From the perspective of the methodology used, the research presented in this paper is a descriptive-analytical study. The research was based on a comparative analysis of the level of engagement of 181 students who participated in the lectures held physically in the amphitheater as well as in the lectures online. The same group of students was addressed with SLIDO polls in both kinds of lectures with various response rates. Also, overall engagement of students showed high level of difference compared to non-SLIDO lectures.

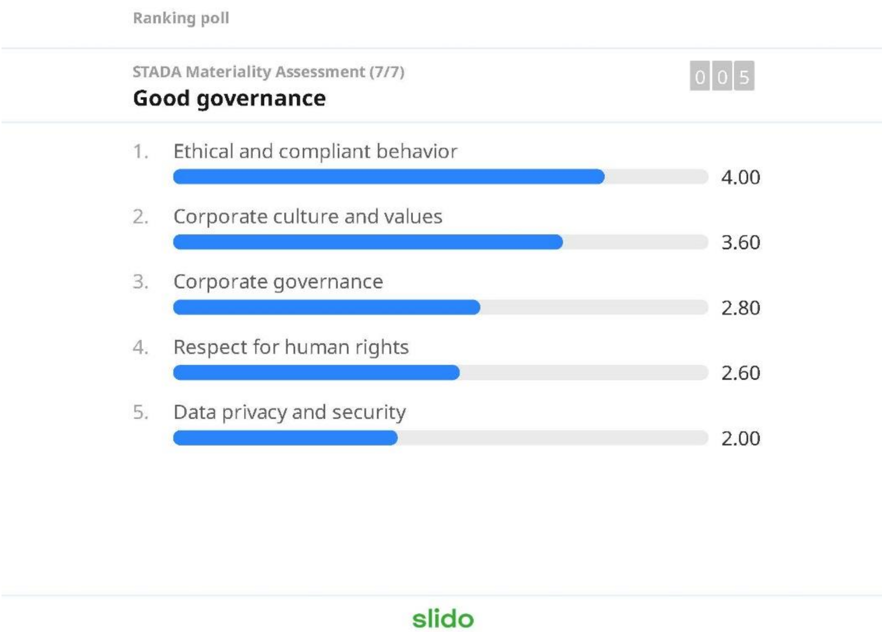
Illustration 1 – an example of SLIDO rating poll used in the research (official export file from the SLIDO software)



Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Illustration 2 – an example of SLIDO rating poll used in the research (official export file from the SLIDO software)



SLIDO from IT business solution to engagement tool in modern education

SLIDO is an easy to use Q&A and polling platform. It helps people to get the most out of meetings and events by bridging the gap between speakers and their audiences. From internal communications professionals to trainers, team leaders, conference organizers and individual presenters, SLIDO is used by anyone looking to enable open conversation at a live meeting, whether in-person or virtual. Having worked on over 1.77M events, this IT solution (software) helped to engage millions of participants, including some of the most outstanding business or scientific conferences worldwide.

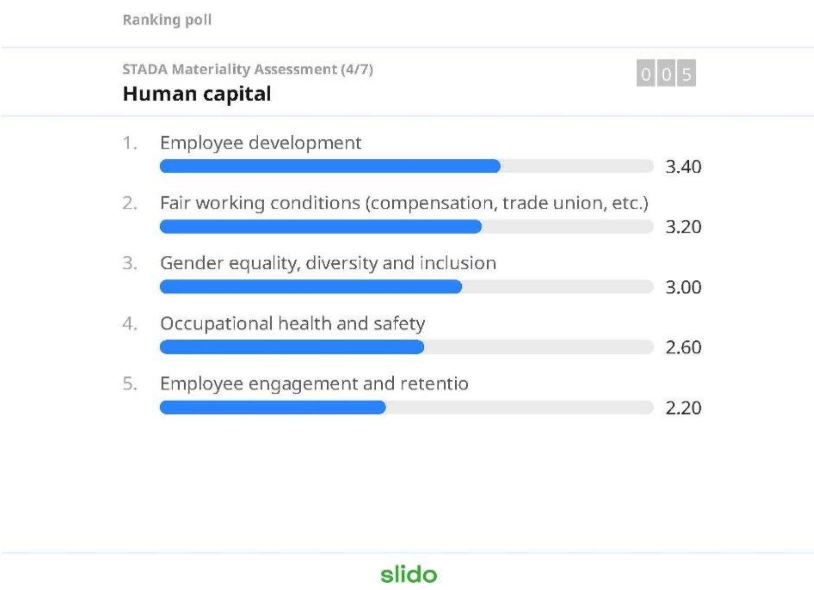
SLIDO was created to support business' needs and challenges but soon it was realized to be potential solution for bridging the gap of lack of students' engagement in teaching. While physical education reduces the possibility of involving all students at once, online teaching offers certain practical solutions,

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

which can cover the whole class or class. One such digital solution is the SLIDO service. This free service (starting pack) is based on creating surveys and mini-tests, which are accessed via QR code, which is now close to everyone, accessible and known, and which offers real-time answers to questions, but also the exact number of those who answered. In addition to agility and precision, SLIDO offers a certain level of greater interest to those who attend education because they immediately gain insight into the opinion of the group, the correctness of their answers, sustainability of attitudes, mastering new knowledge.

Illustration 3 – an example of SLIDO rating poll used in the research (official export file from the SLIDO software)



The use of services such as SLIDO is very important in motivating students to think in a modern way and to be motivated to actively participate in teaching outside the current framework, thus increasing the potential of their preparation for new professions and professions of the future, especially those to which public educational systems did not yet paid enough attention.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Three groups of students of equal size were involved in activations via the SLIDO tool. Two groups numbered 60 students, and the third 61. These are first-year students of the Faculty of Contemporary Arts who attend the study program of multimedia production. The research was initiated by the personal need of the professor to increase students' interest in the material, and to help them become actively involved in teaching, in an easy and fast way. At the same time, the challenge was to offer them a new and modern solution, which does not require too many activities before the concrete action. An additional challenge was the relatively narrow budget space within higher education in Serbia, which was expected to be a free solution or a very favorable license cost. From the conversations with various relevant stakeholders, primarily from the business and IT environment, it became known about the existence of SLIDO IT tool. Consideration of SLIDO as a potential teaching tool has raised several key issues:

- Is this IT service free?
- How is it used?
- Is it simple enough, agile and reviewed in the analysis of results?

Already after the first analyzes, it turned out that SLIDO requires only one step to access the content that needs to be placed with students, and that is the QR code. Assuming that all students have smartphones, as well as use them regularly, this way of engaging in teaching proved to be not only practical but also fun because students would otherwise use their smartphones to access non-teaching content (most likely social media) during the classes.

Further analysis of SLIDO showed that its basic license is either free or reasonably affordable, which meets the criterion of justification of use in terms of price, while the way of presenting the results is very intuitive and easy to interpret, with the option to monitor the number of responses in real time student participation in surveys, ranking of answers, etc.), which further affects their involvement.

Table 1. Engagement rate within Group 1 – 60 students.

Students offline	45 presents on lecture 1	Students online	55 presents on lecture 2
Lecture without SLIDO	Engagement rate 30%	Lecture without SLIDO	Engagement rate 32%
Lecture with SLIDO	Engagement rate 75%	Lecture with SLIDO	Engagement rate 90%

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Out of a total of 181 students, in three groups, in two lecture modes, offline and online, in the version with and without the SLIDO survey, there is a significant increase in engagement and involvement in the case of using SLIDO tools (as shown below within Tables 1, 2 and 3).

Table 2. Engagement rate within Group 2 – 60 students.

Students offline	55 presents on lecture 1	Students online	59 presents on lecture 2
Lecture without SLIDO	Engagement rate 33%	Lecture without SLIDO	Engagement rate 40%
Lecture with SLIDO	Engagement rate 70%	Lecture with SLIDO	Engagement rate 95%

Table 3. Engagement rate within Group 3 – 61 students.

Students offline	56 presents on lecture 1	Students online	61 presents on lecture 2
Lecture without SLIDO	Engagement rate 31%	Lecture without SLIDO	Engagement rate 30%
Lecture with SLIDO	Engagement rate 80%	Lecture with SLIDO	Engagement rate 85%

Apart from being practical in engaging more student, SLIDO proved to be a good choice, as the topic addressed to students involved sustainable development, which is not so familiar to them. This innovative IT tool brought the topic closer to them in a way that also showed a level of fun in the process of learning.

Conclusions

The use of services such as SLIDO is very important in motivating students to think in a modern way and to be motivated to actively participate in teaching outside the current framework, thus increasing the potential of their preparation for new professions and professions of the future, especially those to which public educational systems did not yet paid enough attention.

The results of the research presented in this paper, based on the target group of 181 students illustrate that the engagement rate significantly increased when using SLIDO tool in both offline and online teaching.

With the students participating in offline classes, SLIDO lectures increased engagement to an average of 75% within each group, compared to the average engagement without SLIDO of an approximately 31.33%. This result is less than a half of the previous result (with SLIDO). Similar result, but with an outstanding average of 90% of engagement came after introducing SLIDO to online lectures. Online lectures without SLIDO resulted in modest 34% of engagement which proves that online lectures without active engagement are pointless.

At the same time, the research showed that SLIDO enables check for understanding in real time - via live polls or quizzes to check if the students are keeping up with the lecture. This could help to identify the points that need clarification and adjust some lesson accordingly. It also empower quiet students to ask questions. SLIDO removes students' fear of asking questions in front of the class. With this tool, they could post questions anonymously from their phones and upvote the questions they like. Last but not least, SLIDO collects feedbacks to improve the classes. With this tool each teacher could become a better one, one lecture at a time. By asking for feedback with simple surveys it is easy to understand and see how students vote and participate over time.

References

[1] D. Bajraktari. *Modern Technology in Education*. University of the Potomac, 2019.
[2] D. Stojakovic. *The role of companies in dual education in post pandemic environment*. DSOJ, 2021.
[3] K. Burch. *Remote learning and parenthood*. Insider, 2021.
[4] S. Meinck, J. Fraillon, R. Strietholt. *The impact of the COVID-19 pandemic on education: international evidence from the Responses to Educational Disruption Survey (REDS)*. UNESCO, 2022
[5] T. Jovanovic, K. Jovanovic Corlija, D. Stojakovic. *The Role of HR in the Transformation Journey from IT Shared Center to Competence Center*. Hemofarm Fondacija, 2022.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

THE ROLE OF BLOCKCHAIN TECHNOLOGY IN THE UNIVERSAL METAVERSE FROM THE PERSPECTIVE OF COMPETITIVE RELATIONS IN BUSINESS. CHALLENGES AND UNCERTAINTIES

MOTTO: The definition of the modern world:
"Any advanced technology can be confused with magic."[1]

Roxana-Daniela PĂUN[1]
[1] Faculty of Legal Science and Administrative Sciences, Spiru Haret University, Bucharest, Romania, Email: roxana.paun@spiruharet.ro

How to cite: PĂUN, R.D. (2022). "The Role of Blockchain Technology in the Universal Metaverse from the Perspective of Competitive Relations in Business. Challenges and Uncertainties." *Annals of Spiru Haret University. Economic Series, 22*(2), 39-59, doi: https://doi.org/10.26458/2222

Abstract
Blockchain technology is becoming one of the most prominent trends in finance and digital innovation since the creation of the Internet. Blockchain technology makes data private, permanent and verifiable. Data and transaction logging is public, but encryption protects them from prying eyes and tampering. The architecture of the blockchain database and the associated

[1] Arthur C. Clarke - 16 December 1917 - 19 March 2008 - British science fiction writer, inventor and futurist. He was a commentator and host of the British television series Mysterious World. For a long time, Robert A. Heinlein, Isaac Asimov, and Arthur C. Clarke were known as the "Big Three" in science fiction. His reference work is the novel Space Odyssey 2001, written based on the screenplay of the film of the same title with American director Stanley Kubrick. The screenplay of the film is based on a short story published by the author in 1951, entitled Sentinel. Source: https://en.wikipedia.org/wiki/Arthur_C._Clarke

protocols provide a solid foundation for creating new classes of applications. This is just the theory. In practice, however, blockchain technology has proven to be somewhat less miraculous. It is powerful and effective in a wide range of areas, but in addition to the well-publicized benefits of blockchain, experts have discovered a set of disadvantages of blockchain technology. That's why the Bitcoin blockchain is often referred to as the "open register" of Bitcoin. Experts around the world, with the exception of a few skeptics, see blockchain as a high-impact technology that has the potential to revolutionize the world of finance, gaming, entertainment and more.

Starting from the analysis carried out by specialists in the field on their website, and from information on this technology, the present study brings some arguments to draw the attention of the more or less informed reader to the risks and dangers to which they are exposed and to whom this technology is applied in sensitive areas regarding the life, health, freedom and privacy of the citizens of this planet.

Even if the role of this technology in some fields is undeniable, it must still be treated with great care from the perspective of respecting the fundamental rights and freedoms of human beings, the universal values that mankind has gained in centuries of human effort and sacrifice for current and future generations to evolve without repeating the mistakes of history.

History makes fun of those who do not know it, repeating itself, said Nicola Iorga.

Keywords: *blockchain; metaverse; cryptocurrency; identity management; digital identity id; hashing; encryption.*

JEL Classification: K2, K24, M2, M15, M21, O3, O32, O33

Introduction

Globalized society and technological developments are a reality of our contemporary life. In this context, the use of modern technologies in all areas of our lives is a challenge that requires concrete solutions to optimize the effects of using these technologies in order to improve the quality of life and optimize work in all areas. Blockchain technology is a conclusive example, already generating a series of pros and cons that require a detailed analysis to provide the optimal solutions to adapt this technology to the new reality of the world business world.

Blockchains are databases that are only stored on one central server, which is accessible to all users, but are stored on users' computers around the world. This

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

database is distributed with a peer-to-peer architecture. "Distributed" means that data is stored in multiple locations, and "peer-to-peer" means that there is no central authority that holds a master copy of the data, which is why authorities around the world are reluctant to use this technology. We will see further in this study. This topic is a challenge for everyone involved, but especially for end users of this technology, who can use these databases to make everyday work easier in the company, but also in society, in areas that we will briefly list in this paper.

Being a subject that, although it has been researched and developed for years in areas such as computer games, gambling, brings new challenges, vulnerabilities and uncertainties. Although it has gradually entered many other areas, it is becoming a reality that requires authorities around the world to accept, regulate, optimize it from the perspective of information security and data protection through secure encryption. There is currently a lot of experimentation with variations in the basic architecture of the blockchain, finding that mainstream blockchains behave well in small quantities, but when it comes to scaling, they have trouble supporting full-scale applications.

Transaction fees are rising, and processing times are rising by the hour. But many new blockchains include innovative solutions to these problems. Researchers continue to experiment with consensus mechanisms, coordination of parallel sub-links, private blockchains and other technical issues. The interdisciplinary character of the subject derives this technology from the classic theme of computer programming, precisely through its implementation in various fields. Thus, if at first it was intended to be a technology for cryptocurrencies, later it was developed by the creators, with the contribution of all specialists who wanted to get involved, as we will learn from the analysis undertaken in this study.

History: Bitcoin is the creation of Satoshi Nakamoto, but blockchains were invented at a completely different time and place, although it seems that the blockchain architecture that makes possible the existence of Bitcoin and other cryptocurrencies was also established by Nakamoto, who launched Bitcoin blockchain and cryptocurrency in 2009. However, a generation before Nakamoto's white paper, a doctoral candidate at the University of California at Berkeley (California) named David Chaum pointed out the blockchain database in the dissertation, "Computer systems established, maintained and trusted by Suspicious Mutual Groups." That was in 1982, 27 years before Bitcoin. There were also decentralized databases before Chaum, however, according to experts, the year of the invention of this technology is 1982.[2]

[2] https://kriptomat.io/ro/blockchain/istoricul-blockchain/

Chaum's "suspicious networks" were not created specifically to support digital currencies, but the connection was obvious. Based on his work on blockchain technology, Chaum launched a company called DigiCash in 1989, and in 1995, the company introduced a cryptocurrency with various names such as digicash, eCash, or cyberbucks. DigiCash's digital currency promised to offer many of the functions of modern cryptocurrencies, including anonymity as a key benefit. Even governments could not decrypt eCash-encrypted transfers, according to the company. However, Chaum failed to persuade the banks to support the project, and without an internet infrastructure that supports peer-to-peer transactions, but only with stock exchanges, the project was unsuccessful. DigiCash went bankrupt in 1998.

In 2008, the history of blockchain technology became interesting when a research paper appeared on online discussion forums. The paper was called "Bitcoin: A peer-to-peer electronic money system" which was attributed to Satoshi Nakamoto.

Experts say that the blockchain protocol highlighted in Nakamoto's work is essentially the same as that of David Chaum. The only significant difference is the addition of the consensus mechanism "proof of work for the validation of blocks and for the mining of coins". However, most people believe that Satoshi Nakamoto created blockchain technology.

Nakamoto uploaded the blockchain source code to SourceForge in 2008 so that software developers around the world could contribute to the project. The first modern blockchain was launched in January 2009, along with the associated cryptocurrency, Bitcoin.

Bitcoin has been the only blockchain and the only viable cryptocurrency in the world for two years. In 2011, developers launched blockchain-based cryptocurrencies called Litecoin and Namecoin, both derivatives of the Bitcoin project. Peercoin followed in 2012, and the following year, five blockchains were introduced, including the first memecoin, Dogecoin.

2015 is another important year, as the Ethereum blockchain was introduced by a team that also included contributors to the Bitcoin project. Ethereum was different. Other blockchains existed only to support specific cryptocurrencies, but Ethereum was introduced as a platform for running decentralized applications. The Ethereum blockchain holds executable source code in addition to data, so it is the foundation for thousands of blockchain-based applications. Bitcoin and Ethereum are the most widespread blockchains in use, but now there are hundreds and thousands more, all based on Nakamoto's original concept. Blockchains can be public, such as the Bitcoin blockchain, or private, used for internal data management.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Researchers have created many variations on the basic architecture of the blockchain. Many include innovations to support faster processing, higher scalability, and lower transaction fees. Consensus mechanism, coordination and subordinate sub-links, private blockchains and other key technologies are now part of projects around the world.[3]

Blockchain technology in the universal metaverse from the perspective of competitive relations in business. Blockchain connection with universal metaverse[4]

The individual elements of the technology required to implement Metaverse 1.0 already exist. There is technology to create and navigate virtual neighborhoods while we are embodied in avatars. E-commerce has proven its viability, becoming more widespread. There are virtual reality headsets for use at home when we enjoy entertainment and electronic eyeglasses that serve as displays for applications running on the computers we carry with us - our smartphones. Today's PCs, tablets, and phones are powerful enough to meet the requirements of a virtual world interface layer between users and applications. All we have to do is put the pieces together. Even if the negative effects of these technologies on human health are not yet presented, they are beginning to appear, and the dependence on technology has already created new diseases of the human body exposed by the radiation waves generated by these technologies.

Once the internet has metamorphosed into metavers, we may find that the game-style visual interface is the least important element. Researchers will learn from feedback on early implementations, and by the time the metaverse reaches a global audience, it may be quite different from what we imagine today. Only time will tell if researchers will be able to turn the Internet from a task-oriented work and entertainment platform into a place where we can spend our happy lives.

No one has fully imagined such a metaverse, although voice recognition is a reality widely accessed by any user. Immediate, automatic translation is another example, which has already materialized in the disappearance of the translator / interpreter profession.

---

[3] https://kriptomat.io/ro/blockchain/ce-este-tehnologia-blockchain/

[4] See: What is Metaverse and Why Should Someone Care?, https://kriptomat.io/ro/blockchain/ce-este-metaversul/ What Does This Have To Do With Blockchains?

Some of the innovations in the metaverse may be quite ineffective. Today you can order pizza by visiting a website and click two buttons. Metavers dreamers imagine a bustling city where your avatar walks into a pizza restaurant and orders a conversation with a counter employee. This is more fun but less effective. As the metaverse evolves, we may find that placing a speech command through a digital assistant such as Alexa or Siri is a better way to feed the family.

The authors of the cryptocurrency site have identified three major ways in which blockchain technology can play an important role in a universal metavers:

1. The metaverse could incorporate blockchain technology as a lower-level service to ensure that the emerging reality of consensus is truly decentralized. You will visit the Google metaverse or the Apple metaverse or the Meta metaverse. All three companies are pursuing this goal as soon as they can. Interoperability will require protocols and decentralization that could reduce the profitability of tech companies as usual. But this interoperability is essential for the metaverse to reach its full potential. (already illustrated in many SF movies)

2. Secondly, the metaverse will have to have a world currency without any friction. It doesn't have to be Bitcoin or Ether, but it makes sense for it to be a blockchain-based cryptocurrency. Every e-commerce website will want to set up a metavers store. Currency conversion and credit card regulations, however, are an obstacle to this interoperable future. The metaverse may use multiple currencies, but the conversion must be automatic, invisible, and instantaneous.

3. And finally, the blockchain world offers a good solution to personalization and ownership issues. You could visit a virtual store to customize the avatar to decorate your home from metavers. You will need a way to establish ownership of the digital items you buy - and that's exactly what non-fungal chips can be used for. Today's NFTs could be used as an attached technology that can meet a number of technical needs in metavers.

The Snoop Dogg rapper, who created a version of his villa in real life that users can visit The Sandbox. They will be able to take a tour of the villa, interact with the visual representations of the singer's pets, cars, statues, souvenirs and more, all created as NFTs. They can also buy concert tickets with VIP access permits in the Virtual Dogghouse. Users who buy Snoop-branded NFTs can use them outside of Snoop Dogg's Sandbox virtual world portion. Snoop's dogghouse gives us a glimpse of what the metaverse might be. But because it's only available to Sandbox users, it's not metavers. For the metaverse to be successful, it must be universally valid, interoperable, and integrated.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Challenges and uncertainties regarding the evolution of blockchain technology

At this point, there are challenges and uncertainties that relax some and worry others. After so many centuries of certainty, control of populations, incomes, expenditures, a system is created that seems to be out of control by anyone.

Even though Satoshi Nakamoto's blockchain is not the first distributed database and is not the first peer-to-peer database, so it is not the first blockchain, it is still the basis for the first modern cryptocurrency and the starting point for all blockchains after him. There are even differences in terminology. Database programmers call them records, and blockchain programmers call them blocks. Row, record, block - all refer to a single piece of data. In computer science, this structure is known as a double-stranded list because it links back and forth. Memory chips in your computer and smartphone detect system usage errors. This system is also used to find errors on your hard drive. This simple checksum system is essential for blockchain technology, and first-year computer science students are well acquainted with it. However, Nakamoto anticipated vulnerabilities in his blockchain architecture. Instead of a simple gathering to create checksums and track links in the data chain, he used a cryptographic process called "hashing."

Hashing and Encryption

Hashing creates a unique identifier by combining the value of the previous record with the value of the current record in a one-way mathematical process that results in a hash value that looks like a mathematical formula composed of numbers and letters, similar to passwords we use to encode access to certain activities performed using the Internet (mail access, bank card access, etc.). It is called unidirectional because there is no mathematical verification process to transform that formula. Each blockchain transaction is validated using the hash mechanism, detailed on the site: What Is Blockchain Technology And How Does It Work? https://kriptomat.io/ro/blockchain/ce-este-tehnologia-blockchain/

Nakamoto has set up encryption to ensure that data stored in the blockchain is visible to each user, but can only be decrypted by those who have the right decryption keys. Without a key, all you see is a meaningless string.

However, hashing and encryption consume a lot of computing resources. It's a slow process. Worldwide, Bitcoin's entire blockchain network is limited to a processing level of 4.6 Transactions Per Second. (TPS). Credit card companies typically process an average of 1,700 Transactions Per Second and claim to have the capacity to support 56,000 TPS.

The computer network that validates Bitcoin transactions consumes more electricity than Switzerland. A website called Bitnodes provides an updated number of nodes that are currently online and accessible, but a quick Google search shows that experts provide estimates of the number of nodes between 6,000 and 200,000. Nobody really knows how many they really are. And these are just a few elements that are identified by specialists as inconveniences and challenges that generate uncertainties about the degree of applicability of this technology.

The most widely used blockchain is Ethereum, which includes changes that make it more flexible than the Bitcoin blockcain. It has its own cryptocurrency - Ether - but the developers have created on this blockchain many additional cryptocurrencies that run on it, being a platform with various types of use in the real world in addition to virtual money.

One of the main benefits of Ethereum is that it has executable programs in addition to the existence of data. These programs are known as "smart contracts." For example, a smart contract created for ten could add up to all the Ether tokens added to your account this month and send 10% to the church as a donation.

Has anyone thought that this technology, at the rate with which it is spreading and developing, could be used in the future to rewrite current employment contracts in terms of remuneration, where the classic form of money known to us that will be replaced by coins virtual media that only circulates on the internet and not in our pocket? And then the points received in these "smart contracts" to be used for the purchase / payment of goods and services, thus generating total control of humanity? Now it looks like a science fiction movie script, but which, coupled with the information on identity management discussed in the following pages of this paper, is beginning to emerge as the new reality of a society controlled "for the common good" by a handful of people who have accumulated huge revenues with which many of the world's states have already bought.[5]

Blockchain applications: A blockchain is a peer-to-peer database architecture with complex encryption protocols for verifying data before adding it to the database. We think of blockchains as the foundation of cryptocurrencies because the introduction of Bitcoin has been a highly visible use in blockchain technology beyond computer science. Its architecture is also suitable for applications in many industries and is gradually expanding to various fields. Blockchain smart contract technology means the ability to manipulate blockchain data with executable code,

---

[5] For those who still don't think they should to watch the sci-fi movie "Equilibrium"

which is stored in blocks, and turn the blockchain into a flexible foundation for applications across a wide range of situations.[6]

Among the areas in which it already works is health, by storing medical records in the blockchain database that becomes accessible wherever there is an internet connection. This allows doctors, insurance companies to access each patient's medical data through simple online transactions, and with appropriate permission doctors can add new data to the registration. This blockchain technology has the potential to revolutionize health by giving patients complete control over their medical records, but also the efficiency of payments for medical services, which comes as a bonus. Insurance settlements using the same blockchain-based applications can eliminate the risk of fraud, improving the speed of reimbursement for losses in the insurance industry. Immutable property value records, claims and reimbursements provide much-needed visibility to the insurance industry. And smart contracts can reduce much of the paperwork required for insurance payments. The use of this technology in the distribution chain brings many advantages in the management and development of business relationships. Manufacturers, sellers and consumers all have an interest in tracking supply chains from original sources in the buyer's shopping cart. Whether checking food for inorganic contaminants or ensuring that import duties are paid across national borders, blockchains can play a key role in tracking goods through their manufacturing to use. In fact, Walmart is already using a blockchain that tracks the supply chain for the food it sells in stores. It has also been used in Romania since April 2021, when a project was announced for Romania to monitor eggs via the blockchain before they reach the store. The technology is used to store information such as the location and name of the farm or farmer, veterinary information about the hens from which the eggs came, what they were fed, how the birds were raised, the date of packaging and other details that complete the product traceability. In a certain form, the Special Telecommunications Service also used blockchain in Romania, even at the polls. "This state-of-the-art complementary solution guarantees the integrity and strengthens the transparency and traceability of the electoral process," STS reported in November 2020.

Luxury watchmaker Brieling offers certified digital watchmakers who provide authenticity. If you sell the watch, you can transfer the certificate to the new owner

[6] https://kriptomat.io/ro/blockchain/cele-mai-bune-cazuri-de-utilizare-din-lumea-reala-de-astazi/

by establishing a verifiable ownership chain. The technology can also be used to track the origin of food in grocery stores by tracking each transfer. More and more people care about ethical sources, and the blockchain can take part in it. Decentralized financing (DeFi) and blockchain work together like beer and pizza and track secure transactions while eliminating the need for slow and expensive intermediaries. The blockchain retains a record for previous transactions and auditors. DeFi applications are available for borrowing and lending, international remittances, investments, and more. It is possible that DeFi and not cryptocurrencies could be the phenomenal application of the blockchain.

Tracking references in a blockchain database is the perfect place to register diplomas, certificates of competency, licenses or other vocational qualifications. This is essential for medical institutions and legal practices, where hiring people without the right qualifications can lead to disaster and more. But it is easy to realize the near future in which all academic and vocational performance is added to a personal blockchain-based file for use by academic institutions, employers and even customers, for the business environment.

Last but not least, blockchain voting is the perfect application for verifying the identity of the voter guaranteed with cryptographic security, in which the blockchain network can monitor the vote, count it, and guarantee the integrity of the result.

In the world of online gaming and gambling, blockchain technology already provides a record of the randomness of the game of dice, poker hands and gaming events, where this technology is used, can record the strengths of players in role-playing games and gambling winnings. Some companies use blockchain technology to create early versions of metavers game worlds.

Digital distribution of music, movies, other artwork in the media is convenient for users, but artists and publishing companies complain about aggressive piracy. Blockchain-based distribution could copy every single digital media file and provide a convenient mechanism for viewers to make micropayments directly to creators or publishers.

In real estate, whether it's maintaining a database of land and property, selling homes without the time and expense of legal authority, or just minimizing the paperwork involved in buying property, the blockchain has significant potential to eliminate paperwork and the piles of documents now required by law to complete real estate transactions.

In tourism and leisure, Blockchain technology could serve as a basis for a rewards program that delivers coins that can be spent in a supplier store or, potentially, with cooperating businesses, in the case of airlines and hotel chains,

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

respectively companies in the travel industry that maintains loyalty programs for elite customers. Loyalty programs are a great app for privately issued chips.

In entertainment, artists, musicians and sports teams were among the first to recognize the potential of NFT's[7] to increase fan engagement. A growing number of blockchain-based platforms allow fans to purchase collectible NFTs that support the team or artist while giving fans voting rights for the team song or special places at events.

In the field of art collections and investment, auction houses that trade works of art have adopted NFT technology as a way to allow investors to establish ownership of works of art without physically owning them. Whether it's JPG files with cute kittens or Picasso masterpieces, you can now buy, collect and invest through blockchain NFT trading platforms!

Blockchain wallet - is considered the equivalent of a bank account, as it allows you to deposit, receive or send cryptocurrencies. This wallet stores information that confirms the user's possession of cryptocurrencies. When a transfer is made, it will be registered in the Blockchain, and the balances of the two parties will be debited or credited accordingly. The classification criteria for these wallets are:

a) depending on the type of access,

- ***Hot Wallet*** - these wallets are permanently connected to the internet. They have the advantage that they can be easily accessed and transactions can be done quickly, but they can pose security risks if not handled properly.
- ***Cold Wallet*** - are offline wallets, usually used as a virtual safe, for storing cryptocurrencies that will not be traded too soon. They offer increased security, but accessing them is much more difficult.

b) depending on how the private key is stored,

- ***Desktop Wallets*** - Downloaded and installed on a computer, these wallets can only be used on that device. They can provide greater security against cyber attacks, but only if the device on which they are installed is well secured.
- ***Mobile wallets*** **-** these are wallets that are downloaded to your mobile phone. They offer greater accessibility than desktop devices, but may be vulnerable to cyber attacks.
- ***Online wallets*** - these are not installed on the owner's device, but operate in a cloud system, and private keys are stored on a third-party server. They are fast, easy to use and safe, but require management fees.

[7] NFT = Non-fungible token

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

- ***Hardware wallets*** **-** are similar to online wallets, except that, in their case, the private key is stored on a device specially designed for this purpose, used every time you want to make a transaction. Although they are among the safest types of Blockchain wallets, they are also the most expensive.
- ***Paper wallets*** **-** involve printing a private key and a QR code on a piece of paper. It is a good choice for long-term storage of cryptocurrencies, and the only risk is the destruction or loss of the paper on which the Blockchain login information is printed.

We are all already familiar with the QR code, so new technology is starting to be a part of our lives, whether we like it or not! Understanding the working principle of Blockchain technology and knowing its benefits can create new development opportunities for any company and optimize current activities. With the help of quality services, provided by specialists in the field, Blockchain can open new horizons and can significantly improve the operational processes of any entity.

However, no one is talking about the challenges, the uncertainties so that we do not call them dangers in terms of the total invasion of their privacy, the limitation in the future of access to a free life, etc. There is quite a bit of information at the moment about these issues, but, analyzing "Identity Management Through Blockchain" the authors of the site https://kriptomat.io/ro/blockchain/ce-este-managementul-identitatii-prin-blockchain/ define "Identity management is a complex process that involves identifying, authenticating, and authorizing individuals to access systems, networks, and applications. Robust digital identity solutions are being implemented to reduce the risk of fraud, identity theft and data breaches. "

Thus, aspects are revealed and summarized regarding: how blockchain-based ID systems work, increasing self-sovereign identity, blockchain reputation scoring systems, the use of daemon wallets for transaction automation, micro-payment management and identity-based subscription issues digital. Without being in a science fiction series, we find that Hollywood made several films many years ago that presented us then this reality that becomes now and in the following years the future of humanity!

"Concerns about privacy are paramount when it comes to identity management, and this is especially true of government-issued documents such as passports and driver's licenses. Birth certificates are a living example of the paper-based pre-digital identity management era. Data security breaches are a major threat to identity security, with hackers often selling stolen personal information (names, email addresses, passwords, etc.) on the darknet. In 2019 alone, hackers accessed more than 7.9 billion consumer records, including personal and financial data. No wonder cyber-attacks of this nature are seen as a major risk to global stability. All of these concerns add to a problem that can be solved by storing digital identity in the blockchain. "

I allow myself not to share this point of view of the authors, starting from a statement by Bill Gates who said at a conference in the USA that human intelligence created the computer, the programs and then the virus for these programs, so that he also sells the antivirus. ! Extrapolating to what has happened on the planet in recent years, how will the scientific, academic world react and not only when they find that according to this principle it was "developed" and "escaped from the Wuhan Research Laboratory" (funded by the same character[8]) and the C19 virus, for his pharmaceutical companies to sell to the governments a “so-called vaccine”[9]. Starting from the definition, we all found that this serum did not protect at all, did not create any immunity, on the contrary, those vaccinated transmit the disease and became ill, (even after the booster), realities that even divided the medical world in two. This is confirmed by insurance companies and even manufacturing companies, some of which do not insure against the disease and do not pay the insurance.

In the case of the lawsuit filed in the USA, the legal representatives of the manufacturing company stated that they will provide the information in 50 years, as this would take the company to prepare the evidence and present it to the court. (a premiere for the US judiciary!) How does Bill Gates now know that "After the Omicron wave passes, COVID-19 will be like the seasonal flu" [10](January 2022 statement), but he knows for sure that ”In a few years, my hope is that the only time you really need to think about the virus is when you get your common vaccine against COVID-19 every fall, ” of course provided by the factories he owns! - statement from 09.12. 2021!

Until the truth is found and the guilty will be punished, the global pandemic was used to change the paradigms and lives of these contemporary generations, but also of future ones, with a new lifestyle, with a "new reality", as the media

---

[8] According to information taken by part of the international press

[9] Vaccine definition "Biological product obtained from pathogens or microbial cultures, which is administered (by injection or by mouth) to a human or animal to create immunity against infectious diseases or for therapeutic purposes"; https://dexonline.ro/definitie/vaccin

[10] https://www.digi24.ro/stiri/externe/bill-gates-dupa-ce-trece-valul-omicron-covid-19-va-fi-ca-gripa-sezoniera-1801309- 13.01.2022

"intoxicated". "The virtual world to prepare for" the era of digital identity created through the blockchain".

Gradually man of these times "voluntarily renounces" the rights and freedoms that have been gained over centuries of human existence.

If at the beginning the use of this technology has all the "ingredients" and arguments to come to the aid of man, but it can guarantee us that in the near or distant future secure storage and management of digital IDs for both businesses and users will not be can deal with data security breaches, technology creating the possibility of controlling individuals by manipulating their digital identity (known as self-sovereign identity), in the so-called Access and Identity Management (IAM) market. And in the future, people who have become "undesirable" who may oppose the system of total control are literally eliminated by erasing their identity and expelling them from society, limiting access to health and food, to the extinction of some people. This seems like a sci-fi scenario at the moment, but let's remember that it was Jules Verne's submarine, Hollywood movies with the time machine, time travel and drones, etc.

Blockchain ID systems seem to involve storing digital identities on the blockchain. However, this is more than that, as the authors of the article point out, in 2018, for example, the World Food Program (WFP) used an Ethereum [11]-based ID system to provide humanitarian aid.

*Sovri*n is an open-source network that allows digital ID management, being created to "evolve the current system of isolated identities, endless passwords, and insecure databases", non-profit allows identity verification without problems and in a secure way for life. The Sovrin network consists of distributed server nodes that are hosted and managed by a number of trusted entities called Stewards. Each node contains a copy of the register, which verifies the validity of the accreditations issued within the network. By implementing Sovrin, organizations can avoid the regulatory burdens associated with storing huge amounts of data that, as I mentioned, can be easily stolen. GlobaliD is another platform concerned with

[11] The most widely used virtual currency blockchain is Ethereum, which includes changes that make it more flexible than the Bitcoin blockcain. Ethereum has its own cryptocurrency - Ether - but the developers have created many additional cryptocurrencies running on this blockchain. This platform has various types of use in the real world in addition to virtual money.- according to: https://kriptomat.io/ro/blockchain/ce-este-tehnologia-blockchain/; see also: https://www.technologyreview.com/2018/04/12/143410/inside-the-jordan-refugee-camp-that-runs-on-blockchain/

issuing self-sovereign identities. GlobaliD identities consist of a name and key data that defines who the user is, which may include conventional identifying information such as name, date of birth and address and more advanced identifiers such as biometrics, GPS data and social networking profiles.

Blockchain Reputation Scoring Systems

The use of the blockchain in the creation and storage of digital identities gave rise to the concept of an immutable reputation scoring system, which could be used by financial institutions and others to verify users. Shyft Network is a startup that is actively exploring a blockchain-based identity solution, enabling basic anonymity and anchoring KYC data[12]. In the business world, "credibility scores" reflect their reputation and level of trust. "Data is valuable, and individuals deserve to be compensated for sharing it." To this end, the Network provides users with an interface through which to view and manage interactions with their data, and to earn rewards from their distribution.

On the principle of rewarding computer games, Shyft ingeniously assigns "credibility scores" to users or businesses, and a public blockchain protocol will incorporate trust in data stored across different ecosystems.

Micro-payments based on Digital Identity (ID) and Subscriptions, which are still in their infancy, the blockchain offers enormous potential. The example chosen by cryptomat authors indicates the possibility of accessing articles on a paywall-type website such as the New York Times, without the need to register. Instead of handing over your name and email address to the publisher, who then stores them in a centralized database, you can access an article with a verified digital ID and then pay, in crypto or fiat[13], for what you consume.

Digital ID-based systems can be used to automate and pay for subscription services, whether they are physical products, such as household cleaning products,

---

[12] Know Your Customer (KYC) standards are designed to protect financial institutions against fraud, corruption, money laundering and terrorist financing. Based on this indicator, the bank may refuse financing, opening an account for that company.

[13] Fiat money is the currency of a country that its own government has declared as a legal means of payment, but which does not have coverage provided by a physical or other good. In other words, the value of FIAT money derives from the relationship between supply and demand, rather than the value of the material from which it is made.- https://www.financialmarket.ro/terms/bani-fiat/

or digital items, such as software as a service (SaaS)[14] and online learning materials.

Other disadvantages of this "distributed registry technology" are presented in the virtual environment in https://kriptomat.io/ro/blockchain/argumente-pro-si-contra-tehnologia-blockchain/ as follows: Although sufficiently flexible and powerful to support many exciting new applications and services, blockchain technology also has a number of disadvantages: - it is complex and new, which means that there are not enough software engineers trained in blockchain, which makes blockchain to be expensive. Currently, the most used blockchains are not suitable for large-scale deployment of applications and services. Bitcoin and Ethereum blockchains handle less than 50 transactions per second, but there are technological solutions on the horizon. However, limited scalability remains a significant disadvantage that compromises the performance of current blockchain applications.

Mining Crypto Proof of Work is known to be harmful to the environment because it consumes a lot of energy to improve each block of transactions, especially on the Bitcoin blockchain. Blockchains are reliable due to network redundancy, but all those nodes also contribute to power consumption.

Public key cryptography is a two-sided blessing that is deeply rooted in blockchain technology. Encryption secures the network, but users who lose their private keys may lose access to their private funds. Users have lost millions of euros simply by losing their private keys from their blockchain accounts, which confirms the volatility of cryptocurrencies and the risk not legally covered by any authority of any state in the world.

Even some of the advantages can easily become disadvantages, as follows:

Blockchain transactions take place without the approval or involvement of third parties, which makes them impossible to control by the institutional entities of the states. You can make a crypto investment without hiring an investment advisor. You can buy without the need for a bank to process your credit or debit card payment. You can borrow funds without having to pay dearly for a financial institution. Because you do not need the approval of banking directors or financial professionals, you can execute transactions in minutes instead of days or weeks.

[14] Software as a Service (SaaS) is considered to be part of cloud computing, a software licensing and delivery model in which software is licensed on a subscription basis and hosted centrally. (SaaS) is also known as "on-demand software" and web-based / web-hosted software.

This great advantage of using the open register function of blockchain technology, becomes a disadvantage when the qualified person, trained in vocational professions are no longer useful, becoming unemployed. The financial advantage in the absence of intermediaries (you can make as many blockchain-based transactions as you want without paying for a bank investor's ski vacation or a bank CEO's private jet) can become a risk if you lose your encryption keys without he still had access to his own funds, and there was no form of insurance against financial losses. Blockchains are owned and operated by users and the applications they use and do not need the expensive services of financial institutions. If these applications are attacked by hackers, so far there is no way to recover the lost money. The current reliability of decentralized peer-to-peer databases can become a vulnerability in the event of loss of these databases or theft of vital information for the company, personal health, etc., depending on the area where they are activated. Copies of blockchain transactions are stored on hundreds or thousands of network nodes, transactions are checked before being added to the blockchain, and secure, because in a peer-to-peer network, there is no single point of failure.

In the case of a conventional database, the failure of a single server can take all your data offline and then you live with the hope that the last backup was as recent as possible. This does not happen in the case of the blockchain, where the whole database with vital information and a lot of money can disappear, which you can no longer recover. Even if each blockchain uses a consensus mechanism to validate transactions before they are added to the database as blocks, which, through these consensus mechanisms, would make it impossible for hackers and thieves to enter fraudulent data, however, there is no security against the loss of the entire database, not to mention the costs of building these blockchains and paying for protection mechanisms (based on the computer antivirus model). Non-stop running of blockchains, initially an advantage, it generates high costs of resources, electricity, and dependence on technology affects human health and leisure, as the network is always ready for transactions, and man becomes a robot who gives up his life, freedoms, technology rights, although it should be the other way around.

Conclusions

What is Blockchain? American comedian Stephen Colbert says "it's gold for nerds." Well, nerds are now the popular kids in the block, and blockchain technology is becoming one of the biggest temptations for finance and digital innovation since the creation of the Internet. A phenomenon considered first exotic, then experimental, cryptocurrencies have recently become one of the top priorities of regulators, whether we are talking about governments, central banks, supervisors, the International Monetary Fund or the G20 summit agenda. The positions are not aligned: some send warnings or opt for a ban, others express their intention to create a favorable legal framework. However, the importance of blockchain technology, which is at the origin of cryptocurrencies, is unanimously accepted, being recognized for its potential to radically transform production systems, business models, the labor market, etc., but also the way of governing.

The potential of blockchain, but also of machine learning and Al (artificial intelligence) in ID (digital identity) systems, blockchain-based identity management is a fascinating area of exploration for years to come, with even more explosive and futuristic solutions. which is to come on the "production line". The most common use of blockchain technology today is cryptocurrency. But there are many more use cases for this, from monitoring the supply chain and e-voting (electronic voting), to tracking royalties, data security, etc. Humanity will have to adapt, trying, without hindering technological evolution, to use it ONLY IN THE INTEREST OF HUMAN BEING and not against him, just to make his daily life easier for automated activities, in relation to state authorities, banks, any service provider, without wasting time at the counters and pollute the environment with documents in letter formality.

Reluctance to novelty is explicable, especially in the case of authorities that are structurally conservative and inertial. The rise of cryptocurrencies, whose value has risen sharply and rapidly, has been associated in public discourse almost exclusively with speculative investments, implicitly insecure and possibly illegal. However, the vast majority of states leave the regulation in a gray area: no ban, no legal framework adopted. In some countries, even with remarkable technological development, such as South Korea (it is one of the first countries in which cryptocurrencies have been widely adopted), the messages are contradictory. For now, European Commission officials are ambiguous. They appreciate the opportunities generated by blockchain technology, but are wary of regulation, emphasizing the risks it could entail. In other words, for now, the attitude is waiting.

The US and Canada have a similar position, where regulators and supervisors closely monitor everything related to cryptocurrencies, but without making a clear statement. Skepticism about new technologies is explicable, especially since this fourth industrial revolution, as it was called, is not a linear and relatively predictable one like the previous ones, but exponential with an extraordinarily rapid transformative power.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Basically, it's a paradigm shift that is still seen as a bet[15]. Until then, however, the reactions of the authorities in the world are different, from banning or indifferently accepting the technology of distributed registers - blockchain,[16] (virtual currencies are not legal in countries such as Belgium, Czech Republic, Denmark, Germany, Italy, Slovenia, Spain, Poland, Croatia, Luxembourg, Finland, warning in other countries, Ireland, Greece, Copper, Latvia, Lithuania, Slovakia, Hungary, Netherlands, Austria, UK, technology is active in Sweden, but not currency, Estonia is currency payment alternative, but not illegal, in France users are required to complete a statement to the Anti-Money Laundering Agency.)

Ethereum is already running "smart contracts", is used as a platform for many blockchain-related applications, most decentralized applications, especially financial decentralization applications, are based on Ethereum private blockchains, which is also in the top of the preferences of corporations seeking to implement token-based savings.

For example, a company might implement a loyalty program in which customers receive Acme coins with every purchase. Then there may be a gift shop where Acme coins[17] can be traded for various benefits. The company could create a network of companies that also accept Acme coins, giving chips a "de facto" value, although they cannot be exchanged for euros or dollars. Each participant has access to a blockchain, but each block in the blockchain can in turn represent another blockchain, so there is communication between different areas.

[15] https://www2.deloitte.com/ro/ro/pages/tax/articles/inceput-de-capitol-reglementatorii-nu-mai-pot-ignora-criptomonedele.html

[16] See Positions expressed by European states on virtual currencies - https://www.bnr.ro/Pozi%C8%9Biile-exprimate-de-catre-statele-europene-cu-privire-la-monedele-virtuale-12132-Mobile.aspx

[17] Acme in Greek means: the peak of development - in 2009, the President of Kazakhstan, Nursultan Nazarbayev, called on Tuesday for the creation of a single global currency, called "acmetal", considered by the Kazakh leader as the best means to combat the current financial crisis, we should create a single world currency under the auspices of the United Nations, "Nazarbayev said before the opening of a major economic conference in the Central Asian countries." We need to move to a completely new monetary system based on legitimacy. , and in a single monetary system "Acmetal", the name of the currency, is a combination of the Greek word "acme" (the peak level of a development) and "capital". Nazarbayev believes that by establishing a single monetary system, humanity could replace the word "capitalism" with "metalism" to better define world finances. https://m.hotnews.ro/stire/5480085

Issue 2/2022

Thus, the company that implements this concept becomes a reliable company, which competes with part of a "blockchain" version of its own company. So the top five benefits of blockchain technology are: protecting rights, creating a distributed economy, eliminating taxes, protecting and controlling data, and compensation for manufacturers. Although technology offers many advantages and solves many problems, it cannot solve all problems. People should not only trust other people, but also mobile devices, robots or vehicles, which should work for them and not the other way around. Although we are at such an advanced technological stage, only 40% of the world's population is connected to the internet. So in recent years, people have been talking more and more about social media, robotics or artificial intelligence, and too little about blockchain technology and cryptocurrencies.

Another authoritative opinion, that of the CEO and co-founder of Modex, Mihai Ivașcu[18], makes a careful x-ray of this technology: “after more than ten years since the advent of blockchain technology, many people still confuse its. "Cryptocurrencies were the ones that took the word blockchain out of a highly specialized IT sphere and made it known to the whole world. Hence the confusion between the two elements, blockchain and cryptocurrencies. The solution initially developed overshadowed the technology itself." . Thanks to its suite of features, blockchain can become an invisible infrastructure that protects digital information and ensures absolute authenticity. It can become an ideal foundation for many industries and businesses. "

The banking industry is using blockchain technology to "reinvent" its outdated systems and procedures, increase the security of databases and transactions, increase speed and save a lot of money while providing superior customer service " thus generating added value to the services they provide.

"Due to its high degree of flexibility and its business-friendly properties, the blockchain can transform a wide range of industries: retail, tourism, cybersecurity, the real estate industry, the supply chain industry, education." "Blockchain can restructure the healthcare system by bringing patients to the heart of the healthcare ecosystem, giving them control over the data."

---

[18] How did the blockchain, the technology behind Bitcoin, become more valuable than cryptocurrency?
by Răzvan Băltărețu HotNews.ro Tuesday, June 15, 2021, https://www.hotnews.ro/stiri-pagini_de_cod-24861060-cum-ajuns-blockchain-tehnologia-din-spatele-bitcoin-fie-mai-valoroasa-decat- cryptocurrency.htm

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

It is this "data control" that the author quoted above acknowledges that should sound the alarm about how blockchain technology is used and more. However, it is certain that much will be written on this subject, with divergent opinions, that only from these contradictory opinions are often born the brilliant ideas, which save humanity from extinction, in the classical, etymological sense of the word!

In short, blockchain technology is the beginning of a new digital age, an era that can solve many of the problems we face, or an era that can take us even further away from what "humanity" means in the etymological sense of the word: „all people, community of people, humanity, but also a feeling of goodwill, compassion for the misfortunes of others, kindness, humanity, humanitarianism”[19].

References:

[1] https://www.todaysoftmag.ro/article/2469/tehnologia-blockchain
[2] https://www2.deloitte.com/ro/ro/pages/tax/articles/criptomonedele-si-prima-reglementare-specifica-din-legislatia-nationala-prin-codul-fiscal.html
[3] https://www2.deloitte.com/ro/ro/pages/tax/articles/inceput-de-capitol-reglementatorii-nu-mai-pot-ignora-criptomonedele.html
[4] https://www.wall-street.ro/articol/Finante-Banci/257928/reglementare-criptomonede-blockchain.html#gref
[5] https://www.hotnews.ro/stiri-pagini_de_cod-24861060-cum-ajuns-blockchain-tehnologia-din-spatele-bitcoin-fie-mai-valoroasa-decat-criptomoneda.htm
[6] https://www.bnr.ro/Pozi%C8%9Biile-exprimate-de-catre-statele-europene-cu-privire-la-monedele-virtuale-12132-Mobile.aspx
[7] https://www.etoro.com/ro/news-and-analysis/etoro-updates/5-tendinte-cripto-de-urmarit-in-2022/
[8] https://www.leadtech.ro/blog/tehnologia-blockchain
[9] https://www.technologyreview.com/2018/04/12/143410/inside-the-jordan-refugee-camp-that-runs-on-blockchain/
[10] https://www.digi24.ro/stiri/externe/bill-gates-dupa-ce-trece-valul-omicron-covid-19-va-fi-ca-gripa-sezoniera-1801309
[11] https://www.financialmarket.ro/terms/bani-fiat/
[12] https://dexonline.ro/definitie/umanitate

[19] From lat. humanitas, -atis, fr. humanity ..- https://dexonline.ro/definitie/umanitate

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

USING BIG DATA IN BUSINESS MANAGEMENT

Mariana IATAGAN[1], Raluca ZORZOLIU[1], Elena GURGU [1]
[1]Spiru Haret University, Faculty of Economic Sciences, Bucharest, 46 G Fabricii Street, District 6, Bucharest, Romania, Tel./Fax: +40213169793, Email: se_iataganm@spiruharet.ro, se_zorzoliur@spiruharet.ro, se_egurgu@spiruharet.ro

How to cite: IARAGAN, M., ZORZOLIU, R., & GURGU, E. (2022). "Using Big Data in Business Management." *Annals of Spiru Haret University. Economic Series*, *22*(2), 61-70, doi: https://doi.org/10.26458/2223

Abstract
Digitalization is fundamentally changing companies and other organizations, just as the business world has never seen before. Changes also take place on the financial and accounting side of a company. Future digital advancements are a necessity because providers use this type of systems. The use of new technologies in business management is expected especially in terms of document recognition, data exchange, receipt and payment transactions, communication, excel replacement, text recognition. Big Data is becoming an indispensable resource for many organizations. Digitalization is fundamentally changing companies and other organizations, just as the business world has never seen before. The term Big Data has evolved in a flash to take into account the rapidly expanding quantities of digital information systems that are generated, the hard work of creating that information that can be analyzed, and the actual use of that data as capital to increase efficiency, create and enable innovation, and improve decision-making.

Keywords: *BIG DATA, technologies; business management; digitalization.*

JEL Classification: M2, M15

Issue 2/2022

Introduction

Big Data is becoming an indispensable resource for many organizations.

Monitoring the flows within a business is especially important, therefore, Big Data supports this activity with alerts received in real time from smart meters, database events and log data, inconsistencies between consumption and billing, changes in consumption patterns compared to historical levels and processes associated with investigating the level of security and questionable services.

Compared to traditional analytical tools, the Big Data concept introduces changes within four dimensions: (1) data types, (2) the speed of their accumulation, (3) their volume, and (4) the quality of the data. With the release of the Web 2.0 environment, much of the valuable data for businesses is generated outside the organization, by consumers and generally Web users.

Adding value by using the potential of Big Data is still in its emerging phase, but it represents a paradigm shift that any business must consider.

Typology of the Big Data Business Model

Type	Examples of functions	Dependencies
Data users	Using data to inform strategic decisions; data development in products	Depends on providers for raw data and facilitators for infrastructure and skills
Data providers	Collection of primary data; aggregation and packaging of data for sale	It depends on facilitators for infrastructure and skills and on users both as clients and as data sources
Data facilitators	Providing infrastructure; consultancy; outsourced analysis	It depends on the users and suppliers as customers

Source: O tipologie a modelelor de afaceri cu Big Data - Telework

The solution offered by using Big Data sets helps businesses better manage their data flows with high volume, high variety and high speed and turn this data into profit-generating information. Big Data researchers unanimously agree that all Big Data systems have the following defining characteristics for their data: volume, variety, velocity, veracity, variability, volatility, viscosity, visualization, and value. We must mention that only the first "four Vs", if they have "high" values, define Big Data, the rest of the "six Vs" are found on any kind of data.

Since the "four V's" are considered defining for this concept, it is appropriate to detail the significance of these characteristics:

1. Volume: The increase in data volumes in enterprise systems is caused by the volume of transactions and other traditional types of data, as well as by new types of data. Too much data is a storage problem, but too much data also has a big impact on the complexity of data analysis;
2. Speed: refers both to the speed with which the data is produced and to the speed with which the data must be processed in order to meet the demand. This involves data flows, the creation of structured records, and the availability for access and delivery.
3. Variety: IT leaders have always had a problem turning large volumes of transactional information into decisions. The variety includes tabular data (databases), hierarchical data, documents, XML, emails, blogs, instant messages, click streams, log files, metering data, still images, audio,
4. Truthfulness: refers to how reliable or questionable the data is.

In anticipation of Big Data opportunities, companies from all industrial backgrounds temporarily collect and store a huge amount of operational, public, commercial or social data.

1.BIG DATA integration issues

BIG DATA integration issues include the variety of data sources, the quality of the data to be integrated, and the visualization of data.

A blockchain is a list of ever-growing data, called blocks, that are linked and secured with the help of cryptography. As a data structure, a blockchain is a simple chained list in which the links between elements are made by hash. Thus, each block usually contains a link to a previous block (a hash of the previous block), a timestamp, and the transaction data. By design, blockchains are resistant to data modification.

The blockchain is "a transparent and distributed ledger that can record transactions between two parties efficiently, verifiable and permanently." To be used as a distributed ledger, a blockchain is usually managed by a peer-to-peer collective network that adheres to a protocol for validating new blocks.

Once recorded, the data in any data block can no longer be changed without altering the blocks that follow, which requires the majority consent of the participants in the network.

Based on the Blockchain system, the first and most popular cryptocurrency at the time, Bintcoin, was created in 2009 by the Japanese Satoshi Nakamoto, whose identity to date is not known.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

De facto, this and is the main objective of Bitcoin and the Blockchain system, maintaining anonymity.

In addition to this, Bitcoin ensures the protection of investments, their free transfer without the participation of third parties and in the absence of any regulations or constraints.

All of the above mentioned is obtained thanks to the decentralized system on which Bitcoin is based, which means the lack of a central element / a third-party segment that makes all payments (transactions), the transfer being made directly between 2 users of the system. The transactions constituting the transfer are included in blockchains that form a common public ledger for the entire Bitcoin network.

Thus, the transaction itself and its value are transparent, but the identity of the participants in the transaction and their wallets remain unknown / hidden due to encryption techniques that use the methodology of public keys and private keys for encoding and decoding.

Bitcoin Blockchain is just a branch in which the blockchain can be used. The Ethereum blockchain was developed by Vitalik Buterin.

This blockchain has some amazing capabilities. One of them is that you can build smart contracts.

Blockchain can also be used by merchants to implement loyalty programs aimed at its customers. Such a system can reduce the costs of managing a customer database and guarantee secure transactions by customers who make use of loyalty points or the benefits offered to them.

Regardless of the field in which it is used, Blockchain technology is an excellent method of transferring sensitive data between people between whom there is not necessarily a relationship of trust, but also a variant of securely storing valuable information, without the risk of it being compromised. Thus, Blockchain is used for storing medical information about patients, digital ID cards, transactions of copyright-protected works, management of contracts and official documents, and much more.

Blockchain wallet can be considered an equivalent of a bank account, as it allows the storage, receipt or sending of cryptocurrencies. However, cryptocurrencies are not stored in such a wallet, but the information that confirms their ownership by the user.

2. Depending on how the storage of the private key is carried out

Wallets on the desktop - downloaded and installed on a computer, these wallets can only be used from that device. They can provide greater safety against cyberattacks, but only if the device on which they are installed is well secured.

Wallets on the mobile - are the wallets that are downloaded to the mobile phone. They offer greater accessibility than those on the desktop, but they can be vulnerable to cyberattacks.

Online wallets - they are not installed on the owner's device, but work in a cloud system, and private keys are stored in a server owned by a third party. They are fast, easy to use and safe, but they involve management fees.

Hardware wallets - are similar to online wallets, with the difference that in their case the private key is stored on a device specially designed for this purpose, used every time it is desired to make a transaction. Although they are among the safest types of Blockchain wallets, they are also the most expensive.

Paper wallets - involve printing on a paper the private key and a QR code. They are a good choice of long-term storage of cryptocurrencies, and the only risk is that of destroying or losing the paper on which the Blockchain login information is printed.

Understanding the principle of operation of Blockchain technology and knowing its benefits can create new opportunities for development for any company and optimize current activities. With the help of quality services provided by specialists in the field, Blockchain can open new horizons and significantly improve the operational processes of any entity.

For the designation of "virtual currencies" are sometimes used terms such as ►"crypto-assets", "crypto-tools", in a generic sense, or "cryptocurrencies", "virtual assets", ►"virtual tokens", etc. There are opinions that "cryptocurrency" does not have a perfect synonymy with "virtual currency".

Sometimes it is preferred to use the notion of "crypto-assets" instead of ►"cryptocurrency", starting from the finding that the latter do not generally perform the functions that define the notion of "currency", "currency", "ban": cryptocurrencies do not act as a means of exchange, do not have the role of storing value, given their volatility and are not used as a unit of account.

Sometimes the term "token" is preferred, instead of "virtual currency", as being more neutral and not entailing the implicit legitimacy of the "currency"/"currency"; it is a broad term, which includes many virtual assets and which can be defined in opposition to account assets, given that the system based on accounts starts from the possibility of verifying the identity of the holder, while those that use tokens are based on the ability to verify the validity of the token itself.

A common feature in the Member States of the European Union lies in the uncertainties surrounding the legal classification of virtual currencies: they are not considered to constitute legal currencies or money, but as means of exchange; they are intangible/intangible assets and may constitute alternative investments with specific risks, inherently associated with investment risks specific to the financial and banking sector; they are intangible/intangible assets and may constitute alternative investments with specific risks, inherently associated with investment risks specific to the financial and banking sector; they constitute units of account and, consequently, are financial instruments; form of financial asset, etc. Therefore, from a terminological point of view, the use of the term 'virtual assets' is sometimes preferred, in so far as those instruments do not constitute 'currency' in the established sense.

In all the Member States of the European Union, the movement of virtual currencies is permitted, but in many of those countries the financial sector supervisors and/or the central banks have constantly issued warnings, informing the public of the absence of any kind of regulation or supervision, of the risks involved in operations with such virtual currencies and of the fact that virtual currencies do not enjoy a well-defined and accepted legal status at the level of the European Union and the international payment system. The warnings in question followed or accompanied similar warnings issued by the three ESAs2 .

So far, three Member States of the European Union have adopted specific (even partial) legislation regulating virtual currencies, distributed ledger technology (blockchain) and the initial supply of "tokens"/currencies: France, Malta and the United Kingdom (more specifically Gibraltar, a British territory). In various Member States, reflections are taking place on the possibility of specific regulatory interventions (e.g. Austria, France, Latvia, Ireland, the United Kingdom, Spain, the Netherlands).

Virtual currencies should not be confused with electronic money as defined in point (2) of Article 2 of Directive 2009/110/EC of the European Parliament and of the Council with the broader concept of 'funds' as defined in point (25) of Article 4 of Directive (EU) 2015/2366 of the European Parliament and of the Council, nor with the monetary value stored in exempted instruments as provided for in points (k) and (l) of Article 3 of Directive (EU) 2015/236634, or with gaming coins, which may be used exclusively in a specific gaming environment. While virtual

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

currencies can frequently be used as a means of payment, they could also be used for other purposes and acquire more varied uses, for example, as a means of exchange, as investments, as value storage products or for uses in online casinos. The objective of this Directive is to cover all possible uses of virtual currencies.

The National Bank of Romania (NBR) has constantly stated in recent years that it has no attributions in the supervision of virtual currency schemes and virtual currencies, but in order to warn the population about the potential risks related to the use of such coins, the NBR issued, on March 11, 2015, a communiqué in which it stressed that "virtual currency is not a national currency and no currency, and its acceptance for payment is not legally binding." The NBR shows that at European level, no authorities have been designated to regulate and supervise virtual currency schemes, but public warnings have been issued about the risks associated with the use of these virtual currencies. The National Bank of Romania also specified that at European level it is intended to regulate virtual currencies from the perspective of money laundering and terrorist financing, by amending the Directive of the European Parliament and of the Council (EU) 2015/849 on the prevention of the use of the financial system for the purpose of money laundering or terrorist financing.

Digitalization is fundamentally changing companies and other organizations, just as the business world has never seen before. Changes also take place on the financial and accounting side of a company.

Future digital advancements are a necessity because providers use this type of systems. The use of new technologies in business management is expected especially in terms of document recognition, data exchange, receipt and payment transactions, communication, excel replacement, text recognition.

3. Big Data -an indispensable resource for organizations

Monitoring the flows within a business is especially important, therefore, Big Data supports this activity with alerts received in real time from smart meters, database events and log data, mismatches between consumption and billing, changes in consumption patterns compared to historical levels, and processes associated with investigating the level of security and questionable services. Then, by integrating these multiple flows in a way that allows real-time analysis and comparison, companies provide employees with the tools to identify fraud faster, protecting infrastructure and revenue.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Table of advantages and disadvantages of using BIG DATA in business

ADVANTAGES	DISADVANTAGES
cloud-based solution related to data storage and transmission	increased education in technology and analytical methods
large data solution focused on control and monitoring	mandating the provision of the data standard
solution for supply chain and risk management systems	changes in the timing and frequency of checks
smart grid and power system solution	
re-examination of concepts such as materiality and independence	

Source: CBR-Challenges-and-trends-for-the-incorporation-of-big-data-in-the-accounting-profession-a84.pdf

Monitoring the flows within a business is especially important, therefore, Big Data supports this activity with alerts received in real time from smart meters, database events and log data, inconsistencies between consumption and billing, changes in consumption patterns compared to historical levels and processes associated with investigating the level of security and questionable services.

Then, by integrating these multiple streams in a way that allows real-time analysis and comparison, companies provide employees with the tools to identify fraud faster, protecting infrastructure and revenue.

As the world enters its deepest global recession since the Great Depression, the connection of health needs to social, economic and environmental well-being must be achieved, linking the present with the future. The long-term social and economic impact of this crisis will be profound.

Conclusion

Being an interdisciplinary topic, Big Data has the potential to attract the attention of the academic and professional communities more and more, being able to be the subject of valuable future research at any time.

Big Data becomes an indispensable resource for many organizations and has the potential to be an extremely valuable resource for professionals.

The increased use of technology is often accompanied by the fear that people may be left without jobs. Not all experts see in this case a danger, although the era in which we live demands more and more computer skills in addition to professional ones.

Romania needs a change in the present development paradigm to face the challenges of the XXI century.

We are living in a period marked by the process of globalisation, the increase in inequalities and the aggravation of environmental problems. Sustainable Development is the solution.

Given the complexity of the economic and social life, in the states with market economy, the conjuncture with global effects – such as the pandemic, the war – but also for a good functioning of the society, the importance of the capacity of cooperation and public-private partnership and coordination in the public sphere is detached.

Romania, as well as the EU, must redesign their medium- and long-term priorities to achieve the objectives of the 2030 Agenda for Sustainable Development, adopted at the United Nations Summit in September 2015. This is a sure-fire way to achieve a better future for future generations.

The global action plan, which Romania chooses to support in the coming years, is aimed at improving poverty, combating inequalities, social injustice and protecting the planet by 2030.

References

[1] Adriana Alexandru, Dora Coardoş, Big Data – Concepte, arhitecturi şi tehnologii, 2017, București
[2] Aspecte de actualitate privind reglementarea tehnologiei registrelor distribuite și a monedelor virtuale în legislația statelor membre ale Uniunii Europene, studiu, Departamentul de Studii Parlamentare și Politici UE Direcția pentru Uniunea Europeană, 2019
[3] Autoritatea Europeană pentru Valori Mobiliare și Piețe, Autoritatea Bancară Europeană, Autoritatea Europeană de Asigurări și Pensii Ocupaționale.
[4] Domenii în care mai poate fi utilizată tehnologia blockchain, Nr. 56 | Martie 2018 | Jurnalul de Afaceri
[5] George Zlati, Tehnologia blockchain, monedele virtuale și dreptul penal, Revista Penalmente, nr 1, 2021, www.revista.penalmente.ro
[6] Mihaela Gabriela Belu, Application of Blockchain in International Trade: An Overview, The Romanian Economic Journal, nr 71, martie 2019

[7] Mihaela Rusanovschi, Gabriela Pociumbanu, Iulian Paniș, Dumitru Bobeico , Blockchain. Tehnologia viitorului , Technical University of Moldova
[8] Strategia privind Digitalizarea Educației din România, Ministerul Educației și Cercetării, 2021
[9] Studiul privind efectele utilizării platformelor BigData asupra concurenței, Consiliul Concurenței, Februarie 2021
[10] Peste 70% dintre companiile est-europene implementează metode digitale precum Big Data, Smart Dashboards sau Advanced Analytics - Arena IT
[11] Postul Consiliului: Opt moduri in care Big Data si AI schimba lumea afacerilor - Bcr Club Antreprenori
[12] Big Data Trends in 2022: The Future of Big Data | Datamation, 2022
[13] CBR-Challenges-and-trends-for-the-incorporation-of-big-data-in-the-accounting-profession-a84.pdf
[14] Cum sa profitati de Big Data in sectorul financiar - Finantistii
[15] 04-ART2-RRIA-1-2017-Alexandru-Coardos-big-data-2-1 (1).pdf
[16] 17 Big Data Applications & Examples | Built In
[17] 5 Beneficii: Avantajele competitive ale Big Data în afaceri - NewGenApps
[18] How Big Data Helps in the Fight Against Climate Change - insideBIGDATA
[19] http://docplayer.ro/204462768-Tehnologia-blockchain.html
[20] https://www.edupedu.ro/intre-roboti-inteligenta-artificiala-si-blockchain-profesorul-nu-va-fi-desfiintat-ci-rezista-in-rol-central-raportul-oecd-digital-education-outlook-2021-despre-tehnologiile-inteligente-care-tran/
[21] https://www.undp.org/content/undp/en/home/news-centre/news/2020/UN_sets_out_COVID_social_and_economic_recovery_plan.html
[22] https://www.wto.org/english/news_e/pres20_e/pr855_e.htm

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

DIGITAL EURO AS NEXT EVOLUTION OF THE EUROPEAN CURRENCY

Dragoș Mihai UNGUREANU
Faculty of Economic Studies, Spiru Haret University, Fabricii Street no. 46G, district 6, Bucharest, Tel.: 021 3169785,
Email: dragos.ungureanu@yahoo.com

How to cite: UNGUREANU, D.M. (2022). "Digital Euro as next evolution of the European currency." *Annals of Spiru Haret University. Economic Series, 22*(2), 71-86, doi: https://doi.org/10.26458/2224

Abstract
Digitalisation has spread to every corner of our lives and transformed how we pay. In this new era, a digital euro would guarantee that citizens in the euro area can maintain costless access to a simple, universally accepted, safe and trusted means of payment. A digital euro would not replace cash, but rather complement it. The Eurosystem will continue to ensure the access to cash across the euro area. A digital euro would give an additional choice about how to pay and make it easier to do so, contributing to accessibility and inclusion. It would support the digitalisation of the European economy and actively encourage innovation in retail payments.

Keywords: *digital euro; digital payment; accessibility and inclusion; innovation retail payments.*

JEL Classification: E42, E44, E51, E52, F15

Europe has a long history of developing and refining the infrastructure that underpins the European economy and enables an interconnected union. The introduction of the euro as the common currency of the Eurosystem in 1999 was accompanied by the establishment of a Real Time Gross Settlement System for Europe. **TARGET**, as it was called, was developed as an efficient, safe, and

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

reliable mechanism for the settlement of euro payments that would support the ECB's monetary policy through the integration of money, and financial markets.

In May 2008, TARGET was succeeded by **TARGET2**. The new system enabled even faster and more secure payments in addition to other advancements by replacing the decentralised structure and inconsistent technological frameworks of the first iteration in favour of a Single Shared Platform.

The TARGET Instant Payment Settlement, or **TIPS**, was introduced in 2018 as an extension to TARGET2. TIPS was a direct response to address the growing consumer demand for instant payments without reintroducing the complexity and fragmentation of national solutions. Among other upgrades, this new iteration offered even faster payments, enhanced resilience, and the ability for settlements in other currencies.

Defining CBDCs and the digital euro

The common denominator of each new advancement is the promise of further speed and efficiency in payments, costs savings, pan-European coverage, and additional features to address the modern needs of consumers and the Central Bank. A European Central Bank Digital Currency, or digital euro, would be the next step in this evolution. By potentially tapping into new technologies and possibilities developed and nurtured in the open blockchain space, as well as innovations honed by the wider private sector, a CBDC can be a definitive step towards ensuring that the Eurosystem remains current in the rapidly changing global landscape. A lot of questions remain open as to its characteristics and specificities of its issuance. However, before we explore the available design space, we must first establish a more detailed definition of CBDCs and the digital euro.

A Central Bank Digital Currency, as the name suggests, is a form of digital money that is issued by a central bank. For a value medium to be considered a CBDC it must fulfil both requirements simultaneously[1]. By this definition, CBDCs are not an entirely novel concept. Commercial banks in Europe, the US, and most of the developed world are required to hold a minimum amount of cash, as well as deposits with the central bank in the form of reserves. These reserve accounts fulfil the definition of a CBDC presented above, as they are digital representations of value, recorded as a liability of the central bank and an asset for the commercial bank.

[1] Coeuré et al., 2020

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900
Issue 2/2022

The novelty of CBDCs and the digital euro relies on two primary factors, namely the extent to which this digital liability of the central bank is made available to the private sector and the types of technologies and systems to facilitate its implementation and additional innovations. The technological design space and options are explored in-depth later in this paper. In terms of CBDC availability, there are two models:

• **Wholesale CBDCs** pertain to the expansion of the reserve model described above to include other legal entities besides commercial banks, whether those are financial institutions or otherwise. In such a model, a CBDC would be reserved for commercial banks and other institutions appointed by the central bank to facilitate payments, remittances, and even the settlement of other financial instruments.

• **Retail CBDCs** are a form of legal tender denominated in the national currency, to fulfil the necessary functions of money, serving as a medium of exchange, store of value, and unit of account, all while constituting a liability of the central bank and asset of the private sector, meaning individuals, households and businesses.

Payment efficiency and security

Cash remains the preferred medium for exchanges today, with a 2019 ECB study reporting that it was used for 73% of Point-of-sale (POS) transactions and amounted to 48% of the total value of POS payments (down from 78% and 53% respectively from 2017). Its tangible nature, speed, and lack of fees make it convenient for local payments, and the instant transfer of value is favoured by consumers and retailers alike.

However, international and non-cash payments have grown significantly, following the exponential rise of ecommerce. From 2018 to 2019, the aggregate number of electronic payments in the euro area increased by 8% (EC, 2020) to a total of approximately €100 billion with a total value of more than €160 trillion. At the same time, reports from firms such as EY (2020) have outlined the changing sentiment towards digital payments. In a relevant survey (figure 1), top financial leaders from around the world highlighted that, by 2030, mobile payments will dominate the market, followed by biometric and digital asset-enabled payments. Payment system companies already report large increases in the transaction volumes of most online retailers. Indicatively, ACI Worldwide's relevant research (2020), showcases a 74% increase in transaction volumes for select sectors, while (Adyen, 2021) reports an increase of 30% to 50%.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

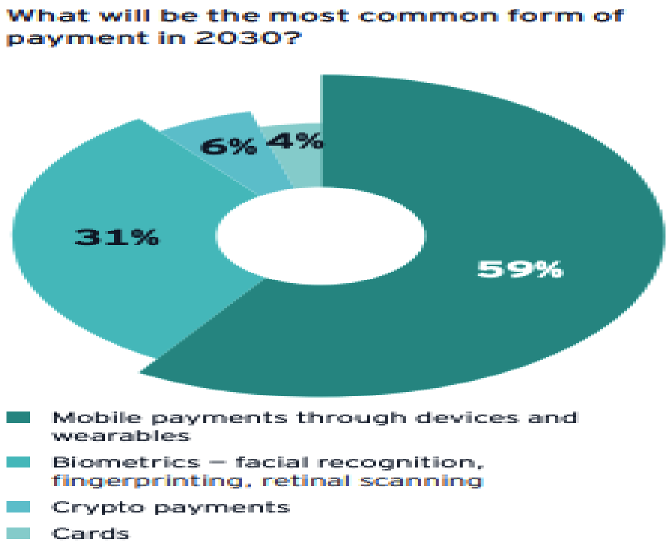


Figure 1. The future of payments.
Source: EUBOF

With the continuous shift from cash to electronic transactions the operational robustness of payments as a whole relies increasingly on credit and debit card networks, e-money providers, and point-of-sale schemes.

Depending on its characteristics and infrastructure, a CBDC can support the resilience and efficiency of the payments system by expanding services previously reserved for the commercial banking system to the wider private sector[2]. With a new or improved technological infrastructure (RTGS/DLT) a CBDC can improve resilience. In addition, a CBDC tied to real-life identities could also increase payment security and prevent money laundering and terrorist financing. The level of pseudonymity/anonymity can even be adjusted according to the specifications of the central bank, enabling even a digital alternative to cash, in terms of anonymity.

To the extent that a CBDC can act as medium for pseudonymous/anonymous payments, it could address the consequences of the declining use of cash, while at the same time promoting financial inclusion. In a scenario where cash is gradually

[2] Riksbank, 2021

phased out, it is reasonable to assume that commercial banks and other for-profit institutions might find it fruitless to expand their services to financially excluded groups, such as the unbanked. A substitute of cash is critical to ensure that the most vulnerable parts of our societies are not deprived of access to our economies. Regardless of whether the use of cash declines further, a CBDC could extend financial services to the 1.7 billion unbanked of the world[3] (26% in Europe). To achieve this, some minimum infrastructure would be required, notably Internet, computers and/or smartphones.

Financial Sovereignty

Central banks face two distinct types of risks that have the potential to directly threaten their financial sovereignty. Those relate to monetary policy inefficiencies, and the rising competition from alternatives developed in the private sector.

Since the Great Recession of 2008, central banks have had to resort to rather unconventional methods, such as negative interest rates and quantitative easing. A CBDC can add new weapons to the arsenal of a central bank to facilitate monetary policy and address future crises.

Central banks may also face increased competition from the open blockchain space and the private sector when it comes to the monopoly of money creation. The proliferation of cryptocurrencies, such as Bitcoin and stablecoins, is one such source of possible competition. The emergence of privately-issued digital assets, such as Facebook's Diem (formerly known as Libra) is another. Even competing CBDC deployments by other central banks, may push a central bank to rethink its own position regarding the CBDC phenomenon.

Traditional players in CBDC

United States of America: The Federal Reserve Bank of Boston announced its collaboration with MIT to research and explore digital currency and build a hypothetical CBDC (Federal Reserve Bank of Boston, 2020; MIT, 2020). After the Federal Reserve's April 2021 police meeting Chairman Jerome Powell cautioned it is "far more important to get it (CBDC) right than it is to do it fast or feel that we need to rush to reach conclusions because other countries are moving ahead."[4] The United States Securities and Exchange Commission recently suggested the

[3] Asli Demirgüç-Kunt et al., 2017
[4] Wall Street Journal, 2021

existence of dollar-based private sector stablecoins was in some sense a counter to China's explicit alliance building.

European Union: In its October 2020 *Report on a digital euro*, the European Central Bank stated its position on CBDCs, which includes the following key phrasing: "While the Eurosystem would always retain control over the issuance of a digital euro, supervised private intermediaries would be best placed to provide ancillary, user-facing services and to build new business models on its core back-end functionality. A model whereby access to the digital euro is intermediated by the private sector is therefore preferable." (ECB, 2020b). It has also partnered with Bank of Japan in general exploratory efforts which emphasize "Balancing confidentiality and auditability in a distributed ledger environment."

Bank of Japan: The Bank of Japan announced a one-year trial of a digital yen (Ledger Insights, 2021), as follow on to its earlier position paper (Bank of Japan, 2020). There has also been joint work with the ECB as noted earlier.

China: Based on information that is publicly available, China's digital yuan is the most well-advanced among leading central banks. This is because of multiple factors. First, its progress in putting the CBDC into public use, efforts to integrate with leading social media offerings such as WeChat, and the breadth of its alliance making with other central banks, as exemplified by its recently announced m-CBDC effort, involving SAMA/UAE, Bank of Thailand, and HKMA.

Canada: Project Jasper is the Canadian banking industry's CBDC initiative. It was embarked upon in 2017, well before most other central banks were giving CBDCs the attention that they are now giving it. Participants in the project consisted of the Bank of Canada and private banks in Canada and were intended for inter-bank value or money transfer in a somewhat decentralized setting. In one of the initial phases, a private version of Ethereum was utilized. The project then moved to R3's Corda solution. In this latter phase, some degree of centralization was utilized in the form of a notary node operated by the Bank of Canada. The project utilized digital signatures to verify the authenticity of information. Privacy was maintained among members by participants only having access to transactions that were relevant to them. Private market participants used newly created objects called Digital Depository Receipts (DDR). These were created in exchange for Canadian Dollars. Both are central bank liabilities, but DDR was only valid within the scope and systems of Project Jasper.[5]

[5] Bank of Canada, 2017, 2019

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Russia: The Bank of Russia has issued a position paper. It specifically calls for a two-tier system: "The selected target model is a two-tier retail model which assumes that the Bank of Russia is both the issuer of digital rubles and the operator of the digital ruble platform. At the same time, financial institutions open electronic wallets for their clients and perform operations over these wallets on the digital ruble platform. Households and businesses will be able to access their digital rubles through any bank where they are serviced."[6]

Non-Sovereign Actors

Bitcoin

Bitcoin's appeal starts with the fact that it already exists and has operated for over a decade. This is in contrast to almost every other digital currency which is still 'vapourware' and faces an uncertain path to market. Bitcoin has an easily recognizable brand, is already used by hundreds of millions of people and has a vibrant ecosystem of service providers. By virtue of being stateless, Bitcoin has a large "total addressable market."

Other aspects of the digital currency that some users may find appealing are its algorithmic (and capped) inflation schedule and censorship resistance. Bitcoin may therefore appeal to digital currency users who are wary of the motives by some countries in introducing CBDCs, such as new policy tools enabled by programmability, or economic surveillance.

That said, Bitcoin's decentralization has its drawbacks. Its throughput is extremely limited and the energy consumption (and environmental impact) of its consensus mechanism is can be considered severe. Having a fixed inflation schedule also makes it vulnerable to severe deleveraging during a crisis, a lesson from other forms of "hard money" that the crypto faithful have yet to learn.

Ethereum

In some ways, Ethereum begins where Bitcoin ends. One of Bitcoin's core elements is the "transaction out" or TXO. It is the subcomponent within the transaction that is ultimately spent or left alone. Bitcoin Core, the codebase that a node operator might run, comes with a set of operations that one might use to not just merely move TXOs around but to do some more complicated things with it. For example, one might, say, mandate that a TXO, after signing it and moving it

[6] Bank of Russia, 2021

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

another block, can only be spent after a certain number of blocks have transpired. This ability to script allows for some flexibility to users of Bitcoin but the actual possibilities are quite limited, especially when compared with the plethora of high and low-level programming languages that are available at present. To a programmer, it might appear like a limitation. And it is, by design.

This is where Ethereum comes in. It allows for a much richer set of instructions, including simple but dangerous things (in a decentralized setting) like “software loops”. The notion here is that users of Ethereum can set up more complicated instructions that can be activated if someone “kicks off” the instruction set or perhaps because another set of instructions kicked off and so on. With layers and layers of abstraction, one then eventually ends up with smart contracts and decentralized exchanges.

However, this level of complexity comes with a cost. Bitcoin, in a way, gives equal weight to the price (in terms of satoshis/byte) regardless to differing instructions. This could not be allowed in Ethereum as it would allow for, among other things, malicious or harmful (though not intentionally malicious) instructions to execute. Ethereum miners have a limited supply of computing power and just like anything else in the world, to economize for a limited supply of something, a price is set. In this instance, the price of instructions is set using a term called “gas” fees. It is best thought of as the fee to execute instructions. If a sufficient amount of fees (in terms of Ether) is not sent with a set of instructions, then instruction stops - circumscribing the problem of malicious or otherwise harmful instructions.

Ethereum is also different from Bitcoin in other ways. Where Bitcoin evolves slowly but surely, Ethereum changes rapidly and sometimes it is not clear to users whether the changes are positive. A “full node” containing all of Bitcoin’s transaction and block data occupies, at present, less than 400 GB of space. The corresponding node, an “archival node”, occupies over 7TB of space. Finally, where one might not find a figurehead for Bitcoin (although some claim to be), one will find one in the persona of Vitalik Buterin for Ethereum.

Finally, Ethereum plans to be different from Bitcoin in other ways. It wishes to move to a Proof-of-Stake model of consensus as opposed to the Proof-of-work model that exists. It also wishes to use techniques like “sharding” that allows different functions to “shard” into smaller, so to speak, sub-chains while still being able to interact with other sub-chains. The path forward for Ethereum is exciting but also risky. Those two things, of course, go hand in hand.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Stablecoins

Introduced to address some of the volatility of cryptocurrencies while maintaining most if not all of their "desirable" characteristics, stablecoins are tied to a conventional currency, such as the dollar, euro, or a basket of currencies. They purport to offer the stability and familiarity of a traditional currency with the frictionless and programmable promise of cryptocurrencies.

Tether is notable as being the largest stablecoin by market cap, and perhaps surprisingly as having the largest daily volume of any cryptocurrency, exceeding even that of Bitcoin and Ethereum.

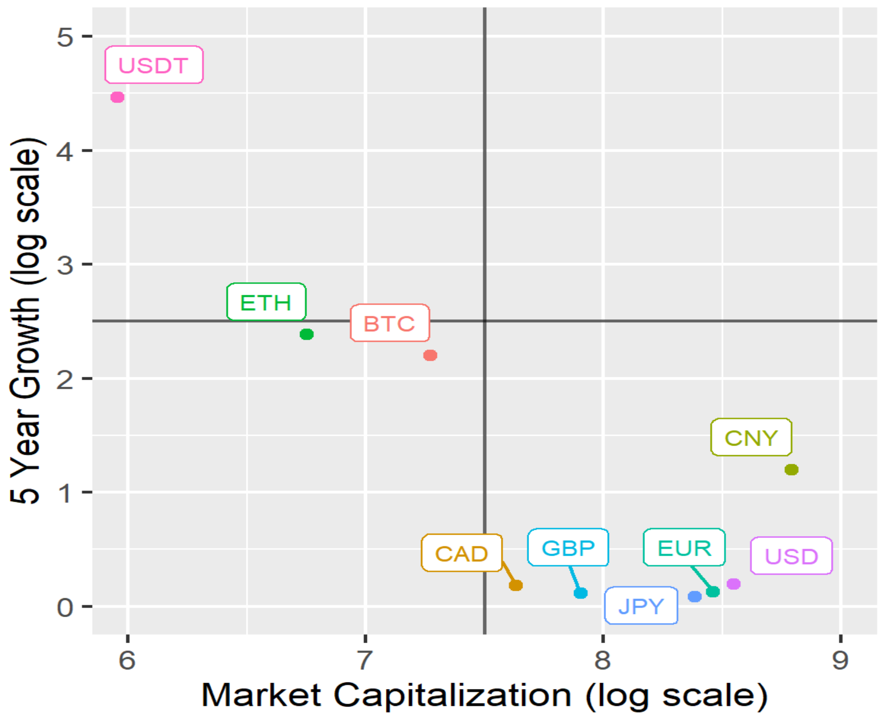


Figure 3. Market cap vs rate of growth.
Source: https://tradingeconomics.com

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

The digital euro timeline

The timeline for a digital euro begins in a joint statement by the European Council and the European Commission on stablecoins in late 2019. The press release[7] noted that the then-recent rise of stablecoins underlined the significance of addressing consumer needs for fast, cost-effective, and efficient payments and cross-border remittances. The possibility of a CBDC to address these was also mentioned.

Christine Lagarde, president of the ECB, has laid the foundations for a digital euro in her speech at the Deutsche Bundesbank conference in September of 2020. It was highlighted the changing consumer sentiment towards digitalization, e-commerce, and electronic payments, further accelerated by the COVID-19 pandemic, along with the rising competition to dominate payments on a global level and Europe's disadvantaged position in the race. The issues of private money with weak connections to a sovereign counterpart, and mobile payments controlled by private firms, were also emphasized as a potential threat to financial sovereignty. A state-backed digital currency, widely trusted by the general public, was promoted as an option for managing the risks of this digital transition while maintaining trust in the existing payments system.

At the same time, the European Commission was adopting the Digital finance package to ensure competitiveness and stability in the Fintech sector. As part of that package, the Markets in Crypto-Assets Regulation addressed cryptocurrencies that fell beyond the scope of existing European legislation and introduced uniform rules for the treatment of stablecoins, leaving room for a pan-European sovereign deployment as a viable alternative. A month later, in October 2020, the ECB published the report on a digital euro.To date, this report constitutes the most comprehensive analysis of the motives behind a European CBDC and its desirable characteristics.

The analysis was released in conjunction with a request for public consultation on the characteristics of the digital euro. Following record participation of more than 8,000 citizens and institutions, the results went public in April 2021. The overwhelming majority of respondents promoted privacy and security as the two most desirable features of a digital euro, as collectively they were highlighted in more than 60% of responses. Accessibility throughout the euro area, no additional costs tied to the use of the new euro, and offline usability were also promoted as close runner-ups. The importance of intermediaries as facilitators of innovative services, smartphones for secure payments, and holding limits or other techniques

[7] European Commission, 2019

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

to manage the amount of digital euro in circulation, were also highlighted. The majority of respondents were men (87%), citizens of Germany (47%), Italy (15%), and France (11%), with the remaining Member States accounting for between 1% and 5% of the total.

Figure 2. Digital Euro Timeline.
Source: EUBOF

Implications of a digital euro for financial stability

The introduction of a CBDC creates two main risks for financial stability, linked to two different scenarios. The first risk is that of *financial disintermediation* in calm times. The second risk is represented by the possibility of *systemic bank runs* in times of financial distress.

The introduction of a CBDC may cause the withdrawal of funds from banks and their conversion into CBDC. This effect would be limited if households used CBDC mainly in substitution for physical cash. However, if commercial bank deposits were freely convertible into CBDC, households, and firms could be less willing to hold liquid money in the form of bank deposits and could prefer to hold CBDC instead. If this were the case, the substitution of bank deposits with CBDC would cause a loss of funding for commercial banks and a shrinking of the banking sector's balance sheet. This is precisely what "disintermediation" means[8].

---

[8] Bank of England 2020

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Therefore, the level of disintermediation caused by the introduction of CBDC is determined primarily by its substitutability with other forms of money. It is crucial to understand whether CBDC could be a substitute for cash, bank deposits, or both, and this, in turn, depends on the design features of CBDC.

Another very relevant factor in the disintermediation process is the behaviour of the central bank after a CBDC is introduced. In the following, we assume that the design of a CBDC is such that it does cause disintermediation. Not only could disintermediation occur after a CBDC is first introduced, but central bank money and commercial banks' money could be "structurally" pitted against each other. In other words, in normal times commercial banks would compete with the central bank to hold deposits. This effect would be reinforced if the central bank does not fill the funding gaps of commercial banks caused by disintermediation. The consequences of a CBDC would be both on banks' liability side and on their asset side. We can identify two main effects on the liability side.

First, banks could try to offer better conditions on their deposits, increasing deposit rates, to counter the conversion of bank money into CBDC. This would increase funding costs for banks and reduce their profit margin and seigniorage.

Second, banks may try to replace the deposits that are converted into CBDC with other types of funding, such as commercial paper, term deposits, bonds, and equity. This second option has three further implications:

- funding would likely become more expensive
- funding may become less stable
- market discipline may decline if banks lose more uninsured than insured depositors. This could push banks to take on more risk.

To sum up, if disintermediation is not adequately dealt with, it may cause an increase in the cost of banks' funding.

On the asset side, as a consequence of a higher cost of funding, banks would have to increase lending rates and transaction fees to maintain profitability. In the literature there is a variety of opinions on the overall effects of this process on lending activity. Many authors[9] envisage negative effects on lending activity by commercial banks. The effects on lending may also depend on banks' market power. The greater this power is, the less loan demand decreases, and the more

[9] Fernandez-Villaverde et al. 2020, Keister and Sanches 2019, Claeys and Demertzis 2019, Kim and Kwon 2019

banks can preserve profits. On the contrary, banks with little market power are forced to shrink their balance sheets and reduce loans.

A very important variable in the disintermediation process is also the stance of the central bank. A relevant role is played by the spread between the interest rate on CBDC and on checkable deposits. If this spread is positive and too large, banks end up reducing their loans.

In times of financial distress, households and firms tend to convert their deposits into safe assets and cash, with possible ensuing bank runs. A CBDC, being a liability of the central bank, would have a higher degree of safety with respect to bank deposits. Therefore, in a situation of financial distress, it could facilitate bank runs in a digital form.

There is not full agreement on this issue in the literature. Some authors argue that a CBDC would allow runs towards the central bank with "unprecedented speed and scale"[10], while others think that "in many cases, this effect will be muted"[11]. In any case, the design of a CBDC plays a key role in this situation as well.

Moreover, in times of financial distress, a CBDC can also play an active role, providing to the central bank some useful instruments. In particular, it may facilitate the provision of liquidity to banks, helping to calm down bank runs. The onset of a digital bank run may also act as a signal for the central bank to understand the conditions of the financial system and provide a fast and effective response[12].

The biggest financial stability issues are disintermediation and the increased risk of bank runs. However, other minor questions related both to stability and integrity must not be overlooked.

The effects of CBDC on financial integrity depend on its design. Strict limits on the size of transactions, coupled with facilitation of identity authentication and tracking of payments and transfers would strengthen financial integrity. Moreover, if it is account-based, a CBDC could help prevent illicit payment and store of value with central bank money. On the other hand, a design that allows for full anonymity and large-value transactions would undermine financial integrity. Once again, we can see that the effects of a CBDC on the economy inevitably depend on

[10] CPMI-MC, 2018
[11] Mancini-Griffoli et al. 2018
[12] Keister and Monnet 2020

its concrete design, which has to be planned according to policy preferences, without overlooking real-world impacts.

If the CBDC is designed in such a way as to preserve anonymity and hence facilitate cross-border payments, its adoption would greatly increase the volatility of international capital movements. Indeed, if we take into account the international environment, very large net cross-border movements of CBDC may not only complicate the conduct of monetary policy but also undermine financial stability. CBDC could, in some situations, lead to large capital movements, exchange rate disturbances and asset price volatility. The effects of cross-border CBDC movements would be especially pronounced during times of generalized flight to safety. Indeed, using a CBDC as an international currency could potentially enable faster deleveraging in capital markets, accelerating cross-border contagion and amplifying exchange rate fluctuations.

Conclusions

Central Bank Digital Currencies are the natural next step in the digitization of money and payment systems. Given the momentum and initiatives already underway worldwide, we cannot imagine a scenario where different forms of CBDCs do not co-exist with other forms of money in the near future.

Europe, as one of the world's largest and most innovative economies, is an important contender in the race to design, implement and deploy the digital money of the future. The European Central Bank is leading this effort as part of its mission to keep prices stable in the euro area and contribute to the safety and soundness of the European banking system.

To contrast the risks of financial disintermediation, electronic bank runs and other potential threats to financial stability raised by the introduction of CBDCs, several solutions could be on the table. Some of them are not related specifically to CBDCs, but consist of more traditional measures (such as lender of last resort and deposit insurance). We shall therefore not discuss them here. Others, instead, involve specific design features of the CBDC, such as:

1. lower remuneration of CBDC with respect to other policy rates - remunerating a retail CBDC could make it even more competitive with respect to bank deposits and government bonds. Therefore, it could end up reducing the quantity of bank lending to the economy and even interfering with the role of government debt as a safe asset.

2. limited convertibility of CBDC - some scholars think that limited convertibility of CBDC with other assets could prove effective in countering financial stability risks. The "light" approach is to discourage convertibility from bank deposits to CBDC through fees. The "hard" approach is to break the link between CBDC and other forms of money. CBDC and reserves would be distinct, and not convertible into each other.

3. cooperation of the central bank with commercial banks in relation to the issuance of CBDCs - the central bank could structurally provide more funding to commercial banks to replace the lost deposits or an alternative solution is the creation of an indirect CBDC, instead of a direct one. The central bank would not provide CBDC directly, but indirectly.

4. control of CBDC volumes.

An ECB-issued digital euro would go a long way toward facilitating payments efficiency and security across the eurozone, furthering financial inclusion, and futureproofing the euro against developments in other economic jurisdictions (e.g. the USA and China) and non-sovereign implementations of private or decentralized forms of digital money (e.g. Diem or cryptocurrencies). The speed of innovation by other actors is relentless and a global race to define the world's reserve currency of the digital era is well underway. Europe cannot afford to not be part of this effort, by both closely monitoring global developments and innovating across dimensions specific to the idiosyncrasies of the eurozone.

References:

[1] ACI Worldwide (2020) COVID-19 Crisis Drives Changes in eCommerce Purchasing Behaviors, ACI Worldwide Research Reveals | ACI Worldwide, Inc.

[2] Adrian, T. and Mancini-Griffoli, T. (2019), The rise of digital money. Washington, DC: International Monetary Fund.

[3] Areddy, J. T. (2021) 'China Creates Its Own Digital Currency, a First for Major Economy', Wall Street Journal, 5 April.

[4] Auer, R., Cornelli, G. and Frost, J. (2020) 'Rise of the central bank digital currencies: drivers, approaches and technologies', p. 44.

[5] Bank of England (2020a) 'Discussion Paper - Central Bank Digital Currency: Opportunities, challenges and design', p. 57.

[6] Bellens, J., Lloyd, J. and Hamish, T. (2020) Why the potential end of cash is about more than money | EY - Global.

[7] ECB (2020a) 'Payments in a digital world'.

[8] Federal Reserve Bank of Boston (2020) The Federal Reserve Bank of Boston announces collaboration with MIT to research digital currency, Federal Reserve Bank of Boston.
[9] Simmons, R. et al. (2021) 'Crisis and the Role of Money in the Real and Financial Economies – An Innovative Approach to Monetary Stimulus', Journal of Risk and Financial Management, 14(3), p. 129.
[10] Visco, I. (2020) 'The role of TIPS for the future payments landscape'.
[11] Werner, R A (2014). Can banks individually create money out of nothing? — The theories and the empirical evidence. International Review of Financial Analysis, Vol 36, pp 1-19.
[12] Wilson, T. (2021) China's digital yuan will not topple the dollar, SEC official says, Reuters.

Websites:
https://www.consilium.europa.eu/el/press/press-releases/2019/12/05/joint-statement-by-the-council-and-the-commission-on-stablecoins
https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200910~31e6ae9835.en.html
https://www.federalreserve.gov/faqs/what-economic-goals-does-federal-reserve-seek-to-achieve-through-monetary-policy.htm
https://www.weforum.org/whitepapers/inclusive-deployment-of-blockchain-for-supply-chains-part-6-a-framework-for-blockchain-interoperability
https://en.wikipedia.org/w/index.php?title=Diem_(digital_currency)&oldid=1022940118

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

DIGITAL EURO AS NEXT EVOLUTION OF THE EUROPEAN CURRENCY

Dragoș Mihai UNGUREANU
Faculty of Economic Studies, Spiru Haret University, Fabricii Street no. 46G, district 6, Bucharest, Tel.: 021 3169785,
Email: dragos.ungureanu@yahoo.com

How to cite: UNGUREANU, D.M. (2022). "Digital Euro as next evolution of the European currency." *Annals of Spiru Haret University. Economic Series, 22*(2), 71-86, doi: https://doi.org/10.26458/2224

Abstract
Digitalisation has spread to every corner of our lives and transformed how we pay. In this new era, a digital euro would guarantee that citizens in the euro area can maintain costless access to a simple, universally accepted, safe and trusted means of payment. A digital euro would not replace cash, but rather complement it. The Eurosystem will continue to ensure the access to cash across the euro area. A digital euro would give an additional choice about how to pay and make it easier to do so, contributing to accessibility and inclusion. It would support the digitalisation of the European economy and actively encourage innovation in retail payments.

Keywords: *digital euro; digital payment; accessibility and inclusion; innovation retail payments.*

JEL Classification: E42, E44, E51, E52, F15

Europe has a long history of developing and refining the infrastructure that underpins the European economy and enables an interconnected union. The introduction of the euro as the common currency of the Eurosystem in 1999 was accompanied by the establishment of a Real Time Gross Settlement System for Europe. **TARGET**, as it was called, was developed as an efficient, safe, and

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

reliable mechanism for the settlement of euro payments that would support the ECB's monetary policy through the integration of money, and financial markets.

In May 2008, TARGET was succeeded by **TARGET2**. The new system enabled even faster and more secure payments in addition to other advancements by replacing the decentralised structure and inconsistent technological frameworks of the first iteration in favour of a Single Shared Platform.

The TARGET Instant Payment Settlement, or **TIPS**, was introduced in 2018 as an extension to TARGET2. TIPS was a direct response to address the growing consumer demand for instant payments without reintroducing the complexity and fragmentation of national solutions. Among other upgrades, this new iteration offered even faster payments, enhanced resilience, and the ability for settlements in other currencies.

Defining CBDCs and the digital euro

The common denominator of each new advancement is the promise of further speed and efficiency in payments, costs savings, pan-European coverage, and additional features to address the modern needs of consumers and the Central Bank. A European Central Bank Digital Currency, or digital euro, would be the next step in this evolution. By potentially tapping into new technologies and possibilities developed and nurtured in the open blockchain space, as well as innovations honed by the wider private sector, a CBDC can be a definitive step towards ensuring that the Eurosystem remains current in the rapidly changing global landscape. A lot of questions remain open as to its characteristics and specificities of its issuance. However, before we explore the available design space, we must first establish a more detailed definition of CBDCs and the digital euro.

A Central Bank Digital Currency, as the name suggests, is a form of digital money that is issued by a central bank. For a value medium to be considered a CBDC it must fulfil both requirements simultaneously[1]. By this definition, CBDCs are not an entirely novel concept. Commercial banks in Europe, the US, and most of the developed world are required to hold a minimum amount of cash, as well as deposits with the central bank in the form of reserves. These reserve accounts fulfil the definition of a CBDC presented above, as they are digital representations of value, recorded as a liability of the central bank and an asset for the commercial bank.

[1] Coeuré et al., 2020

The novelty of CBDCs and the digital euro relies on two primary factors, namely the extent to which this digital liability of the central bank is made available to the private sector and the types of technologies and systems to facilitate its implementation and additional innovations. The technological design space and options are explored in-depth later in this paper. In terms of CBDC availability, there are two models:

• **Wholesale CBDCs** pertain to the expansion of the reserve model described above to include other legal entities besides commercial banks, whether those are financial institutions or otherwise. In such a model, a CBDC would be reserved for commercial banks and other institutions appointed by the central bank to facilitate payments, remittances, and even the settlement of other financial instruments.

• **Retail CBDCs** are a form of legal tender denominated in the national currency, to fulfil the necessary functions of money, serving as a medium of exchange, store of value, and unit of account, all while constituting a liability of the central bank and asset of the private sector, meaning individuals, households and businesses.

Payment efficiency and security

Cash remains the preferred medium for exchanges today, with a 2019 ECB study reporting that it was used for 73% of Point-of-sale (POS) transactions and amounted to 48% of the total value of POS payments (down from 78% and 53% respectively from 2017). Its tangible nature, speed, and lack of fees make it convenient for local payments, and the instant transfer of value is favoured by consumers and retailers alike.

However, international and non-cash payments have grown significantly, following the exponential rise of ecommerce. From 2018 to 2019, the aggregate number of electronic payments in the euro area increased by 8% (EC, 2020) to a total of approximately €100 billion with a total value of more than €160 trillion. At the same time, reports from firms such as EY (2020) have outlined the changing sentiment towards digital payments. In a relevant survey (figure 1), top financial leaders from around the world highlighted that, by 2030, mobile payments will dominate the market, followed by biometric and digital asset-enabled payments. Payment system companies already report large increases in the transaction volumes of most online retailers. Indicatively, ACI Worldwide's relevant research (2020), showcases a 74% increase in transaction volumes for select sectors, while (Adyen, 2021) reports an increase of 30% to 50%.

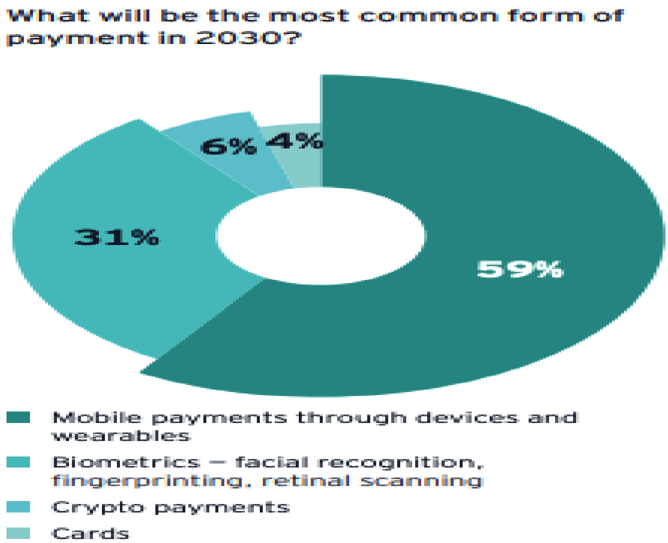


Figure 1. The future of payments.
Source: EUBOF

With the continuous shift from cash to electronic transactions the operational robustness of payments as a whole relies increasingly on credit and debit card networks, e-money providers, and point-of-sale schemes.

Depending on its characteristics and infrastructure, a CBDC can support the resilience and efficiency of the payments system by expanding services previously reserved for the commercial banking system to the wider private sector[2]. With a new or improved technological infrastructure (RTGS/DLT) a CBDC can improve resilience. In addition, a CBDC tied to real-life identities could also increase payment security and prevent money laundering and terrorist financing. The level of pseudonymity/anonymity can even be adjusted according to the specifications of the central bank, enabling even a digital alternative to cash, in terms of anonymity.

To the extent that a CBDC can act as medium for pseudonymous/anonymous payments, it could address the consequences of the declining use of cash, while at the same time promoting financial inclusion. In a scenario where cash is gradually

[2] Riksbank, 2021

phased out, it is reasonable to assume that commercial banks and other for-profit institutions might find it fruitless to expand their services to financially excluded groups, such as the unbanked. A substitute of cash is critical to ensure that the most vulnerable parts of our societies are not deprived of access to our economies. Regardless of whether the use of cash declines further, a CBDC could extend financial services to the 1.7 billion unbanked of the world[3] (26% in Europe). To achieve this, some minimum infrastructure would be required, notably Internet, computers and/or smartphones.

Financial Sovereignty

Central banks face two distinct types of risks that have the potential to directly threaten their financial sovereignty. Those relate to monetary policy inefficiencies, and the rising competition from alternatives developed in the private sector.

Since the Great Recession of 2008, central banks have had to resort to rather unconventional methods, such as negative interest rates and quantitative easing. A CBDC can add new weapons to the arsenal of a central bank to facilitate monetary policy and address future crises.

Central banks may also face increased competition from the open blockchain space and the private sector when it comes to the monopoly of money creation. The proliferation of cryptocurrencies, such as Bitcoin and stablecoins, is one such source of possible competition. The emergence of privately-issued digital assets, such as Facebook's Diem (formerly known as Libra) is another. Even competing CBDC deployments by other central banks, may push a central bank to rethink its own position regarding the CBDC phenomenon.

Traditional players in CBDC

United States of America: The Federal Reserve Bank of Boston announced its collaboration with MIT to research and explore digital currency and build a hypothetical CBDC (Federal Reserve Bank of Boston, 2020; MIT, 2020). After the Federal Reserve's April 2021 police meeting Chairman Jerome Powell cautioned it is "far more important to get it (CBDC) right than it is to do it fast or feel that we need to rush to reach conclusions because other countries are moving ahead."[4] The United States Securities and Exchange Commission recently suggested the

[3] Asli Demirgüç-Kunt et al., 2017
[4] Wall Street Journal, 2021

existence of dollar-based private sector stablecoins was in some sense a counter to China's explicit alliance building.

European Union: In its October 2020 *Report on a digital euro*, the European Central Bank stated its position on CBDCs, which includes the following key phrasing: "While the Eurosystem would always retain control over the issuance of a digital euro, supervised private intermediaries would be best placed to provide ancillary, user-facing services and to build new business models on its core back-end functionality. A model whereby access to the digital euro is intermediated by the private sector is therefore preferable." (ECB, 2020b). It has also partnered with Bank of Japan in general exploratory efforts which emphasize "Balancing confidentiality and auditability in a distributed ledger environment."

Bank of Japan: The Bank of Japan announced a one-year trial of a digital yen (Ledger Insights, 2021), as follow on to its earlier position paper (Bank of Japan, 2020). There has also been joint work with the ECB as noted earlier.

China: Based on information that is publicly available, China's digital yuan is the most well-advanced among leading central banks. This is because of multiple factors. First, its progress in putting the CBDC into public use, efforts to integrate with leading social media offerings such as WeChat, and the breadth of its alliance making with other central banks, as exemplified by its recently announced m-CBDC effort, involving SAMA/UAE, Bank of Thailand, and HKMA.

Canada: Project Jasper is the Canadian banking industry's CBDC initiative. It was embarked upon in 2017, well before most other central banks were giving CBDCs the attention that they are now giving it. Participants in the project consisted of the Bank of Canada and private banks in Canada and were intended for inter-bank value or money transfer in a somewhat decentralized setting. In one of the initial phases, a private version of Ethereum was utilized. The project then moved to R3's Corda solution. In this latter phase, some degree of centralization was utilized in the form of a notary node operated by the Bank of Canada. The project utilized digital signatures to verify the authenticity of information. Privacy was maintained among members by participants only having access to transactions that were relevant to them. Private market participants used newly created objects called Digital Depository Receipts (DDR). These were created in exchange for Canadian Dollars. Both are central bank liabilities, but DDR was only valid within the scope and systems of Project Jasper.[5]

[5] Bank of Canada, 2017, 2019

Russia: The Bank of Russia has issued a position paper. It specifically calls for a two-tier system: "The selected target model is a two-tier retail model which assumes that the Bank of Russia is both the issuer of digital rubles and the operator of the digital ruble platform. At the same time, financial institutions open electronic wallets for their clients and perform operations over these wallets on the digital ruble platform. Households and businesses will be able to access their digital rubles through any bank where they are serviced."[6]

Non-Sovereign Actors

Bitcoin

Bitcoin's appeal starts with the fact that it already exists and has operated for over a decade. This is in contrast to almost every other digital currency which is still 'vapourware' and faces an uncertain path to market. Bitcoin has an easily recognizable brand, is already used by hundreds of millions of people and has a vibrant ecosystem of service providers. By virtue of being stateless, Bitcoin has a large "total addressable market."

Other aspects of the digital currency that some users may find appealing are its algorithmic (and capped) inflation schedule and censorship resistance. Bitcoin may therefore appeal to digital currency users who are wary of the motives by some countries in introducing CBDCs, such as new policy tools enabled by programmability, or economic surveillance.

That said, Bitcoin's decentralization has its drawbacks. Its throughput is extremely limited and the energy consumption (and environmental impact) of its consensus mechanism is can be considered severe. Having a fixed inflation schedule also makes it vulnerable to severe deleveraging during a crisis, a lesson from other forms of "hard money" that the crypto faithful have yet to learn.

Ethereum

In some ways, Ethereum begins where Bitcoin ends. One of Bitcoin's core elements is the "transaction out" or TXO. It is the subcomponent within the transaction that is ultimately spent or left alone. Bitcoin Core, the codebase that a node operator might run, comes with a set of operations that one might use to not just merely move TXOs around but to do some more complicated things with it. For example, one might, say, mandate that a TXO, after signing it and moving it

[6] Bank of Russia, 2021

Issue 2/2022

another block, can only be spent after a certain number of blocks have transpired. This ability to script allows for some flexibility to users of Bitcoin but the actual possibilities are quite limited, especially when compared with the plethora of high and low-level programming languages that are available at present. To a programmer, it might appear like a limitation. And it is, by design.

This is where Ethereum comes in. It allows for a much richer set of instructions, including simple but dangerous things (in a decentralized setting) like "software loops". The notion here is that users of Ethereum can set up more complicated instructions that can be activated if someone "kicks off" the instruction set or perhaps because another set of instructions kicked off and so on. With layers and layers of abstraction, one then eventually ends up with smart contracts and decentralized exchanges.

However, this level of complexity comes with a cost. Bitcoin, in a way, gives equal weight to the price (in terms of satoshis/byte) regardless to differing instructions. This could not be allowed in Ethereum as it would allow for, among other things, malicious or harmful (though not intentionally malicious) instructions to execute. Ethereum miners have a limited supply of computing power and just like anything else in the world, to economize for a limited supply of something, a price is set. In this instance, the price of instructions is set using a term called "gas" fees. It is best thought of as the fee to execute instructions. If a sufficient amount of fees (in terms of Ether) is not sent with a set of instructions, then instruction stops - circumscribing the problem of malicious or otherwise harmful instructions.

Ethereum is also different from Bitcoin in other ways. Where Bitcoin evolves slowly but surely, Ethereum changes rapidly and sometimes it is not clear to users whether the changes are positive. A "full node" containing all of Bitcoin's transaction and block data occupies, at present, less than 400 GB of space. The corresponding node, an "archival node", occupies over 7TB of space. Finally, where one might not find a figurehead for Bitcoin (although some claim to be), one will find one in the persona of Vitalik Buterin for Ethereum.

Finally, Ethereum plans to be different from Bitcoin in other ways. It wishes to move to a Proof-of-Stake model of consensus as opposed to the Proof-of-work model that exists. It also wishes to use techniques like "sharding" that allows different functions to "shard" into smaller, so to speak, sub-chains while still being able to interact with other sub-chains. The path forward for Ethereum is exciting but also risky. Those two things, of course, go hand in hand.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Stablecoins

Introduced to address some of the volatility of cryptocurrencies while maintaining most if not all of their "desirable" characteristics, stablecoins are tied to a conventional currency, such as the dollar, euro, or a basket of currencies. They purport to offer the stability and familiarity of a traditional currency with the frictionless and programmable promise of cryptocurrencies.

Tether is notable as being the largest stablecoin by market cap, and perhaps surprisingly as having the largest daily volume of any cryptocurrency, exceeding even that of Bitcoin and Ethereum.

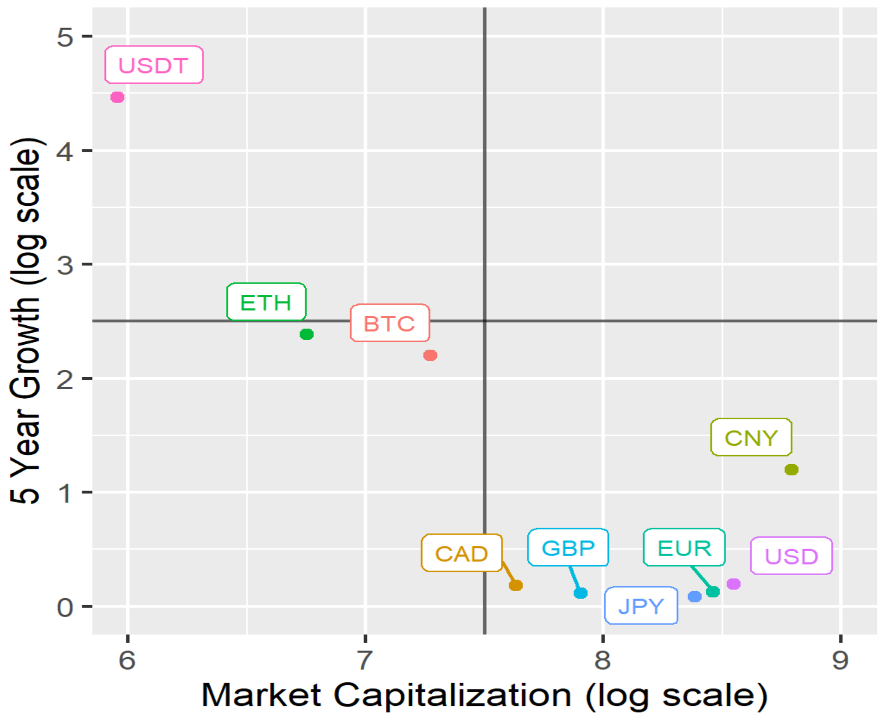


Figure 3. Market cap vs rate of growth.
Source: https://tradingeconomics.com

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

The digital euro timeline

The timeline for a digital euro begins in a joint statement by the European Council and the European Commission on stablecoins in late 2019. The press release[7] noted that the then-recent rise of stablecoins underlined the significance of addressing consumer needs for fast, cost-effective, and efficient payments and cross-border remittances. The possibility of a CBDC to address these was also mentioned.

Christine Lagarde, president of the ECB, has laid the foundations for a digital euro in her speech at the Deutsche Bundesbank conference in September of 2020. It was highlighted the changing consumer sentiment towards digitalization, e-commerce, and electronic payments, further accelerated by the COVID-19 pandemic, along with the rising competition to dominate payments on a global level and Europe's disadvantaged position in the race. The issues of private money with weak connections to a sovereign counterpart, and mobile payments controlled by private firms, were also emphasized as a potential threat to financial sovereignty. A state-backed digital currency, widely trusted by the general public, was promoted as an option for managing the risks of this digital transition while maintaining trust in the existing payments system.

At the same time, the European Commission was adopting the Digital finance package to ensure competitiveness and stability in the Fintech sector. As part of that package, the Markets in Crypto-Assets Regulation addressed cryptocurrencies that fell beyond the scope of existing European legislation and introduced uniform rules for the treatment of stablecoins, leaving room for a pan-European sovereign deployment as a viable alternative. A month later, in October 2020, the ECB published the report on a digital euro.To date, this report constitutes the most comprehensive analysis of the motives behind a European CBDC and its desirable characteristics.

The analysis was released in conjunction with a request for public consultation on the characteristics of the digital euro. Following record participation of more than 8,000 citizens and institutions, the results went public in April 2021. The overwhelming majority of respondents promoted privacy and security as the two most desirable features of a digital euro, as collectively they were highlighted in more than 60% of responses. Accessibility throughout the euro area, no additional costs tied to the use of the new euro, and offline usability were also promoted as close runner-ups. The importance of intermediaries as facilitators of innovative services, smartphones for secure payments, and holding limits or other techniques

[7] European Commission, 2019

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900
ICCS Institutul Central de Cercetare Științifică
Fundația România de Mâine Universitatea Spiru Haret

Issue 2/2022

to manage the amount of digital euro in circulation, were also highlighted. The majority of respondents were men (87%), citizens of Germany (47%), Italy (15%), and France (11%), with the remaining Member States accounting for between 1% and 5% of the total.

Figure 2. Digital Euro Timeline.
Source: EUBOF

Implications of a digital euro for financial stability

The introduction of a CBDC creates two main risks for financial stability, linked to two different scenarios. The first risk is that of *financial disintermediation* in calm times. The second risk is represented by the possibility of *systemic bank runs* in times of financial distress.

The introduction of a CBDC may cause the withdrawal of funds from banks and their conversion into CBDC. This effect would be limited if households used CBDC mainly in substitution for physical cash. However, if commercial bank deposits were freely convertible into CBDC, households, and firms could be less willing to hold liquid money in the form of bank deposits and could prefer to hold CBDC instead. If this were the case, the substitution of bank deposits with CBDC would cause a loss of funding for commercial banks and a shrinking of the banking sector's balance sheet. This is precisely what "disintermediation" means[8].

[8] Bank of England 2020

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Therefore, the level of disintermediation caused by the introduction of CBDC is determined primarily by its substitutability with other forms of money. It is crucial to understand whether CBDC could be a substitute for cash, bank deposits, or both, and this, in turn, depends on the design features of CBDC.

Another very relevant factor in the disintermediation process is the behaviour of the central bank after a CBDC is introduced. In the following, we assume that the design of a CBDC is such that it does cause disintermediation. Not only could disintermediation occur after a CBDC is first introduced, but central bank money and commercial banks' money could be "structurally" pitted against each other. In other words, in normal times commercial banks would compete with the central bank to hold deposits. This effect would be reinforced if the central bank does not fill the funding gaps of commercial banks caused by disintermediation. The consequences of a CBDC would be both on banks' liability side and on their asset side. We can identify two main effects on the liability side.

First, banks could try to offer better conditions on their deposits, increasing deposit rates, to counter the conversion of bank money into CBDC. This would increase funding costs for banks and reduce their profit margin and seigniorage.

Second, banks may try to replace the deposits that are converted into CBDC with other types of funding, such as commercial paper, term deposits, bonds, and equity. This second option has three further implications:

- funding would likely become more expensive
- funding may become less stable
- market discipline may decline if banks lose more uninsured than insured depositors. This could push banks to take on more risk.

To sum up, if disintermediation is not adequately dealt with, it may cause an increase in the cost of banks' funding.

On the asset side, as a consequence of a higher cost of funding, banks would have to increase lending rates and transaction fees to maintain profitability. In the literature there is a variety of opinions on the overall effects of this process on lending activity. Many authors[9] envisage negative effects on lending activity by commercial banks. The effects on lending may also depend on banks' market power. The greater this power is, the less loan demand decreases, and the more

[9] Fernandez-Villaverde et al. 2020, Keister and Sanches 2019, Claeys and Demertzis 2019, Kim and Kwon 2019

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

banks can preserve profits. On the contrary, banks with little market power are forced to shrink their balance sheets and reduce loans.

A very important variable in the disintermediation process is also the stance of the central bank. A relevant role is played by the spread between the interest rate on CBDC and on checkable deposits. If this spread is positive and too large, banks end up reducing their loans.

In times of financial distress, households and firms tend to convert their deposits into safe assets and cash, with possible ensuing bank runs. A CBDC, being a liability of the central bank, would have a higher degree of safety with respect to bank deposits. Therefore, in a situation of financial distress, it could facilitate bank runs in a digital form.

There is not full agreement on this issue in the literature. Some authors argue that a CBDC would allow runs towards the central bank with "unprecedented speed and scale"[10], while others think that "in many cases, this effect will be muted"[11]. In any case, the design of a CBDC plays a key role in this situation as well.

Moreover, in times of financial distress, a CBDC can also play an active role, providing to the central bank some useful instruments. In particular, it may facilitate the provision of liquidity to banks, helping to calm down bank runs. The onset of a digital bank run may also act as a signal for the central bank to understand the conditions of the financial system and provide a fast and effective response[12].

The biggest financial stability issues are disintermediation and the increased risk of bank runs. However, other minor questions related both to stability and integrity must not be overlooked.

The effects of CBDC on financial integrity depend on its design. Strict limits on the size of transactions, coupled with facilitation of identity authentication and tracking of payments and transfers would strengthen financial integrity. Moreover, if it is account-based, a CBDC could help prevent illicit payment and store of value with central bank money. On the other hand, a design that allows for full anonymity and large-value transactions would undermine financial integrity. Once again, we can see that the effects of a CBDC on the economy inevitably depend on

[10] CPMI-MC, 2018
[11] Mancini-Griffoli et al. 2018
[12] Keister and Monnet 2020

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

its concrete design, which has to be planned according to policy preferences, without overlooking real-world impacts.

If the CBDC is designed in such a way as to preserve anonymity and hence facilitate cross-border payments, its adoption would greatly increase the volatility of international capital movements. Indeed, if we take into account the international environment, very large net cross-border movements of CBDC may not only complicate the conduct of monetary policy but also undermine financial stability. CBDC could, in some situations, lead to large capital movements, exchange rate disturbances and asset price volatility. The effects of cross-border CBDC movements would be especially pronounced during times of generalized flight to safety. Indeed, using a CBDC as an international currency could potentially enable faster deleveraging in capital markets, accelerating cross-border contagion and amplifying exchange rate fluctuations.

Conclusions

Central Bank Digital Currencies are the natural next step in the digitization of money and payment systems. Given the momentum and initiatives already underway worldwide, we cannot imagine a scenario where different forms of CBDCs do not co-exist with other forms of money in the near future.

Europe, as one of the world's largest and most innovative economies, is an important contender in the race to design, implement and deploy the digital money of the future. The European Central Bank is leading this effort as part of its mission to keep prices stable in the euro area and contribute to the safety and soundness of the European banking system.

To contrast the risks of financial disintermediation, electronic bank runs and other potential threats to financial stability raised by the introduction of CBDCs, several solutions could be on the table. Some of them are not related specifically to CBDCs, but consist of more traditional measures (such as lender of last resort and deposit insurance). We shall therefore not discuss them here. Others, instead, involve specific design features of the CBDC, such as:

1. lower remuneration of CBDC with respect to other policy rates - remunerating a retail CBDC could make it even more competitive with respect to bank deposits and government bonds. Therefore, it could end up reducing the quantity of bank lending to the economy and even interfering with the role of government debt as a safe asset.

2. limited convertibility of CBDC - some scholars think that limited convertibility of CBDC with other assets could prove effective in countering financial stability risks. The "light" approach is to discourage convertibility from bank deposits to CBDC through fees. The "hard" approach is to break the link between CBDC and other forms of money. CBDC and reserves would be distinct, and not convertible into each other.

3. cooperation of the central bank with commercial banks in relation to the issuance of CBDCs - the central bank could structurally provide more funding to commercial banks to replace the lost deposits or an alternative solution is the creation of an indirect CBDC, instead of a direct one. The central bank would not provide CBDC directly, but indirectly.

4. control of CBDC volumes.

An ECB-issued digital euro would go a long way toward facilitating payments efficiency and security across the eurozone, furthering financial inclusion, and futureproofing the euro against developments in other economic jurisdictions (e.g. the USA and China) and non-sovereign implementations of private or decentralized forms of digital money (e.g. Diem or cryptocurrencies). The speed of innovation by other actors is relentless and a global race to define the world's reserve currency of the digital era is well underway. Europe cannot afford to not be part of this effort, by both closely monitoring global developments and innovating across dimensions specific to the idiosyncrasies of the eurozone.

References:

[1] ACI Worldwide (2020) COVID-19 Crisis Drives Changes in eCommerce Purchasing Behaviors, ACI Worldwide Research Reveals | ACI Worldwide, Inc.
[2] Adrian, T. and Mancini-Griffoli, T. (2019), The rise of digital money. Washington, DC: International Monetary Fund.
[3] Areddy, J. T. (2021) 'China Creates Its Own Digital Currency, a First for Major Economy', Wall Street Journal, 5 April.
[4] Auer, R., Cornelli, G. and Frost, J. (2020) 'Rise of the central bank digital currencies: drivers, approaches and technologies', p. 44.
[5] Bank of England (2020a) 'Discussion Paper - Central Bank Digital Currency: Opportunities, challenges and design', p. 57.
[6] Bellens, J., Lloyd, J. and Hamish, T. (2020) Why the potential end of cash is about more than money | EY - Global.
[7] ECB (2020a) 'Payments in a digital world'.

[8] Federal Reserve Bank of Boston (2020) The Federal Reserve Bank of Boston announces collaboration with MIT to research digital currency, Federal Reserve Bank of Boston.
[9] Simmons, R. et al. (2021) 'Crisis and the Role of Money in the Real and Financial Economies – An Innovative Approach to Monetary Stimulus', Journal of Risk and Financial Management, 14(3), p. 129.
[10] Visco, I. (2020) 'The role of TIPS for the future payments landscape'.
[11] Werner, R A (2014). Can banks individually create money out of nothing? — The theories and the empirical evidence. International Review of Financial Analysis, Vol 36, pp 1-19.
[12] Wilson, T. (2021) China's digital yuan will not topple the dollar, SEC official says, Reuters.

Websites:
https://www.consilium.europa.eu/el/press/press-releases/2019/12/05/joint-statement-by-the-council-and-the-commission-on-stablecoins
https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200910~31e6ae9835.en.html
https://www.federalreserve.gov/faqs/what-economic-goals-does-federal-reserve-seek-to-achieve-through-monetary-policy.htm
https://www.weforum.org/whitepapers/inclusive-deployment-of-blockchain-for-supply-chains-part-6-a-framework-for-blockchain-interoperability
https://en.wikipedia.org/w/index.php?title=Diem_(digital_currency)&oldid=1022940118

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

THE EFFECT OF DIGITAL LEADERSHIP PRACTICE AND LEARNING ORGANIZATION RELATIONSHIP ON INDIVIDUAL PERFORMANCE

Umid VALIZADA
Akademia WSB, University of Dabrowa Gornicza, Zagrebie Dabrowskie, Silesia, Poland, Tel.: +48513408323, Email: umid.valizada@gmail.com

How to cite: VALIZADA, U. (2022). "The Effect of Digital Leadership Practice and Learning Organization Relationship on Individual Performance." *Annals of Spiru Haret University. Economic Series, 22*(2), 87-104, doi: https://doi.org/10.26458/2225

Abstract

Human life is like swimming against the current. If a person is not making an effort to move forward, the current will undoubtedly drag him further back at any moment. This is true for every area touched by human hands. In business life, institutions have to swim against the current, just like people. Today, digital transformation and its effects emerge as a topic that is discussed extensively in academia and practice and constitutes the business agenda of companies. The digital age changes not only the way of doing business, but also customer relations, service models, product styles and most of all, the perception of "talent". This rapid transformation in business strategies has led to the emergence of digital leaders with new and different skills in the short term. These leaders focus on different points than traditional leaders. The aim of this study is to examine the effects of the digital age on leadership theory, how the new leadership model is defined and the studies carried out in the relevant period in order to reveal its dimensions.

Keywords: *digital leadership; performance; business; learning organization; digital skills.*

JEL Classification: M10

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Introduction

Today, the use of digitalization and information technologies is becoming widespread in almost all business processes and applications in businesses. The development of technology directly affects not only business and service processes, but also the company's position in the market, its maneuvers and strategies against its competitors. These systems are extremely important in the processing and storage of information capital, which is one of the scarce resources of enterprises.

Digital tools, information technology solutions, databases and algorithms are used to collect and evaluate significant data and optimize efficiency. This situation paves the way for the inadequacy of existing leadership theories, the change of leadership characteristics, and the emergence of the concept of digital leadership that is compatible with the current era.

Processing, archiving and transferring knowledge capital to potential employees is vital for businesses to survive. Along with the digital transformation, the leadership style expectations and perceptions of the new generation employees have also begun to transform. This situation has recently prompted management consultancy companies, managers and researchers operating globally to conduct deeper research on the concept of digital leadership.

The aim of the research is to investigate whether the relationship between digital leadership practice and learning organization has an effect on individual performance, and if it does, what is its degree. In this study, firstly, the relationship between digital leadership practice and learning organization was revealed and how it affects the individual performance of the employee was investigated. On the other hand, the effects of demographic variables on digital leadership were also examined.

Research methodology

Considering the scope of the research, it was chosen on the employees of different sectors from Turkey, Azerbaijan and Poland. An electronic questionnaire was applied to employees working in public and private bank institutions operating throughout these countries, regardless of department.

The study was carried out with the participation of 234 people working in large-scale domestic and foreign partner banks, based on the banking sector. 193 people who applied the survey completely correspond to approximately 0.1% of the number of bank employees in Turkey. Within the limitations of the research, the survey study was planned on 200 employees and the surveys could be sent to 234 people via electronic communication channels. The majority of the employees answered the survey questions completely and provided feedback. However, the results of the study could be evaluated on a total of 193 participants, since 41 out of 234 people gave a partial return.

The reason for another limitation is that most of the questionnaires are not given on site by the researcher personally and are sent to the participants via remote communication channels on a voluntary basis. It should not be forgotten that more comprehensive results can be obtained in future research by conducting this study with more institutions and participants in banking, communication, informatics, production or different sectors.

Determined as independent variables in the research; From the network of relations questioning the effect of (a) Digital Leadership Practice, (b) Learning Organization, (c) Age, (d) Education, (e) Status, (f) Seniority factors on the perception of "Individual Performance", which is determined as a dependent variable or outcome variable. has been moved.

Theoretical perspectives of the term of “digital leadership” and “learning organization”

Leaders are people who direct the community they live in, motivate people with their work, and make great contributions by encouraging the community to achieve its goals. The motive of acquiring power generally manifests itself in two ways in society. People either become leaders or follow the leader.

According to Şimşeker and Ünsar (2008), “managers can rely on their past technical experience and local successes, but when it comes to leadership required by global conditions, this constitutes a very different situation” (Şimşeker and Ünsar, 2008). Today, leadership theories are broadly grouped under five main headings: Big Man Theory, Trait Theories, Behavioral Theories, Situational Theories and New Approaches. According to the great man theory, leaders are born with necessary characteristics such as charisma, confidence, intelligence, and social skills that make them natural leaders.

The Great Man Theory shows that people cannot learn to be strong leaders. Because according to this theory, a great leader is not made, but a great leader is born (Cherry, 2019, par. 7–8).

Trait Theories assume that successful leaders have some innate physical characteristics and certain qualities that distinguish them from non-leaders. However, the difficulty of classifying and validating these traits has led to widespread criticism of the Traits approach, leading to the emergence of Situational and Behavioral leadership approaches. (Obgonna and Harris, 2000)

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

According to the behavioral theory, the effectiveness of the leader is determined by his behavior as well as his physical characteristics. Behavioral theorists focused mostly on the behavior style of the leader, and basically divided them into two as work-oriented and person-oriented. (Türtgen, Ünsal, and Telman, 2004)

When it comes to the situational theory, unlike the other two theories, the situation variable is also examined to define leadership. According to this theory, leaders are shaped by their personal characteristics and behaviors, as well as by the environment and conditions. According to the theory of new approaches, the coexistence of different cultures as a result of the participation of different generations in business life, globalization and shortening of distances caused the business world, organizations and managerial needs to change. (Kesmili, 2013)

Companies are pushing the boundaries of traditional leadership hierarchies and revealing a new leadership approach that can read rapid change. To make their organizations successful in the digital world, leaders need to think, act and react differently. Therefore, the most critical need for most companies is for leaders to develop digital capabilities (Abbatiello, Philpot, Knight, and Roy, 2017).

Table 1 shows examples of the cognitive, behavioral and emotional abilities that leaders must possess to make their organizations successful in the digital world.

Table 1. Transforming Leadership Capabilities.

Cognitive transformations	Behavioral transformations	Emotional transformations
Conceptualizing possibilities in the virtual world	Adapting to changing power and domains	Ability to tolerate risk and uncertainty
Coping with ever-increasing cognitive complexity	Ability to collaborate with different teams	Flexibility in ever-changing conditions
Thinking different and new ways	Valuing the contribution of new business partners and interest groups	Courage to change business processes
Ability to make practical decisions without all the information	Learning from failures and being able to try again with high energy and motivation	Directing change and leadership self-confidence

Source: Abbatiello, A., Knight, M., Philpot, S., and Roy, I., Rewriting the rules for the digital age: 2017 Deloitte Global Human Capital Trends. UK, Deloitte University Press., 2017, p. 79.

It is necessary to distinguish between two related but different definitions of leadership. Most inclusive, it stands for "leadership in the digital age", which refers to leadership in the broad organizational structure or industry for a more knowledge-intensive society. It means all leaders, regardless of healthcare, arts, or manufacturing, that leaders need to be aware of and effectively use the new constraints and opportunities that ICTs provide.

The second one refers to the leadership in the basic sectors of the information society, which is called "digital leadership". At the beginning of these sectors, information processing, communication and content producers (broadcasting - printing), in short, multimedia. While the two leadership styles are very close to each other by definition, they emerged in ICT sectors and spread with the use of website portals to connect customers and suppliers (Wilson III, 2004).

An important approach to the issue of changing management styles is to establish a digital transformation strategy that serves as a hub to unify all digital coordination, processes and practices within the firm. The potential benefits of digitization for business vary widely. It includes new areas of interaction between all stakeholders, as well as increases in supply and demand, and innovations in the field of value creation (Matt, Hess, & Benlian, 2015).

New leadership traits will vary from country to country, culture to culture, and sector to sector, most notably in economically developed societies and ICT sectors. New societal conditions reveal new forms of leadership necessary to initiate and sustain transitions towards more knowledge-intensive societies. Leadership in the digital age needs new attitudes, new skills, and new knowledge acquired through unique professional experiences that respond to the above-mentioned societal characteristics (Wilson III, 2004).

By using technology to provide real-time feedback, the digital leader is able to communicate with employees in a consistent, authentic and transparent way. It can foster a culture of knowledge sharing that consistently shares content and stories that are of interest to the team. While this digital environment may pose new challenges for leaders, it can also create an opportunity to leave a digital trace for others to follow (Sniderman, Monahan, McDowell, & Blanton, 2017).

In order for an organization to be a learning organization, it is necessary to create productive learning, dialogue and inquiry environments within the organization, and support teamwork, vision sharing, delegation of authority and a leader model that motivates learning through open communication channels with the organization and its environment (Marsick & Watkins, 2003).

When the concept of learning organization is used alone, it defines an ongoing learning process, while the concept of organizational learning defines the outcome of the process. Organizational learning is considered as a basic tool to achieve the strategic goals of companies and information technology is seen as an important tool in organizational learning processes. Considering the strategic importance of information, many businesses adopt information technologies and information management to support information management and organizational learning activities (Aybas, 2007).

The relationship between digital leadership and learning organizational

Knowledge management is a concept closely related to organizational learning. According to the knowledge-based perspective, knowledge management is defined as a critical capability that provides competitive advantage to businesses. In this case, being able to provide continuous learning is one of the organizational advantages that helps the efficient implementation of knowledge management.

Organizational learning refers to the way companies create, support and organize experience and processes around their activities and cultures. For this reason, the adaptation of information technologies to the business for the recording, sharing and processing of information contributes to the formation of learning organizations (Qi and Chau, 2018).

One of the dimensions mentioned in the scale of learning organizations developed by Marsick and Watkins is the supportive and strategic leadership dimension (Marsick & Watkins, 2003). All efforts to become a learning organization are mediated by leaders and managers who provide strategic leadership for learning. For this reason, organizations led by leaders who adopt and support the strategic role of learning are getting closer to the goal of being a learning organization by making more efficient technological investments.

E-learning focuses on the use of computer and network technologies to create and deliver a rich learning environment with a wide range of teaching, knowledge resources and solutions to enhance individual and organizational performance. Smart learning environments and user-friendly interfaces are supported to adapt existing e-learning applications to organizations. Users generally use, manage and interact with e-learning systems individually (Wang, Vogel, & Ran, 2011).

Previous Studies on Individual Performance

In general terms, individual performance is a concept that determines the point reached individually in line with the plans for a determined purpose and the quality and quantity of what has been achieved. In terms of business, performance measurement is defined as an important process managed by human resources units, in which employees are systematically evaluated in terms of ability, efficiency, adaptability, habit, behavior and potential.

A person's abilities and competencies have a direct impact on that person's individual performance. In this respect, individual performance has characteristics that are open to change and influence. There are three basic elements that make high individual performance possible. These elements are expressed as focus, competence and dedication to work (Büte, 2011).

Performance evaluation is considered necessary in terms of the correct management of human resources within the organization as well as an individual psychological need. Seeing the performance levels of the employees of the institution and learning from their experiences also helps them to organize their next work and increase their motivation. The ultimate goal of performance appraisal is to improve individual and organizational performance (Soran, Serin and Balkan, 2016).

The Relationship between Digital Leadership and Individual Performance

Although the application of digital leadership has not been studied enough in the literature, there are various studies on the effects of digitalization of business processes on individual performance. As a result of digitization of business processes by using information-processing and telecommunication technologies, information flow is facilitated and time is saved. It also increases intra-organizational communication and efficiency. In addition to the features listed above, digitalization ensures that tasks and responsibilities are completed on time and with the least error rate, increasing the motivation, job satisfaction and job quality of the employees and increasing their individual performance (Altınöz, 2008).

Associating teams with digitalized business processes, overlapping personal expectations and goals, and concrete support of the performance evaluation process with feedback, rewarding and career management ensure that employees' individual performance increases and organizational goals are met at certain levels (Ateş, 2017).

Digital transformations that are compatible with business needs and business processes directly affect the individual performance of employees. For this reason, it is of great importance that leaders follow digital infrastructures and lead the organization in the process of sustainable digital transformation.

Data collection and analysis

Findings on demographic variables

The total number of bank employees participating in the research is 234. The total number of participants who were fully returned and taken into evaluation was determined as 193.

Considering the demographic distribution of the participants evaluated in the study, 30.1% are between the ages of 18 and 30, 50.3% are between the ages of 31 and 40, and 19.7% are between the ages of 41 and over. In terms of education, 10.9% of the participants are high school or below, 66.3% are associate degree or undergraduate, 22.8% graduate.

Table 2. **Demographic Characteristics of the Participants.**

Demographic variables	Description	N (193)	%
	18–30	58	30.1
Age	31–40	97	50.3
	41 and over	38	19.7
	high school and below	21	10.9
Level of education	college or bachelor degree	128	66.3
	Master degree	44	22.8
	He/she is not admin	129	66.8
	Lower position	16	8.3
Admin status	Middle position	37	19.2
	Upper position	11	5.7
	less than 3 years	44	22.8
Work experiences	3–7 years	73	37.8
	8 years and above	76	39.4

According to the distribution within the managerial status, 8.3% of the participants are low-level managers, 19.2% are middle-level managers, and 5.7% are top-level managers. 22.8% of the participants have a working experience of less than three years, 37.8% have a working seniority of three to seven years, and 39.4% have a working seniority of eight years or more. Demographic distributions of bank employees participating in the research are shown in Table 2, Table 3, Table 4 and Table 5, respectively.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Table 3. **Mean and Standard Deviation Values of Scores for the DL Scale.**

Demographic variables	Groups	Mean values	Standard deviation
	18–30	3.88	.87
Age	31–40	3.69	.61
	41 and over	3.73	.85
	high school and below	3.84	.81
Level of education	college or bachelor degree	3.78	.73
	Master degree	3.64	.77
	He/she is not admin	3.74	.78
	Lower position	4.12	.64
Admin status	Middle position	3.74	.68
	Upper position	3.66	.72
	0- 3 years	3.95	.81
Work experiences	3–7 years	3.54	.71
	8 years and above	3.85	.71

Table 4. **Mean and Standard Deviation Values of Scores for the LO (Learning Organization) Scale.**

Demographic variables	Groups	Mean values	Standard deviation
	18–30	4.06	.82
Age	31–40	3.90	.65
	41 and over	3.91	.75
	high school and below	4.17	.67
Level of education	college or bachelor degree	3.99	.72
	Master degree	3.75	.74
	He/she is not admin	3.92	.76
	Lower position	4.32	.57
Admin status	Middle position	3.96	.74
	Upper position	3.97	.39
	0-3 years	4.10	.78
Work experiences	3–7 years	3.86	.71
	8 years and above	3.97	.71

When the descriptive statistics on the digital leadership scale are evaluated, it is seen that the average scores of the participants in the 18-30 age group are higher than the participants in the other age groups (M=3.88), and that the average scores of middle-level managers are higher than those of other statuses and non-managers, it is seen that the average scores of those with a higher education level are higher than the other education groups (M=3.84), and finally, those with 0-3 years of working experience have higher average scores than other groups (M=3.95).

When the descriptive statistics on the learning organization scale are evaluated, it is seen that the average scores of the participants in the 18-30 age group are higher than the participants in the other age groups (M=4.06), and the average scores of the lower level managers are higher than those in other statuses and non-managers (M=4.32). It is seen that the average scores of those with an education level of or below are higher than the other education groups (M=4.17), and finally, those with 0-3 years of working experience have higher average scores than other groups (M=4.10).

Table 5. **Mean and Standard Deviation Values of Scores Related to the IP (Individual Performance) Scale.**

Demographic variables	Groups	Mean values	Standard deviation
	18–30	4.26	.62
Age	31–40	4.24	.53
	41 and over	4.30	.57
	high school and below	4.30	.46
Level of education	college or bachelor degree	4.27	.57
	Master degree	4.21	.58
	He/she is not admin	4.24	.58
	Lower position	4.46	.34
Admin status	Middle position	4.25	.60
	Upper position	4.29	.41
	0-3 years	4.20	.58
Work experiences	3–7 years	4.28	.52
	8 years and above	4.27	.59

When the descriptive statistics on the individual performance scale are evaluated, the average scores of the participants in the 41 and over age group are higher than the participants in the other age groups (M=4.30), and the average scores of the lower-level managers are higher than those of other statuses and non-managers (M=4.46), and It is seen that the average scores of those who have a high school or lower education level are higher than the other education groups

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

(M=4.30), and finally, those who have a working experience of 4-7 years have higher average scores than other groups (M=4.28).

Findings on hypothesis tests

The relationship between the digital leadership practice independent variable and the learning organization dependent variable was tested with simple linear regression analysis. The aim is to determine whether the learning organization variable can be predicted by the estimation variable. Before applying the regression analysis, the condition of meeting the prerequisites of the test was examined.

Linearity between dependent and independent variables, normal distribution of errors, independence of errors, and equal variance of errors were examined. Regression analysis results and confidence interval values are given.The condition of meeting the preconditions of the regression analysis was examined under four headings and the following results were obtained.

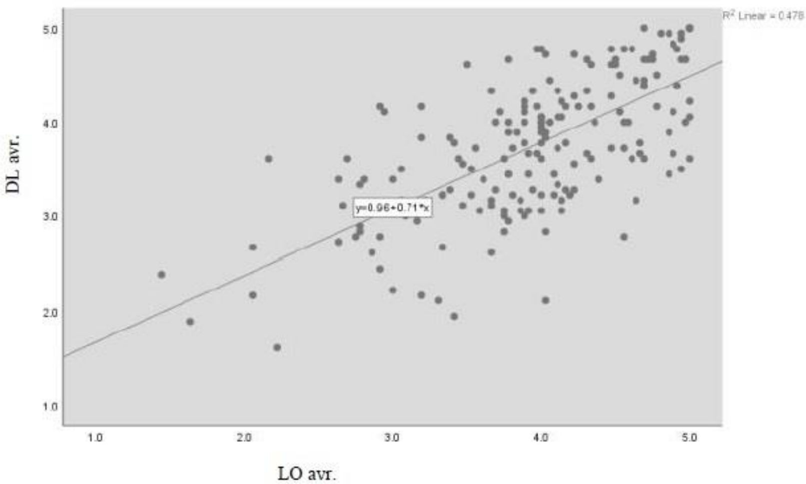


Figure 1. Digital leadership practice and learning organization relationship scatterplot.

Linearity: When the scatter plot of the dependent and independent variables was examined, it was determined that the linearity relationship was “positive and in

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

appropriate measures”. As seen in Figure 1, as the values of the learning organization variable increase, the values of the digital leadership variable tend to increase to a certain extent.

Normality: P-P graph in SPSS was used to test the "Normality" prerequisite for the relationship between digital leadership and learning organization.

When the P-P graph shown in Figure 2 is examined, it is seen that although the points are not exactly on the line, they follow a close course and the normality assumption is met.

Independence of errors: Durbin - Watson test was used to evaluate the independence of errors in the research and a reasonable value of 1,590 was obtained. The value of DWD between 0 and 4 confirms the assumption of statistical independence of errors.

Homogeneity of variances: It is seen that there is a significance value (p=0.00), since p>0.05 significance values are deemed appropriate, this value confirms the assumption of covariance (homogeneity of the errors) of the errors.

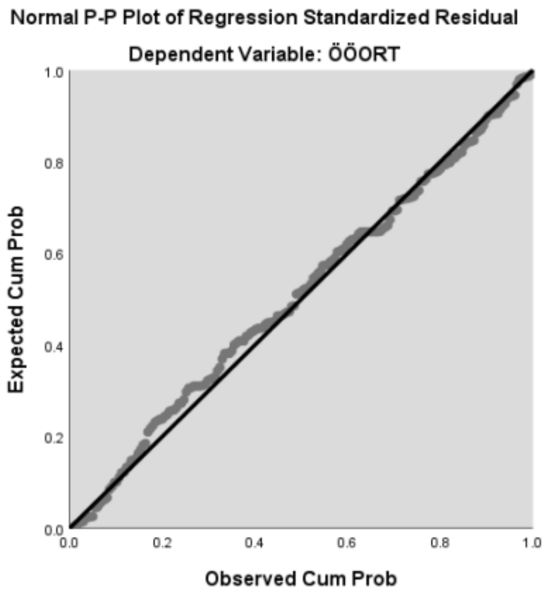


Figure 2. Digital leadership practice and learning organization relationship P-P graph.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

In order for the variances to be considered equal, the Levene test result should be greater than 0.05 (sig= $p>0.05$). As a result of the findings, it is seen that the concurrency assumption of the errors is met. As a result, it was seen that the preconditions of normality, linearity, homogeneity of variances and independence of errors, which are among the assumptions of the regression analysis, were met. For this reason, it can be said that the results obtained from the regression analysis have the feature of fully reflecting the reality.

The relationship between the independent variable obtained from the average of the digital leadership application and the learning organization relationship scores and the individual performance dependent variable was tested with simple linear regression analysis. The aim is to determine whether the individual performance variable can be predicted by the estimation variable. Before applying the regression analysis, the condition of meeting the prerequisites of the test was examined. Between dependent and independent variables; The preconditions of linearity, normal distribution of errors, independence of errors, and equal variance of errors were examined. Regression analysis results and confidence interval values are given. The condition of meeting the preconditions of the regression analysis was examined under four headings and the following results were obtained.

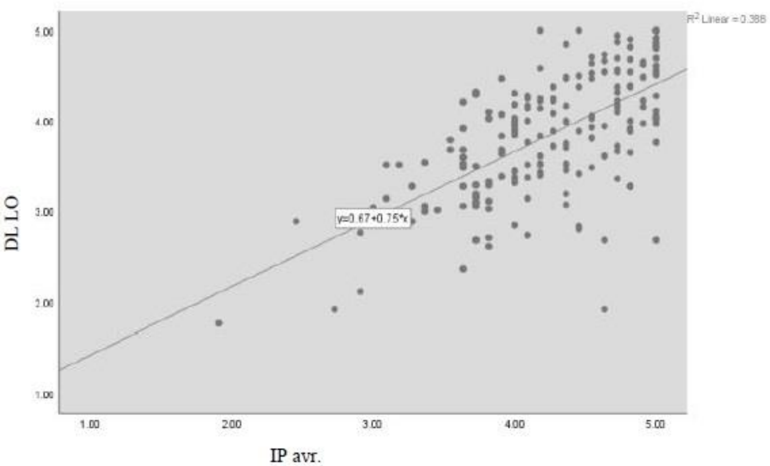


Figure 3. Scatter plot of the relationship between DL and LO scores and individual performance.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Linearity: When the scatter plot of the dependent and independent variables was examined, it was determined that the linearity relationship was “positive and in appropriate measures”. As seen in Figure 3, as the values of the learning organization variable increase, the values of the digital leadership variable tend to increase to a certain extent.

Normality: P-P graph in SPSS was used to test the "Normality" prerequisite for the individual performance relationship between digital leadership and learning organization average scores. When the P-P graph shown in Figure 4 is examined, it is seen that although the points are not exactly on the line, they follow a close course and the normality assumption is met.

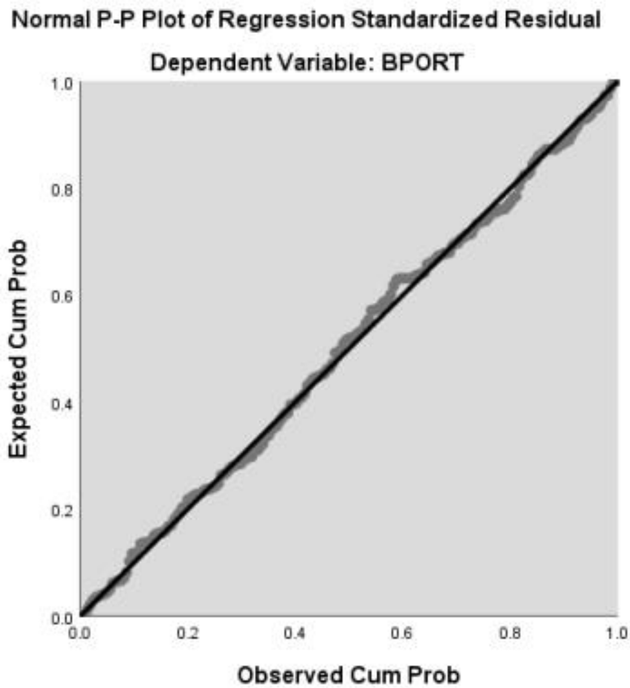


Figure 4. P-P graph of the relationship between DL and LO mean scores in individual performance.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Independence of errors: Durbin - Watson test was used to evaluate the independence of errors in the research and a reasonable value of 1.870 was obtained. The value of DWD between 0 and 4 confirms the assumption of statistical independence of errors.

Homogeneity of variances: It is seen that there is a significance value (p=0.00), since p>0.05 significance values are considered appropriate, this value does not confirm the concurrency assumption of the errors. In order for the variances to be considered equal, the Levene test result should be greater than 0.05 (sig= p>0.05). In line with the findings, it is seen that the assumption of covariance of errors is met.

As a result, it was seen that the preconditions of normality, linearity and independence of errors, which are among the assumptions of the regression analysis, were met. For this reason, it can be said that the results obtained from the regression analyzes fully reflect the reality.

The relationship between digital leadership and learning organization variables and individual performance dependent variable was tested with multiple regression analysis method. It was seen that the estimation variable explained 0.434 of the variance, and it was determined that the relationship between digital leadership and learning organization provided the opportunity to explain the effect of the individual performance significantly (R^2 =0.434; F = 74.618; p =0.000) (p =0.000; p <0.001).

In this case, the relationship between the three conceptual structures was found to be statistically significant. In other words, the increase in the degree of interaction between the digital leadership practice and learning organization perceptions of the employees in the enterprise will positively increase the individual performance perception scores of the employees. As a result, the null hypothesis was successfully rejected and the alternative hypothesis (H1) was accepted.

Conclusion and Discussion

Throughout history, data has never been more important and the need to use data at this speed has never arisen. In this context, businesses need leaders who will believe in the necessity of digitalization and can realize the transformation from start to finish in all processes and applications. In this context, the formation of the idea of transformation, its adoption by the entire organization and its determined implementation are seen as the success of the leader. The effort to establish a culture of digitalization and continuous learning is possible with the strategy, foresight and determination of the digital leader. The concept of digital leadership practice and its relationship with learning organizations and individual performance are examined in detail in this study. In this study, which examines the effect of digital leadership practice and learning organization relationship on individual performance, the relationship of demographic variables (age, education, status, seniority) with individual performance is also included.

In this study, the issue of whether individual performance perception differs significantly, based on demographic variables as well as digital leadership and learning organizations variables, was examined. The study is an electronic survey study and is based on those working in the banking sector throughout Turkey. Of the 234 people included in the study, 193 returned. The response rate of the questionnaires was calculated as 78.86%. This ratio was deemed sufficient to represent the mass.

In order to collect data in the research, the Information Leadership scale developed by Ulutaş and Arslan (2018) and consisting of 18 items to measure the perception of digital leadership, the Learning Organization Profile scale consisting of 36 items and adapted into Turkish by Şahin et al. (2014) to determine the perception of the learning organization, In order to determine the perception of individual performance, the Individual Performance Evaluation Scale consisting of 11 items and adapted into Turkish by Karakurum (2005) was used.

As a result of the pilot studies, the sub-dimensions of the scales were rearranged, but the number of statements was not reduced. The expressions in the measurement tools were made more understandable and the participant was provided with healthier answers while filling out the scale.

After the preliminary analyzes were made in the main study, some findings were obtained. The relationships between the average scores of the digital leadership scale and the learning organizations scale and the scores of the individual performance scale were examined by multiple linear regression analysis, and the first basic hypothesis of the study was confirmed. In other words, it has been concluded that the increase in the degree of interaction of the employees' digital leadership practice and learning organization perceptions will increase the individual performance perception scores of the employees in a positive way.

Within the scope of the research, four hypotheses were established to test whether the employees show a significant difference in their individual performance perception levels under the influence of demographic variables. As a result of the study, no statistically significant difference was found between the individual performance perceptions of the employees and the variables of age, education level, status and seniority. Therefore, the alternative hypothesis was

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

rejected. The information and findings obtained as a result of this study are insufficient to make generalizations. However, it is possible to argue that the said study enriches the conceptual structure of digital leadership practice for other studies.

In the literature review, very limited resources and information about the application of digital leadership have been found. In addition, no study has been found in which the subject is discussed together with the learning organization and individual performance.

From this point of view, more studies are needed to better define and investigate the concept of digital leadership, based on the criteria set forth in the research. If done so, it would be more acceptable for social science research.

With the implementation of digital applications in different sectors, it is necessary to determine in which subjects the sector differs from each other, taking into account the unique dynamics of the sector. Examining the subject together with different disciplines is important both for determining the areas of influence in the process and for other studies to be carried out.

References

[1] Abbatiello, A., Knight, M., Philpot, S., and Roy, I. (2017), Rewriting the rules for the digital age: 2017, Deloitte Global Human Capital Trends, UK: Deloitte University Press.
[2] Altınoz, M. (2008), The effect of office automation systems on individual performance. Selcuk University Journal of Social Sciences Institute, 20, p. 51-63
[3] Aybas, M. (2007). A research on organizational learning, information technologies and organizational context relations in Turkish businesses. Institute of Social Sciences, High License thesis, Dokuz Eylul University
[4] Befort, N., and Hattrup, K. (2003), Valuing task and contextual performance: experience, job roles, and ratings of the importance of job behaviors, Applied HRM Research , 8 (1), p. 17-32
[5] Büte, M. (2011), Etik iklim, örgütsel güven ve bireysel performans arasindaki ilişki. Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi, 25 (1), s. 171-192
[6] Cherry, K. (2019), The Major Leadership Theories: The Eight Major Theories of Leadership, https://www.verywellmind.com/leadership-theories-2795323
[7] Clerkin, C. (2015), Creative Leadership and Social Intelligence: The Keys to Leading in the Digital Age, Challenges, Key Contexts, and Emerging Trends. pp. 175-187
[8] Fore, C. W. (2013). Next generation leadership: Millennials as leaders. PhD Thesis. Minnesota, ABD: Capella University, ProQuest Dissertations Publishing

[9] Harvey, C., and Denton, J. (1999), To come of age: the antecedents of organizational learning. Journal of management studies, 36 (7), p. 897-918
[10] Hesse, A. (2018), Digitalization and Leadership - How Experienced Leaders Interpret Daily Realities in a Digital World, Proceedings of the 51st Hawaii International Conference on System Sciences, pp. 1853-1864
[11] Kesimli, İ. (2013), Liderlik davranış türleri, Kırklareli Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi , 2 (1), s. 1-10
[12] Marsick, V. J., and Watkins, K. E. (2003), Demonstrating the value of an organization's learning culture: the dimensions of the learning organization questionnaire, Advances in developing human resources, 5 (2), 132-151
[13] Matt, C., Hess, T., and Benlian, A. (2015, Ağustos 4), Digital transformation strategies, Business & Information Systems Engineering, 57 (5), p. 339-343
[14] Obgonna, E., and Harris, L. C. (2000), Leadership style, organizational culture and performance: empirical evidence from UK companies. The International Journal of Human Resource Management, 11 (4), p. 766-788.
[15] Qi, C., and Chau, P. Y. (2018), Will enterprise social networking systems promote knowledge management and organizational learning? An empirical study. Journal Of Organizational Computing and Electronic Commerce, 28 (1), p. 31-57
[16] Şimşeker, M., and Ünsar, S. (2008), Küreselleşme süreci ve liderlik, 3 (9), s. 1029-1045
[17] Sniderman, B., Monahan, K., McDowell, T., and Blanton, G. (2017), Fewer sleepless nights: How leaders can build a culture of responsibility in a digital age, UK: Deloitte Insights
[18] Soran, S., Serin, E., and Balkan, M. O. (2016), The effect of human resources management processes on performance: The mediating role of organizational learning and an application, Doğuş University Journal, 17 (1), p. 1-14
[19] Türetgen, İ. Ö., Ünsal, P., and Telman, N. (2004), Yöneticiler için liderlik özelliklerini ölçen bir ölçek geliştirme. Psikoloji Çalışmaları, 24, s. 25-44
[20] Wang, M., Vogel, D., and Ran, W. (2011), Creating a performance-oriented e-learning environment: A design science approach. Information & Management, 48 (7), p. 260- 269
[21] Wilson III, E. J. (2004), Leadership in the digital age. G. R. Goethals, G. Sorenson, & J. M. Burns, The Encyclopedia of Leadership, part 4, p. 858-861

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

SMART CITIES AND SOCIO-ECONOMIC DEVELOPMENT IN NIGERIA: EVIDENCE FROM SOME SELECTED COUNTRIES

Raheem Akanni Adewale OKEWALE[1], Abolaji Jamiu ATOBATELE[2]

[1] Department of Public Administration, Faculty of Management Science, Lagos State University, Ojo, Lagos, Nigeria, Tel.: +2347065250047, Email: raheem.okewale@lasu.edu.ng

[2] Department of Public Administration, Faculty of Administration, Ahmadu Bello University, Zaria, Tel.: +2347036844761, Email: abolaji561@gmail.com

How to cite: OKEWALE, R.A.A., & ATOBATELE, A.J. (2022). "Smart Cities and Socio-Economic Development in Nigeria: Evidence from some selected Countries." *Annals of Spiru Haret University. Economic Series, 22*(2), 105-122, doi: https://doi.org/10.26458/2226

Abstract

The rate at which cities are growing over decades with unprecedented increase in the use of utilities such as water, energy, education, housing, sanitation etc. calls for concern. The unprecedented population growth has led to the agitation for smart cities where little efforts will be utilized to achieve maximum output. However, the government of Nigeria has put in place some measures to achieving smart city concept that will assist the citizens to live better life that will lead to a robust socio-economic, despite this feat the country has not explored the concept maximally to increase better living that will engender a robust socio-economic development. Sequel to this background that this study examines the role plays by smart cities in ensuring socio-economic development in Nigeria. The secondary data used in this study was gathered from existing publications. Being a qualitative research, content analysis was employed in the interpretation of the data. It was revealed that smart city arrangement in Nigeria is poor, hence this affect socio-economic activities most especially in the areas of trade and commerce, education, security, health to mention but a few. The study therefore recommends that *government should encourage private sector through public private partnership to achieve this feat.*

Keywords: *smart cities; Nigeria; government; socio-economic; development; education.*

JEL Classification: O18

Introduction

Digital technology concepts have gone through different strata which are digital cities to intelligent cities and now smart cities. Smart city depends on digital or automated infrastructural facilities to building robotic transportation systems, hospital, schools, roads etc. Under the smart city arrangement, there is sophistication in terms of infrastructural facilities provided that assist the citizens to interact with one another through digital technology. According to Musa (2017) A city's infrastructure comprise complex systems, such as sewage treatment plants, water treatment plants, police stations, fire departments, utility services, schools, libraries, business, houses coupled with an urban complex infrastructure that help citizens' interaction and technological integration of the city's infrastructure. Technology helps to achieving city-officials interaction with the community and the city's infrastructure through real-time control systems, sensors, and collection of data from citizens (Poslad, Athen, Zhenchen, & Haibo, 2015).

Smart city adopts intelligent urban system to enhance socio-economic development so as to achieve unprecedented economic growth and development in the country. According to Musa (2017) data collection is key to ensure efficiency, which leads to optimization of the systems. A smart city provides technological solutions to city problems and increase better quality of life.

Smart city enhances the socio-economic activities such as reduction of grid lock, interaction over the smart devices to conduct businesses and engender harmonious environment due to sophistication of digital technology.

The world statement policy of 2010 in Shanghai: Better city, better life is a reflection of the importance giving to the smart cities in playing crucial roles to achieving sustainable socio-economic development. According to United Nation (2011) Shanghai declaration of October 31, 2010 highlights the importance of establishing cities of harmony where residents will domicile harmoniously with minimum efforts put in place to achieving maximum output. The importance of

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Socio-economic development to any country cannot be over-emphasized as it increases the standard living of the citizens. Socio-Economic development causes improvement and change in the activities of a society with resultant consequence on changes in economics enhancement and reduction in the level of poverty that affects the citizens. Socio-economic development means the improvement of people's lifestyles through improved education living standard of people and employment. It is the process of economic and social transformation based on environmental factors which include increase in the use of internet to advance day to day activities. Socio-economic development, therefore, is the process of social and economic development in a society but in Nigeria infrastructure and other ingredients of socio-economic development such as electricity, good road network, telecommunication, education and awareness are not adequate which is the reason smart city arrangement has not gained popularity to advance socio-economic activities in many cities. Infrastructural deficit manifest globally and identified as one of the major determinants of adequate and good urban settlement (Aigbokan, 1999; Otegbulu, 2011; UN-Habitat, 2015, 2015). Urban problem is the horizontal growth of a city's physical structures which present growth patterns that manifest major urban problems in both developed and developing countries (Adetokunbo & Emeka, 2015).

However, in Nigeria, most especially cities such as Abuja, Lagos, Ibadan, Kano, Port Harcourt etc. embrace the arrangement of smart city to conduct socio-economic activities but the arrangement is not enough as there are many places in the country that digital technology is lacking due to lack of infrastructure and unstable policy of the government. Many offices and cities in Nigeria have not keyed into this smart city arrangement properly to advance socio-economic activities. For instance, many cities are still adopting traditional system to control traffic. Also many places in Nigeria have not grown to the level where sophisticated digital technology are used to advance socio-economic activities in the areas of security, adequate generation of data for research etc. For instance anti-social behaviours committed on the streets cannot be tracked without security agents being present at the scene of the crime. Also in Nigeria, insurgency, criminal herdsmen have been difficult to arrest and decimate due to lack of sophisticated digital infrastructures that can track and expose them which is a direct opposite of what is happening in developed countries. For example in United States of America (USA) if the crime is committed anywhere the perpetrator finds it difficult to escape arrest because of high impact technology. Adeyeye (2010)opined that the current metropolitan growth in Nigeria manifest urban sprawl and traditional settlement that stimulate scattered population growth in which the available technology to improve these challenges are insufficient. Illegal structures, slum development, and informal settlements are the major characteristic of the Nigeria metropolis and other developing countries. Loss of life and property, urban insecurity, traditional settlement and slum developments are the physical characteristic of Nigerian metropolis (ARUP, 2014; Solis, 2012 quoted in Soyinka, Siu, Lawanson and Adeniji 2016). Unstable political economy in Nigeria has made many cities in the country to experience stagnancy as they are physically developed (structure) without increase in status. Apart from the Wi-Fi in Wuse Market provided by Google Station and Millenium Park, Abuja there are no other public places and facilities like library, market and building with internet provision in most cities (Ogunfuwa quoted in Oyedele, N.D).

However, many authors have written on the artificial intelligence, smart city, but there are few study on smart city and socio-economic development in Nigeria where evidences are drawn from Western Countries. It is against this backdrop that this study seeks to examine the role plays by smart cities in enhancing socio-economic development of Nigeria and to draw evidences from Korea, Canada, Japan and Denmarkin order to improve Nigeria smart city arrangement.

Review of Literatures

Literatures on smart cities and socio-economic development are reviewed empirically so as to bring out the views of the scholars on the subject matter.

Abdoullaev (2011) identified smart city as an urban settlement manifesting intelligent information systems, technology embedded infrastructure, transport systems, utilities, energy networks as provision for social infrastructures and good governance for its citizens.

According to Rode (2017) smart city concept has been in existence since the 90’s, then it focused on ecology and urban development but the in 2008, there was a shift in paradigm in which the word smart is used in the context of digital technology even till today.

Soyinka et al (2016) the smart infrastructure in Lagos can be adopted by developing blueprints that identify strategic areas for the redevelopment and integration of smart infrastructure concepts. Connectivity through technology mapping and linkages for adequate functionality should also be provided. The blueprints must be designed to manifest harmonious land uses within the same vicinity and develop the synergy with the public facilities such as schools, grocery stores and recreational facilities within these areas to advance sustainable residential areas. The land use development that accommodates smart and community infrastructures and its integration within the existing built-up areas of Lagos metropolis should be ensured. The infrastructures, public services, and building infrastructures should be integrated within existing vacant areas of Lagos via spot clearances. A practical example of such integrations with smart infrastructure concepts that should be encouraged includes the Shoprite at Ikeja and the jetty transport in Badore area of Eti-Osa LGA, but this integration should provide adequate technology and smart infrastructure concept.

Woherem and Odedra-Straub (2017) the establishment of a smart city is a journey completely dependent on the maturity status of each individual city and the availability of basic infrastructure, funding and skills. The study therefore recommends that tech-savry young population in combination with public private partnership (PPP), venture capital, tech hubs will be able to come up with smart applications that will make life a little easier and make government notice the mess their city dwellers have to survive in.

Shichiyakh, Klyuchnikov, Balashova, Novoselov, Novosyolova (2016) "smart city" is used throughout the world with a variety of contexts and has all sorts of practical aspects often 'smart city' referred to the use of information technologies in the urban environment and the life of citizens.

Musa (2017) indicated that smart city initiatives contribute directly and indirectly to the economic growth.

Ajala (2018) the application of the concept in Nigeria will be limited by the level of ICT infrastructure, absent of a national policy guideline and poor investment in transport infrastructure. The development of a national policy guideline for integrated transport development; establishment of a city structure that will coordinate and promoted investment with innovative funding that will support ICT- infrastructure in the transport sector.

Akujobi, Nwakanma and Ekeocha (2017) the growing model of smart urban housing patterns and street linkages, ability of security institutions to receive information on crime and enforce rapid response and smart intelligence gathering, revamping of old metering system to smart metering of electricity, water and other social services being provided by the Nigerian government remains a huge clog to actualization of the smart city initiatives. There should be synergies and review of developmental policies in Nigeria that will engender sustainable smartness that will help to enhance values.

According to Miller (2016) application of the smart infrastructure include the use of real-time information and the integration of urban system, multi-modal transport networks that are effective, efficient equitable movement of the people, goods, and services in a more social, environmental, and physically sustainable areas over a long period of time. It also includes the integration of all real-time information and activities with a viable effective digital technology to advance socio-economic activities.

An insight into the level of Nigerian Cities Development.

Nigerian cities such as Lagos, Abuja, Kano, Port Harcourt etc. are densely populated most especially Lagos and Kano State owing to rural-urban migration occasioned by the development of those cities. According to Oyedele (N.D) urban growth is enhanced by the emergence of local governments in the country with their corresponding headquarters experiencing major growth. Nigeria has 774 official local governments. The growth of these cities was further enhanced with the availability of revenue which afforded the local governments the opportunity to improve on infrastructures. The growth of these cities however has experienced poor road network, poor transportation, grid lock etc. caused by lack of proper planning. Supporting this view is Woherem et al (2017) African cities are haphazardly structured with poor infrastructure and poor service delivery. Salau quoted in Yakubu (2018) observes that Nigerian census conducted in 1952 regarded urban center as an area with the population of more than 5000 people. In contrast, the 1963 census was fixed at 20,000 people. Salau stressed that the economy of Nigeria in which urbanization has begun from was stagnant coupled with lower growth of industrialization which has a grave implication on unemployment, human and food insecurity etc. Oyeleye in Yakubu (2018) stresses that the 1970 oil boom and the operation of Ports in some parts of the country coupled with massive infrastructural development in the cities led to uncontrolled rural-urban migration with a view to have better life. The urban development plans in Nigeria 1960-1966focused its development plan on economic planning rather than aiming at resolving physical planning challenges. The second National Development Plan 1970-1974 was formulated to develop war ravaged Eastern parts of the country. The 1975-1980 plan brought a great relief by including certain policies that focused on environmental and rural development occasioned by the establishment of Federal Ministry of Housing, Urban Development and Environment. The greatest contribution of the Federal Government to Urban and Regional Planning was the

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

institutionalization of the concept of new towns which led to the emergence of Abuja, Onne, Satellite town and FESTAC town. It is important to note that outside the present Abuja City and the then celebrated FESTAC town are deteriorating due to lack of political will to sustain the policy thrust with the exception of Abuja that assumes smartness due to bias and political economy of national development in Nigeria. Also, World Bank made in-roads into the states for urban development programmes with site and services projects in Bauchi and Imo states that are struggling to development due to their current level of socio-economic and political development that failed to adopt smart digital technology in urban governance. In addition the fourth National Development Plan clearly stated the objective of Urban and Regional Planning by defining the role of physical planning as a mechanism to achieving national development objectives as well as putting forward some policy measures that were of planning interest (Adebayo, 1999). From 1999 to date Nigeria has adopted a number of strategies for national development and management which included National Economic Empowerment and Development Strategy (NEEDS) in 2003 that was domesticated in the State and Local Government. National Urban Development Policy (NUDP) in 2009 was charged with the responsibility of developing a dynamic system of urban settlements which will promote economic growth, promote efficient urban and regional development and ensure improvement in the standard of living of all Nigerians by (i) Restructuring all existing public institutions involved in urban management at the three tiers of Government and where necessary create new ones with a view to ensuring effective responses to the challenges of urbanization in Nigeria. (ii) Prepared regional, master plans, and development plans for all designated urban centers and growth centers within the context of National Physical Development Plan (iii) Integrate the urban development policy into the national economic policies of government (Akujobi, Nwakanma, and Ekeocha, 2017). Nevertheless, the herculean efforts are being made by the government and the private sector to advance the smart concept in Nigeria but the effort is still at the minimum level due to the level of infrastructure and government inconsistent policies. The emergence of sophisticated digital technology in Nigeria has not caused increase in the smart city arrangement that will lead to increase in socio-economic activities. Bansal, Shrivastava, & Singh; Belanche, Casaló, & Orús, quoted in Soyinka et al (2016) identified poverty, environmental pollution, infrastructure deficit and ineffective urban services etc. as challenges that mitigate against smart infrastructure development. (Bansal, Shrivastava, & Singh quoted in

Soyinka et al 2016) identifies six basic elements of smart infrastructure as benchmark for smart city classifications that will lead to socio-economic development to include; 1, the sources of renewable energy like wind energy, thermal power energy, solar energy etc., 2, smart grid for smarter city, 3, smart physical planning/land use morphology, such as compact city with mix land uses, diverse transportation choices, 4, smart eco-friendly environment, 5, intelligent cities, smart transportation, and 6, ICT as the major factors.

Concept of Nigeria Smart City Initiative

The Nigeria Smart City Summit gave birth to The Nigeria Smart City Initiative acronym NSCI was held in Abuja, Nigeria on 8th August, 2017 under the auspices of the Federal Ministry of Communication in collaboration with AFRITEX Initiative. The summit emphasized on how to launch viable strategies that will transform Nigerian cities from their informal settlements to modern and responsive cities that is capable of meeting the needs and aspirations of the citizens presently and in the future. The plans of NSCI was to heavily rely on application of ICT and smart technologies in the administration, development and management of Nigerian cities so as to achieve effective transport sector, secured environment, decent affordable housing, efficient sanitary and waste disposal system, urban regeneration and upgrade in the cities. The Initiative intends to capture more than 50 percent of all Nigerian cities. (National Information Technology Development Agency, NITDA). The Federal Government of Nigeria (FGN) is showing commitment to the provision of infrastructures and application of smart concepts that will assist to transform urban areas into functional and responsive cities that are capable of meeting the needs of the city dwellers in order to achieve socio-economic development.

The reliance on ICT for national physical development planning will give country a facelift to become technology hub of African sub region. The government of Nigeria put in place many programmes and policy guidelines that gave impetus to the successful implementation of the NSCI. The Ministries, Departments and Agencies at the Federal, States, Local Government Areas, private sector participants, professional associations and NGOs keyed in into this arrangement. It became mandatory for all MDAs in the country to embrace e-governance in the conduct of their statutory functions. Also, government e-learning platform for public servants Public Service Learning Management System (PSLMS) which aim at building smart public servants for the country was initiated. More so, this arrangement gave birth to the Government Integrated Financial Management Information System (GIFMIS), Treasury Single Accounts (TSA), Integrated Payroll and Personnel Information System (IPPIS) e-payment system and the effort towards cashless economy thereby enhancing the economic capacity and growth potentialities of the cities and the urban centres. The Nigeria ICT Roadmap covered 2017 to 2020 which aimed at transforming the Nigerian economic, social, political and interactive environment to be fully ICT compliant and information driven by the year 2020 (Mansur, 2019).

Strategies Adopted by the Governmentto Promote Smart City

In order to advance the smart city arrangement, various strategies are put in place which include the following

National Board for Technology Incubation (NBTI) is technology Hubs that is government-based support programme with a view to assisting the entrepreneurs to develop technology based firms with ten technology incubation centres spread across the Nigeria. There are more than 50 registered technology hubs for training millions of young Nigerian entrepreneurs in ICT and computer applications, programming, analytics etc.

Nigerian Digital Literacy Council was established developing guidelines and standards for the actualization and improving the digital literacy of Nigerians so as to be relevant in the global information driven environment.

National Information Technology Agency (NITDA) is the agency charged with the responsibility of enforcing compliance with Public Information Access (PIA) protocol.

PIA is saddled with the responsibility of overseeing the provision of internet services in public places or in the areas where the public have unrestricted access. The government plans to provide free internet service in many public areas in the country.

Also, there are many technology based institutions charged with the responsibility of training Nigerians on the digital technology which include Africa Regional Institute for Geospatial Information Science and Technology AFRIGIST, National Space Research and Development Agency (NSRDA), Federal School of Surveying FSS, Universities and Polytechnics teaching courses on capacity building that is needed for the realization of Smart Cities arrangement.

The government continues to show commitment on GNSS infrastructures such as CORS and earth observation satellites. Many active CORS network are strategically located in the country, streaming data to providers and users of spatial information in the country. Data from the 2.5 meter resolution EOS Nigeria Sat – 2 has been sufficient for supervising and monitoring of many physical development sectors.

Private participation in the provision of enabling environment for the growth of Smart City. In 2013Google Maps introduced turn – by- turn navigation for subscribers of Google Map for

Mobile. Real traffic updates was introduced in 2015 so as to help commuters navigate busy traffic conditions and in July 2017 Google Map debut Street View in Nigeria for over 10,000kilometres of road networks particularly in Lagos. The project is being extended to many urban centres in the country (Mansur, 2019).

Insight into Smart City in Nigeria.

The former Governor of Lagos State Akinwunmi Ambode announce at the Conference tagged Lagos at 50 in May 2017 which is themed ‘Towards a Smart City: Preparing for the next 50 years of prosperity’ with keynote being delivered by the Oxford Professor, Paul Collier. Lagos State is the commercial capital of Nigeria with more than 20 million inhabitants. It is a City with great potentials, it has a Gross Domestic Product (GDP) of about US$136bn in 2017. According to Africa Business Insight (ABI) (2017) Lagos economy is adjudged to contribute immensely to the growth of Nigerian economy and earns the highest annual tax revenue of all States in the country and the Federal Capital Territory. The technological advancement in Lagos has helped in bringing out the potentials of the city through Savvy entrepreneur that built the Computer Village where information and communication technology (ICT) can be found. According to ABI (2017) Computer Village in Lagos is adjudged the largest ICT accessory market in Africa. In order to make Lagos artificial intelligent city, the government installed free Wi-Fi connectivity in the new Bus Rapid Transist (BRT), Ndubuisi Kanu Park in Alausa, Ikeja City Shopping Mall. Also the government has upgraded Lagos Enterprise Geographic Information System which adopt technology in monitoring and evaluating of public infrastructure, improve government citizen relationship inter alia. More so, there has been installation of information highway metro fiber and 4G LTE networks across the State to facilitate e-services such as e-health, e-agriculture etc. Also the former governor of Lagos Akinwunmi Ambode announced plan to transform Yaba into a major technology hub. The smart city is being built in Ibeju Lekki on the outskirts of Lagos. Apart from the smart city Lagos which has got to the advanced stages, Eko Atlantic City has also begun, which is created from sand-filled area of Atlantic Ocean in Victoria Island. The Lagos Smart City is a project by the State Government with a cluster of offices and residential buildings for ICT business. Another Smart City innovation technology is located in Lekki-Epe Expressway which will provide physical and ICT infrastructure, energy to the country. Another Smart City initiative is currently going through on Lekki-Epe Expressway with $300million initiated by Imperial International Business City (IIBC) and promoted by one of the royal families in Lagos. This project is expected to be completed by 2021 with its potential to creating eco-friendly smart business city (ABI, 2017). The diagram below shows the level of artificial intelligent in Lagos State of Nigeria. This has been evident as laudable project have been embarked upon as part of her city smartness revolution which include the construction of the Eko Atlantic city, activation of toll-free emergency services, city heritage MOU it signed with Dubai and free Wi-Fi in public parks and the ongoing construction of 10 lane light project along Lagos- Badagry express way, etc (Adegoriola, Akinwande and Muraina, N.D).

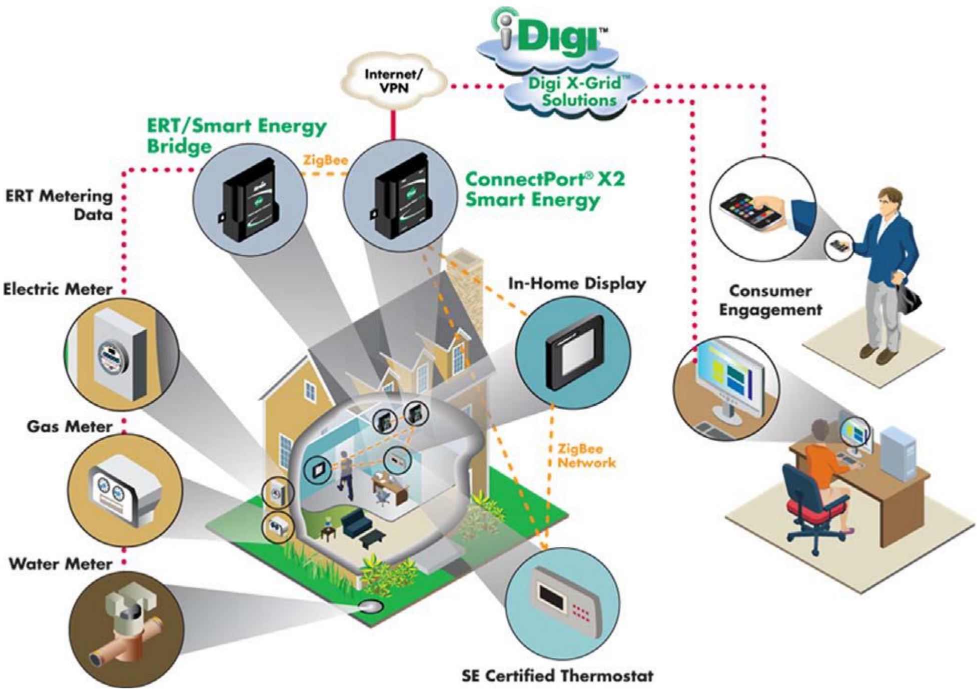
The picture below is adopted from Africa Business Insight (2017).

Contributions of Smart City Concept to the Development of Nigeria

Nigeria has a significant number of people that have access to internet facilities to interact with their environment and world at large. In Nigeria smart city technology is used to perform the following functions-

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022



Source: Adopted from Soyinka et al (2016)

1.Banking – this type of technology has been adopted by the commercial banks in the country in order to facilitate good number of transactions outside the banking hall and beyond banking hours. The services include collection of money, buying of recharge cards, transfer of money to another bank etc. through Automated Teller Machine (ATM)

2. E-Services-most of the applications such as jobs, company registration, tax payment, educational registrations are done electronically. Take for instance, students pay their registration fees through automation and this has saved the students the trouble of wasting time in the Bank. In Ahmadu Bello University most services are rendered through automation which include payment of hostel fees.

3. E-Transportation- there have been emergence of commercial cars, and bikes called Uber that operate through internet to convey their passengers from one place to another. Smart bus is another area where Lagos State made impact through Bus

Rapid Transit (BRT) which provides internet services to the passengers on board. According to Adegoriola et al (N.D) the mode of transportation in the state is mainly by road with 90% of total passengers and goods moved through this means. The state is endowed with natural water ways for ferry services and federal rail network which will be complemented by the emerging state rail network. The demand for trips in the Lagos megacity region by all modes (including walking) was estimated at 22 million per day with walk trips accounting for 40% of total trips in metropolitan Lagos.

4. E-Commerce-Nigerians have adopted transaction of goods and services over the internet. This can be seen as re-inventing the government explained by Gaebler and Osborne in the evolution of Public Administration in the 1990 and beyond. In Nigeria goods and services are transacted through platforms such as JiJi, Jumia, Konga etc. over the internet'. According to Mansur (2019) Smart cities support national economy by creating new businesses and customers. Smart traffic navigation, goods and vehicles tracking systems, intelligent traffic management, automatic ticketing systems, smart parking etc. generate wealth, increase government revenue, save man hours and improved the quality of lives of citizens. A study conducted by a research group Alpha Beta (supported by Google) and presented in October 2017 on Economic Impact of Geospatial Services in Nigeria indicated that digital maps reduced travel time of Nigerians by about 8% and saves over Naira 190b annually. The study found, value digital maps at an average of N22, 131 per year per user which translates to N1781billion per year for all users in the country.

5. Smart Houses- in a bid to increase socio-economic development of Nigeria and make people live a good life, many smart cities arrangements have begun in Lagos which include Eko Atlantic City in Victoria Island.

Challenges of Smart Cities in Nigeria

1.Lack of basic infrastructure: inaccessibility to basic infrastructure such as electricity and piped water, education etc in urban cities in developing countries will make smart city concept difficult due to lower access to communication technologies, access to the digital education and skills needed to initiate and improve this concept will be a major challenge. According to Apashile (2019) "There is clearly access to basic services such as electricity and piped water in urban cities in developing countries. However much of the population have lower access the communication technologies. Access to the digital education and skills needs to be improved. This a major challenge when planning smart city projects"

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

2. Problem of inclusion- This is a fundamental issue that has to be addressed if smart cities are to be adopted. Since the success of smart cities lie among the populace that have access to the internet connections, but in Nigeria the cost of internet connectivity is high therefore not everybody can afford the price. According to Yakubu (2018) the gap between the rich and the poor in terms of wealth and social status pose a challenge to the development of smart cities as it relates to digital inclusion

3. Environmental problem- Most of the Nigeria cities are not planned, houses are built haphazardly coupled with bad drainage system. There are no good roads network and the streets in most cities do not comply with the town planning arrangement. These problems constitute impediment to smart city concept. According to Soyinka et al (2016) the environmental situation of Ikeja and Eti-Osa Local government manifest slow development with peculiar growth challenges, transport challenges, slum, inadequate infrastructure, dispersed and uncoordinated infrastructure. Assessing the environmental condition of Ikeja and Eti-Osa LGA shows a critically challenged sprawl settlement. The environmental conditions of the study area is a sprawl development manifesting environmental challenges such as bad drainage with flooded areas, bad roads with several potholes and traffic challenges, littered dirt, haphazard building arrangement, and inadequate environmental conditions.

Evidences of Smart City Concept in some selected Countries

In order to improve the lives of the people and socio-economic development, many cities in Europe take advantage of smart city arrangement with the adoption of smart lighting, use of technology to enhance gridlock, Wi-fi access points, use of smart phones and appliances, smart grid technologies etc. Below are the cities in Europe where smart city arrangements are adopted.

Korea: Smart cities concept in Korea includes four main pillars which are research and development; the Smart Solution Challenge; deregulation and national pilot programme purposely for smart cities. The feat recorded on smart city initiative can be attributed to the high level of smartphones usage (95% of Koreans use a mobile phone), compact urban development and the development of the IT industrial ecosystem. Also, the emergence of local governments' initiatives, the creation of dedicated smart city teams within local administrations, citizen engagement and rapid corporate growth have been responsible to the success of the smart city initiative. Korea faces three main concerns: privacy; the smart divide;

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

and cost. Korea is addressing the smart divide through public CCTV networks and integrated social services. For example, SK Telecom and the Korea Land and Housing Corporation (LH) work together to equip the elderly with a speaker that recognises their voice and provides them with information, entertainment and company.

Japan: sees smart cities as “a sustainable city or region with the use of ICT and other new technologies to solving various challenges she encounters and manages herself so as to achieve overall effectiveness. Also, in 2019, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) supported 15 ‘Leading Model Projects’ and 23 ‘Prioritised Projects for Implementation that are based on consortia with the private sector and local governments to solving urban and regional challenges via new technologies and data. MLIT and other ministries responsible for 71 consortia which have sufficient capability will support them through a public-private council. The idea behind these projects is to galvanise the cities to take their own initiatives and respond to the challenges of the places that have been left behind.

The Smart Cities concept in **Canada** brought about a competition amongst the local, regional governments and indigenous communities, with the objective of stimulating the communities to adopt a smart city approach in order to improve the lives of their residents through innovation, data and connected technology. This competition was initiated to engage all communities, including rural and remote communities that have little or no access to the internet. The Challenge offers four prizes up to CAD 50 million, which are open to all communities irrespective of their population size. To ensure that all communities participate, the government put in place a series of incentives to assist the small cities build up capacity and develop their proposals. In total, the government received 130 applications covering a wide range of solutions in areas such as food security, reducing isolation of the senior population, integration of migrants, and accessibility for people with disabilities. One of the main aspects of the competition is that all ideas have to be shared and be applicable to other communities.

Denmark: The Ministry of Transport, Building, and Housing and the Danish Business Authority consider “Smart City” as an evolving concept: At the beginning, the concept limited to governmental issues especially in the area of environmental, energy and infrastructure on how information and communication technologies can improve urban functionality. Later, all other areas of welfare keyed into the Smart City concept, for example in business development,

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

innovation, citizen involvement, culture, healthcare and social services, the use of data and digital platforms assist the smart initiatives (OECD, 2020).

The Prototype of Smart City Technology.

The diagram below shows different arrangement that are combined together to achieving smart city

It is found out that smart city initiative requires the maturity of the leadership and availabilities of basic infrastructure, funding and skills that will enable the people to interact with their environment effectively

The study also reveals that smart city arrangement will help to enhance socio-economic development. Through these initiatives many business outfit will rise which will stimulate the economy to achieve rapid growth. Supporting this view is Musa (2017).

The study found out that through smart city initiative, over utilization of infrastructural facilities will be reduced, security institutions will be enhanced which reduce criminal activities to the barest minimal, and grid lock will be reduced. Supporting this view is Akujobi et al (2017).

It will increase access to the database making research interesting and more reliable coupled with availability of information on the crime and history of the criminals.

Conclusion and Recommendations

The adoption of smart city initiatives in most cities of the world and its enormous advantages have been an eye opener to many cities in Africa, Asia and Latin America. Also various researches conducted have proved that the adoption of smart city technology will not only reduce crime rate but will improve commerce and trade, education, governance etc. that will have positive impact on multiplier effect, hence this will increase the economic growth coupled with adoption of robust cultural, political, social and economic structural model that will further lead to socio-economic development. The study therefore recommends that government should intensify efforts by providing infrastructural facilities and linkages in form of high level technology that will stimulate private sector to continue to contribute more quotas to the development of smart city initiatives through Public Private Partnership arrangement (PPP).

Government should provide high level technology that will make the differentiations to be integrated effectively and efficiently which will reduce crime, grid lock, improve waste management, and revamp education and health sectors.

References

[1] African Business Insight (2017) Smart Lagos: Status, Prospect and Opportunities. www.howwemadeitinafrica.com.

[2] Ajala, A.T (2018) Conceptualizing Smart City for the Development of Nigeria's Urban Transportation. *Advances in Multidisciplinary and Scientific Research 4(2) 66-72*

[3] Akujobi, C.T; Nwakanma, U.E and Ekeocha, O.E (2017) Role of Smart City in Sustaining Urban Development in Nigeria. *Journal of Applied Science and Development 8(1) 18-42*

[4] Allen, P.M (1995) Cities and Regions as Evolutionary Complex Systems. *Published in Geographical System 4,103-130*

[5] *Azkuna I (2012)* Smart Cities Study*: International study on the Situation of ICT, Innovation and Knowledge in Cities.* Retrieved from the Committee of Digital and Knowledge-based Cities

[6] Batty,M (2010) Environment and Planning B: Planning and Design, 39, 191-193

[7] Harrison, C and Donnelly I.A (ND) A Theory of Smart Cities. *Proceedings of the 55th Annual Meeting of ISS, 55(1)*
[8] Mansur, K. M (2019). Nigeria Smart City Initiatives (Nsci) the Geospatial Perspectives**.** Nigeria Smart City Initiatives (NSCI). *The Geospatial Perspectives (9946)*. FIG Working Geospatial information for a smarter life and environmental resilience. Hanoi, Vietnam, April 22–26.
[9] Matin J, Simon J; Daan, S; Changjie Z; Margot W (2015) Low Carbon-Eco-Knowledge Cities: Making Sense of a Multitude of Concepts Promoting Sustainable Urbanization. *Journal of Cleaner Production*
[10] Musa, W (2017) Impact of Smart City Initiatives on Cities' Local Economic Development. *A Published Thesis presented to the Graduate Faculty of the Fort Hays State University* in partial fulfillment of the requirement for the degree of Master of Labral Studies
[11] OECD (2020). Smart City and Inclusive Growth
[12] *Portugali, J (2000) Self-Organization and Cities.* Springer Verlag, Heidelberg
[13] Rode, P. (2017) accessed 21 July 2021. Available at: http://www.lse.ac.uk/lse-cities/People/philipp-rode/Philipp-Rode?from_serp=1
[14] Shichiyakh, R.A; Klyuchnikov, D.A; Balashova S.P; Novoselov, S.A and Novosyolova, N.N (2016) Smart City as the Basic Construct of the Socio-Economic Development of Territories. *International Journal of Economics and Financial Issues 6(SI) 157-162*
[15] Soyinka, O: Siu, K.W.M: Lawanson T and Adeniji, O (2016). Assessing smart infrastructure for sustainable urban development in the Lagos metropolis. *Journal of Urban Management 5*, 52-64.
[16] *United Nations (2011) World Urbanization Prospects; the 2011 revision highlights.* ESA/P/WP/224, Department of Economic and Social Affairs Populations Division, United Nation, New York.
[17] Woherem E.E; Odedra-Straub, M (2017) Potentials and Challenges of Developing Smart Cities in Africa. *Circulation in Computer Science 2(4) 27-39*
[18] Yakubu, K.N (2018) *Prospect and Challenges of Smart City Development in Nigeria.* Research Gate
[19] Adebayo, A. A. (1999): Climate II: Rainfall in: Adebayo, A. A. and Tukur, A. L. (Eds), State in Maps, Department of Geography Federal University of Yola and Paraclete publishers. 23-26

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

BIG DATA: A SOURCE OF COMPETITIVE ADVANTAGE

Bianca RUSU[1], Lăcrămioara HURLOIU[1], Iulian HURLOIU[1], Marinela GEAMĂNU[1]

[1] Spiru Haret University, Faculty of Economic Sciences, Bucharest, 46 G Fabricii Street, District 6, Bucharest, Romania, Tel./Fax: +40213169793, Email: se_rusub@spiruharet.ro, hlacra@yahoo.com, iulian.hurloiu@spiruharet.ro, geamanu_marinela@yahoo.com.au

How to cite: RUSU, B., HURLOIU, L., HURLOIU, I., & GEAMĂNU, M. (2022). "Big Data: A Source of Competitive Advantage." *Annals of Spiru Haret University. Economic Series, 21*(4), 123-129, doi: https://doi.org/10.26458/2227

Abstract

In a business environment that constantly and rapidly changes, future prediction becomes more important than the simple visualization of historical or current perspectives. For effective future prediction, data analysis using statistical and predictive modelling techniques may be applied to enhance and support the organization's business strategy. Therefore, the effective use of data is becoming the basis of competition. Big data fundamentally change the way businesses compete and operate. Companies that invest in and successfully derive value from their data have a distinct advantage over their competitors. This performance gap will continue to grow as more relevant data is generated and the technologies that enable faster, easier data analysis continue to develop.

Keywords: *big data; analytics; technology; volume; variety; velocity; veracity; structured data; unstructured data.*

JEL Classification: O31, O 33

What is big data?

Evolving technology has brought data analysis out of IT backrooms, and extended the potential of using data-driven results into every facet of an organization. However, while advances in software and hardware have enabled the age of big data, technology is not the only consideration. Companies need to take a holistic view that recognizes that success is built upon the integration of people, process, technology and data; this means being able to incorporate data into their business routines, their strategy and their daily operations.

Organizations must understand what insights they need in order to make good strategic and operational decisions. The first part of the challenge is sorting through all of the available data to identify trends and correlations that will drive beneficial changes in business behaviour. The next step is enriching this organizational information with that from sources outside the enterprise; this will include familiar big data sources, such as those created and stored online.

The collection and aggregation of big data, and other information from outside the enterprise, enables the business to develop their own analytic capacity and capability, which for many years has only been available to a few larger organizations. Big data has the potential to transform almost every aspect of business, from research and development to sales and marketing and supply-chain management, and to provide new opportunities for growth.

Big data refers to the dynamic, large and disparate volumes of data being created by people, tools and machines; it requires new, innovative and scalable technology to collect, host and analytically process the vast amount of data gathered in order to derive real-time business insights that relate to consumers, risk, profit, performance, productivity management and enhanced shareholder value.

Big data characteristics

Big data includes information generated from social media, data from internet-enabled devices (including smartphones and tablets), machine data, video and voice recordings, and the continued preservation and logging of structured and unstructured data. It is typically characterized by the five “V’s”:

a) Volume

The amount of data being created is vast compared to traditional data sources. Volume is like the base of big data, as it is the initial size and amount of data that is collected. If the volume of data is large enough, it can be considered big data. What is considered to be big data is relative, though, and will change depending on the available computing power that's on the market. Some examples of types of data that large companies typically store include:

- Retailers: via loyalty cards being swiped at checkouts (details of all purchases made, when, where, how the customer paid, use of coupons) or via websites (every product the customer had looked at, every page had visited, every product that had ever bought etc)
- Social media (e.g. Facebook, Twitter): friends and contacts, postings made, location when postings were made, photographs etc
- Mobile phone companies: numbers ranged, texts send (which can be automatically scanned for key words), every location the phone has ever been whilst switched on, browsing habits or voice mails
- Internet providers and browser providers: every site and every page visited, information about all downloads and all emails, search terms which were entered.
- Banking systems: every receipt, payment, credit card information (amount, date, retailer, location), location of ATM machines used

b) Variety

Data comes from different sources and is being created by machines as well as people. An organization might obtain data from a number of different data sources, which may vary in value. Data can come from sources in and outside an enterprise as well. The challenge in variety concerns the standardization and distribution of all data being collected. Collected data can be unstructured or structured in nature.

Structured data: this data is stored within defined fields (numerical, text, date etc) often with defined lengths, within a defined record, in a file of similar records. Structured data requires a model of the types and format of business data that will be recorded and how the data will be stored, processed and accessed. This is called a data model. Designing the model defines and limits the data which can be collected and stored, and the processing that can be performed on it. An example of structured data is found in banking systems, which record the receipts and payments from current account: date, amount, receipt/payment, short explanations such as payee or source of the money. Structured data is easily accessible by well-established database structured query languages.

Unstructured data: refers to information that does not have a pre-defined data-model. It comes in all shapes and sizes and it is this variety and irregularity which makes it difficult to store in a way that will allow it to be analysed, searched or otherwise used. An often-quoted statistic is that 80% of business data is unstructured, residing it in word processor documents, spreadsheets, PowerPoint files, audio, video, social media interactions and map data.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

c) Velocity

Data is being generated extremely fast, a process that never stops, even while people sleep. It refers to how quickly data is generated and how quickly that data moves. This is an important aspect for companies need that need their data to flow quickly, so it's available at the right times to make the best business decisions possible. An organization that uses big data will have a large and continuous flow of data that is being created and sent to its end destination. Data could flow from sources such as machines, networks, smartphones or social media. This data needs to be digested and analysed quickly, and sometimes in near real time.

As an example, in healthcare, there are many medical devices made today to monitor patients and collect data. From in-hospital medical equipment to wearable devices, collected data needs to be sent to its destination and analysed quickly.

d) Veracity

Big data is sourced from many different places, as a result the quality (veracity) of the data it needs to be tested. Gathered data could have missing pieces, may be inaccurate or may not be able to provide real, valuable insight. Veracity, overall, refers to the level of trust there is in the collected data. Data can sometimes become messy and difficult to use. A large amount of data can cause more confusion than insights if it's incomplete.

For example, concerning the medical field, if data about what drugs a patient is taking is incomplete, then the patient's life may be endangered.

e) Value

The last V in the 5 V's of big data is value. This refers to the value that big data can provide, and it relates directly to what organizations can do with that collected data. Being able to pull value from big data is a requirement, as the value of big data increases significantly depending on the insights that can be gained from them. Organizations can use the same big data tools to gather and analyse the data, but how they derive value from that data should be unique to them.

Big data and analytics

Big data poses both opportunities and challenges for businesses. In order to extract value from big data, it must be processed and analysed in a timely manner, and the results need to be available in such a way as to be able to effect positive change or influence business decisions. The effectiveness also relies on an organization having the right combination of people, process and technology.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

The processing of big data is generally known as big data analytics and includes: data mining (analysing data to identify patterns and establish relationships such as associations, sequences and correlations), predictive analytics (a type of data mining which aims to predict future events), text analytics (scanning text such as emails and word processing documents to extract useful information), statistical analytics (used to identify trends, correlations and changes in behaviour).

By definition, analytics is the discovery and communication of meaningful patterns in data. For a business, analytics should be viewed as the extensive use of data, statistical and quantitative analysis, using explanatory and predictive models to drive fact-based business management decisions and actions.

Analytics helps to optimize key processes, functions and roles. It can be leveraged to aggregate both internal and external data. It enables organizations to meet stakeholder reporting demands, manage massive data volumes, create market advantages, manage risk, improve controls and, ultimately, enhance organizational performance by turning information into intelligence.

The benefits and risks of big data

While there is no doubt that the big data revolution has created substantial benefits to businesses and consumers alike, there are commensurate risks that go along with using big data. The need to secure sensitive data, to protect private information and to manage data quality, exists whether data sets are big or small. However, the specific properties of big data (volume, variety, velocity, veracity, value) create new types of risks that necessitate a comprehensive strategy to enable a company to utilize big data while avoiding the pitfalls. This should be done in a prioritized fashion so that companies can start to realize the benefits of big data in step with managing the risks.

Big data overcomes traditional restraints in a cost-effective manner and opens opportunities to ingest, store and process data from new sources such as external social media data, market data, communications, interaction with customers via digital channels. By some estimates, more than 80% of the data within organizations is unstructured and unfit for traditional processing. Using big data will enable the processing of this unstructured data and increased system intelligence which can be used to improve performance in sales, increase understanding of customer needs, reinforce the internal risk management function, support marketing initiatives and enhance fraud monitoring.

Big data capability allows organizations to integrate multiple data sources with relatively low effort in a short timeframe. Combined with a lower cost of storage per

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

gigabyte, this enables organizations to build, for example, a holistic view of customers by shifting customer data from various separate business departments into a single infrastructure, and then to run consolidated analytics and reporting on it.

Big data technologies release organizations from the traditional accuracy vs. cost challenge by enabling them to store data at the lowest level of detail, keeping all data history under reasonable costs and with less effort.

However, big data poses a variety of risk issues. Risks often include those associated with storage and retention of large volumes of data, data ownership and quality, information security, reputational risks and various regulatory requirements including privacy issues. The main risks of using big data include:

- Cost: It is expensive to establish the hardware and analytical software needed, though these costs are continually falling.
- Regulation: Some countries and cultures worry about the amount of information that is being collected and have passed laws governing its collection, storage and use. Breaking a law can have serious reputational and punitive consequences.
- Loss and theft of data: Apart from the consequences arising from regulatory breaches as mentioned above, companies might find themselves open to civil legal action if data were stolen and individuals suffered as a consequence.
- Incorrect data (veracity): If the data held is incorrect or out of date incorrect conclusions are likely. Even if the data is correct, some correlations might be spurious leading to false positive results.

Effectively managing these risks will require companies to revisit governance structures and frameworks in order to allow for the effective and timely identification and assessment of risks in order to make informed risk/reward decisions.

Conclusion

By applying analysis of big data to pressing business issues, companies are reshaping their operations and accelerating their business results. As its potential becomes more evident, big data will transform every aspect of the organisation, from strategy and business model design to marketing, product development, operations and more.

Over time, organisations will become far more data-driven in how they make decisions, develop products and services, and interact with customers, employees and stakeholders at all levels. Companies that move quickly to capitalise on the potential of big data will often gain ‘first mover’ advantage, enabling them to innovate in ways that are difficult to replicate.

References

[1] Lăcrămioara Rodica Hurloiu, Bianca Florentina Rusu, Ion Iulian Hurloiu, Alexandrina Meruţă - Auditul financiar statutar, Editura Print Caro, Chişinău, 2018.
[2] ACCA, 2018, Big data - part 1 and part 2, Technical articles,
[3] Alexander S. Gillis, 2021, The 5 V's of big data, Technical article,
[4] Lăcrămioara Hurloiu, Burtea Elena, Preda Bianca, Hurloiu Ion, Şerban Măriuţă, Meruţă Alexandrina, Ştefan Raluca, Documentele financiar contabile-management, control, audit, clasificare şi securitate, Editura ULIM, Chişinău, 2014
[5] Bernard Marr, John Wiley, Big Data: Using SMART Big Data, Analytics and Metrics To Make Better Decisions and Improve Performance, Sons Publishing House, United Kingdom, 2015
[6] Viktor Mayer-Schönberger; Kenneth Cukier, Big data: The Essential Guida to work, life and learning in the age of insight, John Murry Publishers, United Kingdom, 2013
[7] Hurloiu Lăcrămioara Rodica, Preda Bianca Florentina, Reglementări și proceduri actuale privind auditul financiar-contabil, Editura Fundaţiei România de Mâine, Bucureşti, 2013
[8] Preda Bianca, Hurloiu Lăcrămioara, Reglementări şi procedure actuale privind auditul financiar-contabil, Editura Fundaţiei România de Mâine, Bucureşti, 2013
[9] ISA – StandardeleInternaţionale de Audit, 2008, www.cafr.ro
[10] Boulescu Mircea, Bârnea Corneliu, Audit financiar, Ediţia a III-a, EdituraFundaţieiRomânia de Mâine, Bucureşti, 2007;
[11] Nica Dumitru (coordonator), Evaluarea întreprinderii, Editura Fundaţiei România de Mâine, Bucureşti, 2007;
[12] Ordonanţa de Urgenţă a Guvernului nr. 75/1999 privind activitatea de audit financiar. Republicată: M.O. nr. 598 din 22 august 2003.
[13] Hotărârea Guvernului nr. 983/2004 pentru aprobarea Regula-mentului de organizare şi funcţionare a Camerei Auditorilor Financiari din România. M.O. nr. 634 din 13 iulie 2004.
[14] Hotărârea nr. 30/2004 a Consiliului Camerei Auditorilor Financiari din România pentru aprobarea Codului privind conduita etică şi profesională în domeniul auditului financiar elaborat de Federaţia Internaţională a Contabililor (IFAC), ediţia 2003. M.O. nr. 966 din 21 octombrie 2004.
[15] Hotărârea nr. 45/2004 a Consiliului Camerei Auditorilor Financiari din România pentru aprobarea Normelor privind asigurarea pentru risc profesional. M.O. nr. 339 din 21 mai 2005.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS) AND FINANCIAL PERFORMANCE OF SELECTED MONEY DEPOSIT BANKS IN NIGERIA

Dorcas Adebola BABATUNDE
Department of Accounting, Faculty of Management Sciences, Federal University Oye-Ekiti, Ekiti State-Nigeria,
Email: adebola.babatunde@fuoye.edu.ng

How to cite: BABATUNDE, D.A. (2022). "International Financial Reporting Standards (IFRS) and Financial Performance of Selected Money Deposit Banks in Nigeria." *Annals of Spiru Haret University. Economic Series*, 22(2), 131-147, doi: https://doi.org/10.26458/2228

ABSTRACT

This study examined International Financial Reporting Standards (IFRS) and financial performance of selected money deposit banks in Nigeria. Specifically, the study analyzed the effect of adoption of IFRS on profit after tax (PAT), return on asset (ROA) and return on equity (ROE) of 10 randomly deposit money banks over the period of 14 years covering Pre-IFRS and IFRS era. Data used for the study were collected from the financial statements of the selected banks. Panel estimation techniques including pooled OLS, fixed effect and random effect estimation were employed, after which the most consistent and efficient estimation result was evaluated using restricted F-test and Hausman test. Result showed that adoption of international financial reporting standards has positive effect on all the measures of performance, starting from profit after tax, return on asset and return on equity with reported coefficient estimate of 24.8241 ($p < 0.05$) for PAT model; 3.566556 ($p > 0.05$) for ROA model and 232.5723 ($p > 0.05$) for ROE model respectively. This study established that adoption of international financial reporting standard explain a notable percentage of systematic variation in the performance of deposit money banks especially when measured in terms of profit after tax, and concluded that adoption of international best practices of reporting (IFRS) promoted improved performance of firms in Nigeria banking industry view *from the perspectives of profitability as well as return on investment of asset and equity. Hence, regulatory authorities in Nigeria banking industries should devise a mechanism for evaluation consistency of deposit money banks as torching adherence to international standards of reporting. Management and auditors of accounting report need to work together at tightening compliance to ensure better performance impact of IFRS adoption. Also, Financial Reporting Council of Nigeria should further harmonize their operation in the bit to sustain proper check and balances needed to ensure coherence in the regulatory framework necessary for proper adoption of IFRS in the country*

Keyword: *International Financial Reporting Standards (IFRS); deposit money banks (DMB); financial performance; Nigeria.*

JEL Classification: G21

1.0 INTRODUCTION

International Financial Reporting Standards (IFRS) is an effective tool for accounting and financial reports consideration amidst organizations, investors, financial analysts, regulators, auditors, shareholders and creditors. It enables each stakeholder to access the performance and value of an organization through proper evaluation of financial ratio and helps to respond positively to the continuous increase in globalization of capital market and international trade as a whole (Eriki, Modebe, Okoye & Erin, 2017). International Financial Reporting Standard enhances reduction in the cost of capital and includes increase in market liquidity and equity value of an organization which facilitates positive effect of firm size on profitability. Also, there is an avenue for presenting comprehensive information that nullifies information asymmetry or disparity in financial report between organization and users of financial statement such as shareholders, investors, creditors, auditors as well as financial analyst. In addition, International Standard ensures the use of common language which promotes comparability of accounting reports across different nations as well as and globally promotes the quality, usefulness and reliability of financial reports (Financial Accounting Standards Board, 2008; Ogundele, 2017; Anthony and Okoro, 2018). It encourages the convergence of a nation’s accounting standard to international standard and promotes uniformity in the financial reports which facilitates the capacity of stakeholders in making both national and international finance and investment decision without difficulty (Shehu, 2015).

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Prior to International Financial Recording Standard, different countries operate different Generally Accepted Accounting Principles in relation to economic and financial policy operative in their respective economy. Specifically, Statement of Accounting Standard (SAS) was formed by the Nigerian Accounting Standard Board for the purpose of developing and issuing local accounting standard (Kenneth 2012). However, the difference between the local standard and international standard makes accessibility and analysis of foreign stock and debt difficult for investors and financial analysis. Also, organizations with multinational features find it difficult to prepare different forms of financial statement for their subsidiaries outside the headquarter country (Mande, 2014). In addition, the need for proper accountability and transparency is on high demand in organizations. Fraudulent practices such as false reporting, irregular transaction and asset embezzlement become rampant in organization. There are loopholes in the local standard which enables the local accountants and investors to hide their fraudulent practice on the global level since their local standard are not easily understood in the global level. Foreign analysts faced difficulty in analyzing such financial statement for foreign equity and debt financing decision. These practices have overtime reduced the confidence and trust of investors and other user of financial statement in financial reporting (Ugbede, Mohd & Ahmad, 2014). Therefore, it becomes very important for the nation to address issues that can attract and encourage investors. Thus, Nigerian Accounting Standard Board was later renamed as Financial reporting Council for the purpose of overseeing the adoption and implementation of International Financial Reporting Standard.

Organizations and stakeholders expect the International Financial Reporting Standard to a reliable tool for protecting and improving their interest in investment and any other financial decision. Relative to local standard, international standard is capable of decreasing the cost of capital and enhance international capital mobility, efficiency of capital allocation and capital market development (Abolaji & Adeolu, 2015). Also, it should enable organizations to arrive at a standard financial ratio in terms of liquidity, leverage and profitability, among others, for international comparison. Through improvement in liquidity, leverage, profitability and solvency IFRS can help to enhance the survival status of an organization (Yinusa, Oyindamola & Obidu, 2019). In addition, this financial standard is expected to have positive influence on the performance measures such as return on asset, return on equality, and asset management (Leonard, Ulumma, & Edith, 2018). Furthermore, IFRS should be able to improve the shareholders wealth through proper accountability that reflects in dividend per share, earning per share. It should be able to promote proper record keeping, transparency, uniformity, comparability and public confidence in financial reporting. This stems from the fact that adoption of IFRS would promote consistency, accountability and transparency which in turn will results into adequate financial reporting practice and proper dissemination of accounting information that is of high value to stakeholders (Matthew, 2015). With more reliable and credible financial statement, the propensity to attract direct investment will increases as the firms risk profile would be known and predictable.

Notably, in Nigeria reform introduced by the Apex bank in the year 2005 was objectively targeted at the recreation of a banking system that is strong, competitive and reliable (Eriki, Modebe, Okoye & Erin, 2017). These reforms focused largely at establishing operational system that can boost the confidence of depositors, investors as well as other stakeholders. However, financial information dissemination among Nigerian banks is considered relatively weak and unreliable compared to other developed and developing nations of the world. Notable the statue-quo over time has been a concurrent compliant by investors that financial information on company performance is either unavailable or, if provided, lacks reliability (Shehu,2011). Nigerian banking industry settings in terms of accounting standards, institutional structure, and corporate governance are expected to be in line with international best practices for effectiveness and efficiency of operational which will result into improved performance however revise is the case in the country. Following the adoption of international financial information standard in 2012 it was expected that operational performance of most Nigerian banks will match up to that of the advance world, however in reality that has not been the case so far. As pointed out by Nkechi & Peters, (2019) many banks failed to take advantage of the IFRS adoption to improve operational performance due to their inability to present adequate and sufficient information in their financial statements, thus most banks are characterized by deficient financial reportage, operational misappropriation, under capitalization and feeble corporate governance that obstruct their execution and makes it hard to identify issues effectively (Nkechi & Peters, 2019). As a result, many of these banks could not raise capital from international capital market as foreign investors as well as their local counterparts do not have confidence in the operational performance.

Quite a number of empirical studies have been conducted on the subject matter of International Financial Reporting Standard (IFRS) as it relate to performance, efficiency and/or earning quality of money deposit banks in Nigeria. few of these studies include (Shehu, 2015; Anthony and Cyprian, 2018; Nwaubani & Okoro 2019) on the effect of IFRS on financial performance (Omakoli, Uzodima & Okpala, 2017; Nkechi, 2019, Unachukwu, 2019; Meshack, Charles, Amanda and Mercy 2018, Akinleye, 2016; Ibanichuka & Asukwo, 2018; Ofoegbu & Odoemelam, 2018; Ajibade, Nyikyaa & Nyikyaa 2017) on the impact of IFRS adoption on financial reporting practices; (Yahaya, Onyabo & Usman 2015) on the effect of mandatory adoption of IFRS on earning prediction (Godwin, Lilian and Gospel, 2019). However, these studies provided different discoveries on the effect of IFRS on performance of firms in Nigeria. While some of these studies discovered significant effect of IFRS (Yahaya, Onyabo & Usman 2015, Eriki, Modebe, Okoye & Erin, 2017, Shehu, 2015, Unachukwu, 2019; Matthew, 2015), other acclaim that adoption of IFRS has no significant effect on firms performance (Nwaubani & Okoro, 2019; Nkechi & Peters, 2019; Atoyebi & Simon, 2018). This study thus examines how IFRS adoption affect performance of selected deposit money banks in the country. Specifically, this study captured performance in three dimensions as measured in terms of profit after tax, return on asset and return on equity, thus the study examined:

i. effect of IFRS adoption on profit after tax of deposit money banks in Nigeria

ii. effect of IFRS adoption on return on asset of deposit money banks in Nigeria

iii. effect of IFRS adoption on return on Equity of deposit money banks in Nigeria

2.0 A Literature Review

2.1. International Financial Reporting Standard

International financial reporting standards (IFRS) is an information system which provides necessary guides for the preparation and presentation of summary of transaction of an entity over a specified period of term, international financial reporting standard. Notably international financial reporting standard among other things was geared towards enhancing the level of transparency that can engender better understanding of information disseminated through financial statement of a firm over time (Izedonmi, 2001). International financial reporting standard was developed by international accounting standard board (IASB) as framework of standard for preparing and publishing public entity's financial report (Zakari, 2010). As pointed out by Oyedele (2011) International Financial Reporting Standards (IFRSs) unify accounting and financial reporting on a globally scale. International Financial Reporting Standards was objectively designed to improve the comparability of financial statement across nations on the premise of a principle-based set of accounting standard. Accordingly, the main characteristics of IFRS principle-based approach, fair value, comprehensive income, entity consolidation and transparency (Adebayo, 2017)

2.2 Adoption of International Financial Reporting Standards in Nigeria

The Nigeria's Federal Executive Council (FEC) gave approval for the convergence of Nigerian SAS with the IFRS from January 1, 2012. The adoption was organized such that all stakeholders used IFRS by January 2014. According to the IFRS adoption Roadmap Committee (2010), Public Listed Entities and Significant Public Interest Entities are expected to adopt the IFRS by January 2012. All Other Public Interest Entities are expected to mandatorily adopt the IFRS for statutory purposes by January 2013, and Small and Medium-sized Entities (SMEs) shall mandatorily adopt IFRS by January 2014. Nigerian listed entities were required to prepare their closing balances as of December 31, 2010 according to IFRS. The closing figures of December 31, 2010 will become the opening balances as at January 1, 2011 for IFRS based financial statements as at December 31, 2011. The opening balances for January 1, 2012 will be the first IFRS full financial statements prepared in accordance with the provision of IFRS as at December 31, 2012. Shehu (2015) investigated the adoption of international financial reporting standard IFRS and earning quality in listed deposit money banks in Nigeria. Specifically, the study analyzed the effect of leverage, profitability, liquidity, size and growth of banks on earning quality during the pre and post IFRS adoption using data collated over the period 2008-2013 for selected listed money deposit banks in Nigeria. Result from the panel regression estimation technique used in the study revealed that leverage and bank size has negative effect on equity quality while profitability, liquidity and bank growth has positive effect on equity quality during pre-IFRS. The study also discovered that all the variables have positive effect on equity quality during the post-IFRS. Except liquidity, all the variables have significant impact on equity quality during the post-IFRS. The study concluded that firm's attributes including leverage, profitability, liquidity, bank size and bank growth best explain and predict earnings quality of listed deposit money banks in Nigeria after the adoption of IFRS better than before the adoption.

However, a similar study carried out by Anthony and Cyprian (2018) focused on adoption of IFRS and asset quality in the Nigerian banking sector. Specifically, the study investigated the effect of the adoption on asset quality, loan volume, net interest income and profit after tax of deposit money banks listed on the Nigerian Stock Exchange. The study employed data collated for period 2011 and 2012 on 10 deposit money banks in Nigeria. The study analyzed data using paired student t-test. Result showed that IFRS adoption has positive effect on profit after tax and net interest income but negative effect on loan volume and asset quality. Hence it was concluded in the study that IFRS adoption has negative insignificant effect on assets quality of deposit money banks in Nigeria.

Ajibade, Nyikyaa and Nyikyaa (2017) investigated IFRS adoption and bank performance in Nigeria and Canada banks. Specifically, the study analyzed the effect of IFRS adoption on the earnings of five banks in Nigeria and Canada. The study employed data over the period 2006 -2017. The study analyzed data using panel regression analysis. The study revealed significant and positive relationship between IFRS adoption and earnings of banks in Nigeria and Canada. Therefore, the study concluded that FRS adoption has improved the decision-making capability of the various stakeholders, thus, increasing investor confidence. The study suggests that, in order to safeguard the suitable adoption of IFRS in Nigeria and Canada, competent Accountants and Auditors in IFRS are required in large number and that the Institute of Chartered Accountants of Nigeria and Canada must intensify it efforts in organizing IFRS based training programs for its members and other parties connected with corporate reporting.

Similar investigation carried by Omakoli, Uzodima and Okpala (2017) was geared at examining the effect of Financial Reporting Standard Adoption on the financial performance of listed money depositing banks in Nigeria alone, with emphasis on the effect of pre and post IFRS adoption on liquidity, performance growth, return on assets and earning per share. The study employed secondary data collected between the periods 2009-2016 for five listed money deposit banks in Nigeria. Student t-test statistics was employed in the study and result showed that there is no statistically difference between the effect of pre and post IFRS adoption on financial ratio measured by liquidity and performance growth while there is statistically difference between the effect of pre and post IFRS adoption on earning per share and return on equity. The study thus concluded that adoption of IFRS has significantly influenced the financial performance of money depositing banks in Nigeria.

In the context of banking sector also Matthew (2015) investigated the impact of international financial reporting standards adoption on financial reporting practices in the Nigerian banking sector, focusing on the statistical difference between total asset, total liabilities and total equity in the SAS and IFRS regimes. The study made used 2010 financial statement data for five listed banks in Nigeria, using mean and student t-test statistics as method of analysis. Result showed that quantitative differences in the financial reports prepared under NGAAP and IAS/IFRS are statistically significant. Hence the study concluded that IFRS adoption has impacted on financial reporting in the Nigerian Banking sector. Nwaubani and Okoro (2019) investigated the adoption of international financial reporting standard and asset quality in the Nigerian Banking sector. Specifically, the study analyzed the effect of the adoption on asset quality, loan volume, net interest income and profit after tax of deposit money banks listed on the Nigerian Stock Exchange. The study employed 2010 and 2011 data for 10 listed deposit money banks in Nigeria. The study analyzed data using student test. The study found that IFRS adoption results in negative insignificant effect on assets quality, loan volume while indicating positive insignificant effect on net interest income and profit after tax. Therefore, the study concluded that fundamentally the IFRS adoption has no significant effect on assets quality in the Nigerian banking sector.

Akinleye (2016) assessed the effect of international financial reporting standard adoption on the performance of money deposit banks in Nigeria. Specifically, the study examined the effect of liquidity, capital ratio and investment ratio on return on asset and return on equity. The study used IFRS adoption as dummy variable. The study employed data collated over the period 2009-2014 for 10 money deposit banks in Nigeria. The study analyzed data using panel regression. The study showed that financial ratio such as IFRS, liquidity ratio, current ratio and investment ratio exert significant influence on return on asset and return on equity. Therefore, the study concluded that adoption of IFRS exert positive impact on performance of money deposit banks.

Atoyebi and Simon (2018) evaluated the impact of International Financial Reporting Standard adoption on financial reporting practice in the Nigerian banking sector. The study specifically analyzed the the impact of valuation of Loan Loss Provisions (LLPs) on earnings management and capital management during the pre and post-adoption of IFRS for listed deposit money banks in Nigeria. The study adopted data over the period 2006-2016 for 15 listed deposit money bank in Nigeria. The study analyzed data using panel regression analysis. The study found

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

that a significant positive relationship between LLPs and earnings management for both pre and post-IFRS adoption. Furthermore, the study also found a positive insignificant relationship between LLPs and capital management for both pre and post IFRS adoption. Therefore, the study concluded that in the post-IFRS regime there was evidence of accentuated earnings management behavior using LLPs in the sampled Nigerian listed

Yahaya, Onyabo and Usman (2015) investigated international financial reporting standard adoption and the value relevance of accounting information of listed deposit money banks in Nigeria. the study specifically evaluated the effect of IFRS adoption on the price model and return model. The study collated data over the period 2004-2013 for 15 listed banks in Nigeria. the study analyzed data using panel regression analysis. The study revealed that return model also indicates adoption of IFRS improved relevance of accounting numbers in the deposit money banking sector and price model specification is 84% for the total sample and that all coefficients are statistically significant. Therefore, the study concluded that there is an improvement in value relevance of accounting information after IFRS adoption. Unachukwu (2019) investigated the implementation of international financial reporting standard as a tool for the performance of Nigerian insurance companies. Specifically, the study examined the level of implementation of IFRS in Nigerian insurance companies; influence of implementation of IFRS on the performance of insurance companies, and the influence of implementation of IFRS on investment decision making by insurance companies. The study employed data collected from 50 respondents in 29 listed insurance companies. The study analyzed data using frequencies, percentages, mean, Pearson Product Moment Correlation Coefficient and Ordinary Least Squares method of regression analysis. The study found a strong relationship between financial performance and implementation of IFRS; and implementation of IFRS has a significant influence on investment decision making. Therefore, the study concluded that implementation of IFRS is a veritable tool to financial performance of Nigerian insurance companies.

Eriki, Modebe, Okoye and Erin (2017) examined international financial reporting standards adoption and the performance of key financial ratio. The study specifically assessed the significant difference in profitability ratio, short tern solvency ratio, long term solvency ratio and investment ratio during the GAAP and IFRS period. The study employed data over the period 2013-2015 for 11 quoted banks in Nigeria. The study analyzed data using Mann Whitney U-test. The study revealed that Profitability ratios of listed banks under NGAAP differ significantly from those under the IFRS regime; there is statistically significant difference between short-term solvency ratios of quoted banks under NGAAP and IFRS; long-term solvency ratios of quoted banks under NGAAP are significantly different from those under the IFRS regime; and there is significant difference between investment ratios, of listed banks. Therefore, the study concluded that adoption of the International Financial Reporting Standard has significant impact on the performance of financial ratios of quoted deposit money banks in Nigeria.

Moreover, Adesanmi, Sanyaolu, Ajayi and Suyi-Ajayi (2019) assessed International Financial Reporting Standards and earning per share of money deposit banks in Nigeria. Specifically, the study analyzed the effect of IFRS on earning per share. The study used IFRS as dummy variable and included profitability ratio, volume of shareholding and firm size as explanatory variables. The study employed data collected over the period 2007-2016 for 14 listed deposit banks in Nigeria. the study showed that positive and significant relationship between IFRS adoption and market performance of the listed deposit money banks. Therefore, the study concluded that adoption of IFRS will effect positively on the market performance of companies in Nigeria. Thus, the study recommended that all companies in Nigeria should not adopt the international standards but adheres strictly to the requirements of these standards while applying them in the preparation of financial statement.

Ofoegbu and Odoemelam (2018) examined international financial reporting standards disclosure and performance of Nigeria listed companies. Specifically, the study analyzed the examined the association between IFRS overall disclosures and the performance of nonfinancial quoted companies. The study employed data collated over the period of 2012-2017 for 64 sampled companies. The study analyzed data using regression analysis. The study revealed that share price, size, and audit firm size significantly and positively related to the overall disclosure of firms. Therefore, the study concluded that extent of corporate disclosure does not significantly associate with financial performance. Thus, the study recommended that companies should be concerned with the disclosure of relevant information at a possible minimal cost to stabilize the possible negative effect of extensive mandatory and voluntary disclosure on financial performance.

In addition, Soomiyol, Wahab and Samsudin (2018) investigated impact of international financial reporting standards on the financial ratios of listed deposit money banks in Nigeria. The study specifically compared the impact of IFRS and NGAAP on the financial performance of Nigerian deposit money banks using profitability, liquidity and leverage. The study employed secondary data over the period 2012-2013 for 11 banks quoted on NSE. The study analyzed data using descriptive and paired sample t-test statistics. The study found that return on asset, return on equity, current ratio and net cash flow from operations to current liabilities ratio, total debt and debt to equity ratio computed from financial statements compiled under IFRS is significantly different from that computed under NGAAP. The study concluded that IFRS adoption had a significant positive impact on the financial ratios of Nigerian deposit money banks. The study recommended that analysts and other financial statements users should rely more on IFRS-based financial statements when making economic decisions.

3.0 METHODOLOGY

3.1 Scope and Method(s) of Analyses

This study focused on 10 randomly selected deposit money banks in operation between 2005 and 2018 including Access bank, First City Monument Bank, Fidelity bank, First Bank, Guaranty trust Bank, Skye Bank, United bank for Africa, Wema Bank, Zenith Bank and Union Bank. The period covered in this study spans between pre IFRS era and IFRS era. Specifically, the study covered 7years before IFRS (2005-2011) and 7 years of IFRS (2012-2018). In the quest to achieve the objectives, the study made use of Pearson Product Moment Correlation analysis and static panel data estimations including pooled OLS estimator, fixed effect estimator, and random effect estimator, alongside post-estimation tests such as restricted f-test, Hausman test.

3.2 Model Specification

This study used model which measured performance in terms of return on asset (ROA) and return on equity (ROE), as a function of IFRSA adoption alongside with other variables as presented in equation one (Akinleye,2016). The baseline model presented in equation (1) was adapted based on the fact that this study captured banks performance in three dimension of profit after tax, return on asset and return on equity in relation to adoption of IFRS with consideration given to firms size as a control , which was absent in previous studies reviewed

$$Y_{it} = \alpha_0 + \alpha_1 LR_{it} + \alpha_2 CR_{it} + \alpha_2 IR + \alpha_2 IFRSA_{it} + \mu_{it} ------(i)$$

Where: Y represent return on asset (ROA) and return on equity (ROE), LR represent liquidity ratio; CR represent capital ratio; IR represent investment ratio and IFRSA represent adoption of international financial reporting standard

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Model for this study
Functional representation
Y=f (IFRSA, FZ)
Linear representation of the models

$$PAT_{it} = \delta_0 + \delta_1 IFRSA_{it} + \delta_2 FZ_{it} + \mu_{it} -------(ii)$$
$$ROA_{it} = \delta_0 + \delta_1 IFRSA_{it} + \delta_2 FZ_{it} + \mu_{it} -------(iii)$$
$$ROE_{it} = \delta_0 + \delta_1 IFRSA_{it} + \delta_2 FZ_{it} + \mu_{it} -------(iv)$$

Where: Y represent measures of performance including profit after tax (PAT) measured in billion naira; return on asset (ROA) measure in percent (%); and return on equity (ROE) measure in percent (%); IFRSA represent international financial reporting standard adoption measured as dummy (1 for adoption era, 0 for non-adoption era), and FZ represent firm's size measured as natural log of total asset.

4.0 FINDINGS AND DISCUSSION

Table 1. Correlation analysis.

	PAT	ROA	ROE	IFRSA	FZ
PAT	1.0000				
ROA	0.4549	1.0000			
ROE	0.2485	0.0768	1.0000		
IFRSA	0.4313	0.0680	0.1405	1.0000	
FZ	0.2433	-0.0804	-0.0058	0.4178	1.0000

Source: Author's Computation (2020)

Correlation statistics presented in *Table 1* showed existence of positive correlation between international financial reporting standard adoption and performance of deposit money banks in terms of profit after tax, return on asset and return on equity. Firms size exhibit positive correlation with profit after tax, but negative correlation with return on asset and return on equity. Specifically, reported correlation statistic stood at 0.4313 for PAT and IFRSA; 0.0680 for ROA and IFRSA; 0.1405 for ROE and IFRSA; 0.2433 for PAT and FZ; -0.0804 for ROA and FZ; -0.0058 for ROE and FZ. Notably the result showed that over the period covered in the study across the sampled deposit money banks, adoption of

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

international financial reporting standard move predominantly in the same direction with measures of performance including PAT; ROA and ROE.

Table 2. Estimations Result (PAT).

Coefficient	Pooled	Prob	Fixed	Prob	Random	Prob
C	-2.33763	0.882	-12.18205	0.481	-13.2213	0.435
IFRSA	26.49363	0.000	24.6265	0.000	24.8241	0.000
FZ	2.248219	0.368	4.228063	0.095	4.018532	0.099
	R-square=0.5908 Adj R-square=0.5790 F-statistics=16.15 Prob(F-stat)= 0.0000		R-square=0.6256 Adj R-square=0.5934 F-statistics=19.44 Prob(F-stat)= 0.0000		R-square=0.6881 Wald chi2(5)= 66.72 Prob> chi2 =0.0000	
	Restricted F-test= 16.52 (p=0.0000 < 0.05)					
			Hauman Test = 0.11 (P= 0.9442 > 0.05)			

Source: Author’s Computation, (2020)

Table 3. Estimations Result (ROA).

Coefficient	Pooled	Prob	Fixed	Prob	Random	Prob
C	12.98586	0.088	5.941454	0.620	12.98586	0.086
IFRSA	3.566556	0.188	2.726363	0.362	3.566556	0.186
FZ	-1.692915	0.159	-.8020031	0.646	-1.69291	0.157
	R-square=0.6190 Adj R-square=0.6047 F-statistics=11.33 Prob(F-stat)= 0.0091		R-square=0.6564 Adj R-square=0.6247 F-statistics=10.70 Prob(F-stat)= 0.0009		R-square=0.4190 Wald chi2(512.65 Prob> chi2 =0.0058	
	Restricted F-test= 5.56 (p=0.0044 < 0.05)					
			Hauman Test = 0.49 (P= 0.7811 > 0.05)			

Source: Author’s Computation, (2020)

Most consistence and efficient estimations as presented in table 2, 3, and 4 are the random effect estimation result evaluated by Hausman test statistics for the three models respectively. Result showed that adoption of international financial reporting standards has positive effect on all the measures of performance, starting from profit after tax, return on asset and return on equity Reported coefficient estimate of 24.8241 ($p < 0.05$) for PAT model; 3.566556 ($p > 0.05$) for ROA model

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

and 232.5723 (p > 0.05) for ROE model respectively. However, the result showed that adoption of international financial reporting standard by deposit money banks in Nigeria, resulted on the average in an increase of 24.82 billion, in profit after tax, 3.57% in return on asset and 232.6% in return on equity, other thing held constant. Relatively, while adoption of IFRS has positive influence on all measures of performance, result showed that the influence is more pronounced when performance is measured in terms of profit after tax. Reported R-square statistics stood at 0.6881, 0.4190 and 0.5246 for model 1, 2, and 3 respectively, which connote that about 69%, 42% and 52% of systematic variation in profit after tax (PAT) return on asset (ROA) and return on equity (ROE) can be explain jointly adoption of international financial reporting standards and firms size of deposit money banks in Nigeria. Notably discoveries made in this study are in sync with the findings of Soomiyol, Wahab and Samsudin (2018); Eriki, Modebe, Okoye and Erin, 2017, Shehu, 2015, Unachukwu, 2019; Omakoli, Uzodima and Okpala (2017); Matthew (2015) to mention but few. Succinctly, Soomiyol, Wahab and Samsudin (2018) submitted that IFRS adoption has positive impact on the financial ratios of Nigerian deposit money banks especially return on asset and return on equity. Omakoli, Uzodima and Okpala (2017) found that adoption of IFRS has significantly influenced the financial performance of money depositing banks in Nigeria. In the work of Matthew (2015) it was also concluded that IFRS have impacted on financial reporting in the Nigerian Banking sector.

Table 4. Estimations Result (ROE).

Coefficient	Pooled	Prob	Fixed	Prob	Random	Prob
C	323.9661	0.371	68.73454	0.900	274.1279	0.503
IFRSA	240.2174	0.064	217.6238	0.114	232.5723	0.071
FZ	-48.0073	0.402	-24.0498	0.764	-39.9007	0.537
	R-square=0.4248 Adj R-square=0.4105 F-statistics=11.74 Prob(F-stat)= 0.0095		R-square=0.5368 Adj R-square=0.462 F-statistics=11.84 Prob(F-stat)= 0.0030		R-square=0.5246 Wald chi2(5)= 13.33 Prob> chi2 =0.0095	
	Restricted F-test= 4.85 (p=0.0060 < 0.05)					
			Hauman Test = 0.11 (P= 0.9445 < 0.05)			

Source: Author's Computation, (2020)

5.0 Conclusion and Recommendations

This study established empirically that adoption of international financial reporting standard explains a notable percentage of systematic variation in the performance of deposit money banks in Nigeria especially when measured in terms of profit after tax. Discoveries made in this study, underscore the role of adopting international best practices in promoting improved performance in Nigeria banking industry, a case of selected money deposit banks view from the perspectives of profitability as well as return on investment of asset and equity. Hence, regulatory authorities in Nigeria banking industries should devise a mechanism for evaluation consistency of players in the Nigerian banking sector as torching adherence to international standards of reporting. There is need for periodic assessment of reporting standards used by corporate organization in the country in line with best international practices so as to guide against possible deviation from that can help sustain better corporate performance in the country. In addition, management and auditors of accounting report need to work together at tightening compliance to ensure better performance impact of IFRS adoption. Lastly, Financial Reporting Council of Nigeria should further harmonize their operation in the bit to sustain proper check and balances needed to ensure coherence in the regulatory framework necessary for proper adoption of IFRS in the country.

References

[1] Adesanmi, A.D, Sanyaolu, O.A., Ajayi, E.O. & Suyi-Ajayi, A.D. (2019). International Financial Reporting Standards and earnings per share of money deposit banks in Nigeria. *International Journal of Social Science and Economic Research* 4(05), 1-17

[2] Adebayo, I.K. (2017). Adoption of International Financial Reporting Standards and Performance Reporting of Nigerian Deposit Money Banks (Master Thesis), Babcock University, Nigeria

[3] Ajibade, A.T., Nyikyaa, T.P. & Nyikyaa, N.M. (2017). IFRS adoption and bank performance in Nigeria and Canada banks

[4] Akinleye, G.T. (2016). Effect of International Financial Reporting Standards in Nigeria. *European Journal of Business, Economics and Accountancy 4*(4), 87-95

[5] Anthony N.N. & Cyprian, O.O. (2018). Adoption of International Financial Reporting Standards (IFRS) and assets quality in the Nigerian banking sector: The fundamental effect approach. *Journal of Public Management Research* 4(2), 11-28

[6] Atoyebi, T.A. & Simon, A.J. (2018). The impact of International Financial Reporting Standards adoption on financial reporting practice in the Nigerian banking sector. *Journal of Accounting, Finance and Auditing Studies 4*(3), 170-197

[7] Eluyela, F., Adetula, T., Oladipo, O., Nwanji, T. & Adebanjo, F. (2019). Pre And Post adoption of IFRS based financial statement of listed small medium scale enterprises in Nigeria. *International Journal of Civil Engineering and Technology 10*(01)1097-1108

[8] Eriki, E., Modebe, N.J., Okoye, L.U & Erin, O.A. (2017). International Financial Reporting Standards adoption and the performance of key financial ratios: evidence from quoted deposit money banks in Nigeria. *Journal of Policy and Development Studies, 11*(3), 40-47

[9] Godwin, I.E., Lilian, O.N. & Gospel, J.C. (2019). Effect of mandatory adoption of IFRS on earnings predictability of firms in the financial services sector. *Journal of Economics, Management and Trade 24(*1), 1-12

[10] Haruna, D. & Emmanuel, K.A. (2018). IFRS adoption and shareholders' wealth of deposit money banks in Nigeria. *International Journal of Accounting & Finance, Vol. 7(2), 16-30*

[11] Ibanichuka, E.A.L. & Asukwo, I.S. (2018). International Financial Reporting Standards adoption and financial performance of petroleum marketing entities in Nigeria. *International Journal of Advanced Academic Research, Accounting and Economic Development, 4*(2), 1-15.

[12] Izedonmi, P. F. (2001). An evaluation of the level of banks' compliance with accounting standards issued by the Nigerian Accounting Standards Board (NASB) .*Journal of Nigeria Banker.* July-December 12-9.

[13] Jensen, M. C. & Meckling W. H. (1976). Can the corporation survive? *Centre for Research in Government Policy and Business,* University of Rochester, Rochester, N.Y working Paper, 76-94,

[14] Leonard, I.A., Ulumma, R.O. & Edith O.K. (2018). International Financial Reporting Standards and manufacturing firms' financial performance in Nigeria: A study of selected quoted firms. *International Journal of Accounting and Taxation, 6*(1), 102-114

[15] Matthew, A. A. (2015). The impact of International Financial Reporting Standards adoption on financial reporting practice in the Nigerian banking sector. *Journal of Policy and Development Studies 9*(2), 169-184

[16] Matthew, A.A. (2015). Impact of IFRS on financial reporting practices in Nigeria *(A case of KPMG). Global Journal of Contemporary Research in Accounting, Auditing and Business Ethics 1*(1), 263-281

[17] Meshack, A., Charles, A.M., Amanda, & Mercy, S.A. (2018). Does adoption of International Financial Reporting Standards Affect Financial Performance? Evidence from Nigerian Deposit Money Banks. *International Journal of Accounting and Financial Reporting* 8(3), 51-77

[18] Nkechi, O.T. & Peters, E.O. (2019). effect of IFRS adoption on performance of banks in Nigeria. *International Journal of Social Sciences and Humanities Reviews 9*(1), 207 – 219

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

[19] Nwaubani, A.N. & Okoro, C.O. (2019). Adoption of International Financial Reporting Standards and assets quality in the Nigerian banking sector: the fundamental effect approach. *Social Science Journal 3*, 182-197
[20] Ofoegbu, N.G. & Odoemelam, N. (2018). International financial reporting standards (IFRS) disclosure and performance of Nigeria listed companies. *Cogent Business & Management 5*, 1-18
[21] Omakoli, E., Uzodima, A. & Okpala, N. (2017). Effect of International Financial Reporting Standard adoption on financial performance of listed money depositing banks in Nigeria. *European Journal of Business and Management 9*(17), 11-17
[22] Oyedele, T. (2011). IFRS adoption in Nigeria. In an overview of IFRS and challenges posed to professionals. CITN Seminar on IFRS Adoption in Nigeria. Lagos: CITN
[23] Shehu U. H. (2015). Adoption of International Financial Reporting Standards and earnings quality in listed deposit money banks in Nigeria. *Procedia Economics and Finance 28*, 92 – 101.
[24] Soomiyol, M.T., Wahab, M.S. & Samsudin, A. (2018). Impact of International Financial Reporting Standards on the financial ratios of listed deposit money banks in Nigeria. *Journal of Humanities and Social Science, 13(10), 74-81*
[25] Unachukwu, J.C. (2019). Implementation of International Financial Reporting Standard as a tool for the performance of Nigerian Insurance companies. *Asian Journal of Advanced Research and Reports 4*(4), 1-10 adoption on the performance of money deposit banks
[26] William, O. E. (1985). *The economic institutions of capitalism:* New York: Free Press
[27] Yahaya, O.A., Onyabo, J.M. & Usman, S.O. (2015). International Financial Reporting Standards' adoption and value relevance of accounting information of listed deposit money banks in Nigeria. *Journal of Economics and Sustainable Development 6*(12), 85-94
[28] Yinusa, A., Oyindamola, E.& Obidu, Q.M. (2019). Determinants of survival of listed deposit money banks in Nigeria. *European Journal of Accounting, Auditing and Finance Research* 7(3), 20-40
[29] Zakari, M. I. (2010). IFRS as a tool for cross boarder financial reporting. *Institute of Chartered Accountants Seminar Paper on IFRS adoption in Nigeria.*

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

CAPITAL STRUCTURE AND FIRM PERFORMANCE OF LISTED MANUFACTURING FIRMS IN NIGERIA STOCK EXCHANGE

Rafiyat Bosede OLANIYI[1], Kayode Peter ABILORO[2], Niyi Oladipo OLANIYAN[3]

[1] Department of Accounting, Federal University Oye-Ekiti, Nigeria
[2] Department of Accounting, Federal University Oye-Ekiti, Nigeria
[3] Department of Accounting, Federal University Oye-Ekiti, Nigeria

How to cite: OLANIYI, R.B., ABILORO, K.P., & ILANIYAN, N.O. (2022). "Capital Structure and Firm Performance of Listed Manufacturing Firms in Nigeria Stock Exchange." *Annals of Spiru Haret University. Economic Series, 22*(2), 149-167, doi: https://doi.org/10.26458/2229

Abstract

This research studied the link between capital structure and financial performance of Nigerian manufacturers. It evaluated the nexus between total debt and financial performance of listed manufacturing companies in Nigeria, the nexus between equity and financial performance of listed manufacturing firms in Nigeria Stock Exchange.

The study used ex-post-facto data to investigate variable relationships. Nigerian manufacturing firms were studied. The data was taken from the company's (2005-2020). Both descriptive and inferential statistics, such as Pearson correlation and panel regression, were used to examine the data.

Return on equity, equity capital has a substantial influence on the performance of Nigerian manufacturing companies. 6.34 and 0.26 Total debt assessed by asset debt-to-equity ratio has no influence on stock market performance (p>0.6580). Sand return on equity has a positive significant influence on financial performance of Nigerian manufacturing firms by 6.331 (p = 0.0000.05) and 0.117 (p = 0.0070.05); long-term debt also has a positive significant effect.

The study found that equity capital, total debt, and long-term debt have the potential to positively and significantly influence the financial performance of manufacturing firms in Nigeria, whereas short term debt has the potential to

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

positively and insignificantly influence financial performance. Total asset has the potential to positively and significantly influence financial performance.

Keywords: *capital structure, financial performance, influence, total asset.*

JEL Classification: G11, G17

Introduction

The nation's economic development and the general population's level of life are directly influenced by the manufacturing companies. Manufacturing companies not only help to lower the nation's unemployment rate but also contribute significantly to the country's overall economic growth. Other types of companies rely on manufacturers to provide them with the raw materials, equipment, and machinery that they need to operate. This is especially true of manufacturers that make manufacturing items. Businesses that are involved in manufacturing are prospering in Nigeria, which is seeing an increase in the total number of companies operating in this sector [Ajibola, Wisdom & Qudus, 2018]. Because manufacturing firms play such an important role in the economy of the nation, several stakeholders, including the government, consumers, investors, and even researchers, are interested about the performance of manufacturing companies, particularly their financial performance.

The term "financial performance" refers to the state of an organization as a whole as well as the returns generated from its combined resources that are put to use in its day-to-day operations. According to Bilafif and Ibrahim (2019), the definition of "financial performance" is "the effective use of resources to fulfill specified objectives, which results in a desirable growth in profitability indices." [Citation needed] A quantitative depiction of the quantity, cost, or outcome of operations that demonstrates how well or badly a firm does financially in this research is referred to as the financial performance of the company. Analyzing a company's financial performance often involves looking at a number of different measures, including return on asset (ROA), TOBIN's Q, return on investment (ROI), return on equity (ROE), and earnings per share (EPS). On the other hand, it would be preferable to get returns on assets and equity.

When the primary objective of managers is to maximize shareholder value, the capital structure of the company is often considered as a crucial choice that financial managers need to make when establishing the proper financing mix for their firms. As a direct result of this, the researcher is interested in the impact that the composition of capital has on the financial performance of Nigerian companies.

Both microeconomic (those that are particular to an individual company) and macroeconomic (those that affect the whole economy) factors contribute to the overall economic health of a country. As a consequence of this, the major purpose of this study is to investigate the ways in which the capital structure of businesses in Nigeria affects the performance of such businesses. There has been a lot of study done on how a corporation's financial performance is affected by the capital structure of the company. There has been a lot of study done on how a corporation's financial performance is affected by the capital structure of the company.

There has been a lot of study done on how a corporation's financial performance is affected by the capital structure of the company. [See Hariandy, 2015; Samuel, 2016; Shen, 2017; Ajibola, Wisdom & Qudus, 2018; Akinleye & Akomolafe, 2019; Nelson & Peter, 2019; Ahmed & Amina, 2019; Olarewaju, 2019; Bilafif & Ibrahim, 2019; Akpali, 2019; Maryam, Muhammed, Mahmud & Abubakar, 2020] However, some of the holes need to be filled up. To begin, not one of these investigations, with the only exception of the one that was carried out by, was completed not too long ago employing just organizations that are responsible for the production of manufacturing goods [Temuhale & Ighoroje, 2021]. This research tries to fulfill a need in the market.

The primary purpose of this study is to examine the influence of capital structure on listed manufacturing firm in Nigeria stock exchange

. The specific objectives are to:

- examine the impact of total debt on the financial performance of listed manufacturing firm in Nigeria stock exchange
- investigate the impact of equity on the financial performance of listed manufacturing firm in Nigeria stock exchange
- evaluate the impact of total assets on the financial performance of listed manufacturing firm in Nigeria stock exchange

Literature Review

Capital Structure

A company's financial strength is built on capital. It supports the firm's operations by providing a buffer to engage its activities and unanticipated losses when difficulties develop, allowing the organization to continue operating in a reasonable and practical manner while dealing or resolving problems. Iorpev and

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Kwanum (I2012). The organization continues to reassure stakeholders that it will meet its responsibilities, and that they may have faith in the organization's financial stability. Consumption generates money in the manufacturing process. People, machinery, and money are considered to be factors of production (including the fourth type of information). As a result, each company organization's capital is critical. (2011)

The stock market and long-term debt are the two primary components that make up the capital structure of a firm. Although an organization's level of long-term permanent financing, which can be represented by preference shares, ordinary shares, and debt, may change over the course of its existence, the majority of businesses make it a priority to keep their financial portfolio within a close proximity to the capital structure goal they have set for themselves [Sunday & Samson, 2019]. Commercial businesses must be able to establish different ways for selecting the appropriate components of capital to employ in company operations in order to boost productivity and/or accomplish performance in order for the capital structure to be acceptable and effective. This method should be defined thoroughly by the finance management. The capacity of the firm to correctly identify sources of finances adequate to support its operations will differentiate between good capital structure management and poor capital structure management [Tian & Zeitun, 2017].

Debt total

Debt has been theorized by a number of researchers from various perspectives and levels of expertise. To begin, Dare and Sola (2018) defined debt as an organization's borrowing of cash to operate its activities. One of the advantages of using debt as a source of money is that when the loan is paid off, the connection ends and no more responsibilities exist. Onaolapo and Kajola (2018) confirm this by stating that debt entails borrowing from a third party while maintaining ownership. Debt refers to a contract between a debtor (borrower) and a creditor (lender), which may take the form of leases, bonds, notes, certificates, debentures, and mortgages [Akinleye & Akomolafe, 2019]. As a consequence of this, "total debt" refers to the total amount of money that an organization has borrowed from a third party in order to finance its activities.

According to Barbosa and Louri's (2015) research, an increase in total debt makes it possible for companies to borrow money. It opens up the possibility for them to get the necessary finance for their capital investment. An increase in debt

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

has the particular characteristic of imposing a need on the borrower to repay the amount borrowed in addition to interest over a predetermined length of time. The terms of the agreement between the two parties would include a schedule for repayment as well as the rate of interest that the lender is obligated to pay on the total amount that was borrowed. Even if a corporation suffers financial losses and is unable to meet its commitments, it is still financially responsible to its creditors and must pay them [Saad, 2021]. Even though they do not control the firm, holders of the company's debt are nevertheless entitled to a portion of the profits that it makes. The debt structure of the corporation can undergo changes in the future. For example, the total amount of debt might be extremely little or very high depending on the situation. When a company's total debt increases, the risk that it poses to its shareholders also increases. On the other hand, if the conditions are right, this might lead to an increase in the company's earnings [Saad, 2021].

Equity

Equity, as defined by Sunday and Samson (2019), is the money that is delivered to a company's regular shareholders after all of the company's short-term and long-term obligations have been met in full. After the resolution of the claims made by preference shareholders, ordinary shareholders have the right to receive returns. The information on the firm is available to all shareholders, and the shareholders' votes give them total control over the activities of the company. According to Warokka et al research's (2020), shareholders, who are also referred to as equity holders, are considered to be partial owners of the firm. Furthermore, they are held responsible for the risk that the company faces since they have residual claims on the assets of the company. According to Akinleye and Akomolafe (2019), equity is a kind of capital that is used by most companies. This form of capital allows the ownership of the firm to be gradually distributed among the shareholders. This is the value that would be returned to the shareholder in the event that all assets were sold off and all obligations were satisfied. According to Barbosa, N., and Louri, M., equity is the value that is allocated to the owners of a corporate organization (2020). It is possible for the corporation to get funds via the sale of shares without being required to return the stocks by a specific date. It is now possible for it to operate without the need of taking out financing. Shareholders have the expectation that they will profit from a company's ongoing operations.

Capital gains and dividends are two ways that shareholders might benefit from the company's future earnings. Ordinary shareholders, however, have minimal culpability if the company loses money. This indicates that the amount of money

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

they lose is equal to the amount of money they put into the company [Sunday & Samson, 2019]. Equity helps a corporation to obtain capital without taking on debt, as described by Oyedokun, Olatunji, and Sanyaolu (2018). This implies you may buy the fund with your own money instead of paying a set amount. Investors and shareholders are both equity owners (people acquire shares in a business with the hopes of receiving their money back from future earnings). Internal and external equity are both possible sources of capital [Muigai & Murithi, 2017]. Internal equity refers to a company's retained earnings that are included in the company's distributable reserves [Taani, 2017]. When a company's retained earnings (internal equity) are insufficient for the investment opportunity, external stock is bought.

Financial Performance

Performance in practically every aspect of human life has recently attracted more attention. Performance is a subjective notion that may be divided into many categories based on its nature. The concept of performance is multifaceted. Various academics, educators, researchers, and intellectuals have conceptualized performance from various perspectives. Shen (2017), for example, saw performance as both a means to a goal and an end result. He went on to say that performance is a sequence of actions taken over a period in order to achieve a desired end or result. He went on to say that the final product may be called performance. Ahmad, et al., (2019) had a similar perspective, claiming that performance is the capacity to distinguish the end effects of organizational operations. Performance, according to Oyedokun, et al. (2018), is an organization's meaningful outcomes after efficiently employing various constrained resources. Furthermore, he asserted that performance does not refer to the conclusion or outcome of an activity, but rather to the path taken.

It is possible to evaluate the level of a company's financial performance by using a variety of different financial indicators, such as return on asset (ROA), TOBIN's Q, return on investment (ROI), return on equity (ROE), earnings per share (EPS), market share (MS), revenue growth (RG), and cost merit. Some of the indicators that should be looked for when measuring performance in non-financial or market-based areas include growth in market share and sales, satisfaction among customers and employees, organizational survival and stability, risk management, stakeholder management, risk management, and productivity, relational and social capital, and behavioral performance. On the other hand, the inquiry that was carried out in order to compile data for this research placed a key emphasis on assessing the performance of Nigerian manufacturing businesses from a financial and accounting perspective.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

The Return on Asset

The return on assets of a company is a metric that is primarily concerned with finance and examines both the operational and financial health of the business [Olarewaju, 2019]. The ratio that is referred to as the return on assets (ROA) is computed in such a manner that the more productive the use of assets is for the benefit of shareholders, the higher the ratio will be. The capacity of a company to put its resources to good use in order to meet the financial expectations of its shareholders is one of the most important factors in determining whether or not it will be profitable [Abor, 2018]. Return on assets, often commonly referred to as ROA, is a fundamental measurement of a company's capacity to create profits from its assets and is typically abbreviated as ROA. Return on asset is a financial measure that indicates a company's rate of return in proportion to the value of its assets, as stated by Oyedokun et al. Return on asset is a financial measure that shows a company's rate of return in proportion to the value of its assets (2018). In other words, the return on asset measure is used to assess how much money a firm makes in proportion to the value of its assets in order to have a better idea of how profitable the company is. It indicates how well a corporation utilizes its resources to achieve the objectives it has set for itself.

Return on Equity

Return on equity (ROE) is a metric that is used to evaluate the success of a firm based on the value of its shareholders' equity. To calculate a company's return on equity, just divide its net income by the total amount of equity held by its shareholders. According to Sunday and Samson (2019), ordinary shareholders are concerned about the rate of return gained by an organization in proportion to the quantity of capital given by equity holders, after subtracting the amount that was used to pay other capital suppliers. Return on equity is a common statistic that is used to assess the effectiveness of a business. It goes beyond a simple calculation of profit. ROE is a measurement that may be used to determine the amount of profit that can be attributed to ordinary shareholders in relation to the book value of the investment that they have made in a company, as stated by Ahmad et al (2019). The value of return on equity may be calculated by taking the whole amount of net returns that are available to a company's shareholders and dividing that number by the total amount of equity held by those shareholders.

Issue 2/2022

Theoretical Review

Pecking Order Theory

Myers and Majluf were the authors of this hypothesis (1984). This idea assumes that a company's internal resources have been depleted before it looks for outside sources of funding. In essence, the philosophy that governs pecking order refers to the situation in which a company exhausts its own sources of funding before seeking funding from outside sources. Equity funding would be the last resort if debt could not be raised. This idea predicts a negative relationship between an organization's capital structure and its performance, according to the literature. That is, the notion of optimum leverage is not considered in pecking order theory [Frank & Goyal, 2003].

Trade Offs Theory

This concept, which describes how the capital of a company is organized in terms of debt and equity, is one of the most often used ones in the field of corporate finance. This idea is often attributed to Kraus and Litzenberger, who deserve credit for its conception (1973). This theory proposes that the optimal capital structure for each company is attainable and can be expected by maintaining stability between the cost of debt and the tax benefits it provides, while maintaining other parameters at their original values. According to Ogenche et al., this concept demonstrates a positive association between gearing and profitability (2018). In a similar vein, the trade-off theory explains the relationship between a low total cost of capital and a high debt-to-equity ratio, with the latter causing an increase in the total cost of capital to be generated. This idea follows a similar line of thought as the previous one [Tsuji, 2017].

This hypothesis is predicated on the idea that the optimal form of capital structure for most enterprises is a combination of debt and equity financing. This hypothesis follows a similar line of thought as the previous one and proposes that loan capital may raise a company's worth up to a certain point. After that point, the value of the company stays steady and will only begin to decrease if excessive borrowing occurs. The tradeoff hypothesis places an emphasis on the limits of a capital structure that is centered entirely on debt, in which the weighted average cost of capital is at its lowest and a company's market value is at its greatest [Binh & Tram, 2020]. The cost of financial crises, the expense of the agency, and the personal tax on interest income are all elements that contribute to this limitation.

Empirical Review

Hariandy conducted research on the capital structures, growth rates, and profitability of listed manufacturing firm in Indonesia (2015). In the study, the researchers used a technique that is known as multiple regression analysis. It has been shown that there is a significant and positive correlation between the capital structure of Islamic microfinance companies in Indonesia and their levels of profitability. This link is advantageous since it shows that there is a connection between the two. The examination at hand is concentrating its attention on a study that is now being carried out in Nigeria rather than the one that was carried out in Indonesia and is being evaluated here.

In 2015, Caroline and Willy performed research to evaluate how the capital structure of firms listed on the Nairobi Securities Exchange affects the performance of such companies. The data were imported into SPSS, and multiple regression analysis was used so that the hypotheses could be examined and evaluated. In contrast to equity and long-term debt, which both have a significant and positive effect on financial performance, short-term debt has a negative effect on financial performance that is both significant and significant. This contrasts with the positive and significant effect that long-term debt and equity have. However, the research that was looked at did not succeed in accomplishing this aim, which was one of the purposes of the study. The research that was evaluated did not consider the impact that an organization's total debt ratio has on its success.

Foyeke, Olusola, and Aderemi (2016) looked at the financial structures and levels of profitability of listed manufacturing firm in Nigeria stock exchange. Stats software was used to analyze data using the spearman's rank correlation and regression methods for a sample of 25 manufacturing companies that had been listed on the Nigerian stock exchange between the years of 2008 and 2012. The sample was comprised of companies that had been listed on the Nigerian stock exchange between the years of 2008 and 2012. Companies that had been listed on the Nigerian stock market during the years of 2008 and 2012 constituted the sample for this study. Within the sample, we included companies that have been involved in transactions on that specific market. The results of the research indicate that there is a positive correlation between the presence of equity ownership and the level of profitability enjoyed by manufacturing companies in Nigeria. In place of regression analysis and Spearman's rank correlation, which were both used in the prior study, panel regression analysis is going to be utilized in the present investigation.

Nwachukwu and Akpeghughu (2016) carried a study on the topic of the connection between capital structures and overall firm performance in listed

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

manufacturing firm in Nigeria stock exchange (2000-2014). The research demonstrated, with the assistance of regression analysis, that there is a connection between equity capital and return on investment that is both positive and substantial, whereas there is a connection between debt capital and return on investment that is both negative and substantial. This was found to be the case. It was found that these links had a statistically significant influence on both outcomes, which was the case in both of the cases. In the prior study, the focus was placed mostly on financial institutions located in Nigeria. On the other hand, the focus of the present research is mainly on the various manufacturing organizations in Nigeria.

Research was carried out by Oyedokun, Olatunji, and Sanyaolu on the potential effects that a company's capital structure may have on the overall level of financial performance of listed manufacturing firm in Nigeria stock exchanges. They were primarily interested in the manufacturing industry in Nigeria for the purposes of their research (2018). A balanced panel analysis was carried out for the purpose of this research utilizing one hundred distinct data points that were gathered from ten distinct publicly listed firms between the years 2007 and 2016. In this particular piece of research, the researchers used both descriptive statistics and regression as methods of data analysis and interpretation. According to the findings of the analysis, there is both a statistically significant and a negligible impact that capital structure has on performance metrics. The inquiry also concluded that there is no correlation between the two. In the preceding study, both descriptive static analysis and regression analysis were used as methods. In contrast, the present research will focus mostly on panel regression analysis as its major method of data collection and analysis.

METHODOLOGY

3.Model Specifications

This study uses ex-post facto (after-the-fact) data. Due to the short timeframe of the research, only ten (10) of the twenty-one (21) food and beverage businesses listed on the Nigerian Stock Exchange were sampled. The research covered "DN Meyer Plc, Portland Paints & Products Nigeria Plc, Lafarge Africa Plc, Cutix Plc, Beta Glass Cu Plc, Greip Nigeria Plc, Premier Paint Plc, Austin Laz & Company, Notore Chemical Ind. Plc, Dangote Cement plc from 2010 to 2019. This research used secondary data. The study's data came from yearly reports and the Nigerian Stock Exchange fact book. The research covers 2005-2010.The researcher used OLS regression to analyze the effect of dependent factors on independent variables.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Regression was used to obtain the linear equation coefficient that best predicted the dependent variation. F-statistics were used to evaluate the regression model's significance and t-statistics to test the regression coefficients. F and t-statistics were examined with 95% confidence. A correlation matrix showed the relationship between capital structure and firm performance.

ROAit = *f*(EQUit TODit, TOAit)……………………….……………… (3.2)

Where: ROA, ROE, EQU, TOD, TOA, *f* and it are as later defined.

The econometric representation of the new models is given thus:

$$ROA_{it} = \beta_0 + \beta_1 EQU_{it} + \beta_2 TOD_{it} + \beta_3 TOA + \mu_{it} \text{ ……….. (3.4)}$$
$$ROE_{it} = \beta_0 + \beta_1 EQU_{it} + \beta_2 TOD_{it} + \beta_3 LTD_{it} + \beta_5 TOA_{it} + \mu_{it} \text{ …. (3.5)}$$

Where:
ROE is Return on Equity,
ROA is Return Assets
EQU is Equity
TOD is Total Debt
TOA is Total Assets
subscript "it" symbolizes the combination of time and individuality,
β_0 is the intercept.

4.2 Presentation of Result

4.2.1 Descriptive statistics

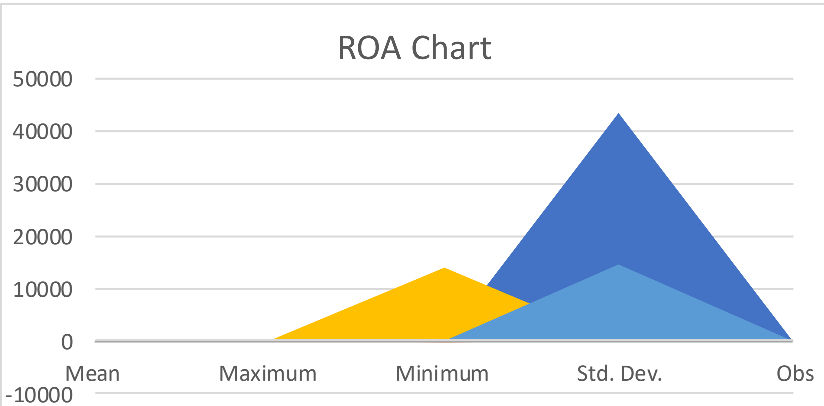
In this part, we will detail the variables that were chosen by using various metrics of weighted average (standard deviation, mean, minimum and maximum). The capital structure topics (return on assets, short-term debt, long-term debt, and total debt), as well as the financial performance indicators, were summed up with the use of the means of central tendency (return on asset and return on equity).

The values of the mean, maximum, and minimum as well as the standard deviation of the following variables are provided in Table 4.1; the dependent variables are return on asset (ROA) and return on equity (ROE), respectively (ROE). Several different manufacturing businesses in Nigeria were investigated with the use of independent variables such as equity (LEQU), total loan and debt (LTOD), long-term debt (), short-term debt (), and total asset (LTOA). When determining all of the statistics, researchers looked at data from a total of 160 company-years' worth of operations from 10 different manufacturing organizations in Nigeria. It was determined that using Stata 14 would result in an improvement in the accuracy of the estimation process.

Table 1. Descriptive Statistics for capital structure and financial performance variables.

Variables	Mean	Maximum	Minimum	Std. Dev.	Obs
ROA	0.4531	0.1472	-0.012	43,343	50
ROE	0.1451	34.958	-0.9843	3.424	50
LEQU	23.342	21.023	3.5948	32.345	50
LTOD	23.232	9.483	14,056	6.345	50
LTOA	45.394	42.204	32.345	14,567	50

Source: Author compilation E-view output (2022)



Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Interpretation

Table 4.1 presents ROA's mean value, which is 0.0211, along with its standard deviation (0.391). This demonstrates how closely clusters are aligned with the average return on assets. Return on assets for companies is 2%, which is positive but not very high. The resources of the company are resulting in a healthy operational surplus. During the time covered by this study, Nigerian companies created very little value for their various stakeholders. A ROA of 2 percent indicates that asset managers are not operating at optimal efficiency. There is a lack of investor interest in companies. As a kind of capital structure, total debt, equity, long-term debt, and short-term debt were used by all tested manufacturing companies, on average. There is a standard deviation of 39 percent for the independent variable. The range of 0.227 to -0.205 demonstrates that different manufacturing enterprises in Nigeria have diverse degrees of efficiency and practices. Mixed performance may be inferred from the fact that some of the manufacturing companies that were tested provide great returns for their stakeholders while others produce negative returns.

The mean ROE is 0.1771, and This demonstrates that manufacturing companies make strong returns on shareholder equity on a normal basis. This demonstrates that a significant number of firms can produce large shareholder returns. The 95 percent STD demonstrates that the chosen companies have varying degrees of success in generating high shareholder returns. The range of values from a maximum of 10.75 to a low of -0.3796 indicates that relative business characteristics influence profitability. While some businesses are successful at making a profit, others are not.

Equity's mean value is 15.597. This indicates that the proportion of equity in the chosen manufacturer's capital structure is 15.597 percent. This indicates that most of the chosen manufacturing companies have a lower-than-average equity. With a value of 2.63 percent for the LEQU STD, it can be deduced that there is not much equity capital dispersion. The minimum required is 8.4121, while the maximum allowed is 20.88. There are certain companies that have a large range of equity capital, while others have a low range. The logarithm of the total debt is 15.184. The overall debt accounts for 15.184 percent of the capital structure of the chosen manufacturing companies. The standard deviation, which was calculated to be 2.953 percent, reveals that there was very little clustering around the mean. The smallest amount of equity is 9.625, and the maximum is 20.83. This implies that certain manufacturing companies have high overall debt, while others have low debt relative to their total assets.

The average logarithm of long-term debt comes to 15,005. This indicates that the manufacturing company's long-term debt makes up 15% of its total capital

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

structure. Since this figure is relatively low, it can be inferred that most of the sampled manufacturing companies had a lower-than-average level of long-term debt. Because the standard deviation of long-term debt is just 3.029 percent, it can be deduced that the tested manufacturing companies have very little variation in their long-term debt. The largest possible amount of long-term debt is 20,89, and the absolute lowest is 9,625. Because of this, the chosen manufacturing companies have varying degrees of long-term debt. The average logarithm value for is 13.798. This demonstrates that the chosen manufacturer's capital structure has a short-term debt component that is 13.798 percent. Because this value is low, most of the chosen manufacturing companies have below-average levels of short-term debt. The standard deviation of short-term debt for is 2.976 percent, which indicates modest short-term debt divergence across the tested manufacturing companies. The most that may be owed on a short-term basis is 19,71, while the absolute minimum is 7,4588. Because of this, the use of short-term debt among the manufacturing companies is variable. 17.139 is the mean value of the logarithm of total assets. This signifies that businesses have enough assets to continue operating. The range of values from maximum 22.57 to lowest 12.495 indicates a large amount of inconsistency across the selected companies. A standard deviation of 2.952 indicates that there is a significant amount of variation around the mean.

Table 2. Result of Pearson Correlation Matrix.

Var.	ROA	ROE	LEQU	LTOD	LTOA
ROA	1				
ROE	0.397	1			
LEQU	0.244	-0.258	1		
LTOD	0.34	0.351	0.327	1	
	0.276	0.492	0.22	0.09	
	0.335	-0.113	0.369	0.326	
LTOA	0.552	0.148	0.263	0.189	1

Source: Audited annual reports for the various years.

In the next table, Table 4.2, you'll find the Pearson correlation matrix. Return on assets, which is usually referred to by its acronym ROA, and return on equity are the factors that are being evaluated (ROE). Equity (LEQU), total debt (LTOD), long term debt (), short term debt (), and total asset (LTOA) are the variables that

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

are independent for a selection of manufacturing businesses in Nigeria. Using the 160 firm-year data collected from 10 distinct manufacturing businesses in Nigeria, we were able to arrive at each and every one of these values. Stata 14, which was used to assist in making the process of estimating easier,

According to the results of the research, which are summed up in table 4.2, there is a positive connection between ROA, ROE, LEQU, LTOD, and LTOA. In addition, there is a link between ROA and LTOA. The correlation coefficient for ROE is 0.397, while the correlation coefficients for LEQU are 0.244, LTOD are 0.34, and's is 0.276. LTOA's correlation value is 0.335. LTOA comes in at number one with a value of 0.552. Based on the data, it seemed that the various factors developed in the same direction across all of the organizations that were put through the tests during the course of the time period that was analyzed. However, a negative link was also found to exist between ROE and LEQU and, with the correlation coefficient for LEQU being -0.258 and the correlation coefficient for being -0.113. This finding supports the hypothesis that ROE is negatively correlated with LEQU and. On the other hand, a positive correlation was found to exist between ROE and LTOD,, and LTOA. The correlation coefficient for LTOD was 0.351, the correlation coefficient for was 0.492, and the correlation coefficient for LTOA was 0.148. These results suggest that ROE and these three time periods are positively related to one another.

A positive correlation was found between LEQU and the other predictor variables, with values of 0.327 for LTOD, 0.22 for, 0.369 for, and 0.263 for LTOA accordingly. The findings also demonstrated that there is a relationship between LEQU and LTOA. It was shown that there was a positive correlation between the LTOD and the other predictor variables, with a value of 0.09 for, 0.326 for, and 0.189 for LTOA respectively. In addition, a positive correlation was discovered between and other predictor variables, with coefficient values of 0.243 for and 0.243 for LTOA. This finding was supported by the findings of the previous study. In the case of LTOA, this was likewise the situation. The value of 0.107 that was determined to be associated with shows that has a positive association with LTOA. To summarize, the results of this study demonstrated that there is a correlation between TOA and the other characteristics that serve as predictors.

The Repercussions that the Discoveries Will Have

According to the findings of the research that was carried out, the capital structure of publicly traded manufacturing companies in Nigeria, which is

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

represented by total debt, equity, long term debt, short term debt, and total asset, has a positive impact on the performance of those companies. This impact can be broken down as follows: As the following notes will demonstrate, the conclusions of the inquiry have significant ramifications for the management of manufacturing enterprises as well as other stakeholders.

The results of this study indicated that there was a significant connection between increased equity and greater financial performance. This suggests that the management prefers increasing the company's equity rather than increasing the amount it borrows in order to boost the company's profitability.

4.3 Summary of Findings

Predictors	**Null hypothesis (H_0)**	**Coef.**	**Prob.**	**Remark**
LEQU and ROA	Coefficient is not positively significant	6.34	0.000	Reject H_0
LEQU and ROE	Coefficient is not positively significant	0.27	0.000	Reject H_0
LTOD and ROA	Coefficient is not positively significant	6.33	0.000	Reject H_0
LTOD and ROE	Coefficient is not statistically significant	0.12	0.000	Reject H_0
LLTD and ROA	Coefficient is not positively significant	4.44	0.000	Reject H_0
LLTD and ROE	Coefficient is not positively significant	0.07	0.043	Reject H_0
LTOA and ROA	Coefficient is not statistically significant	0.00001	0.990	Accept H_0
LTOA and ROE	Coefficient is not statistically significant	0.123	0.028	Reject H_0

Source: Researcher's Computation, 2022

The results of the study indicate that a substantial contribution to the financial performance of a business may be attributed to the capital structure of the firm, which can be quantified in terms of the total debt, long-term debt, and total assets of the organization. This implies that the usage of a bigger quantity of long-term debt and total assets by manufacturing businesses in Nigeria leads to an increase in the earnings of their shareholders. This is the case since this information suggests that this is the case. In conclusion, the utilization of short-term debt has a tendency to augment the returns on investment of shareholders, although to a little degree. When it comes to the day-to-day administration of the company's operations, the management of manufacturing enterprises is strongly opposed to the use of short-term debt. The average interest rate on short-term loan is often much higher, which is one factor that contributes to the overall low profitability of enterprises.

Based on the analysis carried out, the major findings were that:

i. Return on asset and return on equity have a positive significant influence on the performance of manufacturing companies in Nigeria, with 6.341 (p=0.0000.05) and 0.268 (p=0.0000.05) respectively.

ii. Total debt has a substantial beneficial influence on manufacturing business performance in Nigeria, with return on asset and return on equity of 6.331 (p=0.0000.05) and 0.117 (p=0.0070.05), respectively.

v. Total asset has a positive and significant influence on the performance of manufacturing businesses in Nigeria as measured by return on equity (p=0.0280.05) but has a positive and negligible effect on the performance of manufacturing firms as measured by return on asset (p=0.99>0.05).

4.5 Implication of Findings

Outcome of the analysis carried out unveiled that capital structure represented with total debt, equity, and total asset have a positive effect on the performance of listed manufacturing firms in Nigeria. The outcomes of the analysis have significant implication to the management of manufacturing firms and other stakeholders on the following notes:

- This study found out that financial performance increases at a significant level as equity increased. This implies that the management encourages more equity than debts in order to enhance profitability.
- The study found evidence that show capital structure in terms of total debt and total asset notably contributes to the financial performance of firms. This implies that more long-term debts and total assets employed by manufacturing firms in Nigeria contributes to the betterment the earnings of their shareholders.

Conclusion

The findings led to the following conclusions: equity capital, total debt, can significantly influence the financial performance of manufacturing firms in Nigeria; short-term debt can insignificantly influence financial performance; total asset can significantly influence financial performance.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Recommendations

The following are the suggestions that have been made in light of the findings:

i. When it comes to manufacturing companies who are looking to obtain financing for day-to-day operations or expansions, overall debt should take precedence. This is shown by the fact that the outcome, when total debt on its own is positively connected with financial performance considerably, demonstrates this point.

ii. When trying to raise financing, manufacturing companies should make it their goal to guarantee that they are funded entirely by equity capital. A result that depicts a positive significant link with financial success provides proof for this assertion.

iii. Additionally, manufacturing companies should issue more long-term debt and expand their employed assets in order to fund the operations of their business, provided that the value of the company may be enhanced using long-term debt. This is because the value of the company can be increased.

iv. The upper management of manufacturing companies shouldn't put too much money into short-term debt since it doesn't allow them much more time to pay it back.

v. The financial management of a company should devise a plan for the capital structure of their businesses that is open to public scrutiny, would provide an equitable distribution of ownership stakes, and will boost the profitability of the firms' operations. The government need to make provisions for ideas that would support the rate at which the economy increases in order to enable firms to increase their profit margins. This will help the economy grow faster. It's possible that studies with the same emphasis may be broadened to look at other aspects of the economy.

Reference

[1] Abor, J. (2015). The effect of capital structure on profitability: An empirical analysis of listed firms in Ghana. *Journal of Risk Finance,* 6, 438-447.

[2] Ahmad, Z., Abdullah, N. M. H. and Roslan, S. (2019). Capital structure effect on firms' performance: Focusing on consumers and manufacturing's sectors on Malaysian firms. *International Review of Business Research Papers*, 8(5): 137-155.

[3] Oyedokun, J.L., Olatunji, O.O. & Sanyaolu, S.M. (2018). Sensitivity of Performance to Capital Structure. *European Journal of Social Science*, 7(1): 163-144.

[4] Barbosa, N., & Louri, H. (2020). Corporate Performance: Does Ownership Matter? A Comparison of Foreign- and Domestic-Owned Firms in Greece and Portugal. *Review of Manufacturing Organization*, 27(1): 73-102.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

[5] Dare, F. D., & Sola, O. (2018). Capital structure and corporate performance in Nigeria petroleum industry: Panel data analysis. *Journal of Mathematics and Statistics*, 6(2): 168-173.
[6] Frank, M., & Goyal, V. (2003). Testing the pecking order theory of capital structure. *Journal of Financial Economics*, 67, 217-48.
[7] Iorpev, L., & Kwanum, I. M. (2012). Capital structure and firm performance: Evidence from manufacturing companies in Nigeria. *International Journal of Business and Management Tomorrow*, 2(5): 1-7.
[8] Modigliani, F., & Miller, M. (1958). The cost of capital, corporate finance and the theory of investment. *American Economic Review*, 48, 261-297.
[9] Myers, S. (1984). The capital structure puzzle. Journal of Finance, 39, 575-92.
[10] Onaolapo, A. A., & Kajola, S. O. (2018). Capital structure and firm performance: Evidence from Nigeria. *European Journal of Economics, Finance and Administrative Sciences*, 25, 70-82.
[11] Prahalathan, B., & Ranjan, R. P. C. (2011). The impact of capital structure-choice on firm performance: Empirical investigation of listed companies in Colombo stock exchange, Srilanka. International Journal of Research in Commerce and Management, 2(4): 12-17.
[12] Saad, N. M. (2021). Corporate governance compliance and the effects to capital structure. *International Journal of Economics and Financial,* 2(1): 105-114.
[13] Sunday, O. T., & Samson, T. B. (2019). Capital Structure and Corporate Performance of Malaysian Construction Sector. International Journal of Humanities and Social Science, 1(2):28-36.
[14] Tian, G. G., & Zeitun, R. (2017). Capital structure and corporate performance: evidence from Jordan. Australian Accounting Business and Finance Journal, 1(4): 4053.
[15] Tsuji, C. (2011). Recent development of the agency theory and capital structure. Economics and Finance Review, 1(6): 94-99.
[16] Warokka, A., Herrera, J. J., & Abdullah, H. H. (2020). East Asian corporate governance: A test of the relation between capital structure and firm performance. *International Journal of Economics and Finance Studies,* 3(2): 1-10.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

EFFECT OF PENSION INVESTMENT ON FINANCIAL DEPTH IN NIGERIA: EMPIRICAL INVESTIGATION

Godwin Emmanuel OYEDOKUN[1], Richard O. AKINGUNOLA[2], Russell O.C. SOMOYE[3]

[1] Department of Management and Accounting, Faculty of Management and Social Sciences, Lead City University, Ibadan, Nigeria, Tel.: +2348033737184, Email: godwinoye@yahoo.com; godwin.oyedokun@lcu.edu.ng

[2,3] Department of Banking and Finance, Faculty of Administration and Management Sciences, Olabisi Onabanjo University, Ago-Iwoye, Nigeria, Tel.: +2348034717721; +23480337578100

How to cite: OYEDOKUN, G.E., AKINGUNOLA, R., & SOMOYE, R. (2022). "Effect of Pension Investment on Financial Depth in Nigeria: Empirical Investigation." *Annals of Spiru Haret University. Economic Series*, *22*(2), 169-188, doi: https://doi.org/10.26458/22210

Abstract

This study examined the effect of pension investment on financial dept in Nigeria. The study adopted an ex-post facto research design. The population of the study is 14 years of Nigeria economy from the year 2007-2020. Time-series data were sourced for this study which are entirely secondary data from the Pension Commission and the Central Bank of Nigeria (CBN) statistical bulletin, and the World development indicator (WDI) of the World Bank Database. Autoregressive Distributed Delay Limitation (ARDL) bounds testing approach was adopted to examine the long- and short-term relationships between the series, using Eview 12 version. The result of the hypothesis shows that there is evidence that pension investment in equities has positive relationship with financial deepening. This implies that increases in pension investment in equities will lead to increase in financial depth in Nigeria. In sharp contrast, pension investments in FGN securities, local money market securities and mutual funds have a negative relation with financial depth. This implies that increases in pension investments in FGN securities, local money

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

market securities and mutual funds will lead to decrease in financial depth in Nigeria. The result also shows that in the short run that pension investments in equities and mutual funds have positive but insignificant relationship with financial depth, while FGN securities and local money market securities have negative and insignificant relationship with financial depth. The study then recommended that, to accelerate financial sector depth, it is necessary for the financial sector regulators and policymakers to strengthen the depth of banks asset, other financial institutions and financial markets through policies and reforms to attract more pension investment that will contribute to the development of Nigeria's financial stance.

Keywords: *financial depth; financial institutions; financial sector development; pension fund; pension investment.*

JEL Classification: G11

Introduction

The reforms in pension administration all over the world have been of tremendous importance to mobilise 'invisible' funds. Pension funds do accumulate and are subsequently invested which over time has helped the capital market as well as the government in meeting their immediate fund needs. The reform agenda has a clear and well-articulated set of goals, which include weakening the growth of pension liabilities, ensuring timely payment of benefits, instilling thrift in Nigerians as they approach retirement, and developing a simple, transparent, and sustainable pension system (Anaesoronye, 2010; Onwuamaeze, 2011). It can also decipher from the modification agenda; an indirect aim of the scheme is the advancement of the financial sector of the nation's economy.

Pension systems have become a cause of macroeconomic unsteadiness, a limitation to economic growth, and an ineffective or multiple providers of retirement income (World Bank, 2006). In the same vein, pension fund accumulation has been linked to the poor state of financial development which is evident in countries that have adopted an accumulated pension fund system (World Bank, 2006).

For instance, financial depth is not a function but is a representation of the overall expansion of the services provided by the financial system. Similarly, the measures available for access do not directly measure how well the financial system identifies good investments, regardless of the individual's guarantees; but

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900
ICCS Institutul Central de Cercetare Științifică
Fundația România de Mâine Universitatea Spiru Haret

Issue 2/2022

provide an approximation of the use of various financial institutions and instruments (Čihák, Demirgüç-Kunt, Feyen & Levine, 2013).

Annan (2020) opined that financial development can be measured by a variety of factors, including the depth, size, accessibility, and robustness of the financial system. This can be measured by examining the performance and activity of financial markets, banks, fixed income markets, and financial institutions. It has been observed that the greater a country's level of financial development, the more financial services are available. The developed financial system provides higher returns while posing lower risk (Annan, 2020). The foregoing interest the researchers to study the effect of pension investment on financial depts in Nigeria.

Literature Review

Pension Investment in Nigeria

Pension, according to Ozor (2006) and Eneogu (2012) is a periodic income paid after retirement to an employee who has served for certain years and retires because of age, earnings, and length of service and payments are mostly on monthly basis. It is one of the three means of providing for the post-service life of employees. The other two are personal savings and state sponsor social security. Neil (1977) and Fashagba and Ayodele (2011) opined that incorporation of pension into employment conditions can help to improve productivity. Meeting employees' reasonable needs, including pension, in their current employment determines their length of stay, which has a significant impact on the organisation's well-being and productivity.

The motive of a pension scheme is to provide the personnel of an organization with a method of securing retirement, a standard of living moderately consistent with that they enjoyed even as in service. According to Akhiojemi (2004), it is the totality of plans, procedures, and legal processes of securing and placing apart finances to meet the social obligations of care which employers owe their personnel on retirement or in case of loss of life.

Pension Fund Managers (PFAs) invest money in stocks and other securities and investment assets on behalf of RSA holders to ensure value gains. They also save for retirees, protect assets, fund pension schemes, and cover retirees' costs (Wallick, Julieann, Christos & Joanne, 2012). To meet the different needs of retirees or to ensure fund performance that is within the existing regulatory provisions, PFAs take investment decisions considering the internal and external environment, objective setting, risk assessment, risk response, control activities, risk appetite, information and communication, and regulatory review.

Pension Fund Custodians are responsible for housing the pension fund's assets. It is expected that PFAs will never hold the assets of the pension fund. The employer sends the contribution directly to the trustee/custodian, the trustee notifies the PFA of receipt of the contribution, and the PFA deposits the contribution into the employee's retirement savings account. Custodians carry out transactions and activities related to the management of pension investments under PFA instructions. The employer must deduct the contribution from the trustee and repay it within 7 days from the date the employee receives the salary. The Trustee, on the other hand, will notify the PFA within 24 hours of receiving the contribution. To track their activities, authorized operators must submit regular reports of their activities to PenCom. PFA and PFC must disclose their rate of return and publish their audited accounts.

Also, a seeming defect in Section 87 of the Pension Reform Act 2004 has been corrected in Section 101 of PRA 2014. Section 87 of PRA 2004 requires that every Pension Fund Custodian or Administrator shall render to the Commission monthly reports of any fraud, forgery, or theft occurring in its organization failing which it commits an offence and shall be liable on conviction to a fine of not less than N10,000,000 and each of its director or officer shall be liable to a fine, not less than N5,000,000 or imprisonment for a term not exceeding 3 years or both. The implication of this (not exceeding 3 years) is that the term of imprisonment could be one day! In Section 101 of the PRA 2014, the term of imprisonment has been amended to ‘’not less than 5 years’’. Prosecution of offences is vested in the Federal and State High Courts, including the High Court of the Federal Capital Territory, as well as the National Industrial Court to ensure speedy dispute resolution and dispensation of justice as it relates to the offences stated in the Act.

The 2014 PRA Act provides that where there is a conflict between the provisions of the 2014 PRA and any other promulgation, the 2014 PRA shall prevail. Therefore, provisions of other legislation that seek to subject income attributable to pension funds to tax will no longer apply. As a result, pension funds invested in bonds and short-term government securities will continue to benefit from exemptions even after the ten-year tax-free timeframe accorded by the Companies Income Tax (Exemption of Bonds and Short-Term Government Securities) Order 2011 expires.

Financial Depth

According to Ndebbio (2000), financial deepening is defined as an increase in the supply of financial assets in the economy, and thus the sum of all financial asset measures gives us an estimate of the size of financial deepening. As a result, it is suggested that the financial sector is the channel through which financial deepening manifests itself (Asekunowo, 2009)

Kiyotaki and Moore (2005) in their models of financial deepening used the degree of trust in the economy and the ease of conversion of illiquid paper (after an initial acquisition) into a liquid paper as measures of financial depth. They referred to the latter as "securitisation or financial intermediation," and they claimed that if the trustworthiness is high and the costs of transforming to liquid paper are low, then an indicator of financial deepening has been achieved.

The Department for International Development (DFID) (2004) outlined the ways in which the financial sector can be adjudged to be developed or to have deepened and these include improvement in the efficiency and competitiveness of the sector, the variety of financial services offered may expand, as may may the diversification of institutions that function in the financial sector, as may the amount of money that is mediated through the financial sector, as may the magnitude to which capital is distributed by private-sector financial institutions to private enterprises responding to market signals (rather than government-directed lending by state-owned banks), as may the amount of money that is collateralized through the financial sector may increase, the regulation and stability of the financial sector may improve and more of the population may gain access to financial services.

In Nigeria, as part of the Structural Adjustment Programme (SAP), both the financial and the foreign sectors of the economy were deregulated. One of the goals of liberalising the financial sector was to raise the real rate of interest enough to allow domestic savings to be mobilised. In addition, an increase in the interest rate may stimulate portfolio capital inflows. It is therefore conceivable that the defined contributory pension scheme which was introduced at a later date could then serve as a shot in the arm towards the realisation of the goals of savings mobilisation, domestic financial instruments acquisition and portfolio investment inflow (financial deepening) (Asekunowo, 2009). Since the inception of the funded contributory pension scheme, one wonders if the depth of Nigeria's financial system has appreciably improved.

Rousseau and Wachtel (2008) in their study of the impact of financial deepening on economic growth used three measures of financial development, namely: liquid liabilities less narrow money (M3 less M1), the ratios to GDP of liquid liabilities (M3), and credit allocated to the private sector. Lastly, Singh et al (2009) in their study of financial deepening in CFA Franc Zone captured financial depth as credit to the private sector in terms of GDP.

The funded scheme has the inherent potential to increase savings due to its contributory feature. According to the OECD (2005), institutional investors, particularly pension funds, mutual funds, and insurance, have increased their role as savers over the last few decades. It went on to say that this trend is likely to continue as retirement savings increase, and that increased pension saving will increase the size of capital markets. The large pool of savings that constitutes pension funds must be channelled into portfolios for reasonable returns in order to ensure retirees' (former affiliates') old-age liquidity and thus their old-age consumption (welfare). This necessitates a significant amount of financial intermediation in the financial sector. A convergence of the shortfall and surplus spending units is probable to result in further deterioration of the financial system (Ghani, 1992).

Review of Previous Empirical Studies

Odo, Ani, and Agbo (2021) researched the Contributory Pension Scheme and the Premium Base of the Nigerian Insurance Industry. The study examined the level at which the defined contribution pension system has contributed to the growth of the insurance industry's premium base. The study adopted an *ex-post-facto* (after-the-fact) research design. The study shows that the contributory pension scheme had a positive but insignificant impact on the growth of the insurance industry's premium base in Nigeria. The study, therefore, recommended that Nigerian pension regulators enforce strict compliance with the relevant provisions of the law for the insurance industry to experience the quantum growth expected.

Davis, Stewart and Knaack (2021) studied pension funds and financial repression. According to the study, pension funds are used as a captive audience in some economies to channel capital to the government at below-market rates. This policy is only one tool in the toolbox of financial repression, but it is gaining traction as governments around the world struggle to increase fiscal space and reduce their sovereign debt burdens as they rebuild their economies following the pandemic. First, from a historical standpoint, this paper examined financial repression using pension funds. It then assesses the policy's welfare and distributional implications, drawing on lessons learned from a variety of advanced and emerging economies. A general set of policy recommendations is elusive due to the wide range of possible interventions and idiosyncratic country conditions, but the paper proposes four high-level principles that can help policymakers assess the costs and benefits of implementing policies that use pension funds as a captive audience for financial repression.

Musa (2020) examined the determinant of the 2014 Pension Reform Act in Nigeria: A study of Abuja workers and adopted a survey research design. 246 questionnaires were processed. The study aims to identify the impact of taxpayers 'decisions on the 2014 Pension Reform Act in Abuja, Nigeria, and to examine the impact of pensioners' living standards on the 2014 Abuja Pension Reform Act. Nigeria study shows that taxpayer decision-making has a positive and significant impact on the 2014 Pension Reform Act in Abuja FCT, while the standard of living of retirees has a negative and significant impact on the 2014 Pension Fund Reform Act in Abuja FCT. It recommended that the new 2014 Pension Reform Act continue to apply to workers and workers as workers make a good decision to use the plan to prevent future financial crises after retirement. The new Pension Reform Act of 2014 should be implemented with more emphasis on the standard of living of retirees, even if there have not been many plans for the standard of living of retirees.

Okoro and Okoye (2019) researched pension investment funds analysis: A variance-comparison tests of non-contributory (pre) and contributory (post) schemes in Nigeria. The research compared both non-contributory (pre) and contributory (post) pension schemes in Nigeria. Secondary data sources were used. The findings revealed that the contributory (post) system is healthy, dependable, and ready to assist retirees in surviving after they leave the service. As a result of the reform in Nigeria, the defined contribution system (post) has significantly improved, particularly in the area of pension funds. As a result, the study recommended that there be an endless retirement savings plan and that employers make no pension contributions to PENCOM; additionally, the return on investment and service delivery by pension fund managers should be improved in order to boost pension investment and voluntary contributions.

Ekpulu and Bingilar (2016) examined the theory test of the Nigerian pension fund. The specific objective of the study examined the historical expansion of pension funds in Nigeria, a certain aspect of the Pension Reform Act of 2004 and the current Act of 2014, possible regulatory options for investors when investing the pension fund, the pension fund, and economic growth as well as the net asset value of the Pension fund. By including the informal sector in the system and formulating responsive regulation to facilitate the rate of conversion into the

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

system, the prospects for a boost in the capital fund, that is, capital formation, are good. This suggests that there will be more long-term capital available for the execution of capital-intensive projects.

Adeoti, Gunu, and Tsado (2012) conducted a study to analyse the factors that influence pension fund investing. The study relied on primary data gathered using a questionnaire. A simple random sampling approach was used to choose respondents from a sample of five AFPs in Nigeria. A total of 125 questionnaires using Likert scales were processed. the collected data were analyzed. The author opined that the pension fund is a set of resources that are provided by employees to have sufficient resources to meet their needs after retirement. Investments were made to meet the contributor goal. According to main components, economic factors, risk, and property security were identified as the most important determinants of pension investment, it was concluded that the variable was like interest rate the internal control system is not critical in determining the investment of pension funds in Nigeria. The study also recommended that pension fund managers develop good systems to mitigate the enormous risks they face as investment managers.

Jörg (2010) analysed the first results of the Nigerian pension reform of 2004. In early 2010, the new system of privately financed and managed retirement accounts covered approximately 4 million Nigerians in a country of over 50 million people. The research focuses on the new system's flaws. More importantly, the reform did not provide basic social security in old age for the majority of Nigerians employed in the informal sector. In addition, the minority of covered workers are also likely to have problems. The study demonstrates in a computational model that funded accounts have so far produced negative real returns for savers. It is suggested that change inside the present paradigm is unlikely to fix the current system's flaws and that alternative solutions, such as universal non-contributory social pensions, should be considered to extend basic social security. in the Nigerian context.

Asekunowo (2009) investigated the impact of a funded contributory pension scheme on financial deepening and economic growth in Nigeria. Following a review of relevant literature, secondary data on relevant macroeconomic indices in the Nigerian economy were gathered. The information was analysed in a descriptive manner. TDS (total domestic savings) increased during the post-pension reform period, and the increase was not caused by GDP growth. Some financial deepening indicators, such as DCP/GDP (domestic credit to the private sector as a share of GDP), TBD/GDP (total bank deposits divided by GDP), and CIM (contract intensive money), did not improve significantly during this period, pointing to poor intermediation in Nigeria's banking sector. However, the DCP/GDP + SMC/GDP measure (domestic credit to the private sector as a share of GDP plus stock market capitalisation as a share of GDP) improved significantly during this period, owing largely to the performance of the SMC/GDP measure. This implies that the Nigerian capital market experienced some depth during the post-pension reform period. As a result, despite the increased TDS that may have been derived from contributory pension funds, efforts must be intensified to increase the scheme's participation rate by including state employees and informal sector workers in the scheme. The poor performance of the DCP/GDP, TBD/GDP, and CIM measures must be reversed through strict enforcement of banking regulations, and the Nigerian judiciary must be truly reformed to enforce contract laws and protect private property rights. PenCom must be persuaded to relax the stringent portfolio diversification guidelines that PFAs are required to follow to further deepen the Nigerian capital market. This must be followed quickly by the internationalisation of the Nigerian capital market.

Theoretical Framework

This research is based on the theory of financial intermediation, which was first developed in the 1960s by Gurley and Shaw (Kigen, 2016). A financial intermediary is a third party who acts as a go-between in a financial transaction. It is critical to investigate the role of pension funds as intermediaries, as well as how they improve capital markets. According to proponents of the current theory of intermediation, while pension funds do not provide liquid liabilities, they play an important role in influencing the structure of securities markets and, as a result, improve the efficiency of financial systems.

Methodology

The study adopted an *ex-post facto* research design. The population of the study is 14 years of Nigeria economy from the year 2007-2020. Time-series data were sourced for this study which are entirely secondary data from the Pension Commission and the Central Bank of Nigeria (CBN) statistical bulletin, and the World development indicator (WDI) of the Worldbank Database. Autoregressive Distributed Delay Limitation (ARDL) bounds testing approach was adopted to examine the long- and short-term relationships between the series, using Eview 12 version.

The Long-run model is given as:

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

$$LFDIDE_t = \gamma + \propto_1 LPENINVEQ_t + \propto_2 LPENINVFS_t + \propto_3 LPENINVLMMS_t + \propto_4 LPENINVMF_t + u_t \qquad (3.10)$$

To distinguish the short-run impact from long-run impact the error correction model framework is written as:

$$\Delta LFDIDE_t = \gamma + \sum_{i=1}^{N1} \delta_i \Delta LFDIDE_{t-k} + \sum_{j=0}^{N2} \eta_j \Delta LPENINVEQ_{t-k} + + \sum_{j=0}^{N3} \beta_j \Delta LPENINVFS_{t-k} + \sum_{j=0}^{N4} \theta_j \Delta LPENINVLMMS_{t-k} + \sum_{j=0}^{N5} \gamma_j \Delta LPENINVFS_{t-k} + \propto_1 LPENINVEQ_t + \propto_2 LPENINVFS_t + \propto_3 LPENINVLMMS_t + \propto_4 LPENINVMF_t + u_t \qquad (3.11)$$

To determine the speed of adjustment in a co-integrating ARDL model, equation (3.11) can be re-specified to include an error correction term as follows:

$$\Delta LFDIDE_t = \rho \varrho_{t-1} + \sum_{i=1}^{N1} \delta_i \Delta LFDIDE_{t-k} + \sum_{j=0}^{N2} \eta_j \Delta LPENINVEQ_{t-k} + + \sum_{j=0}^{N3} \beta_j \Delta LPENINVFS_{t-k} + \sum_{j=0}^{N4} \theta_j \Delta LPENINVLMMS_{t-k} + \sum_{j=0}^{N5} \gamma_j \Delta LPENINVFS_{t-k} + U_t \qquad (3.12)$$

Where:

LFDIDE = Financial development index to depth, LPENINVEQ = Pension Investment in Equities, LPENINVFS = Pension Investment in FGN Securities,

LPENINVLMMS = Pension Investment in Local Money Market Securities, and LPENINVMF = Pension Investment in Mutual Funds. γ is the intercepts from equations 3.10-3.11, $\delta, \eta, \beta, \theta,$ and γ are the short-run coefficients and $\propto_1 - \propto_4$ are the long-run parameter for the explanatory variables, ρ is the coefficient of the error correction term which must be negative, t represents the periods under study, U_t are the error term.

Data Analysis and Presentation

To conduct the bounds test for co-integration approach within the ARDL framework, the optimal lag order must be determined. According to Enders (2003) too many lags incorporated into the testing equation may reduce the degree of freedom and the power of the test statistics, while too few lags may cause a misspecification problem. Table 1 revealed that the maximum lag for the model is two (2), however, before the maximum lag of two can be used there must be absence of autocorrelation, and these is reported in Panel B of Table 1. The result did not reject the null hypothesis of no autocorrelation, thus for the ARDL model estimation of pension investment and financial depth the maximum lag used is two.

Table 1. Diagnostic Test for Pension Investment and Financial Depth in Nigeria.

Panel A: Lag Order Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-6.6035	NA	1.08e-06	0.446289	0.633909	0.518218
1	253.1289	459.5265	1.30e-10	-8.58188	-7.456162*	-8.15031
2	287.5268	54.24295*	9.28e-11*	-8.943340*	-6.87952	-8.152121*
3	306.6788	26.51818	1.25e-10	-8.71842	-5.7165	-7.56755
4	318.2672	13.81683	2.41e-10	-8.20258	-4.26257	-6.69208

Panel B: Serial Correlation LM Test

Lag	LRE* stat	df	Prob.	Rao F-stat	Df	Prob.
1	26.72522	25	0.3697	1.081153	(25, 127.8)	0.3734
2	21.12032	25	0.6859	0.836912	(25, 127.8)	0.6887
3	14.68586	25	0.9484	0.568374	(25, 127.8)	0.9491

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

4	69.26360	25	0.0000	3.292890	(25, 127.8)	0.0000
5	26.94024	25	0.3589	1.090720	(25, 127.8)	0.3625
6	33.14785	25	0.1274	1.373381	(25, 127.8)	0.1298
7	22.79230	25	0.5897	0.908745	(25, 127.8)	0.5930
8	57.63548	25	0.0002	2.619783	(25, 127.8)	0.0002
9	24.18627	25	0.5086	0.969297	(25, 127.8)	0.5122
10	11.77409	25	0.9883	0.450870	(25, 127.8)	0.9885

Source: Author, 2022

* indicates lag order selected by the criterion. LR: sequential modified LR test statistic (each test at 5% level), FPE: Final prediction error, AIC: Akaike information criterion, SC: Schwarz information criterion and HQ: Hannan-Quinn information criterion

Table 2. Pension Investment and Financial Depth in Nigeria.

Dependent Variable: LFDIDE
Panel A: Long -Run Estimates

Variable	Coefficient	S.E	t-stat	Prob
C	1.633	0.138	11.791	0.000
LPENINVEQ	0.211	0.100	2.115	0.041
LPENINVFS	-0.023	0.032	-0.715	0.479
LPENINVLMMS	-0.003	0.059	-0.053	0.958
LPENINVMF	-0.017	0.042	-0.409	0.684

Panel B: Short -Run Estimates

Variable	Coefficient	S.E	t-stat	Prob
D(LPENINVEQ)	-0.061	0.481	-0.128	0.899
D(LPENINVEQ(-1))	0.466	0.495	0.941	0.353
D(LPENINVFS)	-0.043	0.086	-0.497	0.622
D(LPENINVFS(-1))	-0.067	0.085	-0.791	0.434
D(LPENINVLMMS)	0.452	0.298	1.518	0.137
D(LPENINVLMMS(-1))	0.002	0.299	0.005	0.996

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

D(LPENINVMF)	0.017	0.047	0.369	0.714
D(LPENINVMF(-1))	-0.002	0.049	-0.036	0.972
ECM(-1)	-0.792	0.146	-5.437	0.000

Panel C: Diagnostic Tests	**Statistic**	**Prob.**
Bound Test	22.413	0.000
Serial Correlation	1.700	0.143
Heteroscedasticity	1.665	0.459
Linearity Test	3.032	0.215
Adjusted R-square	0.751	
	CUSUM	
Stability Test	Stable	

Source: Author, 2022

Notes: Table 2 examine the effect of pension investment on financial depth in Nigeria. The dependent variable is financial development index to depth (LFDIDE), while the explanatory variables are pension investment in equities (PENINVEQ), pension investment in FGN securities (PENINVFS), pension investment in local money market securities (LPENINSLMMS) and pension investment in mutual funds (LPENINVMF). The sample period is from 2007Q1-2020Q4. The estimation process was facilitated using Eviews 12.

Interpretation

Bound Test

The first condition to ascertain the possibility of long-run relationship for pension investment and financial depth is the bound test, the results shows that the bound test statistics of 22.413 is statistically significant at 1 per cent level. This is because the statistics of 22.413 is greater that the critical values of 4.26, 3.5 and 3.13 at 1 percent. This implies that there is possibility of a long run cointegrating relationship for pension investment and financial depth in Nigeria. Based on the possibility of a long-run relationship for pension investment and financial depth in Nigeria, the study then estimates the long-run and the short-run elasticity. The empirical results for the model for the effects of for pension investment and financial depth in Nigeria, in the short and long run are reported in Table 2.

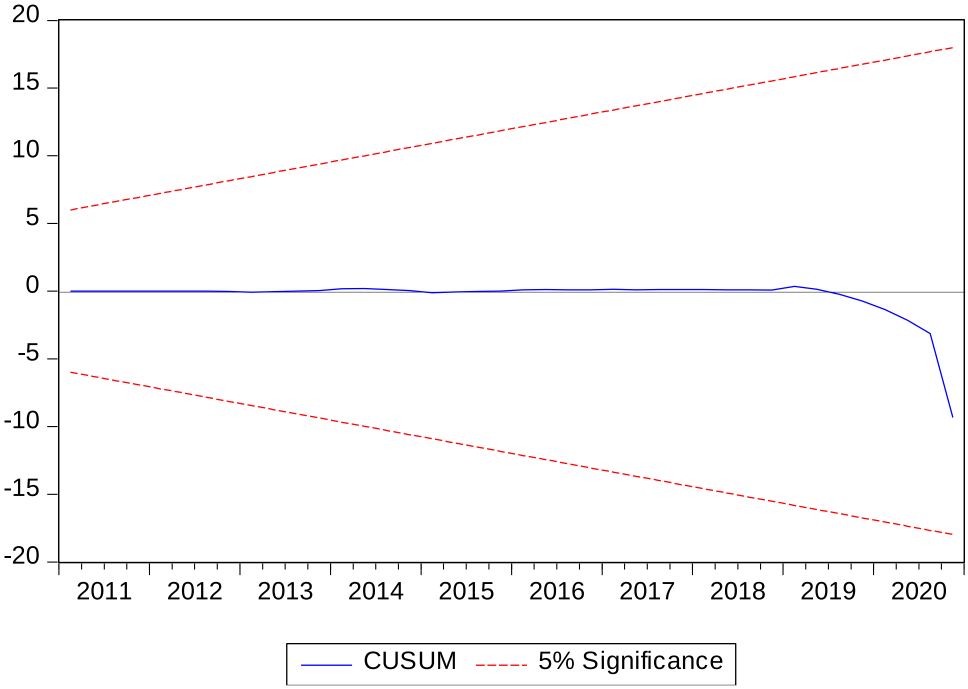


Figure 1. Stability Test - Plots of Cumulative Sum of Residual.

The Long-Run Dynamics

The estimated long-run coefficients (elasticities) for the UECM model are given in Panel A of Tables 2. In the long run, there is evidence that pension investment in equities has positive relationship with financial deepening. This implies that increases in pension investment in equities will lead to increase in financial depth in Nigeria. Furthermore, there is evidence of a long-run significant relationship that pension investment in equities and financial depth in Nigeria (LPENINVEQ = 0.211, t-test= 2.115, $\rho = 0.041$). This implies that pension investment in equities is a significant factor influencing changes in financial depth in Nigeria.

In sharp contrast, pension investments in FGN securities, local money market securities and mutual funds have a negative relation with financial depth. This implies that increases in pension investments in FGN securities, local money market securities and mutual funds will lead to decrease in financial depth in

Nigeria. Furthermore, there is no evidence of a long-run significant relationship that pension investments in FGN securities, local money market securities and mutual funds with financial depth in Nigeria (LPENINVFS = -0.023, t-test= -0.715, ρ = 0.479; LPENINVLMMS = -0.003, t-test = -0.053, p = 0.958, and LPENINVMF = -0.017, t-test= -0.409, ρ = 0.684). This implies that pension investments in FGN securities, local money market securities and mutual funds are not significant factors influencing changes in financial depth in Nigeria.

Concerning the magnitude of the estimated parameters, a 1 per cent increase in pension investment in equities will lead to 0.211 per cent increase in financial depth, while a 1 per cent increase in pension investments in FGN securities, local money market securities, and mutual funds will lead to 0.023, 0.003, and 0.017 per cent decreases in financial depth in Nigeria respectively in the long run.

To test the hypothesis for objective one, the bound test of 22.413 was used and it is statistically significant at 1 per cent level, thus on the overall, the null hypotheses that there is no significant effect of pension investment on financial depth in Nigeria was rejected and accept the alternative hypothesis that there is significant effect of pension investment on financial depth in Nigeria.

Short-Run Dynamics

The purpose of this section is for two reasons. First, is to examine if changes and the statistical significance experienced in the long run also exist in the short run model. Second, is to examine the degree of adjustment back to equilibrium using the error correction term. The short-run adjustment process is measured by the error correction term ECM_{t-1} and it shows how quickly variables adjust to a shock and return to equilibrium. For stability, the coefficient of ECM_{t-1} should carry the negative sign and be statistically significant.

The result shows that in the short run that pension investments in equities and mutual funds have positive but insignificant relationship with financial depth, while FGN securities and local money market securities have negative and insignificant relationship with financial depth. In addition, the estimated coefficient for the ECM_{t-1} reported in Panel B of 4.3 is negative and statistically significant (ECM= -0.792, t-test = --5.437, p = 0.000). This implies that deviations from pension investments in equities, FGN securities, local money market securities and mutual funds equilibrium path are corrected by nearly 79 per cent over the following quarter. In other words, the adjustment process is relatively high in Nigeria. The statistical significance of the ECM_{t-1} confirms the presence of long-run equilibrium relationship between pension investment and financial depth in Nigeria.

The Adjusted R-square is 0.75; this implies that pension investments in equities, FGN securities, local money market securities and mutual funds explains about 75 per cent changes in financial depth, while the remaining 25 per cent were other factors affecting changes in financial depth but were not captured in the model.

Post-Estimation Test

For the validity and reliability of the parameter estimates and to be able to draw valid conclusions based on the results, four types of residual test were conducted. First, is the serial correlation test which is used to test for the possibility of the error term being uncorrelated. Second, is to check if the finite variances of the error terms are equal. This assumption is referred to as the homoscedasticity. A violation of this assumption is referred to as heteroscedasticity. Third, is the linearity test, which is used to test if the model is linearly specified, the non-significance of the Ramsey RESET test implies the model is linear specified. Fourth, is the stability test, where the cumulative sum of residuals (CUSUM) is used. For the stability of the estimated model, the plot of CUSUM statistic must stay within a 5% significance level portrayed by two straight lines.

The results revealed that the successive error terms are not serially correlated because the probability value of *F*-statistic of 1.700 with a probability of 0.143 is not significant. Thus, the null hypothesis that there is no serial correlation in the residuals up to the specified lag orders at 1, 5 or 10 percent significant level is not rejected. The study concluded that the successive error terms were not correlated in the estimated model for pension investment and financial depth in Nigeria. Also, the heteroscedasticity results show that the *F*-statistic of 1.665 with a probability value of 0.459 is not statistically significant at either 1, 5 or 10 per cent levels of significance this implies that the null hypothesis of homoscedasticity could not be rejected; thus, there is evidence that the covariance of the error terms have a constant finite variance.

In addition, the Ramsey Reset Test, *F*-statistics of 3.032 with a probability value of 0.215 is not significant, thus, the model is correctly specified and that there is a linear relationship between pension investment and financial depth in Nigeria. Also, the CUSUM reported in Panel C and Figure 4.2 shows that that the estimated model is stable; because the plot of CUSUM statistic stays within a 5% significance level portrayed by two straight lines.

Annals of Spiru Haret University. Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900
ICCS Institutul Central de Cercetare Științifică
Fundația România de Mâine Universitatea Spiru Haret

Discussion of Findings

This study examined the effect of pension investment on financial depth in Nigeria. The result of the hypothesis shows that there is evidence that pension investment in equities has positive relationship with financial deepening. This implies that increases in pension investment in equities will lead to increase in financial depth in Nigeria. In sharp contrast, pension investments in FGN securities, local money market securities and mutual funds have a negative relation with financial depth. This implies that increases in pension investments in FGN securities, local money market securities and mutual funds will lead to decrease in financial depth in Nigeria. The result also shows that in the short-run that pension investments in equities and mutual funds have positive but insignificant relationship with financial depth, while FGN securities and local money market securities have negative and insignificant relationship with financial depth.

These findings corroborate with the results of Wang, Li, Abdou, and Ntim (2015) that examined the nexus between financial development and economic growth. The empirical results revealed that development hurts economic growth in general, but on the growth of the tertiary sector. By contrast, it found that financial development has no substantial effect on the primary and secondary industries. Also, Bonizzi and Churchill (2017) examined the expansion and innovation of financial markets, commonly known as financialization, as they are closely related to the growth of pension funds. Although the conventional narrative is based on the idea of financial development as a positive change, they argue that annuity pension funds can create demand pressures on the financial system, creating the potential for systemic risk and instability. Therefore, the increase in pension funds is important for the financialization process, as the demand for the assets of these institutions continuously generates growth and innovation in the financial markets. In the current context, pension funds are trying to reduce risk by switching their allocation from stocks to "alternatives" such as hedge funds and private equity. stabilizing force in present financial markets.

Conclusion and Recommendations

The result from this study shows that in the short run, pension investments in equities and mutual funds have positive but insignificant relationship with financial depth, while FGN securities and local money market securities have negative and insignificant relationship with financial depth. From the findings of the study, the study concludes that pension investment in equity, pension investment in FGN

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

securities, pension investment in local money market securities and investment in mutual funds are significant determinants of financial sector development in Nigeria. In particularly, pension investment in Nigeria significantly reinforce financial sector development in the aspect of financial development depth.

The study then recommended that, to accelerate financial sector depth, it is necessary for the financial sector regulators and policymakers to strengthen the depth of banks asset, other financial institutions and financial markets through policies and reforms to attract more pension investment that will contribute to the development of Nigeria's financial stance.

References

[1] Adeoti, J. O., Gunu, U. & Tsado, E. (2012). Determinants of pension investment in Nigeria: The critical factors. *International Journal of Human Resource Studies*, 2(4).

[2] Akhiojemi, S. I. (2004). *Contributory Pension fund*. A paper presented on the new pension reform at ASCON Pension Board of Trustees in September. 2004.

[3] Anaesoronye, M. (2010). Only a fresh bill will safeguard over 70% of small Nigerian workers. *Business Day*, 118 (9).

[4] Asekunowo, V. O. (2009). Funded contributory pension scheme, financial deepening and economic growth: what does the evidence say so far about the Nigerian economy? *CBN Bullion*, 34(1), 35-46.

[5] Central Bank of Nigerian (CBN) (2019). 2018 Annual Statistical Bulletin. Retrieved from: https://www.cbn.gov.ng/documents/statbulletin.asp

[6] Čihák, M., A, Demirgüç-Kunt, A., Feyen, E., & Levine, R. (2013). Benchmarking Financial Systems around the World. NBER Working Paper 18946, National Bureau of Economic Research.

[7] Davis, R. M., Stewart, F. & Knaack, P. (2021). Pension funds and financial repression. *A report by the Finance Team of the World Bank, supported by the Government of the Grand Duchy of Luxembourg* 1-37

[8] DFID (2004). The importance of financial sector development for growth and poverty reduction. *Working Paper, DFID Policy Division*. Retrieved from: www.dfid.gov.uk/ Documents/publications/fsdbriefingnote.pdf

[9] Ekpulu, G. A. & Bingilar, P. F. (2016). Pension fund in Nigeria, an appraisal, *quarterly journal of contemporary research*, 1(2), 196-209.

[10] Eneogu, F. I. (2012). The new pension scheme and workers' productivity in Nigerian universities. A study of university of Nigeria, Nsukka. Unpublished M.sc Thesis.

[11] Fashagba, M. O. & Adeyele, J. S. (2011). The motivating influence of pension on employees in

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

[12] FGN (2005). Contributory pension scheme. A publication of federal ministry of information and national orientation.
[13] Ghani, E. (1992). How financial markets affect long-run growth: A cross-country study. *World Bank Working Paper Series 843, Operations Evaluation Department, Washington, D.C.*
[14] Ikonen, P. (2017). *Financial depth, debt, and growth*. Helsinki: Grano Oy
[15] Jörg, M. D. (2010). Nigerian pension reform 2004-2010: Great leap or inappropriate policy design? *The Korean Journal of Policy Studies,* 25(2), 13-37.
[16] Kigen, A. K. (2016). Effect of fund size on the financial performance of pension funds in Kenya (Masters Thesis). Retrieved January 30, 2018 from scholar.google.com
[17] Kiyotaki, N. & Moore, J. (2005). Financial Deepening. *Journal of the European Economic Association,* 3(2&3), 701-713.
[18] Musa, A. (2020). Determinant of pension reform act of 2014 in Nigeria: A study of Abuja workers, *Nile Journal of Business and Economics*. Retrieved from http://journal.nileuniversity.edu.ng/index.php/NileJBE/
[19] Ndebbio, E. U. (2000). The impact of financial deepening on growth: A study of selected Sub-Saharan African (SSA) countries, *NDIC Quarterly,* 10(2), 36-64.
[20] Odo, C. O., Ani, W. U. & Agbo, I. U. (2021). Contributory pension scheme and the premium base of the Nigerian insurance industry, *Journal of Financial Risk Management, 101-116, available at DOI: 10.4236/jfrm.2021.102006*
[21] OECD (2005). Ageing and pension system reform: Implications for financial markets and economic policies, *OECD Publishing,* 28.
[22] Okoro, E. G & Okoye, E. I. (2019). Pension investment funds analysis: a variance-comparison tests of non-contributory (pre) and contributory (post) schemes in Nigeria accessed at 10.36108/unizikjb/9102.20.0260
[23] Ozor, E. (2006). Review of factors that slow down the processing of retirement benefits, A paper presented at the workshop organized by the institute of chartered secretaries and administration of Nigeria, Held at Modotel Enugu, between 14th and 16th
[24] Pension Commission (2019). Regulation on investment of pension fund assets. Retrieved from: https://www.pencom.gov.ng/wp-content/uploads/2019/01/AMENDED-INVESTMENT-REGULATION-FEBRUARY-2019-.pdf
[25] Rousseau, P. L. & Wachtel, P. (2005) Economic growth and financial depth: Is the relationship extinct already? *WIDER Discussion Paper No.* 2005/10.
[26] Rousseau, P. L. & Wachtel, P. (2008). What is happening to the impact of financial deepening on economic growth? Retrieved from: www.papers.ssrn.com/so13/papers.cfm?abstract_id=1281959
[27] Wallick, D. W., Julieann, S., Christos, T. & Joanne, Y. (2012). *The global case for strategic asset allocation*. Valley Forge, Pa.: The Vanguard Group.

[28] Wang, Y., Li, X., Abdou, H. A. & Ntim, C. G. (2015). Financial development and economic growth in China. Investment Management and Financial Innovations, 12(3), 8-18.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

STRATEGIES TO ENHANCE LOCAL GOVERNMENT FINANCE IN NIGERIA

Samuel C. UGOH[1], Kahinde Abiodun ISINKAYE[2], Wilfred I. UKPERE[3]

[1] Department of Political Science, University of Lagos, Nigeria, Email: samugoh@yahoo.com

[2] Department of Political Science, Olabisi Onabanjo University, Ago-Iwoye, Nigeria, Email: kehindeisinkaye@yahoo.com

[3] Department of Industrial Psychology and People Management, College of Business & Economics, University of Johannesburg, South Africa, Email: wiukpere@uj.ac.za

How to cite: UGOH, S.C., ISINKAYE, K.A., & UKPERE, W.I. (2022). "Strategies to Enhance Local Government Finance in Nigeria." *Annals of Spiru Haret University. Economic Series, 22*(2), 189-199, doi: https://doi.org/10.26458/22211

Abstract

This study adopted historical approach to political research and used secondary sources of information. This paper focuses on assessing financial challenges facing local governments in Nigeria. The study observed that insufficient allocation from the federation account, lack of effective revenue generation drive, mismanagement of funds, intrusion of the state government into local governments use of funds, amongst others are the major challenges confronting local governments. Nevertheless, if right strategies such as effective planning, accountability, transparency, curbing of financial mismanagement, sound business undertaking, increased fund allocation from federation account are adopted, local Government may be in better position to accelerate the pace of infrastructural development in Nigeria.

Keywords: *infrastructural development; local government; mismanagement; sources of fund.*

JEL Classification: H75 & H76

Issue 2/2022

Introduction

The Local government has been variously defined by scholars as a political authority under the state and federal centre for authorities. It is also an administration, which is saddled with the responsibility of maintaining law and order as well as providing a wide range of social services at the grass-root (Fajobi, 2004). It is the grass-root level of government that touches people's life by meeting their needs and stimulating their participate at the grass-root level. Local government is also close to the people, in terms of touching their lives, more than other levels of government (Sharma 2012). In fact, the significance of local government cannot be over-emphasized with regards to promoting greater understanding, peace and progress of the locality (Omotosho 2013). Local governments derive their financial income for their needs from internal sources, such as internally generated revenues from business undertakings as well as permits granted to businesses among others. They also generate revenues from external sources such as statutory allocation, grants and other sundry sources to meet up with myriads of local government needs. There are so many challenges confronting local government systems in Nigeria. These challenges seem to have become insurmountable in the face of poor revenue generation by local governments in Nigeria, in addition to poor infrastructural development of the locality from which the revenue is to be sourced, as well as the reckless financial spending of local governments' officials. Hence the paper explores the financial constraints facing local governments in Nigeria and suggests strategies to enhance their finances.

Objectives

The paper therefore aims to explores the operations of local governments in Nigeria, with regards to autonomy. Also, the paper looks at the attitudes and behaviours of the local government personnel in terms of revenue generation. The study will consider amongst others multiple sources of income of the local government system and the encroachment of the state government in manipulating their allocated resources. A critical look at the relationship between the local and state government will be interrogated.

Research Approach

This paper as earlier mentioned has utilized historical data. Secondary data obtained from published and unpublished academic sources were used. The paper is a conceptual paper which relied on thick literature reviews, theory building and authors' viewpoints.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Conceptual Clarification

According to Hickey (1996) the local level of government manages the services as well as regulatory roles through locally elected representatives who are accountable to the people. These officials supervise the resources and make policies towards the infrastructural development of the locality.

Aransi (2012) considers local government as a subunit of national government that is administered by a body (either appointed or elected), created by law over a well-defined geographical jurisdiction with authority to generate as well as utilise funds for the development and wellbeing of citizens. Oyediran (2003) argue that this level of government is closest to the grass-root and has great responsibilities.

Imam (2010) contends that the system is essentially an organised social unit founded on the spirit of oneness and entails the governance of a specified local administrative area, which constitutes a political sub-section of a country, state, or some other key political entities. These powers represent the legal concept that substantially oversees local activities, in addition to employees and institutional mandates. According to the 1976 Constitution of Nigeria, the local body is empowered to guarantee, through decentralisation of roles the full participation of the people along with their traditional institutions (FRN, 1976).

Furthermore, the United Nations Division of Public Administration (1961) considers local government as a political sub-unit of a state within a federal system of governance that is established by law, and significantly take responsibility in managing local activities, such as the authority to collect taxes or commit worker towards specific activities related to the locality.

Local government is different from local administration, in the sense that local government is the general involvement both in the choice of those making decision and in the process of decision making. While recognizing the supremacy of other levels of government, local government can be accountable for the decision it takes. Local administration on the other hand is the management of rural communities principally through the help of rural agents employed and accountable to an external agent of the state, which may be state of regional government (oyediran, 2003).

Theoretical Framework

According to Ola (2004), the school of thought holds that the constitutional roles of this grass-root government is the provision services to the people within their locality in an efficient manner. The officials are meant to achieve this goal through the provision of services based on national standard. This school also sees local government from the enviable position for the efficient performance of assigned functions based on closeness to the people. Thus, it is expected that speed and efficiency will reflect in the provision of basic social amenities at the rural level. Traditionally, it is expected that decision and policies of government are easily and quickly arrived at because targets of policies are easily consulted, and their responses could be known simultaneously (Omotosho 2003). In addition, the nearness a local government is to the people the better information that are necessary for policy decision by the local government, which supports the national government to stimulate initiative, and inculcate the feeling of national consciousness (Omotosho 2003).

Expectedly, local government is nearer to the citizens and renders the essential services more effectively to the people through the local level of government, which results in the allocation of fund to that level of government with the result that service delivery forms a bulk of the function of the local government system (Agharere, 1997).

Hence, the paper is contextualized within the efficiency theory of local government because finance have great implications on the performance of local governments. With sufficient funds and effective management of their operations, local governments could be able to fulfill their mandate within the local operational areas that are mandated to them.

Local Governments' Sources of Finance in Nigeria

Ugoh (2016) outlines two major sources of finance for local governments in Nigeria. They include internal Sources such as taxes (market tax and levies, rating tax on property, etc.), fees from local licenses, fines from local courts, earnings from business undertakings, interest payments and dividends, reimbursement, miscellaneous income such as slaughter fees, motor parks, burial ground etc. The external sources of revenue include federation account, donations, grants and gifts, miscellaneous income from non-governmental organizations and other trust funds. He further maintains that every constitutional sharing of revenues to the local government councils by the federal in addition to state authorities fall under the 1982 Revenue Allocation Act (RAA) as amended in 1986, 1988 and 1989. Also, Paragraph 162(3)(5) of the 1999 Constitution gives credence and support to these laws (ibid). He further noted that, the federal government has agreed since January 1992, to be allocating 20% of Federation Account Allocation to be disbursed and distributed to the various 774 local government councils in Nigeria. The 1999

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

constitution made a partial increment of 20.6% of the same allocation and 10 percent of the internally generated income of the state and local government account is divided and allocated various local government councils within the states of the federation.

Hassan (2011) notes that the internally generated revenue include miscellaneous items combined to deliver the necessary funds to finance the huge activities assigned to local authorities as the third tier of government. He further explains that the main reasons local councils exist is to gather different forms of government revenue from people within a locality and utilise those funds in providing efficient social service delivery based on the guiding principles of prudent financial management, on the basis of efficiency, effectiveness, and equity. Efficiency stresses the need to achieve maximum results at the lowest cost, while effectiveness ensures relevance of expenditure. However, equity focuses on justice and fair play. In local government, the objectives of financial management are in consonance with these components stressed and it is the activity, which involves revenue generation and subsequent disbursement, which focuses on expenditure pattern plans to be accomplished. He adds that financial management tends to be beneficial only when activities are properly planned and executed to the extent, that when a unit of it is defective, the whole structure is adversely affected.

However, local governments in Nigeria have suffered from one major challenge of inadequate funding overtime. For example, local government since inception in 1903 till 1976 reforms, received no fund from the central purse, and, depended on local rate, rents, property and tenement rates and various types of grants from the regional or state governments. This appalling situation changed with the reform of 1976 and since then, they have been supported by Federal Revenue Allocation Law which was passed in 1981. Unfortunately, most of the funds allocated to the local government were hijacked by state governments who usually claimed that they have used the fund for projects on behalf of the local governments. This has equally not supported the local government to generate enough resources to run the affairs of their localities (Oyediran, 2003)

Challenges Affecting Funds Generation and Utilization in the Local Government System in Nigerian

According to Abe, et al (2014), the importance of funds for the development and sustainability of any establishment cannot be overemphasized. Specifically, local governments require finance for the maintenance and undertaking of

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

developmental programmes. Constitutionally, local government receives certain amount of allocation from the federal as well as the state governments to cover some of their capital and recurrent expenditures. The challenge, however, is that each locality has its own peculiar economic, social and physical challenges in handling the funds. Apart from this, the imposition from the central and state governments greatly hinders the smooth operation of local government system in Nigeria.

Agharere (1997) notes that apart from the inability to generate their own sources of revenue, local governments are known to perpetually dependent on Federal Government for fund, which is a problem in itself. He adds that we are not here denying the fact that some local governments (mostly urban local governments) have not increased their own revenue efforts, but the issue is that they have done this at a rate slower than the rate at which their reliance on outside sources has increased. Despite this perceived increase in revenue, many local governments are at the verge of bankruptcy.

Hassan (2011) posits that the problems facing local government in Nigeria manifested because most of the items making up revenue earning of the local governments are not backed by law, thereby making the collection difficult and sometimes it becomes a legal issue in the court of law. In addition, poverty rate among people within a local government area in the country, particularly in rural areas, also incapacitate local government operations. The situation is equally not helped by the fact that the cost of collecting revenue, at times, is higher than what is collected, owing to pervasive corruption of local government officials. All the above challenges usually hinder the plans and activities of local governments in Nigeria.

Adamolekun (2014) notes that the roles of local governments, in relation to fund generation and utilization as well as efficient service delivery, is usually affected by inadequate lack of trained local government officials. According to him, Sub-Sahara African countries are known for this practice whereby higher authorities assign and delegates functions to local governments without providing adequate finance and manpower to carry out the assignment. For instance, a country like Nigeria has a formal arrangement of allocating 10 percent of national revenue to local governments to perform functions that are clearly spelt out in the country's constitution. Thus, the discretion of local governments to use the funds is constrained for the specific purpose it was meant for.

Adebisi (2012) posits that pervasive corruptive attitude of local government officials have negatively affected the state of local goverments in Nigeria. This

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900
Issue 2/2022

situation has been further exacerbated by the state government diversion of local government funds. In most cases, the funds are shared amongst those who are entrusted with the management of local government affairs. Also, the staffing and recruitment in local governments seem to have been hijacked by politician who through political patronages reward their cronies, families, and friends.

Strategies to Enhance Local Government Finances in Nigeria

In the first place, local government councils should be accorded partnership status in the development of local communities, rather than as a co-service political-legal agent of the state that carry out delegated responsibilities. Also, local governments should endeavour to mobilize people within their locality to contribute their quota in terms of finance and labour towards the sustainable development of their locality. In addition, the imposition by federal and state governments on local government should be preceded with adequate financial, logistical and human resources capacity building for effective outcomes (Ugoh, 2017). In addition, Local councils should be designed to execute programmes that generate interest among the population, such as engaging in agro-based industry as well as small and medium scale enterprises as a way of improving internally generated revenues.

There is a need to improve quality work life of staff members of local governments. Improvement of their office organization and information flow as well as efficient management of assessment evaluation systems will go a long way in enhancing the performance of local government staff in terms sound collection of local rates by the local councils (Ologbenla, 1997).

There is a need for research efforts targeted at expanding the present base of rateable items. For example, rates on radio and television are hardly collected even though they are statutory, while rates on the use of some home appliances such as sewing machines, electric grinder, video sets, washing machines, vacuum cleaners, personal computers and jewelleries, electric driers, etc., should attract local rates since they are also insurable by their owners against damages or loss, as part of household items (Ologbenla, 1997).

More than that, local governments should accelerate their trading activities as a way of raising investible funds. In that case, they should also be involved in long term capital investments which can be used as collateral when mobilizing funds through loans. This includes the building of shopping complex, small scale industries, factories, etc.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Adetola (2019) has initially canvassed for an increasing revenue allocation to local government and the sharing of funds accruing from the federation accounts among the three tiers of government. He advocated that local government allocation should be adjusted to 22.5% as against 20%. This is indeed necessary because governance should be closer to the people because as resources are available at this component units, there utilization can be better evaluated by the people through effective monitoring, evaluation, and audit. Also, the appointment of special advisers and special assistants to local government chairpersons and other higher level of governments officials should be discontinued as a cost- saving measure to boost financial standing of local governments.

Furthermore, opinions have been expressed about the elimination of the joint state/local government account and adoption of direct payment of allocated funds into the local government accounts. In 2005, the National Assembly legislated that the allocation should go directly to the local authority, instead of the previous arrangement of paying through joint state/local account. Such arrangement will help to prevent the state government undue influence on the joint account towards their favour (Salawu, 2016).

It is also worth taking the advice of Abioro and Muraina (2016), who posited that, local government financial viability should be aimed at ensuring the financial autonomy. They argued that the abolition of the state/local government joint account is highly necessary for the local government to receive their remittances directly from the federation account. They equally advocated for a review of the present revenue allocation formula to ensure equitable distribution of national wealth in their favour as a way of advancing local government financial base. In addition, the tax base of local government should be strengthened to allow for efficient implementation of projects at the local government level in the country.

Corruption is another issue that needs to be tackled in public sector so that workers will no longer feel cheated by the elites and powerful politicians in the society (Akinwale, 2018). From that perspective, reward system should be linked to personnel efforts, and merits need to be enthroned as the basic criteria for promotion and rewards. This will equally advance the financial state of local governments as their resources will be judiciously utilized. Hence, government should setup strong and independent anti-corruption agencies that are politically neutral, and capable of discharging their duties without fear and favour. The anti-corruption agencies and the police services should be able to act without prejudice based on political inclinations or affiliations (Taiwo, 2019). Such agencies will be

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

able to put local governments on their toes by guiding against mismanagement of funds.

Instilling the attitude of accountability in Nigeria especially at the local government level is a key to strengthen their financial viabilities in the country (Adeyemi, 2012). In that case there is need to remind the local government officials of the existence of Independent Corrupt Practice Commission (ICPC) Act and other anti-graft laws to ensure integrity within their localities. The anti-corruption agencies should adopt best practices and strategies to institutionalize integrity through the establishment of anticorruption with the transparency units. In fact, the enlistment of local peoples into anti-corruption corps is a welcome gesture. The idea is to ensure that Nigerian public institutions are characterized by true professionalism and meritocracy, with a sense of commitment and patriotism to defeat corruption, as well as, ensuring transparency in the generation and utilisation resources by instituting a highly efficient corruption management mechanisms. Also, the age-long values of honesty, integrity, hard work, accountability, due process, and transparency in the public service at all levels should be emphasized (Ijeweremere, 2015).

Recommendations and Conclusion

It is glaringly clear that paucity of funds has negatively hampered the operation of local governments in Nigeria. This can be attributed to overdependence of funds allocation from the centre, inability to venture into businesses, poor financial planning and corrupt practices. This has resulted in poor performance and abandonment of viable projects in most local governments overtime. Hence, there is an urgent need to increase the funds allocated to local governments in Nigeria, in order for them to be able to render effective service to people within their locality. Besides, it will help the local government to operate efficiently at these critical moments. Secondly, an intensive revenue generation drive and a commitment to invest in viable businesses that are permitted by the enabling laws in the country in the current times should be encouraged and supported to enable local governments in Nigeria to make profit in a bid to meet their financial obligations. Finally, prudent management of financial resources of the local government is advocated, with strict adherence to the principles of accountability, responsibility, accessibility as well as transparency in the management of local affairs in Nigeria.

References

[1] Abe, T. and Omotosho, F. (2014). Local Government System In Nigeria in Ajayi R and Fashagba J (eds) Understanding Government and Politics in Nigeria, Omuaran: Landmark University Department Of Political Science and International Relations.
[2] Abioro, F. and Muriana O. (2016). Local Government Autonomy in Nigeria: Prospects and Challenges for National Development, African Journal of Institution and Development, 12 (19): 129-137.
[3] Adamolekun, L. (2014). Decentralization, Sub-National Government and Inter-Governmental Relations in Adamolekun L (ed) Public Administration In Africa. Lagos: Spectrum Publishers.
[4] Adebisi, A. (2012). Local Government and Good Governance in Nigeria's Emerging Democracy: An Analysis of the Constraining Factors. Canadian Social Sciences Journal, 8 (6):142-150.
[5] Adetola, O. (2019). Restructuring The Fractured Structure: Selected Thought On The Nigerian State, Ijebu- Ode: Gracia Associate International.
[6] Adeyemi, O., Akindele, S., Aluko, O. and Agesin, B. (2012). Institutionalizing the Culture of Accountability in Local Government Administration in Nigeria. African Journal of Political Science and International Relations, 6 (4): 81-91.
[7] Agharere, V. (1997). Dominant Issues in the Nigeria Local Government system. Lagos: Imprint Publisher.
[8] Akinwale, A. (2018). The Quest for Restructuring Nigeria: The Challenge of Recruitment and Service Delivery. Ijebu-Ode: Gracial Associate International
[9] Aransi, I. (2012). Local Government Administration in Comparative Perspective. USA: Warren Publishing Company.
[10] Fajobi, O. (2010). X-ray of local government administration in Nigeria. Ibadan: Crest-hill Publisher
[11] Hassan M. (2011). Financial Management in Nigerian Local Governments. Ibadan: University Press.
[12] Hickey, T. (1966). Enemies Within and Enemies Without the Gates cited in Yakubu J (ed) Socio-Legal Essay in Local Government Administration in Nigeria. Ibadan: Demyaxs Law Books Publisher.
[13] Ijewereme. O. (2015). Anatomy of Corruption In The Nigerian Public Sector: Theoretical Perspective and Some Empirical Explanation, SAGE Open Journal, 5:1-6.
[14] Imam, I. (2010). 50 years of the Nigerian Project: Challenges and Prospects. Ibadan: College Press Limited.
[15] Ola, R. (2004). Local Government Theory and Practice: An examination of modernization efforts in three decades of Nigeria local government in Agagu, A. and Ola, R. (eds). Development Agenda of the Nigerian State. Ibadan: Flag Publisher.
[16] Ologbenla, D. (1997). Local Government in Nigeria: Strategies and Methods of Revenue Generation. Unilag Journal Social Sciences, 1 (1) 29-41.

[17] Omotosho, F. (2003). Element of Governments. Ado Ekiti: Adeyemo Publishing Company
[18] Oyediran, O. (2003). Introduction to Political science. Ibadan: Daybis Limited.
[19] Salawu, M. (2016). Local Government Administration in Nigeria in Yagboyaju, D., Ojukwu, C., Salawu, M. and Oni, E. (eds) Fundamentals of Politics and Governance. Lagos: Concept Publisher
[20] Sharma, M. (2012). Public Adminsitration in Theory and Practice. New Delhi: Kitab Mahal Publisher.
[21] Taiwo, E. (2019). The Judiciary and The Anti-corruption Crusade in Ayoade, J. and Akinsanya, A (eds). The Buhari Administration Presidency 2015-2019. Ijebu Ode: John Archer Publisher Limited.
[22] Ugoh C. (2017). Ecology of Public Administration and Politics in Nigeria: Contemporary Issues. Lagos: Sam Iroanusi Publisher.
[23] United Nations Summer Conference on Local Government in Africa (1961). Cambridge: UN.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

ACCOUNTING IN THE NEW AGE OF DIGITIZATION. CLOUD ACCOUNTING

Gădău LIANA
Faculty of Economic Sciences, Spiru Haret University, Fabricii Street no. 46G, District 6, Bucharest, Romania, Phone: +0213169793, Email: lianagadau@yahoo.com

How to cite: GĂDĂU, L. (2022). "Accounting in the New Age of Digitization. Cloud Accounting." *Annals of Spiru Haret University. Economic Series, 22*(1), 201-210, doi: https://doi.org/10.26458/22212

Abstract
We note that, in the recent years, there has been substantial progress in the field of Cloud Computing.
The changes brought about by digital technologies are felt in all areas, including in accounting.
Currently, in business, the transfer of accounting systems in the Cloud is a new solution used by more and more companies that believe that, in this way, they will improve the economic efficiency of their business activity, performance and competitiveness of the company.
The purpose of our article is to analyze the implementation of Cloud technology in the organization's accounting, how it influences the flow of accounting processing, and accounting results.
We want to investigate whether Cloud technology is a solution for the future of accounting, or whether there are important impediments that make us susceptible and cautious as users.
The research methods used consist in the analysis of the specialized literature by applying different techniques of analysis of works based on qualitative, quantitative research but also comparative analysis.

Keywords: *cloud accounting; cloud computing; reduces the volume of manually processed documents; the prevent errors; the increase data accuracy; the security information and confidentiality information*.

JEL Classification: *H70, H83, M40, M48*

Introduction

In the business world, the transfer of accounting systems in the Cloud is a new and innovative solution that more and more companies are currently using, motivated by the advantages in terms of costs, diversity and speed of operations provided by the new technology.

The purpose of our article is to analyse the implementation of Cloud technology in the organization's accounting, how it influences the flow of accounting processing, and accounting results.

We want to investigate whether Cloud technology is a solution for the future of accounting, or whether there are important impediments that make us susceptible and cautious as users.

The implementation of Cloud technologies in the accounting information system of modern companies is a current topic that is of interest, but also controversial, both in the business environment and in the accounting profession.

The research methodology of this paper is of qualitative-quantitative deductive type. The research methods used consist in the analysis of the specialized literature by applying different techniques of analysis of works based on qualitative, quantitative research but also comparative analysis.

Cloud computing is a model of data processing that consists in making available to the user, through web resources and provider services, the computing power, the disk space, the databases, the analysis services and the artificial intelligence.

Given that information technology has evolved extremely rapidly in the last decade, there is a need for a new approach to accounting computerization, which can have a positive impact on the business.

A study from December 2015, conducted by KPMG on global cloud trends, shows that more and more managers are prepared and choose to migrate the financial and accounting process to the Cloud.

For these companies, elements such as: access to information, speed of transmission, speed of decision-making, flexibility in managing accounting activities are becoming more and more important.

Literature Review

The research topic responds to current needs in the field of digital accounting. I studied the representative and current works on the chosen topic, by Romanian and foreign authors. It is a topical issue and of great interest.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

1. Cloud Accounting in the business environment. Characteristics

Information technology changes the way companies conduct their business activity related to structure, objectives, strategies, human resources.

A study conducted by Aberdeen Group – a research and market research company, in 2013, shows that Cloud applications implemented in the flow of accounting processing led to a 50% reduction in invoice processing costs, a significant improvement in customer satisfaction and an increase by over 20% of labour productivity.

Thus, Cloud applications implemented in the accounting process can increase the productivity of accounting staff by optimizing the time spent with data processing and its allocation for the development of accounting analysis in decision-making.

By default, this can generate a reduction in the costs of collecting and processing accounting data, but also an improvement in the client-accountant relationship by accessing in a shorter time the information desired by the client.

For many companies, accountancy is a cumbersome and time-consuming process. Collecting and recording data, organizing information, reconciling accounts, generating reports can be difficult, costly, time consuming and error prone activities.

Therefore, an online accounting software in the Cloud can offer managers and employees the possibility of global and integrated access to data, rapid updating of information when desired, rapid generation of reports, of financial statements with a significant reduction in time and costs [Gupta & Gaur, 2018].

Cloud Accounting can provide applications, levers, to meet business needs [Prichici & Ionescu, 2015].

Thus, at the *operational level* – Cloud Computing has functions that support accountants for efficient processing and storage of data on accounts receivable, debt, taxes, and bank accounts.

At the *tactical level* – Cloud Computing has functions that support accountants for a quick generation and access to financial statements, accounting records, reports, cash flow analysis, risks analysis, etc.

At the *strategic management level* – Cloud Computing provides fast and integrated access to data on activities at other levels of responsibility, has functions that support budget planning, business modelling, efficient management of internal controls of a company.

Table 1. Influences of Cloud Accounting business levels.

Influences of Cloud Accounting business levels
Operational level - Cloud Computing has functions that support accountants for efficient processing and storage of data
Tactical level - Cloud Computing has functions that support accountants for a quick generation and access to financial statements, accounting records, reports, cash flow analysis, risks analysis
Strategic management level - Cloud Computing has functions that support budget planning, business modeling, efficient management of internal controls of a company

Source: The author's processing

A Cloud Accounting application is an accounting application that can be accessed from anywhere with an Internet connection, without the need to be installed and managed on one's own servers.

By implementing Cloud-type applications, the financial relationship between the business partners can be significantly improved, in the sense that [Weins, 2016]:

- by means of these applications, it is possible to give up time and resource consuming activities;
- it allows data access in a common workspace;
- it allows secure and online storage of information;
- regardless of location, it allows permanent access from any electronic device that has an Internet connection.

Accounting organizations such as the American Institute of Certified Public Accountants (AICPA) consider Cloud Computing technology as an innovative way of operating in business. Thus, AICPA highlights the diversity of possibilities that are created by using Cloud Computing-based applications in accounting efficiency such as [Weins, 2016]:

- fiscal planning;
- productivity and profitability analysis;
- cash flow forecasts;
- confirmations requested for audit;
- payment of invoices;
- preparation of financial statements, salaries, sales;
- customer relationship management (CRM);
- real-time approach to scanned invoices, etc.

We show in Table no.2 the platforms often used in Cloud:

Table 2. Cloud platforms.

Cloud platforms - opportunities for accounting:
Platforma Software-as-a-Service (SaaS)
Platform-as-a-Service (PaaS)
Infrastructure-as-a-Service (IaaS)

Source: based on information from Tugui, A. & Gheorghe, A.M. (2014)

Through the *Software-as-a-Service (SaaS)* platform – which is the most common form of Cloud – professional accountants have the opportunity to provide accounting services in an innovative way, namely, the use of third-party managed applications without the need of installing additional applications.

Another Cloud platform is *Platform-as-a-Service (PaaS)* – which is the most complex form of Cloud and offers the possibility for a company to develop its own applications.

Another platform often used in the Cloud and with many benefits is *Infrastructure-as-a-Service (IaaS)* – through which one can access infrastructure resources, storage or networking services.

More and more specialists recommend that, before using the Cloud Computing applications in the accounting process, a review of the software possibilities, the infrastructure, the internal processes, its staff be made within the company.

Implementing Cloud applications in the accounting process is not an easy action because it involves a change of mentality, culture, attitude, and even a staff reduction.

Accountants not only adopt Cloud Computing, but must structure a new approach to work, which will reduce administrative processes that are repetitive, but also a staff reduction.

According to a EUROSTAT ranking at the level of September 2020, only 10-15% of the Romanian companies chose to implement Cloud applications in the accounting process. At European level, countries with a better level of IT digitization in the Cloud are: France with 28%, respectively, Germany with 19.4%.

However, at European level, there has recently been a 21% increase in Cloud adoption among corporations.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

2. Advantages of Cloud Computing in accounting

***** Implementing Cloud applications in a company's accounting process helps reduce the time for processing invoices and other financial documents by means of electronic records possibility.

Accounting documents, especially invoices, receipts, tax receipts for purchases, sales, transfers, can be uploaded online directly by the customer through scanning, thus eliminating the stage of sending these documents to the accountant and processing them in the document -by- document system.

Cloud applications collect transaction data from invoices, record information in the accounting journals and post data to the account sheets. Thus, it eliminates a series of accounting steps that the accountant would perform document by document using the usual accounting program, gaining, by means of the Cloud applications, time, a fast processing of a large volume of accounting documents, but also their rapid centralization in Accounting Journals, Account Forms [Mohanty & Mishra, 2017].

***** Financial management based on SaaS solutions automates the financial process and reduces the volume of manually processed documents.

***** Compared to traditional accounting, the Cloud accounting system can make the transition from basic accounting records to compiling real-time business analysis.

***** Cloud Accounting technology improves the customer-accounting relationship through the following two interface components [Prichici & Ionescu, 2015]:

- *Customer-oriented interface:*

Cloud Accounting simplifies the way of approaching the data, all the information required at a certain moment for the analysis of the financial situation are arranged in the form of Dashboards easy to follow by the client;

- *Single user interface:*

Regardless of who accesses certain information and from which location, the same data is available, as different users can track the same information in real time.

***** Cloud Accounting offers the ability to eliminate duplicate information, prevent errors and increase data accuracy. SaaS-based accounting systems have implemented controls that automatically identify and prevent duplicate records [Mohanty & Mishra, 2017].

For example, goods, services purchased or rented are automatically attributed to invoices received or payments made, and expenses are correctly recorded in the accounting period to which they correspond.

***** Cloud technology requires minimal investment in hardware, and maintenance of cloud applications is provided by the vendor at no additional cost. The costs involved in using Cloud applications are lower than the costs of running applications locally on one's own devices.

***** Another advantage is given also by the increase of the activity volume. Thus, for an application running on the company's servers, increasing the volume of activity above a certain level can lead to major additional investments in hardware and software. Instead, cloud technology offers much more flexibility, without additional investment in equipment or infrastructure, this technology allows the management of a larger volume of data by supplementing the demand for cloud services at a minimum additional cost [Gupta & Gaur, 2018].

3. Limitations of Cloud Computing technology in accounting

Although the benefits of Cloud Accounting are recognized at the company level, as we saw from the study conducted by EUROSTAT 2020, the implementation of Cloud applications is quite slow, especially due to the uncertainty of management regarding the control and ownership of information.

The biggest fears of companies refer to the security and confidentiality of their information, in terms of using Cloud-based applications.

These data security concerns are explained by the fact that, by applying Cloud services, the company information is stored on a Server that can be accessed via the Internet, and is not stored on the company's own computer unit.

According to the 2019 Oracle & KPMG Annual Report – there has been a 3.5-fold increase in the number of companies that will hold more than half of the data in the Cloud by the end of 2020.

However, the Report points out that the critical nature of cloud services has turned the security of the Cloud into a key strategic point.

The 2019 Oracle & KPMG Annual Report has identified several segments where companies can face *security threats* by applying Cloud services in accounting, namely [Oracle & KPMG, 2019]:

- The confusion generated by the division of responsibility between departments – can generate cyber and security incidents in the form of malware attacks and data theft;

- CISO central IT security officers frequently see their responsibilities at the edge of cloud security. About 90% of central IT security officers are confused about their role in software security (SaaS) compared to what Cloud services provide;

- Visibility remains the most important security challenge. Timely detection of the cybersecurity problem, but also the inability of the existing network security protocols to provide visibility into the workload of the host server can represent cybersecurity issues;
- Other cybersecurity issues are the lack of security controls, but also the use of the Cloud by unauthorized persons – leading to fraud and information leakage.

Conclusions

Our research on the chosen topic demonstrates the positive impact of Cloud applications on accounting systems, which determines the improvement of business performance.

Many transactions can be performed faster, in a simplified and integrated way, and managers will be able to make faster and better decisions to achieve the company's objectives.

Being connected to a global market, the company can maintain better connections with all its business partners, thus becoming more competitive.

Accounting needs to position itself in the future by taking advantage of digital technology opportunities, including Cloud Computing applications, in order to have a business vision, but also to ensure process efficiency, compliance, control, increase productivity, reduce costs and increase overall business.

Cloud Computing technology changes the way in which the functions of the finance department support business, changes the way in which we identify and manage current and future risks and opportunities, as well as the way in which we analyse and process the information.

Cloud Computing technology changes the way in which information is stored and sorted, the speed and manner in which we interact and communicate and helps us increase transparency and accountability. This is no longer an IT function, but an economic-financial function that is gaining more and more ground in the activity of companies.

The cyber risk is and will remain a thorny issue in this context, but it must be integrated into all business decision-making processes, not added later as a secondary idea.

References

[1] Andreica, H., T. (2014). Globalizarea, economia digitală şi impactul asupra integrării contabilităţii, la *Conferinţa Internaţională „Dezvoltare durabilă în condiţii de instabilitate economică" din 20-21 iunie 2014, Academia comercială Satu Mare, România*. Available at: http://conferinta.academiacomerciala.ro/CD2014/cd_cuprins_simpozion.htm.

[2] Andronie, M., & Ionescu, L. (2019). The Influence of Cloud Technology in Transforming Accounting Practices, *Annals of Spiru Haret University,* Issue 4, p. 27-34.

[3] Congresul al XXI-lea al profesiei contabile din România (2016). „*Profesia contabilă în era digitală. Provocări şi oportunităţi*" din 23-24 septembrie 2016. Disponibil: http://www.ceccarbusinessmagazine.ro/profesiacontabila-in-era-digitala-provocari-si-oportunitati-a1002/.

[4] Gupta, A. K., & Gaur, P. (2018). Impacts of Cloud Computing on Accounting: Aids, Challenges and Its Future Growth. *EPRA International Journal of Economic and Business Review*, 6(3), p.40-54.

[5] Ionescu, B., Prichici, C. & Tudoran, L. (2014). Cloud Accounting – A Technology that May Change the Accounting Profession in Romania, *Revista Audit Financiar, vol. XII, nr. 110 – 2/201*, pp. 3-15.

[6] Mohanty, A., & Mishra, K. A. (2017). Benefits and Issues of Cloud Computing in Accounting, *International Journal of Trend in Scientific Research and Development, 1(6)*, 283-288.

[7] Oracle & KPMG (2019). *Cloud Threat Report*. Available at: https://www.oracle.com/a/ocom/docs/dc/final-oracle-and-kpmg-cloud-threat-report-2019.pdf.

[8] Prichici C., & Ionescu B. (2015*)*. Cloud Accounting - A new paradigm of accounting policies. *SEA - Practical Application of Science, Volumul III.* Available at: https://ideas.repec.org/a/cmj/seapas/y2015i7p489- 496.html.

[9] Tugui, A. & Gheorghe, A.M. (2014). Changing the role of accountancy in the context of Cloud Computing, *Jurnalul Managementul Intercultural, anul XIV, nr. 31 – 2/2014*, p. 149-157.

[10] Weins, K. (2016). *Cloud Computing Trends*, Available at: http://www.rightscale.com /blog/cloud-industryinsights/cloud-computing-trends-2016-state-cloud-survey.

[11] EUROSTAT Statistic (2020). *Cloud computing*, available: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Cloud_computing_-_statistics_on_the_use_by_enterprises

[12] https://www.paychex.com/articles/finance/benefits-of-cloud-over-traditional-accounting/, accessed on May 05, 2017.

[13] http://www.worthofweb.com/blog/cloud-vs-traditional-accounting-software-which-should-you-use/, accessed on May 20, 2017.

[14] http://www.accountingweb.com/community-voice/blogs/amy-vetter/five-myths-your-clients-must-overcome-when-moving-to-the-cloud/, accessed on May17, 2017.

[15] http://content.hubdoc.com/h/i/183191250-5-trends-that-will-change-accounting-forever/, accessed on May 23, 2017.
[16] http://www.thefinancialexpress-bd.com/2017/03/29/65537/Future-of-accounting-profession:-Implications-for-teaching-and-research/, accessed on May 27, 2017.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

PRACTICAL IMPLEMENTATION OF NEUROMARKETING IN DIFFERENT BUSINESS INDUSTRIES: CHALLENGES AND TRENDS

Nevenka POPOVIC SEVIC[1], Milica SLIJEPCEVIC[2], Ivana RADOJEVIC[3]

[1]Faculty of Contemporary Arts, University Business Academy in Novi Sad, Svetozara Miletica 12, 11000 Belgrade, Serbia, Tel.: +(381)114011216, Email: nevenka.popovic.sevic@fsu.edu.rs

[2,3] Faculty of Management, Belgrade Metropolitan University, Tadeusa Koscuska 63, 11158 Belgrade, Serbia, Tel.: +381(11)2030885, Email: milica.slijepcevic@metropolitan.ac.rs; ivana_radojevic@web.de

How to cite: POPOVIC SEVIC, N., SLIJEPCEVIC, M., & RADOJEVIC, I. (2022). "Practical Implementation of Neuromarketing in Different Business Industries: Challenges and Trends." *Annals of Spiru Haret University. Economic Series, 22*(2), 211-227, doi: https://doi.org/10.26458/22213

Abstract

Over the last decade, new technological progress has enabled the researchers to use neuroscience not only for scientific but also for marketing studies, so they can explore, at the same time, conscious and unconscious drivers of consumer behaviour in real daily situations. Applying brain science to consumer behaviour, neuromarketing—a new innovative marketing research discipline—examines consumers' response (sensory, motor, and cognitive) to advertising stimuli. This article focuses on three key areas: literature review, challenges and limitations of neuromarketing, and neuromarketing trends, with several concrete real-life examples in different business industries. Practical challenges and limitations within the neuromarketing research, such as ethics, accessibility, costs and timing, but also side effects, are discussed. At the end, this article emphasizes many practical implementations of neuromarketing in different business branches, with the adoption of academic and scientific neuroscience researches to commercial purposes.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Keywords: *neuromarketing; neuroscience; customer behaviour; challenges; trends; limitations.*

JEL Classification: M31, M39, D87

Introduction

There are theorists that have suggested that the conscious mind is not the source or origin of human behaviour, they hypothesise that impulses to act are unconsciously activated and that the role of consciousness is as sense maker after the fact (Wegner, 2002). Since roughly 95% of processes in our brain are non-conscious, significant number of purchases are impulse driven (Stern, 1962; Fitzmaurice, 2008; Mohan, 2013), and the impulse buying costs the average U.S. consumer around $5,400 per year (O'Brien 2018). So 95% of thinking and therefore purchasing decisions are made in the subconscious part of the brain. Trying to understand how it functions was like an enigma for the researchers in the scientific field, and also for the marketing specialists in the companies.

As an area of applied neuroscience, neuromarketing is committed to the research of subconscious responses of the brain to marketing stimuli, so one can find the answer. Combining the three disciplines—neuroscience, psychology, and marketing (Plassmann et al., 2012)—gives businesses a unique opportunity to create their own brand strategies and increase brand awareness. It is believed that the application of neuromarketing is stimulated by the commercial interest of companies that can use neurophysiological tools (such as positron emission tomography (PET), transcranial magnetic stimulation (TMS), galvanic skin response (GSR), electrocardiogram (ECG), electroencephalography (EEG), functional magnetic resonance imaging (fMRI), facial expression recognition system (fERS), voice pitch analysis, and eye tracking (ET)) to monitor the main neurophysiological signals and consumer behaviour, and based on that to create their own marketing campaigns (Wang and Minor, 2008; Fortunato et al., 2014; Harris et al., 2018; Lim, 2018; Alvino et. al., 2020). Exploring and mapping the brain functions and correlated neuromarketing points with different behaviours, companies are creating highly targeted advertisements that can provide high return on investments. Using neuromarketing techniques, big companies and institutions are able to explore the deepest levels of the human brain and to create personalized products that tap into the neurological processes underlying our mental responses.

Neuromarketing research techniques are currently applied to a wide variety of industries starting from technology, gastronomy, tourism, financial industry, pharmaceuticals, fashion, education, etc. The applications of neuromarketing are growing in the same way that neuromarketing research is paving the way toward a better understanding of human behaviour and helping us to learn more about it. Neuromarketing techniques will likely continue to expand as the field of consumer neuroscience grows and continues to study both the inner workings of the brain and the way it operates. The core and main goal of neuromarketing is the assimilation of theories and methods and their connection with theories and methods in the fields of marketing, economics and psychology, in order to develop neuroscientific explanations of the impact of marketing incentives on the behaviour of target consumers. Depending on neurosciences and the application of new technologies in the field of neurology neuromarketing research domain expands every year (Slijepčević et al., 2017).

Literature Review

Neuromarketing is a special marketing approach for the companies that prefer to take a modern approach to marketing research while studying consumer behaviour with the help of neuroscientific tools. Marketing experts and marketing managers use neuromarketing to assess consumer preferences for different products/services or brands. Owing to neuromarketing, the process of making a purchase decision can be precisely explained.

Modern neuroscientific studies have shown that most of the mental processes, including decision making, occur unconsciously. These unconscious processes explain why individuals fail to predict their future choices (Vecchiato et al., 2013). Neuromarketing applies neuroimaging tools in marketing research with the aim to better understand consumer behaviour towards marketing incentives (most of which are in advertisements), in order to further the business (Hakim et al., 2018). Therefore, the concept of neuromarketing is exclusively related to brain activities in order to monitor the unconscious mind of consumers.

In theory, a distinction is made between the term "neuromarketing" and "consumer neuroscience", where the first term is related to marketing research conducted for commercial reasons, while the second term is used more in academia (Plassmann et al., 2015). The emergence of neuromarketing has significantly improved the sometimes predictable and expected outcomes of traditional marketing research, thus revealing how unconscious responses and feelings affect customer perception and decision-making procedures (Mileti et al., 2016).

Neuromarketing can be described as a mechanism that makes customer relations easier to manage (CRM), and that is based on understanding of the fundamental functional mechanisms of the nervous system (Plakhin, et al., 2018). Neuromarketing offers a suitable replacement for traditional researches that are often not adequate to credibly convey the attitudes, beliefs and values formed by customers. In this way, researches often represent just a validation of mere consumer assumptions about products, services or advertisements. Luan and the authors (2016) proved that the consumer subconscious is difficult to measure by traditional research methods, so they advocated the application of neuroscience technology in marketing research in order to study in detail the consumer subconscious response to close the gap.

Neuromarketing has contributed to the evolution of marketing by illustrating how unconscious responses and emotions can affect consumer perception and the decision-making process. The studies of brain imaging solve these problems by giving researchers the opportunity to understand consumer decision-making process and shopping patterns, through reading and interpreting the unconscious mind. The American Marketing Association has defined consumer behaviour as the dynamic interaction of affect and cognition, behaviour, and the environment by which human beings conduct the exchange aspects of their lives (Ares et al., 2013), (Cherubino et al., 2019).

Over the last two decades, it has become noticeable that industries are adopting neuromarketing in their companies in order to improve the efficiency and accuracy of their marketing strategies. However, the approach and application of neuromarketing vary depending on the goals that a particular company wants to achieve (Stanton, et al., 2016).

In the *advertising industry*, Guixeres and authors (2017) conducted the research on metrics based on the consumer neuroscience in order to anticipate the rates of customer recalls, likes and follow-ups in online advertising. They found that neuromarketing-based techniques are efficient in predicting the success of advertising responses. Hamelin and authors (2017) examined the efficiency of emotions and advertising by developing a new approach to facial expression analysis. Grigaliunaite & Pileliene (2017), on the other hand, applied a neuromarketing approach to study the effect of a female celebrity as a spokesperson for FMCG advertising.

When it comes to the *food industry*, Jain (2010) focused on advertising, food marketing, and the emotional effects induced by food and beverages through neuromarketing research methods directly on a consumer. Bruce and authors

(2014) conducted the research on branding and advertising using the fMRI neuromarketing technique. They found that food logos can activate certain regions of the brain in the youngest population, thereby increasing the effect of the desire to buy a given food item. On the other hand, Wolfe and authors (2016) studied the differences in brain activity between familiar and unfamiliar foods by using also fMRI as a neuromarketing tool. Ramsøy and authors (2017) conducted the research on the topic of assessing consumer preferences and final decision to purchase a particular product, according to body posture and pupil dilation in consumers.

In the field of *pharmaceutical industry* neuromarketing is used in order to inform the target audience about new products, but also in a situation where it is necessary to achieve a strategic advantage over the competition (Nemchenko et al., 2020).

As part of the *political campaigns*, Crespo-Pereira and Legerén-Lago (2017) developed a study on the application of neuroscience in political science and on the role of emotions in voter behaviour. Owing to the supporting disciplines such as philosophy and political science, many studies in the field of neuropolitics examine the causal relationships between the political attitudes of the electorate and the brain functions of voters, which significantly affects the development of certain political activities after political elections (Kolev, 2017).

As far as the *tourism industry* is concerned, Boz et al. (2017) studied the psychological influences of a tourism product or service on the customer, while citing examples of neuromarketing. In a recent research study conducted by means of eye-tracking as a neuromarketing tool, tourists' visual observations related to the hotel offer were analysed based on colour perception, aesthetics, text layout on social networks, as well as on final observations of potential tourists (Muslim, 2020).

Neuromarketing is more frequently used in the field of financial activities, especially in the *banking industry* whose users, in addition to traditional services, are increasingly turning to mobile banking (Eremenko & Kuzmina, 2019; Slijepčević et al., 2022). Owing to the use of neuromarketing techniques, many banks use more subtle ways to attract greater number of customers in order to gain a competitive advantage, by emphasizing primarily hedonistic and other important values (Korzeb & Niedziolka, 2020).

Theoretical Background

The significant application of neuromarketing in the 21st century has inevitably led to numerous discussions of ethical issues, primarily in the field of market research (Ulman, et al., 2015). Specifically, it is important to point out that neuromarketing research techniques are used to create more adequate and efficient products and services, and eventually to advertise them, but not to manipulate the minds of consumers (Stanton et al., 2016). In reality, the idea of neuromarketing is to help the companies create a better product or advertisement in order to attract consumers, but not to manipulate the mind of a consumer (Stanton et al., 2016).

Due to all the above, it is recommended to use the NMSBA Code of Ethics for the application of neuroscience in business. This code ensures the highest ethical standards for the study of neuromarketing to be respected, including the following ones: establishing public trust in neuromarketers' integrity and authority, protecting the participants' privacy, and protecting the neuromarketing service purchasers (Neuromarketing Science & Business Association, 2016). According to Ulman et al. (2015), one of the reasons used to emphasize the importance of keeping confidential and private information is to take care of the target groups of vulnerable consumers. These groups, such as mental health subjects, children and young adults, are prone to discrimination and exploitation, thus easier to be influenced.

Neuromarketing researchers often face different ethical challenges such as the need to protect research subjects, the need to prevent the manipulation of the target groups of vulnerable consumers and the need to provide accurate information to the public (Nyoni & Bonga, 2017; Lim, 2018; Slijepčević et. al., 2020). In this way, neuromarketing raises issues concerning human rights, i.e. the right to cognitive liberty, mental privacy, mental integrity, and psychological continuity (Ienca & Andorno, 2017). This means that, in addition to neuromarketing research, the way the media present the results to the public should be without any hidden intentions, because this is the only way that a positive message can be sent to the target audience in favour of neuromarketing activities.

The research conducted by Slijepčević et al. (2019) found that women have less confidence in neuromarketing research than men. There is an interesting difference observed in this research between female and male respondents in all categories. Regarding the stated view that "Neuromarketing is a manipulative way of selling products and services", as not being in accordance with the NMSB Code of Ethics, 43.2% of male respondents said that they had no opinion on this view or that they did not agree with it. According to the research data, 34.7% of female respondents agreed with the view that neuromarketing was a manipulative way of researching the sale of products and services, while the percentage of male respondents who agreed with this view was significantly smaller, 13.5%. It is also interesting that no female respondent disagreed with the stated view that "Neuromarketing is a manipulative way of selling products and services", while 8.1% of male respondents disagreed with that view. Table 1 shows that 41.6% of female respondents agreed more with the stated view than male respondents who expressed the same opinion as female respondents in only 18.9% of cases.

Table 1. Respondents' views about the statement: Neuromarketing is a manipulative way of selling products and services.

Gender	Neuromarketing is a manipulative way of selling products and services					Total
	I completely disagree	I disagree	I have no opinion	I agree	I completely agree	
Male	3	11	16	5	2	37
Female	0	31	11	25	5	72
Total	3	42	27	30	7	109

Source: Slijepčević, M., Popović Šević, N., & Radojević, I., (2019). Limiting Aspects of Neuromarketing Research. Mednarodno inovativno poslovanje. *Journal of Innovative Business and Management.* 11(1), 72-83. https://doi.org/10.32015/JIMB/2019-11-1-8.

It is extremely important to establish special codes of ethics for each of the above-mentioned industries as well as for other industries that apply all the benefits of neuromarketing research, regardless of whether the clients are public or private organizations (Hensel et al., 2017). In establishing the codes of ethics, it is also very important to establish accurate procedures that cover all the processes in the course of neuromarketing research, which guarantee the respondents' full protection and liberty (Luna-Nevarez, 2021).

One of the important limitations when it comes to the use of neuromarketing, concerns the costs of purchasing and maintaining the necessary equipment. Another limitation is related to the use of isolated research studies that require respondents to lie horizontally, often exposed to the noise of recording machines, which can be quite an inconvenience (Spence & Pikueras-Fiszman, 2014). One of the basic barriers is that neuromarketing is not yet widely used and available in practice. It is inevitable to establish special laboratory conditions as a basis for the use of complex technologies, with continuous monitoring by experts in various

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

neuroscience fields. The said further results in the fact that neuromarketing research cannot be used by companies with limited marketing budgets. However, high costs automatically limit the number of studies.

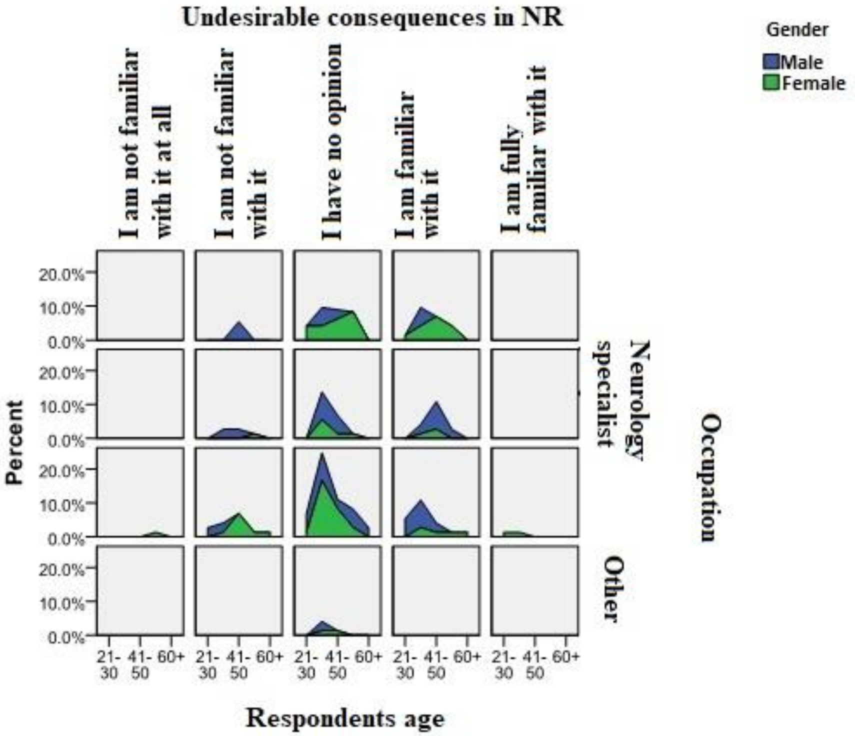


Figure 1. Attitudes of respondents regarding undesirable consequences of the use of specialized devices in the field of neuromarketing research.
Source: Slijepčević, M., Popović Šević, N., & Radojević, I., (2019). Limiting Aspects of Neuromarketing Research. Mednarodno inovativno poslovanje. *Journal of Innovative Business and Management.* 11(1), 72-83.

Most neuromarketing research are conducted on static and large machines installed in specialized rooms, which can potentially affect the atmosphere in which the research is done with test subjects. The barrier to conducting research in

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

extremely synthetic conditions is not negligible either. Neuromarketing research often challenges the reliability and validity of results - specifically, as the very procedure of this type of research is expensive, it is extremely rare to repeat and check it. Moreover, the validity of the results is questionable due to the frequent unrepresentativeness of the sample (mostly a small number of test subjects).

The graph shows the results obtained after analysing the attitudes of respondents related to the fact that there are no unwanted consequences in using medical tools during neuromarketing research (for example, that the tools can endanger the health of the test subjects). Respondents aged 41-50 thought that there were no negative consequences, i.e. that the use of medical devices in neuromarketing research presented no danger to the health of test subjects, while other respondents said they had no opinion on this issue. A high percentage of marketing experts (56.6%) and neurology specialists (50%) took the same stand on this issue. The hypothesis is mainly supported by higher education experts (45.2%), followed by neurology specialists (36.4%) and marketing experts (18.9%). The same number of marketing experts (18.9%) disagree with the hypothesis, which means that the views of marketing experts are divided equally for and against.

Many critics of neuromarketing believe that since the results are obtained in a very complex way, it is very difficult to prove them. Specifically, it is considered that the analysis of consumer emotions following this type of research is created on the basis of a subjective feeling, and that it is very difficult to generalize consumer characteristics (Lajante & Ladhari, 2019).

Neuromarketing trends

The creators of many new products and services have been trying for a long time to figure out what is the backbone for shaping the consumer motivation to buy, mainly through a unique consumer experience. One of the possible reasons lies in the fact that consumer attitudes often differ dramatically with regard to what constitutes their final choice when shopping, which leads to the conclusion that the results of traditional research methods do not necessarily coincide with consumer purchases (Agarwal & Dutta, 2015). Since the traditional methods cannot include subconscious processing that takes place in the minds of consumers, this task is assigned to neuromarketing tools which can discreetly peek into the functioning of the consumer's brain and analyse subsequent procedures in the process of buying. It is recognized that traditional marketing research mainly defines and analyses consumer preferences, while on the other hand neuromarketing researches explain

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

the consumers' psychological aspects and very precise reasons for the purchase decision (Daugherty & Hoffman, 2017).

The development of neuromarketing techniques and trends therein has found its basis in the interest of economic organizations to continuously monitor and possibly influence the behaviour of their target groups. It is not easy to unravel the motives and discover the thoughts of consumers when it comes to buying the products and services. This is the reason why more and more companies understand the importance of neuromarketing, which makes it easier to identify consumer needs and, conversely, to adequately meet market demands.

Table 2. Attitudes of respondents regarding familiarity with the new methodology of neuromarketing research.

Occupation	Neuromarketing research as a new methodology				
	I am not familiar with it at all	I am not familiar with it	I have no opinion	I am familiar with it	I am fully familiar with it
Higher education expert	0,00%	3.23%	12.90%	58.06%	25.81%
Neurology specialist	0,00%	0,00%	36.36%	59.09%	4.55%
Marketing expert	1.89%	16.98%	20.75%	50.94%	9.43%
Other	0,00%	0,00%	66.67%	33.33%	0,00%

Source: Slijepčević, M., Popović Šević, N., & Radojević, I., (2018), Neuromarketing: A new discipline for a more effective understanding of consumer behaviour, *Turn Innovative Ideas into reality,* Reviewed extended abstracts of the 8th International Scientific Conference of the DOBA Business School, Maribor, November 12-13, 113-117.

.

Table 2 shows that the majority of respondents in all three categories are familiar with the stated view that neuromarketing is a new methodology. More than 80% of higher education experts are familiar or fully familiar with the stated view, a slightly lower percentage, about 64%, is recorded for neurology specialists who are familiar with it, while the percentage of marketing experts who are familiar with the stated view is somewhat above 60%. This shows that, when it comes to the

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

development and further implementation of neuromarketing research, the key actors have largely accepted this fact.

Due to the limitations of traditional marketing techniques and the growing demand for objective neural metrics to quantify consumer preferences and predict responses to marketing campaigns, neuroscientific techniques are making major inroads into the field of market research.

Below we will present examples of the application of neuromarketing in practice, in various industries.

In one of the most popular neuromarketing research using fMRI scans, it has been proven that the choice between Coca-Cola and Pepsi largely depends on their brand knowledge, even more than on their taste. Information about a brand activates cerebral areas related to cultural influences, and that is the way the brands make a dramatic influence on behavioural preferences of their customers in cases when they have great cultural contemplation (McClure et al., 2004). In the first test, the test subjects consumed the beverages without identifying the brand. In this blind test, Pepsi taste was rated better than Coca Cola taste. When the brands were made visible, the Coca Cola brand activated significantly more areas of the brain than its competitor, and consumers' opinions dramatically changed. Coca Cola was now rated better. This led to the conclusion that "more positive associations and self-esteem are connected with the Coca-Cola brand" (Pispers et al., 2018).

Almost at the same time, similar brain scan studies were carried out for DaimlerChrysler in Germany, at the Ulm University. They were aimed at finding out how the brain is working when limousines, vans, small cars and sports cars are presented. The results made it clear that the nucleus accumbens—the brain region that plays a central role in the brain's reward system—was activated only in the case of sports cars. Therefore, sports cars triggered the most positive feelings of all cars (Häusel, 2006).

Research conducted by neuroscientist Christian Elger has shown that consumers will buy a product with a discount sign, even if the price is not exactly cheap. The subjects were shown pictures of different products and asked which of these products they would buy. Different prices were displayed for the products, some significantly expensive than usual, others cheaper. A yellow and red discount sign also appeared on some prices. It was found that the test subjects made their purchase decisions in favour of more expensive products as soon as the discount symbol lit up. The brain scanner showed that the financial control system in the brain shut down and the prospect of a "bargain" activated the reward system as soon as the discount sign appeared. (Raab et al., 2009). In this experiment, the discount sign was the framing that was carried out, which caused a change in the test behaviour of the subjects. Even though the price was higher, the discount sign signalled to the subjects' limbic systems that they would save or win money if they chose that product (Traufetter, 2007).

Conclusions

Neuromarketing has become a hot main topic and study field in many companies. There is a significant increase in interest in this field of science and in the application of neuromarketing as a tool for marketing research. A lot has been learned about this topic and there is still more to be learned. It is believed that neuromarketing can help to understand many types of complex consumer behaviour when shopping. Outdated beliefs are replaced by new ones. Neuromarketing helps one to understand the importance of subconsciously communicable content, because about 95 percent of what is perceived is implicitly perceived (Ahlert et al., 2011; Scheier & Held, 2013).

It can be concluded that, in the end, a large number of consumers will not be able to notice the distinction in the advertisements that are processed and created as an outcome of neuromarketing research. Neuromarketing standards have been adopted earlier on, but ethical issues will continue to rise to ensure they are respected and enforced.

The authors believe that this article provides a clear review of the challenges and trends in neuromarketing implementation process in different business branches. The aim of this paper is to help researchers and practitioners in making an accurate decision for the implementation of neuromarketing in their marketing agendas, by providing them with indispensable information to evaluate the challenges and opportunities of existing neuromarketing tools.

Neuromarketing research is expected to expand in the future, because it is believed that companies will benefit from time saving and efficiency of the results brought by this new marketing method. Owing to the possibility to predict consumer behaviour when shopping, neuromarketing is becoming an increasingly attractive method of market research. While providing the producers and sellers with useful information, neuromarketing is also efficiently providing the consumers with help in terms of self-awareness of the scale of preferences.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

References

[1] Agarwal, S., & Dutta, T. (2015). Neuromarketing and consumer neuroscience: current understanding and the way forward, *Decision* 42(4), 457–462. https://doi.org/10.1007
[2] Ahlert, D., André, M., Duchmann, C., Elger, C., Esch, F. R., Evans, B., ... & Wildner, R. (2011). *Wie Marken wirken: Impulse aus der Neuroökonomie für die Markenführung*. Vahlen.
[3] Alvino, L., Pavone, L., Abhishta, A., & Robben, H. (2020). Picking Your Brains: Where and How Neuroscience Tools Can Enhance Marketing Research. *Frontiers in Neuroscience, 14*. https://doi.org/10.3389/fnins.2020.577666
[4] Ares, G., Gimenez, A., Bruzzone, F., Vidal, L., Antunez, L., & Maiche, A. (2013). Consumer visual processing of food labels: Results from an eyetracking study, *Journal of Sensory Studies,* 28(2), 138–153. https://doi.org/10.1111/joss.12031
[5] Boz, H., Arslan, A., & Koc, E. (2017). Neuromarketing aspect of tourısm pricing psychology. *Tourism Management Perspectives*, 23, 119–128. https://doi.org/10.1016/ j.tmp.2017.06.002
[6] Bruce, A. S., Bruce, J. M., Black, W. R., Lepping, R. J., Henry, J. M., Cherry, J. B. C., … Savage, C. R. (2014). Branding and a child's brain: An fMRI study of neural responses to logos. *Social Cognitive and Affective Neuroscience*, 9(1), 118–122. https://doi.org/10.1093/scan/nss109
[7] Cherubino, P., Martinez-Levy, A. C., Caratu, M., Cartocci, G., Di Flumeri, G., Modica, E., . . . Trettel, A. (2019). Consumer behaviour through the eyes of neurophysiological measures: State-of-the-art and future trends. *Computational Intelligence and Neuroscience*, Article 1976847. https://doi.org/10.1155/2019/1976847
[8] Crespo-Pereira, V., & Legerén-Lago, B. (2017). Television design through neuroscience. *El Profesional de La Información*, 26(6), 1047-1055. https://doi.org/10.3145/ epi.2017.nov.04
[9] Daugherty, T., & Hoffman, E. (2017). Neuromarketing: Understanding the Application of Neuroscientific Methods Within Marketing Research. In: Thomas, A., Pop, N., Iorga, A., Ducu, C. (eds) *Ethics and Neuromarketing,* (pp. 5-30). Springer, Cham. https://doi.org/10.1007/978-3-319-45609-6_2
[10] Eremenko, D.S., & Kuzmina, E.V. (2019). Neuromarketing of financial reporting: Russian view of methodology for improving reporting, *DIEM: Dubrovnik International Economic Meeting*, *4*(1), 75-81. https://hrcak.srce.hr/228684
[11] Fitzmaurice, J. (2008). Splurge purchases and materialism. *Journal of Consumer Marketing*, 25(6), 332-338. https://doi.org/10.1108/07363760810902468
[12] Fortunato, V. C. R., Giraldi, J. D. M. E., & De Oliveira, J. H. C. (2014). A review of studies on neuromarketing: practical results, techniques, contributions and limitations. *Journal of Management Research,* 6(2), 201-220. https://doi.org/10.5296/jmr.v6i2.5446
[13] Grigaliūnaitė, V., & Pilelienė, L. (2017). Attitude toward smoking: the effect of negative smoking-related pictures. Oeconomia Copernicana, 8(2), 317. https://doi.org/10.24136/oc.v8i2.20

[14] Guixeres, J., Bigné, E., Ausín Azofra, J. M., Alcañiz Raya, M., Colomer Granero, A., Fuentes Hurtado, F., & Naranjo Ornedo, V. (2017). Consumer NeuroscienceBased Metrics Predict Recall, Liking and Viewing Rates in Online Advertising. *Frontiers in Psychology, 8.* https://doi.org/10.3389/fpsyg.2017.01808

[15] Hakim, A., Klorfeld, S., Sela, T., Friedman, D., Shabat-Simon, M., & Levy, D. J. (2018). Pathways to Consumers' Minds: Using Machine Learning and Multiple EEG Metrics to Increase Preference Prediction Above and Beyond Traditional Measurements. *bioRxiv*. https://doi.org/10.1101/317073.

[16] Hamelin, N., Moujahid, O. El, & Thaichon, P. (2017). Emotion and advertising effectiveness: A novel facial expression analysis approach. *Journal of Retailing and Consumer Services, 36,* 103–111. https://doi.org/10.1016/j.jretconser.2017.01.001

[17] Harris, J. M., Ciorciari, J., & Gountas, J. (2018). Consumer neuroscience for marketing researchers. *Journal of Consumer Behaviour*, 17(3), 239–252. https://doi.org/10.1002/cb.1710

[18] Hensel, D., Iorga, A., Wolter, L., & Znanewitz, J. (2017). Conducting neuromarketing studies ethically-practitioner perspectives. *Cogent Psychology*, *4*(1). https://doi.org/10.1080/23311908.2017.1320858

[19] Häusel, H.G. (2006, September 2): Direkt ins Hirn? Absatzwirt-schaft.de. https://www.absatzwirtschaft.de/direkt-ins-hirn-190468/

[20] Ienca, M., & Andorno, R. (2017). Towards new human rights in the age of neuroscience and neurotechnology. *Life Sciences, Society and Policy*, *13*(5). https://doi.org/10.1186/s40504-017-0050-1

[21] Jain, A. (2010). Temptations In Cyberspace: New Battlefields In Childhood Obesity. *Health Affairs*, *29*(3), 425–429. https://doi.org/10.1377/hlthaff.2010.0107

[22] Kolev, D. (2017). Neuropolitika (politička neuronauka, politički neuromarketing, neuropolitikologija) – nova naučna paradigma. *Svarog*, 13, 49-76. doi 10.7251/SVA2016049

[23] Korzeb, Z., & Niedziółka, P. (2020). Resistance of commercial banks to the crisis caused by the COVID-19 pandemic: the case of Poland. Equilibrium. *Quarterly Journal of Economics and Economic Policy*, 15(2), 205–234, https://doi.org/10.24136/eq.2020.010.

[24] Lajante, M., & Ladhari, R. (2019). The promise and perils of the peripheral psychophysiology of emotion in retailing and consumer services. Journal of Retailing and Consumer Services, 50, 305–313. https://doi.org/10.1016/j.jretconser.2018.07.005

[25] Lim, W. M. (2018). Demystifying neuromarketing. *Journal of Business Research*, 91, 205–220. http://doi.org/10.1016/j.jbusres.2018.05.036

[26] Luan, J., Yao, Z., Zhao, F. T., & Liu, H. (2016). Search product and experience product online reviews: An eye-tracking study on consumers' review search behavior. *Computers in Human Behavior, 65*, 420–430. http://doi.org/10.1016/j.chb.2016.08. 037

[27] Luna-Nevarez, C. (2021). Neuromarketing, Ethics, and Regulation: An Exploratory Analysis of Consumer Opinions and Sentiment on Blogs and Social Media, *Journal of Consusmer Policy* 44, 559–583, https://doi.org/10.1007/s10603-021-09496-y.
[28] McClure, S.M., Li, J., Tomlin, D., Cypert, K.S., Montague, L.M., & Montague, P.R. (2004). Neural correlates of behavioral preference for culturally familiar drinks. *Neuron*, 44(2), 379-387. https://doi.org/10.1016/j.neuron.2004.09.019
[29] Mileti, A., Guido, G., & Prete, M. I. (2016). Nanomarketing: A New Frontier for Neuromarketing. *Psychology & Marketing*, *33*(8), 664–674. https://doi.org/10.1002/mar.20907
[30] Mohan, G., Sivakumaran, B. & Sharma, P. (2013). Impact of store environment on impulse buying behavior. *European Journal of Marketing*, *47*(10), 1711-1732. https://doi.org/10.1108/EJM-03-2011-0110
[31] Muslim, A. (2020). *Neuromarketing u analizi privlačnosti vizualnih obilježja hotelske ponude*, diplomski rad, University of Split, https://urn.nsk.hr/urn:nbn:hr:124:421880
[32] Nemchenko, A., Nazarkina, V., Kurylenko Yu., Podgaina, M., & Podkolzina, M. (2020). Neuromarketing as a health technology assessment and pharmacy component: a review, Pharmaceutical sciences, *Sciences of Europe*, #48, 39-43.
[33] Neuromarketing Science & Business Association. (2016). NMSBA Code of Ethics.
[34] Nyoni, T., & Bonga, W. G. (2017). Neuromarketing: No brain, No Gain! *Journal of Economics and Finance*, 2(2), 17–29. https://ssrn.com/abstract=2925857
[35] O'Brien, S. (2018, February 23). Consumers cough up $5,400 a year on impulse purchases. CNBC. https://www.cnbc.com/2018/02/23/consumers-cough-up-5400-a-year-on-impulse-purchases.html
[36] Pispers, R., Rode, J., & Fischer, B. (2018). *Neuromarketing im Internet: Gehirngerechtes Kundenerlebnis in der digitalen Welt*. Haufe Lexware GmbH.
[37] Plakhin, A., Semenets, I., Ogorodnikova, E., & Khudanina, M. (2018). New directions in the development of neuromarketing and behavioral economics. In G. Grebenişan & A. Pele (Eds.), *MATEC Web of Conferences* (p. 04023). EDP Sciences. https://doi.org/10.1051/matecconf/201818404023
[38] Plassmann, H., Ramsøy, T. Z., & Milosavljevic, M. (2012). Branding the brain: A critical review and outlook. *Journal of Consumer Psychology*, 22(1), 18–36. https://doi.org/10.1016/j.jcps.2011.11.010
[39] Plassmann, H., Venkatraman, V., Huettel, S., & Yoon, C. (2015). Consumer neuroscience: applications, challenges, and possible solutions, *Journal of Marketing Research*, 52(4), 427-435. https://doi.org/10.1509/jmr.14.0048
[40] Raab, G., Gernsheimer, O., & Schindler, M. (2007). Neuromarketing - Grundlagen - Erkenntnisse - Anwendungen. Gabler Verlag | Springer Fachmedien Wiesbaden GmbH. https://doi.org/10.1007/978-3-8349-8789-1
[41] Ramsøy, T. Z., Jacobsen, C., Friis-Olivarius, M., Bagdziunaite, D., & Skov, M. (2017). Predictive value of body posture and pupil dilation in assessing consumer

preference and choice. *Journal of Neuroscience, Psychology, and Economics, 10*(2–3), 95–110. https://doi.org/10.1037/npe0000073

[42] Scheier, C., & Held, D. (2013). Was Marken erfolgreich macht: Neuropsychologie in der Markenführung (Haufe Fachbuch 97) (German Edition) (3rd ed.). Haufe Lexware GmbH.

[43] Slijepčević, M., Popović Šević, N., & Radojević, I. (2017). *Neuromarketing research – a new mirror on consumer behavior*, Proceedings of ICSD 2017, Innovation, Competitiveness and Sustainable Development, Belgrade, Serbia, 15-22.

[44] Slijepčević, M., Popović Šević, N., & Radojević, I. (2018), Neuromarketing: A new discipline for a more effective understanding of consumer behaviour, *Turn Innovative Ideas into reality*, Reviewed extended abstracts of the 8th International Scientific Conference of the DOBA Business School, Maribor, 113-117.

[45] Slijepčević, M., Popović Šević, N., & Radojević, I. (2019). Limiting Aspects of Neuromarketing Research. Mednarodno inovativno poslovanje. *Journal of Innovative Business and Management.* 11(1), 72-83. https://doi.org/10.32015/JIMB/2019-11-1-8

[46] Slijepčević, M., Popović Šević, N., Radojević, I., & Asanin Gole, P. (2020). *Ethical aspects in neuromarketing research.* Research in theory and practice in contemporary business issues. Monograph of the DOBA Business School 2020, 95-111. doi: 10.32015/DOBA.MON.2020

[47] Slijepčević, M., Popović Šević, N., Radojević, I., & Šević, A. (2022). *Relative Importance Of Neuromarketing In Support Of Banking Service Users*. [Manuscript submitted for publication]. Faculty for Management, Belgrade Metropolitan University.

[48] Spence, C., & Piqueras-Fiszman, B. (2014). The perfect meal: the multisensory science of 34 food and dining. Chichester, West Sussex: John Wiley and Sons Ltd. https://doi.org/10.1002/9781118491003

[49] Stanton, S. J., Sinnott-Armstrong, W., & Huettel, S. A. (2016). Neuromarketing: Ethical Implications of its Use and Potential Misuse. *Journal of Business Ethics, 144*(4), 799–811. https://doi.org/10.1007/s10551-016-3059-0

[50] Stern, H. (1962). The Significance of Impulse Buying Today. *Journal of Marketing, 26*(2), 59–62. https://doi.org/10.1177/002224296202600212

[51] Traufetter, G. (2007). IV. Gefühle - Stimme aus dem Nichts. Spiegelspecial, 6, 110-121. http://magazin.spiegel.de/EpubDelivery/spiegel/pdf/53533433

[52] Ulman, Y. I., Cakar, T., & Yildiz, G. 2015. Ethical Issues in Neuromarketing: I consume, therefore I am. *Science and Engineering Ethics, 21*(5): 1271-1284. doi:10.1007/s11948-014-9581-5

[53] Vecchiato, G., Cherubino, P., Trettel, A., & Babiloni, F. (2015). *Neuroelectrical Brain Imaging Tools for the Study of the Efficacy of TV Advertising Stimuli and their Application to Neuromarketing (Biosystems & Biorobotics, 3)* (2013th ed.). Springer.

[54] Wang, Y.J. & Minor, M.S. (2008). Validity, reliability, and applicability of psychophysiological techniques in marketing research. *Psychology & Marketing*, 25, 197-232. https://doi.org/10.1002/mar.20206

[55] Wegner, D. M. (2003). The Illusion of Conscious Will (The MIT Press) (1st ed.). A Bradford Book.

[56] Wolfe, K., Jo, W., Olds, D., Asperin, A., DeSanto, J., & Liu, W. C. (2016). An fMRI Study of the Effects of Food Familiarity and Labeling on Brain Activation. *Journal of Culinary Science & Technology, 14*(4), 332–346. https://doi.org/10.1080/15428052.2016.1138917.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

CREATIVITY AND INNOVATION IN PUBLIC RELATIONS, AS AN IMPORTANT TOOL IN ASSISTING MANAGERIAL DECISIONS

Elena GURGU [1], Raluca ZORZOLIU[1], Ioana-Andreea GURGU[2], Maria Gabriela ILISIE[3]

[1] Spiru Haret University, Faculty of Economic Sciences, Bucharest, 46 G Fabricii Street, District 6, Bucharest, Romania, Tel./Fax: +40213169793, Email: se_egurgu@spiruharet.ro, se_zorzoliur@spiruharet.ro

[2] University of Bucharest, Faculty of Psychology and Educational Sciences, Panduri Street, No. 90, Bucharest, Romania, Email: gurguioana99@yahoo.com

[3] Ciorogarla Secondary School No. 1, Sos. Bucuresti 110, Ciorogarla Commune, Ilfov, Romania, Tel.: 0213503230, Email: gabriela_ilisie@yahoo.com

How to cite: GURGU, E., ZORZOLIU, R., GURGU, I.A., & ILISIE, M.G. (2022). "Creativity and Innovation in Public Relations, as an Important Tool in Assisting Managerial Decisions." *Annals of Spiru Haret University. Economic Series*, *22*(2), 229-265, doi: https://doi.org/10.26458/22214

Abstract

In this study, we write regarding creativity and innovation in public relations, of which it is evident that we need as a necessary means in supporting managerial judgments. For us, creativity in public relations can be a new way to achieve a goal easier, more efficient and faster. It is evident that every client acknowledges creativity, but in frequent situations, it does not convert into evident cases or messages for a mass audience and then is not visible. We also discuss in our study the profile of a ingenious public relations professional, who must be: engaged, instructed, ambitious for performance, having logical knowledge, having malleable and decisive judgment, being an idealist. In this analysis we will make an investigation to show that ingenuity can appear in one of the subsequent positions at the corporate administration

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

zone: either in planning (positioning, outlining) or implementation (technique, presentation information, knowledge).

Keywords: *public relations; creativity; innovation; IoT; tactics.*

JEL Classification: M14, M31, M37

INTRODUCTION

PR agencies primarily work to promote companies and individuals through editorial coverage known as "earned" or "free" media. Many PR professionals think their duties will soon involve purchasing mentions in newspapers, magazines and television, as well as on digital platforms. (Vieira et. al., 2022).

Specialists in the PR field also believe the term "public relations" is too narrow a description of what the job actually entails. (Elgueta-Ruiz & Martínez-Ortiz, 2022). Looking ahead, it's important to consider what roles a PR agency or department will need to fulfil and how to best execute such responsibilities.

Public relations itself is a innovative job - it daily asks the PR professionals to find specific communication solutions in particular cases. Creativity must constantly accentuate the directive to disseminate, not outshine it or, even worse, trivialize it. In one pole, there are presentations or corporate events that cannot be watch from monotony, and in the other, there are effervescent presentations from which people had nothing left. The optimum balance is found between the message, the form and the delivery, so that the PR's words reach the target, be understood and assumed. It's not spectacular at all, but this is the reality. (Gurgu et al., 2022)

For the knowledge disseminated by all these current means to be made accessible to the destination public of the organizations, specialists in PR and communication are required a lot of creativity. The profile of a creative public relations specialist should look like: committed, updated, hungry for work, possessing theoretical proficiency, malleable and constructive logic, having a conception. (Tse, 2022).

Creativity can intervene in one of the following situations: either in strategy (positioning, projecting) or implementation (stratagems, presentation information, knowledge). Ingenuity in public relations can also be explained as the capacity to create something different, by joining two or more components in a particular situation, to create added value to a task. A creative action consists not only in launching the added value, but also in assessing it. It must generate a value that can be perceived by a tertiary party. (Green, 2009)

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Creativity is differentiated by seduction. Scott M. Cutlip notices public relations as a supervisory task that settles and preserve commonly useful liaisons between an organization and the public on which its accomplishment or breakdown confide in. This process takes place in a public space bombarded with messages in both ordinary and unusual ways (Scott, 2015).

Creativity in public relations intervenes in the communication between the institution and the public with components of ingenuity, intelligence, innovation, quality, performance, aimed to highlight the information given off. Actors who discuss their statuses in the public area are keen to inventive behaviour. These help the recipient to position himself greater in a productive, impenetrable, excited, overpopulated territory (Hernaus et al., 2022).

Corporations that disseminate professionally in the public space choose public relations strategies that help them to diversify, to stand out, to captivate recognition. Firms believe that public relations are a field of action where originality is instantly evident and appreciated. (Tam et al., 2022).

Creativity in public relations it is born from knowledge, study, ingenuity, expertise, inner freedom, consideration, training and accomplishment. Creativity generates the disparity between a solid ceremony and a remarkable one. Creativity makes the information of the institution not easily there, but to captivate. Persuasion can have as a tool personality, popularity (usually an endorser), involvement, brilliance, surprise, etc. (Sternberg & Karami, 2022).

Innovation in PR is identified as a new practice, a new technique, a new product, etc. Innovation has lately been announced the primary word in business, but in basis, it is nothing but adjustment and the profits it leads do not apply only to the product industry. There have been requirements for innovation, different means of considering and executing things, preserving pace with a running economy in terms of digital automation, staffing resources, and customer responsibility. And as far as the PR is concerned, there are still emails and phone messages sent to news stations. But it is a good thing that faxes are no longer used (Ruoslahti, 2018).

1. THE EFFECTIVENESS AND DEMAND FOR CREATIVITY IN PR

The actions of the PR specialty are very mixed and involve a lot of techniques. The public relations professional is both the one who considers of a particular communication strategy and the one who documents, deals, supervisors and measures the developments. Because of this, people can notice that in public relations is more work by the organized person, than by an innovative person. A

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

respectable and useful public relations activity cannot be done unless it is assumed and carried out by an ingenious person. Notably in the online environment. And exploration and planning still involve inventive mood. (Fehrer et al., 2022).

According to Oxford Languages Dictionary, creativity is explained as the use of imagination or original ideas to create something; inventiveness. Exploration engages collection all the evidence about the corporation, commodity, representatives, public, market, competition, media and community, which a PR professional demands in establishing a communication strategy. But exploration engage ability. The PR professional must also gather knowledge from the surrounding world, not just from tables. He must confirm a refined spirit of reflection, the capability to investigate human structure, to make precise linkages, to have observations that no one else has. And this is also an aspect of imaginativeness. (El-Kassaret al., 2022).

Projecting in public relations is identified by most publics with an action that is associated to managerial scope, rather than creativity. But the tremendous ideas, the impressive operations on the particular sites, are not shined just because someone has chosen the right words, not only by the illustrations used by the scenario behind them, the one that gives them life and set in motion. The approach to coordinate the purposes with the media and the manners of application, this is the one that regulates whether or not a campaign is imaginative and whether it will be acknowledged (McCollough, 2018).

The online climate and the tension of remaining inventive are what generated it very clear that being innovative, as a public relations individual, is a requirement. Beyond the traditional situations, the digital climate has come with new opportunities to test PR's ingenuity. And this is because the PR specialists must consider game tools, manufacture convenient and pleasant functions, relate with clients and, more than that, detect himself with millions of statements (Verčič et al, 2015).

Consequently, the online climate is the one who has made it very precise that being inventive, as a public relations experienced, is a requirement. Beyond the traditional aspects, the digital environment has come with new opportunities to test PR's creativity. And this is because the PR must think of game mechanisms, build useful and fun applications, interact with consumers and, more than that, distinguish himself among millions of voices. The PR specialist must know the audience in detail, anticipate the reactions and be constantly prepared with a message articulated in its meaning, formulated as the audience would like to hear it from a friend. Therefore, the online environment is the one who has made it very clear that being creative, as a public relations professional, is a necessity. Creativity well put into motion equals efficiency (Barker & McDonald, 2021).

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Hardly can be seen an exceptional campaign generated by a freelancer for a minor business client. There are, nonetheless, certain feasible motivations, among which can be revealed: 1. The premier of the above-mentioned concerns budget. Conforming to the notable model: "We have intentions, but not sufficient financial resources to materialize". There is not enough to claim here. Regrettably, such phenomena appear. But to be innovative means to know how to accustom, to do considerably lesser. Because respectable PR specialists can. Heavily, but it's feasible. Specially in the digital climate; 2. The education earned in schools, high schools and universities does not encourage imagination. The second argument is that ingenious specialists in PR are missing. The education earned in schools does not encourage originality particularly often. Judging out of the box is still punished in many schools, even in some universities; 3. The dilemma of originality is inadequately considered. On the other hand, there is the problem of creativity that is inadequately understood. That contemporary creativity. We're talking here about the pseudo-PR-people who consider that if they take a splendidly glowy hat and put their splints on their pants it means they are innovative and original. But things are not as they are, as we all perceive. Creativity derives from a lot of struggles, accurate documentation, and enthusiasm (McCollough, 2018).

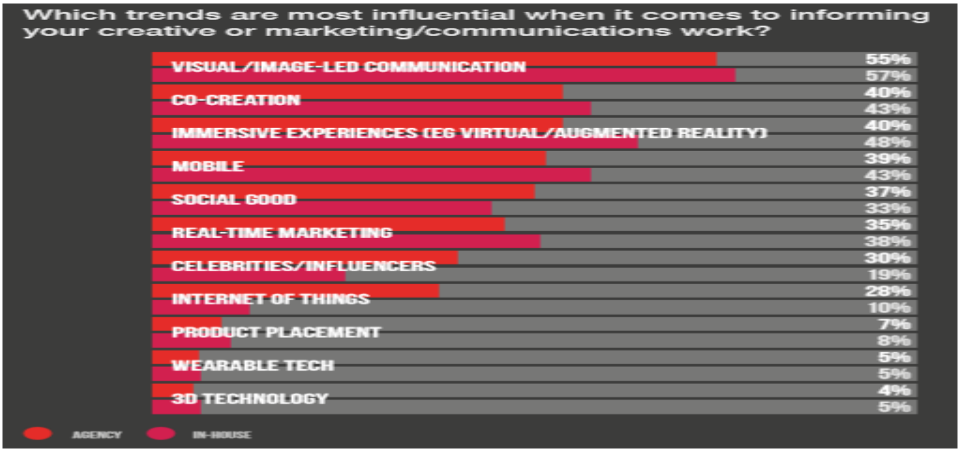
Some people do not consider PR advertising professionals to be particularly creative, except in the rare cases of PR stunts, such as KFC's fried chicken nail polish. Yet creativity plays an important part in much of a PR person's daily work. They must constantly generate fresh concepts for by-lines and story angles, as well as dreaming up campaign ideas for clients. (Lawrence, 2022).

The Holmes Report's Creativity in PR study (The Holmes Report, 2018), which surveys PR executives all over the world, show that 68% of PR agency respondents say their clients are more likely to approach the PR team for "big creative ideas" than in the past. There was also a significant increase in agencies who employ a formally named creative director, from 37% to 56%. Still, a prime impediment to PR teams' showing out-of-the-box creative chops is clients' aversion to risk–something not so prevalent in the advertising field. (*The Holmes Report, 2018)*

From the same study in creativity above, also results that the most important trends that influence the professionals in PR in their creativity work in public relations are, in order of their importance, the following ones: visual/image led communication, co-creation, immersive experiences (VR/AR), mobile, social good, real-time marketing, celebrities/influencers, Internet of things (IoT), product placement, wearable technology and 3D technology. In conclusion, we can say that

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

visual/image led communication, with a percentage of 56%, and AR / VR, with a percentage of 44%, are the two trends that PR specialists use in the last years. At the same time, celebrities, and influencers, as well as the Internet of Things (IoT), are playing an increasing role among the trends that haunt those who create in PR. (*The Holmes Report, 2018)*



Source: *The Holmes Report, Creativity in PR 2018*

According to the same study, *The Holmes Report's Creativity in PR* study (The Holmes Report, 2018), among the causes that stop the professionals in PR from being creative can be enumerated, in the order of their importance, the following: client feedback or risk aversion, lack of time, lack of clear creative objectives, agency feedback or risk aversion, the domain of other departments or agencies, regulatory environment, the economy, differences in opinion about creative quality, leadership do not view it as important, lack of understanding between agency and client, lack of budget, or our own risk aversion.

In today's atmosphere of continuous communications from a multitude of channels, PR people must come up with original approaches to storytelling to break through the noise.

In the diagram shown below we considered that it is necessary to reproduce some of the ways of transforming the knowledge of public relations into skills and behaviours of public relations, as they are perceived today.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Source: *The Holmes Report, Creativity in PR 2018*

The transformation of PR knowledge in PR skills and behaviours

A study published in Statista in 2020 (on a number of 1,563 PR professionals) shows that the most valuable technologies or skills in the PR industry worldwide are in order of its importance, the following: big data analytics, video production, search engine optimization, digital design, user experience, predictive AI

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

technologies, data management, coding, chatbots, blockchain, robotics and 3D printing. We believe that these data influence many directional ideas on the attitudes, beliefs and activities of PR practitioners.

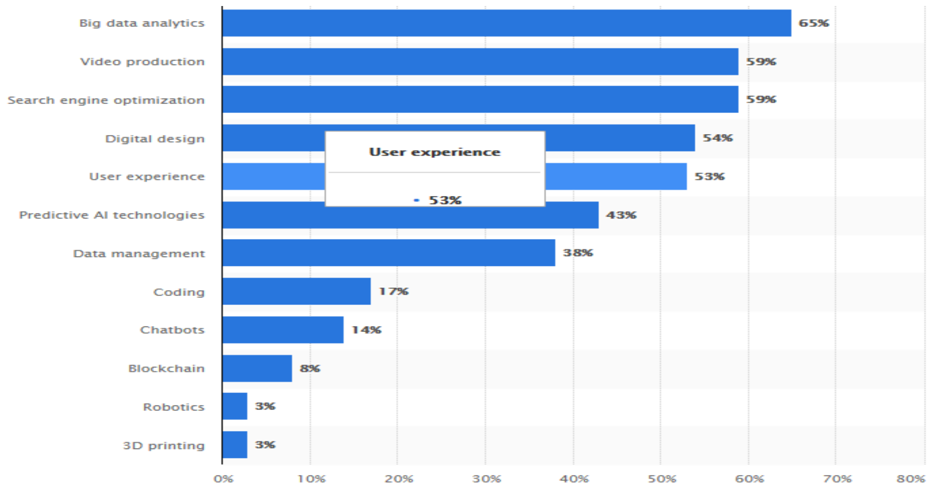


Fig. 2. Most valued technology skills in the public relations industry worldwide, Statista 2020, https://www.statista.com/statistics/1057897/public-relations-skills-technology/

1.1. PR CREATIVE STRATEGIES

Below we mentioned some exemplifications of good practices in PR creativity.

a). Creativity in PSAs helps make a message fresh. When we watch TV, listen to the radio or read a newspaper, we have seen and heard a public service announcement (PSA). The Federal Communications Commission (FCC) of USA defines public service announcements as “any announcement for which no charge is made and which promotes programs, activities, or services of federal, state or local governments or the programs, activities, or services of non-profit organizations and other announcements regarded as serving community interests.”

Many companies worldwide have adhered to the phrase “other announcements regarded as serving community interest” in order to place thoughtful and well-received PSAs. And, of special interest to public relations professionals, PSAs are absolutely free of any charge to place. PSA is a way to educate the public about something a company cares about deeply. Broadcast PSAs are either 10, 15, 20, 30 or 60 seconds long, while newspaper PSAs are generally graphical and anywhere from 1/8th of a page to a full page. (Fu et al., 2022).

b) We've all seen and know the 30-second PSAs on late-night TV that feature a talking head looking into the camera and telling us to adopt a dog or talk to our children about drugs. *The Canadian Ontario Association of Optometrists (OAO)* unveiled an eye-opening approach to getting a simple public service message to the public. To urge people to give their eyes periodic breaks from screens, it filmed a series of snappy, fun viral videos, called *20 Second Daydreams*. Optometrists recommend using the 20/20/20 rule: everyone who uses a computer permanently must take a break from staring at a computer every 20 minutes, for 20 seconds, focusing on something 20 feet away. Using that as inspiration, the Canadian company developed five animated 20-Second Daydreams videos, each with a unique way to encourage viewers to look away from their screens. The comprehensive, multi-platform media campaign used online, offline and out-of-home executions to reach their target audience. This fresh packaging of a mundane personal health topic makes all the difference. The video series makes a point through entertaining content, as opposed to a routine "eat-your-veggies" message. Showing beats telling, but it takes more work. (Penz & Schupp, 2022)

c) *Creativity helps express company values in a distinct brand voice*. Advertisements for travel metasearch sites usually involve a curtesy gnome (for example: Travelocitity- an online travel agency owned by Expedia Group from USA) or a charismatic spokesperson (for example: Trivago - a Dutch tourist destination search engine, based in Germany, which focuses mainly on hotels, the site comparing the prices of over 700,000 hotels on more than 150 booking sites, such as Expedia or Booking.com). Instead of traditional advertisings, Danish travel site Momondo produced a short documentary about 67 people doing DNA tests to find out more about their ancestral origins. Does this have anything to do with shopping for airfares? Only tangentially, but it's effective. Momondo links the documentary to a brand statement that differentiates it from competitors like Expedia Group from USA, who is an online travel shopping company for consumers and small businesses. "Our vision is of a world where our differences are a source of inspiration and development, not intolerance and prejudice." (Expedia's vision statement is milquetoast in comparison.) Momondo's creative endeavour was no small project; it involved a heavy lift of DNA tests, interviews, and filmmaking. Yet it started an important conversation by espousing its values through storytelling. Seventeen million views later, Momondo has taken a strong stand and conveyed it an entertaining way through creative content and PR (Creelman, 2022).

Issue 2/2022

d) *A great idea aligns a company's mission with its market.* Intuit reinvented itself some years ago as a provider of services to small businesses in USA. Intuit Inc. is an American business and financial software company that develops and sells financial, accounting, and tax preparation software and related services for small businesses, accountants, and individuals. The company is headquartered in Mountain View, California. As of 2019, more than 95% of its revenues and earnings come from its activities within the United States. Its *Small Business Big Game* campaign was not only a contest for small business owners to win a Super Bowl advertising, but a way for it to interact with and celebrate SMBs. The 17,000 participating owners had the opportunity to tell their stories and receive additional benefits through the program. The initiative was an inspired method of spreading awareness of the Intuit Quickbooks brand, and more importantly, to position the company as an advocate for small business owners. PR teams need to conceive inspiring ideas to communicate alignment with their audience (Luchsinger, 2022).

e) Creative PR helps B2B brands to be accessible. B2Bs must scramble to find creative ways to gain a competitive advantage in crowded markets. One way is to offer the company's more human face to the public. Capitalizing on the trend of B2B PR/marketing borrowing B2C tactics, a UK data security company opened up a pop-up retail store in 2017 in London where customers were required to pay for products with personal data from their mobile phones. The Data Dollar Store was a fun, experiential event that raised awareness about data privacy, thereby communicating the company's purpose to the general public. The event, boasting a playful, performance art ambience, accurately reflected the company's values ("supporting art, science, and sport") and the overall brand vibe. A firm's PR team must bring their best creative chops when envisioning a tactic that generates so much earned and shared media on such a modest budget. (Behera et al., 2022).

All four above examples have the elements of authenticity and audacity in common. We can say that audacity can add authenticity. Creativity is in itself PR currency since it's the x-factor that can boost the inherent value of any campaign tactic. Some say it cannot be taught, but we disagree. The more we exercise those creative muscles, the stronger they become. Creative concepts are by definition outliers, so they may take a leap of faith. We strongly believe that small steps lead to larger strides and big ideas. (Case et al., 2022).

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

2.THE PRIORITY OF CREATIVITY IN PUBLIC RELATION

Being creative in public relations can involve a multitude of things, but below we have listed some aspects that we believe to be the most important**.**

a) thinking outside the box. Being creative in the world of public relations involves thinking outside the box and standing out from a crowd. Doing the same thing as everyone else can become boring and static. Creativity in PR is always changing, so being creative and thinking of new, innovative ideas allows us to stay ahead of the competition, which can turn to be very beneficial and important when promoting an image or brand and working with a client (Trevas et al., 2022).

b) solving problems and communicating ideas. Being creative in public relations means that we can solve problems, communicate ideas, add new perspectives, and tell stories. The message we portray is essential when it comes to PR and the brand with which we are working. We have to remember that when coming up with new and exciting ideas it is also important to make sure we are clearly conveying an idea or story. We don't want to have any disconnect or confusion between concepts. For example, we wouldn't title a blog one thing and write about something completely different or design a logo and have not related it to the company we are creating it for (Capizzo, 2022).

c) keeping our audience captivated. Captivating our target audience is also a huge part of the creative process of PR. Being original but also keeping our audience engaged and captivated is an important skill to have in the world of business. Keeping our intended audience as well as our client happy and staying ahead of the game all at the same time can be challenging but is not impossible. Being graphic design majors, some people have experienced difficulties when it comes to thinking of new ideas and satisfying the professors' criteria. We have learned that not every new idea or concept will work, and it is okay to fail a few times before the final product is produced (Smaller, 2022).

d) being creative in all aspects of PR. Creativity is relevant in all situations of public relations. For example, event planning, writing, social media, design, etc. all involve a creative process. How people put on an event or what they post on social media requires an innovative thinking process. Therefore, no matter what side of public relations they are a part of, it is crucial to remember that their job is just as important in the development process when it comes to promoting and portraying a brand as the next person's job. So, creativity can be used in numerous ways and can mean something different to everyone (Krasić & Bodrožić, 2022).

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

2.1.PR CREATIVITY MECHANISMS

Public relations activity depends on creativity in practically all its endeavours. As in the other fields of communication, accomplishment in PR does not have a precise technique, it is the product of associating the appropriate mechanism at the proper occasion. The diversified communication campaigns carried out by a corporation, or a brand definitely have as an origin stage an applied approach to the company's philosophy, but their victory hangs on the capability of the professionals to be visionary. Because public relations are extending fast, public relations experts are requested to bring elements of brilliance, to seek new perspectives of approach and to confirm their creativity and expertise in every image operation. To gather spotlight to the corporation they work for, public relations professionals often request for event creation. Some certain ceremonies target the workers and others the external audience. These events can take the form of picnics, anniversary parties, team buildings, sporting events, public events, "open days", etc. It captures a lot of originality to surprise those targeted and to keep organized actions from coming monotonous. This is why public relations professionals are seeking to examine their imagination by adopting styles to encourage ideas such as brainstorming, evaluating ideas, personal creativity, focus group (Scott, 2022).

Of course, documenting and informing about a precise issue, a certain product must precede any inventive endeavour. In public relations, nonetheless, everything must have a functional purpose, perceptible in image capital or money. Thus, visionary capacity is not acknowledged for itself as long as there are no touchable results. This is also the motivation why some corporations avoid engaging very inventive people who may become unhelpful. But other businesses have found a better beneficial solution. They have in each performance team an individual who will soften the innovative desire when they go away from the purpose. The ingenious capacity of a team of consultants in public relations is reflected, in connection with other things, in the intensity of client fulfilment or the number of customers, in the case of public relations companies. Regrettably, the quality of work is not the exclusive principle that excites or discourages people to resort to the services provided by professionals. (Myszkowski et al., 2022).

Many businesses find the prices practiced by the PR companies quite exclusive, and they are obliged to give up this type of services. Yet, the ingenuity of the specialists also used to overcome this restriction. Therefore, guerrilla-type public relations (guerrilla PR), a progressively trendy section, developed. The motivation why guerrilla-type public relations are becoming better and better welcomed by both clients and the society is very simple. Guerrilla PR represents, above all, originality in public relations. It suggests administering remarkable tactics, with maximum feedback and minimum prices. It indicates disseminating information in a wise, better exclusive and intrusive way than conventional methods. (Copeland, 2022).

In guerrilla category of public relations the key to success is not to do more and more public relations actions, which are progressively absorbing more funds but to detect alternatives to settle effective and committing relationships with the public, practicing the abilities feasible. Of course, in public relations, originality also presumes an uncertainty because the information may not reach the destination public or be misunderstood. But it is important to remember that we must have the courage to unleash creativity. And if we take into account *Jay Conrad Levinson's* opinion then we can be confident in the chance of our actions: "you don't have to be a magician of the word to use the force of guerrilla creativity. You don't have to be an exceptional writer, a perfect artist, a great photographer or a wonderful playwright. You just have to be a clear-thinking man, a tireless researcher, and a realistic person. You also have to be passionate not about beauty or art, but about your product or service." (Levinson, 2001).

Creativity is also relevant in preparing public relations information. Even though most of the ideas utilized in the field must rigorously accompany the preparing rules, creativity does not turn out superfluous. On the contrary, it is all the more problematic to be authentic, to captivate consideration, when there are constraints by rules and templates. Such demands request even more brilliance and genius from the one who composes the texts. The public does not respect that a professional in PR has composed 100 or 1000 press releases associated to the business, for the public each text is a demonstration of the engagement, expertise, and gratitude that the author has towards the corporation he represents. So, a professional in public relations must regularly come up with different and attractive "clothes" to wear the same defining information of the business. We would like to notice that a public relations consultant can also demonstrate ingenuity through the way he makes his own image (Chen, 2022).

It is recognized that the society tends to overlap the perception of the spokesperson with that of the corporation. If the individual who shows in front of community is a confident, reasonable, enjoyable person, the enterprise will also be identified as secure, accessible and communicative, but if the spokesman is unmanageable, impassive and laconic the society will consider that the business has something to hide, is obsoleted and not engaged in society problems (Pressgrove et al., 2022).

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

The brilliance of the professionals in public relations is and will be put to the test by what we call "peace PR" (public relations for peace). This different and enthusiastic perception intends to strengthen the power of peace news to make it more obvious in the media at the expense of war. Absolutely, nonetheless, peace is a very problematic "client", which indicates that accomplishing this objective will request originality to develop civic appreciation and education strategies (Hidayat, 2022).

It is absolutely necessary to remark that the territory of public relations is a very large one and that it grants and demands the ample and uncensored expression of talent. We can be certain that whenever the public relations campaigns and activities depending on originality, we will have something remarkable, extraordinary, mysterious, something that will force us stop, something that will make us wish to watch what it follows.

3. CRUCIAL CREATIVITY IN PR

While there are many elements that go into a successful public relations strategy, creativity needs to be one of them. Except for crazy PR stunts (think at *East Coast Radio's* live billboard, Bacardi's 'Back to the Bar' and the #Budget2019), no one ever really associates PR with creativity. However, as any good PR professional will tell us, creativity is an integral part of the job. According to the Creativity in PR 2018 study by *The Holmes Report*, 54% of clients said that creativity ranked as a nine out of 10 for importance when considering whether to hire a specific PR agency. However, the same study also revealed that 71% of PR professionals or agencies believed that client feedback or risk aversion was the biggest barrier to creativity. There is a fundamental disconnect between what clients and PR professionals want to be delivered and what is delivered. However, there is a way to combat this disconnect, by better understanding the importance of creativity in PR. For PR professionals (and clients), here are three reasons why creativity is key in PR: (Gurgu et al., 2022).

1. Originality in PR as a result of the noise. The digital age has brought with it numerous possibilities for innovative PR, but it has also brought with it masses of uninteresting content that people simply don't want to engage with. In this case, PR specialists have to get creative. For example, instead of another message with someone telling that water is precious and that we need to find ways to reduce our usage, Sanlam Corporation – a South African financial services group headquartered in Bellville, Western Cape, created the '2-Minute Shower Songs' campaign. In an effort to get South Africans to cut down their water usage, Sanlam worked with some of the country's most popular musicians, encouraging people to keep their showers to two minutes or less. Artists like Mi Casa, Kwesta, GoodLuck, and Springbok Nude Girls re-recorded their top tracks, cutting them down to two-minutes long, making it easier and more fun for people to have short showers. They told people to download the playlist and switch the water off once the song has ended. It was a serious message, with a creative execution (Tam & Kim, 2018).

2. Creativity can express values in a distinct brand voice. Every brand has (or should have, at least) a distinct brand voice, and a creative PR campaign can be just as effective as an advertising campaign if it is done right. Any good PR campaign needs to have a clear link between the brand and the message being put out. For example, we take the Nando's '#RightMyName' campaign. Nando's is a South African restaurant company that specializes in Portuguese cuisine, such as peri-peri kind of chicken recipes. Launched in Johannesburg in 1987, Nando's operates over 1,000 restaurants in 35 states. Their logo is the famous Portuguese symbol, the Rooster of Barcelos. The campaign linked the fact that the brand kept getting the dreaded 'red line', which highlights its name as a spelling mistake, with the fact that *many* South Africans had the same issue because their names were not recognised by computer software. The campaign expressed the company's values and its love for diversity in a way that was succinct with its brand voice. And without advertising any of the products that Nando's sells, it created a campaign that was true to the brand (Song & Tao, 2022).

3. *Creative PR campaigns are just as effective as adverts***.** Creative ideas align a company's mission and market. With a good idea and careful execution, anyone can use his/her PR strategy to show the proper audience that a brand aligns directly with their needs, wants, thoughts or ideals. For example, let's take a look at Sanlam's 'Conspicuous Saver' campaign. The campaign, aimed at encouraging people (particularly the youth) to save money, showed that the brand understood a few things about its audience, namely:

- Young people generally don't see saving as 'cool'
- Social media is an important part of youth culture
- Celebrities are incredibly influential, particularly to the youth
- Young people want to emulate the celebrity lifestyles they see on social media

With that in mind, the campaign used two of the biggest celebrities in South Africa, Pearl Thusi and Cassper Nyovest, to make saving look cool. The celebrities flooded their social media pages with money-savings tips and showcased a less

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

expensive lifestyle, without mentioning the campaign! Viewers speculated as to whether or not the celebrities had run out of money due to the fact they were posting photos and videos of them shopping at second-hand stores, providing fans with money-saving tips and even a music video that appeared to mock other high-budget music videos. With the digital sphere alight with speculations, Sanlam released the purpose of the campaign. Sanlam was viewed as the leading voice in saving, particularly within a market that traditionally does not save (Chamblee, 2022).

4. DIFFERENT PRACTICES TO INNOVATE AND REVIVE

Presently, corporations in all industries demand to discover different practices to innovate and revive themselves in order to handle in the digital economy. Converting a magnificent conception into an attractive product, result or service, with a major influence on the society, it requests another crucial piece. Thus, after decades of practice in inventing solutions and managing co-innovation programs, PR managers consider that communication is the most remarkable component in innovation. In fact, innovation is communication (Noack & Schmidt, 2022).

Communication, incorporating the priceless art of listening, is more indispensable than anytime in the digital era, as the pace of development advance exponentially, automation becomes more sophisticated and the entire industry is disturbed overnight with unexpected business models. Put honestly, public listen rather to respond, than to understand. However, digitization requests dynamic listening to the environs to handle and strengthen collaborative strategies with corporations, associates, and clients around the world (Henriques & Suarez, 2022).

We totally admit the point of view of journalist and publisher Chris Anderson, the TED Talks curator, who said "that every important component of human improvement appeared just because communities shared interpretations with each other and then collaborated with each other, converting these concepts into reality." Thus, two-way communication can represent the contrast between accomplishment and disappointment when it materializes to innovation (García-Sánchez, 2021).

Here, in the following rows, we will identify what are the three crucial reasoning why innovation means communication today.

1. Initially and foremost, involvement and diversification must be respected. Today's most inventive institutions appreciate that game-changing ideas can appear from anywhere and from everyone, thus developing stronger diversification and involvement. In "Why Diversity Matters," McKinsey & Company found that the most varied honest businesses in their industry were 35% more likely to exceed their rivals, while those in a broad variety of men and women were with only 15% more opportunities to get stronger financial benefits (Hunt, et al., 2015).

Cisco's own investigation reveals that inclusive experiences were the second biggest advantage of IoT innovations and that they were relevant shortly after the quality of the technological framework. Cisco is an American worldwide automation group headquartered in San Jose, California, in the heart of Silicon Valley. Cisco develops, manufactures and sells telecommunications equipment and other high-technology services and products, as well as networking hardware and application software. Through its various acquired subsidiaries, such as OpenDNS, Webex, Jabber and Jasper, Cisco develops oneself in distinct technology markets, such as Internet of Things (IoT), domain security and energy management. The corporation has stronger involvement places, with major influence on the capacity of distinct institutions and teams to communicate openly, routinely and with reciprocal appreciation. For example, Cisco inaugurates an innovation provocation for all its operators (over 74,000 employees) every year, encouraging them to collaborate and co-innovate, create varied teams, take advantage of their own desires and transfer their ideas to enterprise (Michaud & Appio, 2022).

If someone is struggling to come more inventive, then communications should encourage their integral intentions from beginning till ending. Every corporation must cooperate with employee communications, human relations, corporation group managers and top executive management, including the CEO, to increase the influence of representative innovation in the decisive trend of the business. It is imperative to develop the fundamental messages spread by executives and others to sessions and events regulated by the corporation, in videos, editorials, and presentations (Ren et al., 2022).

2. Furthermore, shaping a vigorous and innovative team is very effective. For illustration, in Silicon Valley, start-ups depend on almost each person to support what they do best to cultivate true player-level managers of work teams. In giant corporations, the process tends to be quite bureaucratic, embarrassing and with undeniable political impacts, which slows open conversation and improvement. Originally, the formation of an innovation team is at least as necessary as the idea itself. Innovation is more like a team sport with various participants than the classical approach with the support of engineers who have the same theories as a result of rigid study processes and with a limited perspective of the outside world. The triumphing innovations come from inter-functional teams that handle the knowledge of their representatives considering sales, marketing, human resources, engineering, operational development or business development. With an open mind to communication, creators of innovation confront each other, certify and promote together honestly profitable results - not experimental observations. Elon Musk, the settler of innovation, stated that expertise is remarkably crucial, resembling a sports team. The team that has the greatest individual player will generally triumph, but then there is also a multiplier of how these professionals perform together and the scenario they practice. Thus, businesses should invest in a influential communication platform to strengthen team innovation. Renewed notices should grant and motivate decision-makers, accept uncertainties without suspicion of being judged or penalized. Handled by HR, any corporation will be able to disseminate its inventive attitudes through interactive media channels (Tomitsch, 2022).

3. And last but not least, the spotlight should be on hyper co-development. The times of the solitary innovator performing solely at midnight in a place behind the building or in a garage are long ended. Today, no one can innovate alone because of the complexity of automation and applications that emerge on the market. Today it is all about hyper co-innovation, where solution providers, clients, associates, and even workers study, cooperate and evolve closely. A lot of corporations have set up innovation hubs to present and co-develop solutions with their environs. For companies, it is imperative to have international and local innovation hubs that serve as research laboratories and listening outposts. Here, workers can work with associates to experience the best methods and failures, to evolve and, most importantly, to market results straight on the market. In the end, everybody triumphs. However, we cannot overestimate the significance of listening (Yan et al., 2022).

The Greek philosopher Diogenes Laertius said that "we have two ears and a tongue, so we can listen more and speak less." (Toler, 2019). Also, management father, Peter Drucker, said: "To improve communication, do not work with everyone, but only with the final recipient." (Drucker, 2018). In all innovation programs, whether internal or external, great things arise particularly by observing, assuming and evaluating alternative viewpoints. Without the strength of two-way communication, few innovations that would develop our generations and livelihoods would progress beyond an idea.

5.THE INNOVATION OF SERVICES

The applications for innovation in PR were partially requested due to the advancement of content marketing or inbound PR. Content Marketing is easily when the current media (blogs, social channels, pictures, speeches, videos, e-books) are utilized in a united project to issue substance in certain communities, to target undeniable public and to obtain a precise development. Realistically, this stratagem is different through nothing but reputation. It could be argued that the Content Marketing industry has been nearby for over a century. The American John Deere Agriculture Company is usually perceived as a founder with their magazine called "The Furrow", being published for the first time in 1895. Regardless of the term used, it is important to proactively create media opportunities. Optimizing websites and press releases, significantly engaging with the public in social media and increasing the number of search engines are just some of the results that PR agencies are currently offering, as part of their offered services. (Scott, 2022)

The mystery for the PR industry - and the tremendous opportunity for the business community - is that the relationships with the media have continued to be their most relevant actions. And the online media landscape is drastically different from the former times of printing material. Reporters no longer contact on PR professionals and even when they do, they would prefer to communicate to company holders or founders anyway. Finding, staging and building liaisons with the media is now within everyone's extent. With this in attention, digital marketing companies are migrating ahead, suggesting not only content creation and media relationships, but also more specialize (and more profitable) online advertising business. PR business providers require remaining at the cutting edge of digital mechanisms and techniques to serve future clients (Pittman et al., 2022).

Dominant digital tool: As subject matter moves more and more towards the visual sector, complimentary tools such as Infogr.am make it accessible for companies to connect greater, from statistics to stories, in a lovely design shape, applicable for social and digital channels. Infogram is a web-based data visualization and infographics platform, set up in Riga, Latvia. It permits people to produce and distribute digital charts, infographics and maps. Infogram gives a perceptive WYSIWYG editor that converts users' data into infographics that can be published, embedded or distributed. Customers do not demand coding technique to handle this mechanism; customers include newsrooms, marketing teams, authorities, professors and students. The mass media is also progressively assimilating this category of content in the coverage of their news, thus increasing their press releases. Innovation in service shipment. The latest striking range of innovation within PR is the provision of services and pricing designs. Contemporary PR companies consider commodities and services in an outdated fashion, maybe because they seem convenient that way, but that doesn't

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

undoubtedly match the way contemporary corporations operate. Giving them what they might need, but not fundamentally what they demand. And here, the automation accelerates the way some PR companies distribute consumer information. (Elgueta-Ruiz & Martínez-Ortiz, 2022).

Autonomous subcontractor employees, 24-hour teams and international network partnerships authorize even the smallest firms to deliver worldwide, across continents. For example, let's take into consideration The PR Network in Northern Ireland, which handles online project administration systems, independent specialists and personalized services. The corporation is a substitute PR service for contemporary firms that require great quality PR, at an economical price. The corporation concentrates on expertise of over 1,800 senior autonomous specialists. A local company called Serious PR has been providing the same identical approach for certain years. Regrettably, this ingenious model is rather exclusive. For the most part, the industry remains to perform with a universal provider that provides: up-to-the-hour staffing costs, setting up hours per month with supplementary invoices, worthless management levels, which are individually overloaded with drinking and taking wine or dinner to gain extra clients. In a contemporary generation of frequent social media, with a society less and less capable of actions that can do much of the core business, which only requests intermittent top-level decisive guidance, this age-old model of acting is dated, is no longer satisfactory for the original purpose and is practically not worth the investment. For alike motivations, this model will rapidly come unsuccessful. The PR industry will have to watch at their companions, such as FinTech, Digital Marketing and beyond, to find out how easily they can handle the digital landscape and the different tools and skills within it if they wish to provide a personalized function, accustomed to the late generation of businesses. Otherwise, they will be invariably contested of overvaluation and under-delivery. (Terry, 2022).

Digital dominant Tool: There are plentiful computerization mechanisms applicable to streamline PR processes, from social programming software such as Hootsuite, Sprout Social and Buffer, to tools such as Coverage Book to spare time, even for the primary task, consumer announcing. (Ashok et al., 2022).

Innovation in the service team. Of course, every firm requires more than just commodities and services to provide to its clients. Businesses require honest people to encourage their profits. The demand of the current workforce and the increasing set of skills required to manufacture superior content and professional proficiency to captivate clients also involve innovation in the PR industry. PR companies have a lousy notoriety when it comes to people administration. From internships like "enslavement", available only to prosperous students, to the "first-last-out" attitude, exhausted laborers became intellectually fatigue before the age of 30, career advancement in a house not thinking of reaching for them.

Add PR is an industry that will strive to attract the best writers, digital marketers, and data scientists. Equally problematic is the need for traditional PR agencies for everyone, who can do little of one thing and less of another. Even once recruited, a beginner digital specialist does not easily fit into the structures of any project team. to this the fact that PR agencies are either asking candidates for a digital diploma or looking for a lot of skills, from graphic design to advanced PC, all packed into an inexperienced graduate, so they can pay very poorly. Staff recruitment, retention, and development can be said to be an area that could certainly benefit from innovative thinking in the future. (Lin et al., 2022).

The cutting-edge digital tool: ASANA is one of the many projects management and teamwork programs that allow for flexibility between teams. ASANA is a web and mobile application designed to help teams organize, track, and manage their work. It was founded in 2008 by Facebook co-founder Dustin Moskovitz and ex-Google-and-Facebook engineer Justin Rosenstein, who both worked on improving the productivity of employees at Facebook. The product launched commercially in April 2012. In December 2018 the company was valued at $1.5B. At *UtilityBear.com*, a Northern Ireland clothing store, they use ASANA for design projects, for eCommerce, digital marketing and social media, the team being geographically dispersed, so half of the staff work outside of the office base and outside of business hours. (Fernandez-Lores, 2022).

6. EVALUATION OF INNOVATION IN SERVICES

Despite the traditional argument that PR is "part-art-part-science", public relations have been predominantly full of quality writers, skilled communicators and people with a healthy and innovative way of thinking. There was and remains a shortage of qualified personnel in the analysis of the databases. And this is a problem because the data analysis has become the basis of the modern evaluation of the PR campaign. In the most advanced thinking agencies, digital is now the cornerstone of performance control. We can try to measure the public sentiment, we can even try to raise awareness, but the modern business wants more. Modern businesses want concrete evidence of value. Beyond traditional PR services such as media, modern agencies are on a steep learning curve for measuring data from blog domain ranking, search engine optimization (SEO), technical improvement in areas such as video production, measuring social media activity and finding ways to automate as much as possible to free up time for creativity, content production, and long-term campaign planning. With the help of innovative tools, modern PR can try to bridge the gap between outputs and inputs and show the true basic value for companies (Van Looy, 2022).

Top Digital Answer: The Client connects to a Google Analytics account and does great things for a PR report. Once the online media coverage URLs are entered, the tool links the traffic source to the site visitors, producing an instant snapshot of the traffic generated by the PR coverage, as well as any purpose or value of the created transaction. (Comfort et al., 2022).

Regardless of the industry in which a company is located, digital technologies arm us all with a wide variety of product innovations, service delivery, and processes. We know, for example, that innovative companies that use these technologies work better and are ultimately more successful. Moreover, in the future, lack of innovation can lead to the total loss of some business models. (Pauschinger & Klauser, 2022).

7. THE INNOVATION IN SOCIAL MEDIA CHANGES PR SHAPE

With over 3.4 billion people active on social media around the world, meaning almost half of the global population, social media has impacted nearly every industry and has had a profound influence on the media and public relations professions. In an **ING Bank** study in 2022 on the criticality of social media, 81 percent of PR professionals and 78 percent of journalists indicated they can no longer do their job without leveraging social networks.

On average, consumers spend nearly 2.5 hours on social sites every day. With such a focus on this technology, it's no surprise that 60 percent of brands expect social budgets to continue to increase year-over-year. These statistics alone show how much of an impact social media has had on the PR industry from a quantitative view. (Mohamad et al., 2022).

Let us see now the day-to-day changes that this technology brings to practitioners.

We think of the keyways that social media is changing PR, as follows:

Two-Way Conversations: Less than 10 years ago, the Public Relations Society of America (PRSA) defined the PR profession as "the strategic communication process that builds mutually beneficial relationships between organizations and their publics." That definition no longer holds true, as public relations, social media and digital marketing have integrated with the wider communications world. Facebook, Instagram, Twitter, YouTube and other social media channels have transformed the communication between companies and the public. The PR process used to be surprisingly one-dimensional, but the future of PR is now a conglomeration, mainly focused on leveraging new innovations to communicate with the public. In the era of instant Twitter and Instagram feedback, companies now have customer service representatives fielding questions in real time via social media.

As the future of PR continues to transform, the line between marketing, customer service and PR will become more and more blurred. People's trust in companies has diminished rapidly over the past decade. In the next five years, there will be a public call for companies to become more transparent – which may lead to 24/7 live video recordings of manufacturing facilities, daily updates from the CEO or even virtual tours of different offices around the world – all communicated directly through social media. (Adanlawo & Chaka, 2022).

Niche-Influencers: Public relations is no longer simply about traditional media. Social communication makes it possible for the average person to create their own platform and cultivate their audience in a way that has never been possible before. The future of PR leverages the macro-influencers (those with fewer than 100,000 followers) and micro-influencers (those with fewer than 10,000 followers). As the pendulum swings towards the small, we expect these nimble influencers to continue to make a big impact in the PR world. (Lee et al., 2022)

Faster news cycles: Social and digital media has shortened the life span of news, pushing often-frenzied journalists to turnaround stories in a short time. This has forced PR professionals to keep up. Roughly 6,000 tweets are shared every second on Twitter. While this makes social media a highly effective tool for communicating breaking news coverage, it also means the lifespan of a story is so much shorter than it used to be. Journalists are constantly searching for "the next big thing" and PR professionals need to keep up with their turnaround time. In today's turbulent news cycle, journalists and the public turn to Twitter to get the latest news, making the competition to get attention from media even harder. PR professionals will spend less time blanketing news to a wide net of journalists and will instead focus on very targeted media outreach and relationship building. Journalists are often pressed for time in this continuous news cycle, forcing them to prioritize, capture essential stories first and, perhaps, neglect other leads that have some appeal. (Guarneri, 2022).

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Access to Journalists: Social media helps public relations professionals get an inside scoop on reporters. By following a journalist on social networking sites, PR specialists can gain insight into a reporter's tone of voice, opinions on relevant topics and recent work. To pursue this goal, PR professionals must use tools like Cision to find journalists that meet their criteria and get instantly connected with their recent web content and profiles. In addition to social media being a great resource for finding reporters, it will continue to morph into a platform to connect and pitch journalists. While some media still prefer to be pitched by email, Twitter and LinkedIn are both emerging as platforms where journalists are open to receiving relevant pitches. (Comfort et al., 2022).

Social media is constantly changing so PR professionals must stay atop its many trends and innovations. Social media shows no signs of slowing down and it's up to PR professionals to adapt their strategies or get left behind.

8. INNOVATION IN PR THROUGH DIGITAL TOOLS

Automating Public Relations. Automation technology is helping PR firms scale faster and more efficiently than ever before. Some PR services are providing a SaaS (Software as a service) platform to allow brands to manage their own PR with the same network and background as a PR agency. Software as a service is a software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted. SaaS applications are also known as Web-based software, on-demand software and hosted software. The term "software as a service" (SaaS) is considered to be part of the nomenclature of cloud computing, along with infrastructure as a service (IaaS), platform as a service (PaaS), desktop as a service (DaaS), managed software as a service (MSaaS), mobile backend as a service (MBaaS), and information technology management as a service (ITMaaS). (Andersson et al., 2022).

SaaS apps are typically accessed by users using a thin client, e.g. via a web browser. SaaS has become a common delivery model for many business applications, including office software, messaging software, payroll processing software, DBMS software, management software, CAD software, development software, gamification, virtualization, accounting, collaboration, customer relationship management (CRM), management information systems (MIS), enterprise resource planning (ERP), invoicing, human resource management (HRM), talent acquisition, learning management systems, content management (CM), geographic information systems (GIS), and service desk management. SaaS has been incorporated into the strategy of nearly all leading enterprise software companies. (Guarneri, 2022).

However, this fact has led to a different set of challenges for brands. Because having the contacts and tools at someone's disposal is only part of the requirements for an effective PR outreach campaign - there is still creativity required. However, this is just the beginning for the PR industry. As technologies like Artificial intelligence (AI) and Machine Learning (ML) continue to evolve, there is even the potential to replace the human-aspect of PR with algorithms and bots designed to mimic human speech, tonality and nuance. Though this is a few years from reality, the question is when it will happen rather than if it will. (Bhattacharyya, 2022).

Emerging Technology Trends: New applications, tools and technologies are being created each day. Using this innovation, consumers are finding alternative ways to gather and absorb information. In 2018, video was named the most popular form of multimedia content. In the first few months of 2019, we've seen this shift, as PR professionals are realizing the extent to which virtual reality (VR) can deliver value and creativity for clients. VR provides a level of realness and excitement that a press release or a short video simply failed to do in the past. VR results in a deeper emotional connection with stakeholders that is certain to change the game in digital storytelling. (Wang et al, 2022).

As social sites begin to leverage the limitlessness of VR, there will be no bounds on how professionals will use this tool to support PR and marketing objectives for brands. Idaho Commerce was able to leverage VR at the recent SelectUSA Summit, which draws more than 3,000 companies, including 1,000-plus global investors. Idaho Commerce's goal was to promote its region as an exceptional place for international investment, but foreign stakeholders where not familiar with the state's business climate. Using VR, the experience allowed people visiting Idaho's tradeshow booth to virtually visit the state's landmark sites. This helped potential investors understand what the state had to offer. Idaho became one of the most highlighted booths at the event. (Bodunde & Ohu, 2022).

In public relations a great impact can be obtained if immersing the public in VR (virtual reality) or AR (augmented reality). In a press conference for example a VR/AR game application can highlight the main characteristics of the brand, of a product/service and will facilitate the PR presentation. We have to imagine the conference participants playing an interactive game in VR/AR. The company will create an unforgettable experience and the clients will associate the company with the positive feeling experienced in the conference and will return to interact with the company, to compare, see, buy new products, becoming faithfully. (Liu & Zheng, 2022).

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

The role of IoT and blockchain in public relations. The function of writing a press release is no longer a priority in PR. As it turns out, writing is one thing, and relevance and attention is another thing. Now, the PR function is beginning to focus more on return on investment (ROI), so we see two major disciplines that are beginning to align: public relations and marketing. In simple terms, it's not just about creating content, but rather about "content marketing" - and today this means a whole world of difference. (Kozinets, 2022).

Then, the most important game-changer in PR, in our opinion, is the Internet of Things (IoT). Even though the internet has always been involved in PR activity, the number of users is constantly increasing, with more technologies designed, making it more convenient for humanity to access anything online. For public relations, this means one thing: the internet is the largest communications medium and will remain that way until the next technological revolution. (Firouzi et al., 2022).

The spread of the internet came with the development of new technologies bases on Artificial Intelligence. These technologies are IoT and Blockchain. Having in mind the great impact of social media on developing a successful brand, IoT and blockchain come to potentiate it.

The frank on-line communication with the clients thought IoT, can be facilitated with fun solutions, such as gamification. Here comes the blockchain that will allow clients to replace the fidelity points (used to obtain benefits from a certain retailer or a coalition of firms) in tokens. The tokens have a great benefit that can be used for a lot of different companies or to transform them into cryptocurrencies. Cryptocurrencies also can be exchanged in real currency (Choi, 2018; Wang et al., 2018).

Tokenization associated with creative games will increase the online interaction between the company and clients, consolidating the brand. All the loyalty schemes used by a company may be included in a platform for interactive interaction with clients: the gamification, the association with social media accounts, advertisements, competitions campaigns, giveaways, testimonials. (Davidová et al., 2022).

The games designed to attract the clients may highlight the importance of the brand, or the advantages/characteristics of their products, and services. Imagine a VR game for young men with tesla cars in which the client can choose from all the characteristics the ones that he is interested in and drive the car in a VR competition. Thus, the company presents the characteristics of the car and the client gains the points or tokens that can be transformed into a discount or a service for the car that has to be bough. Here’s how PR creativity is stimulated by using blockchain. (Ezzi et al., 2022).

Maybe implementing blockchain in marketing seem futuristic or expansive, but even start-ups can use blockchain for tokenization of the interaction with the clients. An example of a platform for rewords facilities for tourists, through tokens or cryptocurrencies is Ethereum or GOZO token. (Xu et al., 2021).

By now some airline companies (Lufthansa, Singapore Airlines, Cathay Pacific) and tourism firms tested blockchain solutions for the improvement of the client fidelity, but the innovators and early adopters in blockchain are financial companies, transforming the benefits in digital wallets.

Using these platforms, blockchain will facilitate safe data fulfilment procedures, recording the interactions with clients, transparent historic transactions and mitigating the back-office administrative and transactional cost (Antoniadis et.al, 2019).

CONCLUSION

What will the future of public relations look like? What does the future of public relations hold for us? The guiding principle of public relations refers to the use of news and content to present a message about anything - a product, a business, an organization, an effort - using any effective means of reaching the audience. Over the years, public relations (PR) have taken many forms, depending on the most effective means of communication at one time.

Public relations do not deal with advertising. Public relations tell stories. PR is an image-maker. But, with the technological advances that transform almost every aspect of communication and interaction, without leaving anything intact, we could ask ourselves: "PR is still, essentially, a story modelling tool, not advertising, but also an image modelling tool that we have always known? " It is clear that public relations are still a continuous influence that has stood the test of time.

From our point of view, the law of supply and demand has given the PR a new impetus, the companies having increasing ambitions in impressing and attracting their customers, with a more precise focus on building and gaining an audience.

There is always a new battle, a new publisher, a new editorial calendar, a new PR store, etc., which makes PR a very interesting and opportunistic landscape for brand building. To keep up to date, it is essential for PR and communication people to constantly read articles and news from the target market, to attract the attention of new publishers, writers, publishing columns, etc., and then to take the right step to align with the requirements and impress the public. Whenever PR people meet a new writer or publisher, it is good to send them an introductory email, even if they have not yet prepared a news item that will immediately meet the needs of the target audience.

Given the current trends, we think it is safe to predict that the PR will remain along the lines, consistent in the years to come. Inevitably, a stronger focus will be placed on online content and less on print.

As for the future of public relations, in our opinion, we are looking at a growing number of people who are turning to online media as a source of real-time stories and responses. There is and will be a considerable shift from public relations based on journalists/writers, to a customer-focused approach.

In recent years, public relations have focused on a more customer-oriented structure, with consumers playing a much more important role in the way agencies provide their information to the press. We think it is an important factor to consider, and the PR strategies of companies should be slightly modified nowadays to reach the target customers of the content companies that will ultimately create a rapid and beneficial change for the customer, either through the purchase of products or services or through impressions, etc. It is important now that business people in PR focus more not only on what the writer/journalist wants to write but also on what the consumer hopes to read.

Public relations refer to stories and, as people and activities evolve, so will the stories. Today, people spend more time browsing online than reading a book, and when reading online, only 28% of words are likely to be retained. To optimize attention, the more condensed the content, the better.

For public relations, the direction is now focused on visual content - infographics, GIF content, and short videos that can be shared. From our perspective, the audience of the future will ask for short, condensed, attractive and visible content from the PR people of a company. As a PR agency, careful planning and brainstorming of visual content are essential. PR people need to be careful about keeping what's current and potentially viral to attract audiences. Given these realities, they also add that the statistics show us that the largest population of Internet users is made up of people between the ages of 18 and 49, most of whom are millennials.

So, we're talking about a growing population worldwide of tired people that are using the old tactics of public relations. Do you think they read long articles? Do you think they're still looking at ads? What kinds of influences do you think will make their purchasing decisions now? In order to answer these questions, the future PR people will pay more attention in the future to the analysis processes. Any organization that does not take into account the power of the analytical capability will be clearly disadvantaged compared to the rest. However, the good news is that we can now identify several reliable analytical tools for market testers. Compared to printed materials, it is easier to measure the return on investment for any PR article published online, with more sophisticated tracking tools at hand.

Public relations are and will remain in storytelling and image building, which will remain constant. In the coming years, within the PR vocabulary, we will probably hear terms such as "data techniques", "data analysis" and "geo-location" added to existing terms in PR. Companies need to be armed with statistical data as a basis for reliable and influential stories, to rise above the competition.

But all these innovative practices are far from being widespread. Of course, the PR industry is learning and innovating, but not as fast as the business community it serves and needs.

References

[1] Adanlawo, E. F., & Chaka, M. (2022). Internal Corporate Communication as a Public Relations Function to Improve Organisational Reputation. *Journal of African Films and Diaspora Studies*, *5*(1), 33.

[2] Andersson, C., Hallin, A., & Ivory, C. (2022). Unpacking the digitalisation of public services: Configuring work during automation in local government. *Government Information Quarterly*, *39*(1), 101662.

[3] Antoniadis, I., Kontsas, S., & Spinthiropoulos, K. (2019). Blockchain and Brand Loyalty Programs: A Short Review of Applications and Challenges. In *International Conference on Economic Sciences and Business Administration* (Vol. 5, No. 1, pp. 8-16). Spiru Haret University.

[4] Ashok, M., Madan, R., Joha, A., & Sivarajah, U. (2022). Ethical framework for Artificial Intelligence and Digital technologies. *International Journal of Information Management*, *62*, 102433.

[5] Barker, R., & McDonald, S. (2021). Practically there? Exploring public relations educators' perceptions of creativity in the curriculum and classroom. *Journal of Communication Management*.

[6] Bauer, M. W., & Bucchi, M. (Eds.). (2008). *Journalism, science and society: Science communication between news and public relations*. Routledge.

[7] Bhattacharyya, S. S. (2022). Monetization of customer futures through machine learning and artificial intelligence based persuasive technologies. *Journal of Science and Technology Policy Management*, (ahead-of-print).

[8] Bodunde, I. J., & Ohu, E. (2022). Advertising in Virtual Reality: A Hierarchy of Effects Paradigm. In *Marketing Communications and Brand Development in Emerging Economies Volume I* (pp. 229-252). Palgrave Macmillan, Cham.

[9] Botan, C. (2006). Grand strategy, strategy, and tactics in public relations. *Public relations theory II*, 223-248.
[10] Botan, C. H., & Hazleton, V. (2010). *Public relations theory II*. Routledge.
[11] Breakenridge, D. (2012). *Social media and public relations: Eight new practices for the PR professional*. Pearson Education.
[12] Breakenridge, D. K. (2008). *PR 2.0: New media, new tools, new audiences*. FT Press.
[13] Capizzo, L. (2022). What counts amid contention? Measuring perceived intractable problems in public relations. *Public Relations Review*, *48*(2), 102179.
[14] Case, A. F., Dodd, M. R., & Petrie, G. M. (2022). INVOLVEMENT AND AUTHENTICITY. *Paulo Freire and Multilingual Education: Theoretical Approaches, Methodologies, and Empirical Analyses in Language and Literacy*.
[15] Chamblee, W. (2022). *The Effects of Social Media on Public Relations* (Doctoral dissertation).
[16] Chen, L. (2022). Intuition and Ingenuity: Gödel on Turing's "Philosophical Error". *Philosophies*, *7*(2), 33.
[17] Choi, J. (2018). Modeling the integrated customer loyalty program on blockchain technology by using credit card. *International Journal on Future Revolution in Computer Science & Communication Engineering*, *4*(2), 388-391.
[18] Clark, C. E. (2000). Differences between public relations and corporate social responsibility: An analysis. *Public Relations Review*, *26*(3), 363-380.
[19] Comfort, S. E., Gruszczynski, M., & Browning, N. (2022). Building the Science News Agenda: The Permeability of Science Journalism to Public Relations. *Journalism & Mass Communication Quarterly*, 10776990211047949.
[20] Cottle, S. (Ed.). (2003). *News, public relations and power*. Sage.
[21] Creelman, V. (2022). "Thank you for reaching out:" Brand relationship management and the conversational human voice of customer care in online service encounters. *Discourse, Context & Media*, *46*, 100572.
[22] Culbertson, H. M., & Chen, N. (Eds.). (2013). *International public relations: A comparative analysis*. Routledge
[23] Curtis, L., Edwards, C., Fraser, K. L., Gudelsky, S., Holmquist, J., Thornton, K., & Sweetser, K. D. (2010). Adoption of social media for public relations by nonprofit organizations. *Public relations review*, *36*(1), 90-92.
[24] Cutlip, S. M. (2013). *Public relations history: From the 17th to the 20th century: The antecedents*. Routledge.
[25] Davidová, M., Sharma, S., McMeel, D., & Loizides, F. (2022). Co-De| GT: The gamification and tokenisation of more-than-human qualities and values. *Sustainability*, *14*(7), 3787.
[26] Davis, A. (2000). Public relations, news production and changing patterns of source access in the British national media. *Media, Culture & Society*, *22*(1), 39-59.

[27] Demetrious, K. (2013). *Public relations, activism, and social change: Speaking up*. Routledge.
[28] DiStaso, M. W., McCorkindale, T., & Wright, D. K. (2011). How public relations executives perceive and measure the impact of social media in their organizations. *Public relations review*, *37*(3), 325-328.
[29] Drucker, P. (2018). *Essential Drucker*. Routledge.
[30] Drucker, P. F. (2018). *The effective executive*. Routledge.
[31] Duhé, S. C. (2007). *New media and public relations*. Peter Lang.
[32] Edwards, L. (2006). Rethinking power in public relations. *Public relations review*, *32*(3), 229-231.
[33] Edwards, L. (2012). Defining the 'object'of public relations research: A new starting point. *Public Relations Inquiry*, *1*(1), 7-30.
[34] Elgueta-Ruiz, A., & Martínez-Ortiz, J. (2022). Public relations in the new millennium: Towards a synoptic view of fifteen years of research in Public Relations Review in the 21st century (2000–2014). *Public Relations Review*, *48*(2), 102175.
[35] El-Kassar, A. N., Dagher, G. K., Lythreatis, S., & Azakir, M. (2022). Antecedents and consequences of knowledge hiding: The roles of HR practices, organizational support for creativity, creativity, innovative work behavior, and task performance. *Journal of Business Research*, *140*, 1-10.
[36] Estanyol, E., & Roca, D. (2015). Creativity in PR consultancies: Perception and management. *Public Relations Review*, *41*(5), 589-597.
[37] Ezzi, F., Jarboui, A., & Mouakhar, K. (2022). Exploring the Relationship Between Blockchain Technology and Corporate Social Responsibility Performance: Empirical Evidence from European Firms. *Journal of the Knowledge Economy*, 1-22.
[38] Fehrer, J. A., Baker, J. J., & Carroll, C. E. (2022). The role of public relations in shaping service ecosystems for social change. *Journal of Service Management*.
[39] Ferguson, M. A. (2018). Building theory in public relations: Interorganizational relationships as a public relations paradigm. *Journal of Public Relations Research*, *30*(4), 164-178.
[40] Firouzi, F., Farahani, B., & Marinšek, A. (2022). The convergence and interplay of edge, fog, and cloud in the AI-driven Internet of Things (IoT). *Information Systems*, *107*, 101840.
[41] Fitzpatrick, K. (2007). Advancing the new public diplomacy: A public relations perspective. *The Hague Journal of Diplomacy*, *2*(3), 187-211.
[42] Fu, J., Li, X., Zhao, X., Zhang, K., & Cui, N. (2022). How Does the Implicit Awareness of Consumers Influence the Effectiveness of Public Service Announcements? A Functional Near-Infrared Spectroscopy Study. *Frontiers in Psychology*, *13*, 825768-825768.
[43] García-Sánchez, S. (2021). TED talks: multimodal communicative affordances for EPS/ELF dissemination. *Journal of English as a Lingua Franca*, *10*(2), 261-284.

[44] Gillin, P. (2008). New media, new influencers and implications for the public relations profession. *Journal of New Communications Research*, *2*(2), 1-10.
[45] Green, A. (2009). *Creativity in public relations*. Kogan Page Publishers.
[46] Grunig, J. E. (2009). Paradigms of global public relations in an age of digitalisation. *PRism*, *6*(2), 1-19.
[47] Grunig, J. E. (2013). *Excellence in public relations and communication management*. Routledge.
[48] Guarneri, J. (2022). *You Need PR: An Approachable Guide to Public Relations for Early-Stage Companies*. Greenleaf Book Group.
[49] GURGU, E. ILIC, M., RATH, S., & GURGU, I.-A. (2022). "What Will the Future of Creativity and Innovation in Public Relations Look Like?" *Annals of Spiru Haret University. Economic Series, 22*(1), 243-264
[50] Heath, R. L. (Ed.). (2013). *Encyclopedia of public relations*. Sage Publications.
[51] Hendrix, J. A., Hayes, D. C., & Kumar, P. D. (2012). *Public relations cases*. Cengage Learning.
[52] Henriques, F. M., & Suarez, M. C. (2022). Digitalization and collaborative dynamics integrating artistic, technological and co-creative resources: The case of Postmodern Jukebox. *International Journal of Entrepreneurial Behavior & Research*.
[53] Hernaus, T., Černe, M., & Vujčić, M. T. (2022). Leader–member innovative work behavior (in) congruence and task performance: The moderating role of work engagement. *European Management Journal*.
[54] Hidayat, R. (2022). The Importance of Public Relations Role in a Company to Achieve Sustainability in the Application of Peace Journalism. *Sustainability Science and Resources*, *2*(1), 1-13.
[55] Hunt, D. L. (2015). V, Prince S. *Why Diversity Matters. McKinsey & Company*.
[56] Hutton, J. G., Goodman, M. B., Alexander, J. B., & Genest, C. M. (2001). Reputation management: the new face of corporate public relations?. *Public Relations Review*, *27*(3), 247-261.
[57] Ihlen, Ø. V., & van Ruler, B. (2009). Introduction: Applying social theory to public relations. In *Public relations and social theory* (pp. 9-28). Routledge.
[58] Kent, M. L. (2008). Critical analysis of blogging in public relations. *Public Relations Review*, *34*(1), 32-40.
[59] Kent, M. L., & Saffer, A. J. (2014). A Delphi study of the future of new technology research in public relations. *Public Relations Review*, *40*(3), 568-576.
[60] Kozinets, R. V. (2022). Immersive netnography: a novel method for service experience research in virtual reality, augmented reality and metaverse contexts. *Journal of Service Management*.
[61] Krasić, S. O., & Bodrožić, T. (2022). An Analysis of Public Relations Profession Image in Selected Films and Television Shows of American Production. *CREATIVE INDUSTRIES AND EXPERIENCE ECONOMY*, 115.

[62] Kristensson, P., Magnusson, P. R., & Matthing, J. (2002). Users as a hidden resource for creativity: Findings from an experimental study on user involvement. *Creativity and innovation management*, *11*(1), 55-61.
[63] Kunczik, M. (2016). *Images of nations and international public relations*. Routledge.
[64] L'Etang, J. (2005). Critical public relations: Some reflections. *Public Relations Review*, *31*(4), 521-526.
[65] Lamme, M. O., & Russell, K. M. (2009). Removing the spin: Toward a new theory of public relations history. *Journalism & Communication Monographs*, *11*(4), 280-362.
[66] Lattimore, D., & Lattimore, D. (2004). *Public relations: The profession and the practice*. New York, NY: McGraw-Hill.
[67] Lawrence, D. (2022). *Digital writing: a guide to writing for social media and the web*. Broadview Press.
[68] Lee, J. A., Sudarshan, S., Sussman, K. L., Bright, L. F., & Eastin, M. S. (2022). Why are consumers following social media influencers on Instagram? Exploration of consumers' motives for following influencers and the role of materialism. *International Journal of Advertising*, *41*(1), 78-100.
[69] Lee, M., & McGovern, A. (2013). *Policing and media: Public relations, simulations and communications*. Routledge.
[70] L'Etang, J. (2009). Public relations and diplomacy in a globalized world: An issue of public communication. *American Behavioral Scientist*, *53*(4), 607-626.
[71] Levinson, J. C. (2001). *Guerrilla Creativity: Make Your Message Irresistible with the Power of Memes*. Houghton Mifflin Harcourt.
[72] Lin, M., Zhang, X., Ng, B. C. S., & Zhong, L. (2022). The dual influences of team cooperative and competitive orientations on the relationship between empowering leadership and team innovative behaviors. *International Journal of Hospitality Management*, *102*, 103160.
[73] Liu, B. F., & Horsley, J. S. (2007). The government communication decision wheel: Toward a public relations model for the public sector. *Journal of Public Relations Research*, *19*(4), 377-393.
[74] Liu, Z., & Zheng, Y. (2022). Virtual World Under AI: Augmented Reality and Deep Synthesis. In *AI Ethics and Governance* (pp. 95-109). Springer, Singapore.
[75] Luchsinger, M. (2022). *Little Lies: A Look at Misinformation in Recording Industry Public Relations* (Doctoral dissertation, Middle Tennessee State University).
[76] McCollough, C. J. (2018). Competition and public relations campaigns: Assessing the impact of competition on quality of projects, partners, and students. *Journal of Public Relations Education*, *4*(1), 25-48.
[77] Michaud, T., & Appio, F. P. (2022). Envisioning innovation opportunities through science fiction. *Journal of Product Innovation Management*, *39*(2), 121-131.
[78] Mohamad, B., Abdullah, S. N., Akanmu, M. D., & Raji, R. A. (2022). TO WHAT EXTENT ARE CREDIBILITY AND ATTRACTIVENESS OF SOCIAL MEDIA

INFLUENCER IMPORTANT IN DEVELOPING POSITIVE BRAND IMAGE AND CUSTOMER ATTITUDE?. *Mixed Methods Perspectives on Communication and Social Media Research*.
[79] Moloney, K., & McGrath, C. (2019). *Rethinking public relations*. Routledge.
[80] Myszkowski, N., Barbot, B., & Zenasni, F. (2022). Cognitive and Conative Profiles of Creative People. In *Homo Creativus* (pp. 33-48). Springer, Cham.
[81] Noack, A., & Schmidt, T. (2022). Innovation and communication: Spatial pioneers and the negotiation of new ideas. In *Communicative Constructions and the Refiguration of Spaces* (pp. 225-245). Routledge.
[82] Olasky, M. N. (2013). *Corporate public relations: A new historical perspective*. Routledge.
[83] Oliver, S. (2008). Public relations strategy. *Strategic Direction*.
[84] Ontario Association of Optomerists (OAO), Canada, 2020, https://www.optom.on.ca/OAO/News/Marketing_Campaigns/OAO/Public_Outreach_patients/Index.aspx?hkey=08a0efd5-3046-497d-a4e6-9c7c0974ae69
[85] Papasolomou, I., & Melanthiou, Y. (2012). Social media: Marketing public relations' new best friend. *Journal of Promotion Management*, *18*(3), 319-328.
[86] Pauschinger, D., & Klauser, F. R. (2022). The introduction of digital technologies into agriculture: Space, materiality and the public–private interacting forms of authority and expertise. *Journal of Rural Studies*, *91*, 217-227.
[87] Pearson, R. (2017). Business ethics as communication ethics: Public relations practice and the idea of dialogue. In *Public relations theory* (pp. 111-131). Routledge.
[88] Penz, F., & Schupp, J. (Eds.). (2022). *The Everyday in Visual Culture: Slices of Lives*. Taylor & Francis.
[89] Pfau, M., & Wan, H. H. (2006). Persuasion: An intrinsic function of public relations.
[90] Pittman, M., Oeldorf-Hirsch, A., & Brannan, A. (2022). Green advertising on social media: Brand authenticity mediates the effect of different appeals on purchase intent and digital engagement. *Journal of Current Issues & Research in Advertising*, *43*(1), 106-121.
[91] Pressgrove, G., Barra, C., & Kim, C. (2022). Identifying a credible spokesperson for corporate social responsibility initiatives: Findings from a cross-national study. *Public Relations Review*, *48*(2), 102177.
[92] Rogers, C. R. (2009). Social media, libraries, and Web 2.0: how American libraries are using new tools for public relations and to attract new users. *South Carolina State Documents Depository*.
[93] Roper, J. (2005). Symmetrical communication: Excellent public relations or a strategy for hegemony?. *Journal of Public Relations Research*, *17*(1), 69-86.
[94] Ruoslahti, H. (2018). Co-creation of knowledge for innovation requires multi-stakeholder public relations. In *Public Relations and the Power of Creativity*. Emerald Publishing Limited.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

[95] Sallot, L. M., Lyon, L. J., Acosta-Alzuru, C., & Ogata Jones, K. (2003). From aardvark to zebra: A new millennium analysis of theory development in public relations academic journals. *Journal of Public Relations Research*, *15*(1), 27-90.
[96] Scott, D. M. (2022). *The new rules of marketing and PR: How to use content marketing, podcasting, social media, AI, live video, and newsjacking to reach buyers directly*. John Wiley & Sons.
[97] Seo, H., Kim, J. Y., & Yang, S. U. (2009). Global activism and new media: A study of transnational NGOs' online public relations. *Public Relations Review*, *35*(2), 123-126.
[98] Smaller, H. (2022). Captive audience: how corporations invaded our schools, by Catherine Anne Gidney: Toronto, Between the Lines Press, 2019, 248 pp., $27.95 (paperback), ISBN 978-177-1-13426-2.
[99] Smith, R. D. (2017). *Strategic planning for public relations*. Routledge.
[100] Smudde, P. M. (2005). Blogging, ethics and public relations: A proactive and dialogic approach. *Public Relations Quarterly*, *50*(3), 34.
[101] Solis, B., & Breakenridge, D. K. (2009). *Putting the public back in public relations: How social media is reinventing the aging business of PR*. Ft Press.
[102] Sommerfeldt, E. J. (2013). The civility of social capital: Public relations in the public sphere, civil society, and democracy. *Public Relations Review*, *39*(4), 280-289.
[103] Song, B., & Tao, W. (2022). Unpack the relational and behavioral outcomes of internal CSR: Highlighting dialogic communication and managerial facilitation. *Public Relations Review*, *48*(1), 102153.
[104] Sriramesh, K., & Verčič, D. (2019). *The global public relations handbook: Theory, research, and practice*. Routledge.
[105] Sternberg, R. J., & Karami, S. (2022). An 8P theoretical framework for understanding creativity and theories of creativity. *The Journal of Creative Behavior*, *56*(1), 55-78.
[106] Steyn, P., Salehi-Sangari, E., Pitt, L., Parent, M., & Berthon, P. (2010). The social media release as a public relations tool: Intentions to use among B2B bloggers. *Public Relations Review*, *36*(1), 87-89.
[107] Tam, L., & Kim, J. N. (2018). Social media analytics: how they support company public relations. *Journal of Business Strategy*.
[108] Taylor, M., & Kent, M. L. (2010). Anticipatory socialization in the use of social media in public relations: A content analysis of PRSA's Public Relations Tactics. *Public relations review*, *36*(3), 207-214.
[109] Tench, R., & Yeomans, L. (2009). *Exploring public relations*. Pearson Education.
[110] Terry, P. E. (2022). Well-Being and Evolving Work Autonomy: The Locus of Control Construct Revisited. *American Journal of Health Promotion*, *36*(4), 593-596.
[111] *The Canadian Ontario Association of Optometrists (OAO)-20 Second Daydream, 2015*, https://www.edelman.ca/work/ontario-assocation-of-optometrists
[112] *The Holmes Report 2018 – The Best Agencies, Campaigns, Inflencers and Stories of the Year, https://www.provokemedia.com/docs/default-source/The-Holmes-Report-Books/the-holmes-report-2018-book.pdf*

[113] Theaker, A. (2013). *The public relations handbook*. Routledge.
[114] Theaker, A., & Theaker, A. (2004). *The public relations handbook* (Vol. 2). Abingdon: Routledge.
[115] Toler, S. (2019). *The power of positive words: What you say makes a difference*. Harvest House Publishers.
[116] Tomitsch, M. (2022). Interactive media facades—research prototypes, application areas and future directions. In *Rethinking Building Skins* (pp. 313-337). Woodhead Publishing.
[117] Trevas, S., Guerreiro, R., Faria, C., & Santos, A. (2022). Thinking Outside the Box. *Cureus*, *14*(1).
[118] Tse, T. (2022). Work faster, harder, cheaper? Global, local and sectoral co-configurations of job insecurities among Hong Kong creative workers. *Critical Sociology*, 08969205221087345.
[119] Van Looy, A. (2022). Search engine optimization. In *Social Media Management* (pp. 125-146). Springer, Cham.
[120] Van Ruler, B., & Vercic, D. (Eds.). (2008). *Public relations and communication management in Europe: A nation-by-nation introduction to public relations theory and practice*. Walter de Gruyter.
[121] Verčič, D., Verčič, A. T., & Sriramesh, K. (2015). Looking for digital in public relations. *Public relations review*, *41*(2), 142-152.
[122] Vieira, V. A., de Almeida, M. I. S., & Schreiner, T. F. (2022). Amplifying retailers' sales with a hub's owned and earned social media: The moderating role of marketplace organic search. *Industrial Marketing Management*, *101*, 165-175.
[123] Wang, L., Luo, X. R., & Xue, B. (2018). Too Good to Be True? Understanding How Blockchain Revolutionizes Loyalty Programs. 24th Americas Conference on Information Systems, New Orleans, 2018., p.1-10
[124] Wang, Z., Du, Y., Wei, K., Han, K., Xu, X., Wei, G., ... & Su, X. (2022). Vision, application scenarios, and key technology trends for 6G mobile communications. *Science China Information Sciences*, *65*(5), 1-27.
[125] Wilcox, D. L., Ault, P. H., & Agee, W. K. (2006). Public relations: Strategies and tactics.
[126] Wright, D. K., & Hinson, M. D. (2010). An analysis of new communications media use in public relations: Results of a five-year trend study. *Public Relations Journal*, *4*(2), 1-27.
[127] Xifra, J., & Grau, F. (2010). Nanoblogging PR: The discourse on public relations in Twitter. *Public relations review*, *36*(2), 171-174.
[128] Xifra, J., & Huertas, A. (2008). Blogging PR: An exploratory analysis of public relations weblogs. *Public relations review*, *34*(3), 269-275.
[129] Xu, H., Cheng, Y., Li, Z., & You, C. (2021). Content sharing network based on ipfs and blockchain. In *IOP Conference Series: Materials Science and Engineering* (Vol. 1043, No. 5, p. 052014). IOP Publishing.

[130] Yan, Y., Gupta, S., Licsandru, T. C., & Schoefer, K. (2022). Integrating machine learning, modularity and supply chain integration for Branding 4.0. *Industrial Marketing Management*, *104*, 136-149.
[131] Yun, S. H., & Toth, E. L. (2009). Future sociological public diplomacy and the role of public relations: Evolution of public diplomacy. *American Behavioral Scientist*, *53*(4), 493-503.
[132] Zaharna, R. S. (2000). Intercultural communication and international public relations: Exploring parallels. *Communication Quarterly*, *48*(1), 85-100.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

THE RELATIONSHIP BETWEEN CORPORATE SOCIAL RESPONSIBILITY AND MARKET SHARE: EVIDENCE FROM NIGERIA IN WEST AFRICA

Aderemi Daniel ADEKANMI[1], Moses Babatunde OLOLAD[2], Ebunoluwa Tokunbo ADEOYE[3], Mustapha BOJUWON[4]

[1] Department of Accounting, Faculty of Management Science, Federal University Oye-Ekiti, Nigeria, Email: adekanmideremi@gmail.com

[2]Department of accounting and finance, Elizade University, Ilara-Mokin, Ondo State, Nigeria, Tel.: +2348033710552, Email: Philip-odewole@elizadeuniversity.edu.ng.

[3]Department of Accounting, Adeleke University, Ede, Nigeria, Tel.: +2348132686161, Email: ebuoluwa.adeoye@adelekeuniversity.edu.ng.

[4]Department of Accounting, Federal University Oye-Ekiti, Nigeria, Tel.: +2348142080605, Email: bojuwo2009@gmail.com.

How to cite: ADEKANMI, A.D., OLOLAD, M.B., ADEOYE, E.T., & BOJUWON, M. (2022). "The Relationship between Corporate Social Responsibility and Market Share: Evidence from Nigeria in West Africa." *Annals of Spiru Haret University. Economic Series, 22*(2), 267-281, doi: https://doi.org/10.26458/22215

Abstract

The study examined the effect of corporate social responsibility on market share of listed manufacturing firm in Nigeria. It specifically examined the effect of internal environmental cost on market share of listed manufacturing firms in Nigeria, it also examined the effect of external environmental cost on market share of listed manufacturing firms in Nigeria. The study predicated of stakeholder's theory.

The study adopted Ex post facto research design and secondary data was gathered to analyse the relationship between the variables. The population of the study consisted of forty-two manufacturing listed in the Nigeria Stock Exchange,

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

while ten samples were collected from the population. The data collected were analysed through descriptive statistic, Error Correction MODEL (Long and short run relationship), and correlation matrix regression analysis.

The result of the findings revealed that internal environmental cost has positive and significant effect on market share of listed manufacturing firms in Nigeria (p= 0.1.454 > 0.05) and external environmental cost has positive and significant effect on market share of listed manufacturing firms in Nigeria (p=0.6757 > 0.05).

The study concluded that CSR activities such as internal environmental cost and external environmental cost through donations to the society where they operate their business and other social and infrastructural facilities reflect in their annual financial statement as external cost incurred during the year.

The study recommended that Nigerian manufacturing firms take advantage of external environmental costs by investing more on the business's environment, notably via corporate social responsibility.

Keywords: *corporate social responsibility; internal environmental cost; external environmental cost; market share.*

JEL Classification: G11, M30

Introduction

The concept of corporate social responsibility has evolved into a fundamental need. The new economic development patterns, the application of new technology, and the globalization of the economic system all provide new obstacles, and not only to the business communities of various nations; they bring new challenges to all of humanity. In addition, the idea of Corporate Social Responsibility (CSR) states that businesses have a need to consider the interests of its customers as well as the ecological imprint in every area of their operations [Michael, 2017]. The world we live in right now is at such an era in which the future of both the planet and humans is totally dependent on our level of understanding as well as our desire to change. [Lawal, 2016] When companies voluntarily integrate social and environmental matters into their business and combine them harmoniously with economic interests, and when relationships with all stakeholders are based on the valuable principles of respect for the individual, society, and the environment, then corporate social responsibility can be thought of as an activity policy and practice of organizations [Mohamed, 2017].

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

However, according to Aguilera (2015) corporate social responsibility is receiving more and more attention, there are still a great number of unknowns associated with it. These unknowns can have an impact on the social responsibility activity itself, as well as the disclosure and presentation of information regarding it to users. Many scholars focus on a variety of facets of social responsibility, and the concept of social responsibility itself may shift significantly depending on the cultural setting of a nation. It is also possible to see that the bulk of research was carried out in developed nations, despite the fact that the number of studies carried out in developing nations has increased in recent years. [Olaniyan & Efuntade, 2021].

The acquisition of a relative competitive advantage is a precondition for expanding a company's market share [Porter, 2016]. According to Ojung'a (2017), Ibrahim (2017) company's market share is dependent on the internal structure of its marketing department, the coordination of its operations, the quality of its information and communication technology, its procurement system, the quality of its human resource capital, and the way in which these elements interact with one another and effect the price and distinction of the product. The proportion of an industry's or market's total sales that a certain firm has earned over a certain amount of time for a particular company may be used to calculate that company's market share in that industry or market. Start by taking the firm's sales for the period in question and dividing those numbers by the industry's total sales for the same time period. This will give you an estimate of the percentage of the market that the company has [Dorothy et. al, 2015]. In markets that are competitive as opposed to those that are dominated by a limited number of firms or even just one company, it is vital for businessmen and investors to be aware of how well companies or their products are doing in relation to those of their competitors. Markets that are controlled by oligopoly or monopoly are not competitive. The market share is one way that may be utilized to throw light on the relative performance of the companies. The fundamental idea behind market shares is an easy one to understand [Ahmad, 2015]. According to Mohammed and Kamaljeet's (2015) definition, a company's market share is the percentage of the whole market that is under its control.

Dorothy (2015) is of the opinion that it is possible to represent a company's market share as a proportion (or percentage) of the total amount. Finding out what proportion of an industry's or market's total revenues a certain firm has earned over a specific amount of time for a specific company is one way to figure out that company's market share. Start by taking the firm's sales for the period in question and dividing those numbers by the industry's total sales for the same time period as this will give an estimate of the percentage of the market of the company

Igbekoyi (2017) surmise that markets that are competitive as opposed to those that are controlled by a small number of businesses or even just one company and it is essential for businessmen and investors to be aware of how well companies or their goods are performing in comparison to those of their competitors. In contrast, in markets that are controlled by a small number of businesses, or even just one company, it is not as important. The market share is one way that may be utilized to throw light on the relative performance of the companies. The fundamental idea behind market shares is an easy one to understand.

According to Mohammed and Kamaljeet's (2015) who defined that market share is the percentage of the whole market that is under its control. It is possible to represent a company's market share as a proportion (or percentage) of the total quantity of certain products or services that it sells within a specific geographic region (which may be a single community or the entire world). It is possible to get a complete picture of the position that a firm has in the market by evaluating its market share in a number of different industries. For instance, a researcher would be interested in finding out what share of the market has over his product. When examining a particular product line or sales inside a constrained territory, it is possible to identify instances of highly concentrated market shares. At other instances, a market share might be more comprehensively analyzed by considering the whole market, the total number of certain products or services that it offers within a specific geographic region (which may be a single community or the entire world). It is possible to get a complete picture of the position that a firm has in the market by evaluating its market share in a number of different industries [Lawal, 2016].

Some of the existing literature in Nigeria leaves a few gap that need to be addressed. For instance, Osisanwo and Atanda (2019) focused on employee benefits, corporate giving, and employee safety variables (not firm-specific ratios) that affect their performance in the course of discharging their duties. They hypothesized that if staff members are well motivated, they will give their best to the company if they are in a position to do so. The following factors are taken into consideration: the interest rate, the levels of prior stock returns, the money supply, and the exchange rate. The researchers Ahmed et. al (2017) and Aguilera (2015) employed total assets as a proxy for business success. On the other hand, in the modern literature, corporate performance has traditionally been assessed in terms of legal social responsibility.

In addition to this, the sample for these studies was comprised of all of the companies that are listed on the Nigerian Stock Exchange (NSE), the research did not focus on a particular industry, and the results seem to be too generic and not specific. It is necessary to take into account the cost to the environment of how these organizations offer value to the community in which they conduct their business as well as the general qualities that are assigned to the area in which they operate. Based on these, the study is considered essential because it attempts to fill these literature gaps by using the social environmental cost as a measure of firm value on the food, tobacco, and beverages industry, which is a component of the manufacturing sector. Specifically, this study focuses on the listed manufacturing firms in Nigeria. The following research question was developed in light of this background information:

- To what extent does external environmental costs affect market share of listed manufacturing firms in Nigeria?
- To what extent does internal environmental costs affect market share of listed manufacturing firms in Nigeria?
- What are the linkage between external environmental cost, internal environmental cost and market share of listed manufacturing firms in Nigeria?

Literature Review

The term corporate social responsibility refers to the duties that corporations have for the communities in which they conduct their operations. The maintenance of public health and safety of immediate environment, and the provision of basic social amenities are all included in these obligations. According to the World Company Council for Sustainable Development (2015), "the commitment of company to contribute to sustainable economic development, working with employees, their families, and the local communities" is the definition of "corporate social responsibility." An idea known as "corporate social responsibility" (often abbreviated as "CSR") has garnered an increasing amount of focus in both the business sector and the academic community over the course of the previous several decades [Aguilera et. al, 2019]. A number of writers interpreted the meaning in a variety of ways, and these readings differed according to the authors' backgrounds, interests, and experiences, as well as the values that were ingrained in each author's particular frame of reference. [Adams et. al, 2016]

According to Adelopo (2006), the concept of "corporate social responsibility" refers to a concern with the requirements and objectives of society that goes beyond the realm of the merely economic. According to the definition of "corporate social responsibility" that was provided by the European Union in the year 2002, "corporate social responsibility" is "the concept whereby a company integrates social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis as they are increasingly aware that responsible behaviour leads to sustainable business success." [Olaniyan et. al, 2021]

According to Adegbite (2018), researches that were conducted on CSR were able to discover a number of aspects that serve as the reason for why firms readily engaged in adopting corporate social responsibility. These elements are also referred to as drivers. Even though the drivers are applicable to all companies, the degree to which they are applied and the roles they play in improving financial positions differ from one company to the next and also from sector to sector. Even though the drivers are applicable to all companies, the extent to which they are applied and the roles they play in improving financial positions differ from company to company. Even while the drivers are relevant to all businesses, the degree to which they are utilized and the roles they play in improving financial conditions differ from one organization to the next [Adelopo, 2016]. There are many important factors to consider, some of which include the following: the reputation of the management, the quality of the workforce, the availability of money and investor relations, the risk profile and risk management, learning and innovation, competitiveness and market positioning/brand distinctiveness, and operational efficiency. [Abdul & Mustafa, 2016]

A company's market share may be defined as the proportion of the industry's entire revenue that it accounts for. It is determined by keeping track of a firm's sales over a certain period of time and then dividing that number by the total sales that a company delivers during that time period. This criterion is used to generalize the notion of the connection of the firm to the market and the other companies that are in competition with it [Abdul & Mustafa, 2016]. A company's proportion of an industry's total sales or a market's total sales is referred to as its "market share," and it is measured over a certain amount of time. Market share may also refer to the entire sales of a market. To get a company's percentage of the market, start by taking the company's sales for the period and dividing that number by the industry's total sales for the same period. This statistic is used to provide a high-level overview of the size of a firm in respect to both the market in which it operates and the businesses that it competes with. Adegbite (2015).

Investors and analysts pay close attention to both increases and decreases in market share since these fluctuations may be an indication of how competitive a company’s goods or services are in their respective markets. If a company’s market share does not change even though the general market for a product or service is growing, this suggests that the company’s revenues are growing at the same rate as the total market. Because of this development, a company that is expanding its market share will experience faster revenue growth than its competitors. This growth will result in the company outperforming its competitors [Adams & Ferreira, 2019]. A rise in a company’s market share may enable it to attain larger scale with its operations, which in turn may boost the company’s profitability. A corporation might aim to increase its share of the market in several ways, including cutting pricing, increasing promotion, or launching new items that are either distinct or similar to existing ones. In addition to this, it is also able to increase the size of its share of the market by appealing to other demographics or audiences [Adegbite, 2018].

This research study is anchored on the stakeholder theory. According to Edward Freeman’s (1984) stakeholder theory believes that a corporation has a responsibility to provide value for all of the people who are important to its continued existence (shareholders), and not only for those who stand to benefit from it. In stakeholder theory, an interrelationship is described between the various actors that are involved in a company, and it provides an alternative purpose for the company. This purpose does not only consider the sole objective of maximizing the wealth of shareholders, but it also focuses on the interests of all other individuals who are either directly or indirectly connected with the organization. Internal stakeholders and external stakeholders are the two primary categories that may be used to categorize stakeholder groupings. Internal stakeholders are those individuals who are already a member of the company, while external stakeholders are those individuals who are not already associated with the business. Financers, suppliers, consumers, communities, and workers are examples of internal stakeholders. Examples of external stakeholders include the government, the media, rivals, special interest organizations, and customer advocacy groups. For a company to have long-term success in terms of profitability and sustainability, as well as an increase in their market share, it is essential for the company to have productive relationships with its many stakeholders [Mohammed & Kamaljeet, 2015].

Corporate social responsibility which hinges on social issues that are of great concerns to a wide range of corporate stakeholders has been described as the dominant and most useful theory in explaining corporate social practice [Hahn & Kühnen, 2013]. The basic proposition of the theory is that managers in organizations have a network of relationships with many groups that both affect and are affected by

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

the actions of the firm through market shares, thus must shift from the conventional objective of maximizing shareholders interest only. Thus, by being socially responsible, companies not only concern themselves with maximizing shareholders value but also meet the interest and expectations of entire stakeholders which will lead to improve performance of the firm and market share [Hilder et. al, 2017].

Research on CSR and financial performance in the Nigerian construction industry was carried out by Ibrahim and Garba (2015). The research used both an ex-post facto and a survey design, and multiple regression analysis and the chi-square test were used to analyze the results of the survey. The findings of the research indicate that non-philanthropic activities have a greater influence on the financial success of businesses operating in the Nigerian construction sector than do philanthropic services.

Research of Nigerian corporations' levels of Corporate Social Responsibility and how well they performed was conducted by Hilda, Hope, and Nwoye (2015). In this study, an exploratory research methodology was used, and time series data was collected. The research concluded that there is a considerable connection between the costs of social responsibility and the profitability of businesses.

An investigation on Dangote Industries Limited's Corporate Social Responsibility and Performance was carried out by Adamu et. al (2015). The research strategy used in this study was a survey, and the data collection came from Dangote Industries Limited's annual reports. The expenditures for corporate social responsibility, selling and distribution, turnover, and return on assets for the period of 2007-2014 are included in the data that was utilized. The findings indicate that the company's success was considerably impacted by its commitment to social and ethical responsibility.

Adekanmi, Adedoyin, and Adewole (2015) studied the determinants of socio-environmental accounting of listed firms in Nigeria with a view to providing information on how socio-environmental accounting could be employed to enhance firms' sustainability. Secondary data was source for a sample of 50 listed firms. The study found that firm's size, profitability and number of analysts analyzing the firms were the three major factors that had positive influence on socio-environmental reporting of listed firms in Nigeria. The study concluded that socio-environmental accounting could be employed to enhance sustainable business practice in quoted companies.

Igbekoyi, Alade and Oladele (2019) investigated the influence of manufacturing companies' compliance with corporate social responsibility regulations in Nigeria.

The sample for this research was drawn from the Nigerian Stock Exchange and included 74 different industrial companies. Purposive sampling was used to choose a sample size of 25 companies, and this was done with the intention of include only companies that have been continuously operating during the span of time covered by this research. The information used in this study came from the annual reports of the companies that were chosen and span the years 2002-2016. However, throughout the course of the investigation, it was discovered that the level of participation in CSR by the companies was inconsistent and, at certain points in time, statistically negligible.

The effects of social responsibility activities on Nigerian deposit money banks were investigated by Sukanmi (2020). The sample size is comprised of thirteen commercial banks that have been granted permission to do business in Nigeria by the Central Banks of Nigeria and that are traded on the Nigerian Stock Exchange as of the year 2019. Fifteen banks were sampled. The data that was utilized for this research was gathered from the annual reports of these financial institutions. According to the findings of the research, the banks provided relatively little information on the environment, product quality, and customer relations, but they did share a lot of information about their human resources and their role in the community.

Research Method

This study employed descriptive design method to establish the relationship between corporate social responsibility measured in term of internal and external environmental cost and market share of listed manufacturing firm in Nigeria. The data required for this study were secondary in nature and it was sourced from the financial statement and annual financial report of the sampled listed firms in Nigeria exchange for this study covering 2010-2020. The population for this study covered one hundred and forty-two (42) manufacturing firms quoted in Nigerian Exchange. The five (5) manufacturing firms were randomly selected from the quoted manufacturing firms in Nigeria; they are: Dangote Sugar, Berger paints, Dangote Cement, Cadbury Nigeria and Flour Mills of Nigeria, covering the period of 2010 to 2020.

Model Specification

The study employed measures of market share (dependent variables) which are regressed against the explanatory variables that comprise (EXENVC) External environmental cost and (INTENVC) Internal environmental cost. The following model was developed in functional form as:

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900
INSTITUTUL CENTRAL DE CERCETARE ȘTIINȚIFICĂ

Issue 2/2022

$$MARS_t = f(ENVC_t) \quad \text{..} \quad (3.1)$$

MAS=f(EXENVC,INTENVC)

MARS=a_0 + a_1ENVC + a_2DT +µ

Where:
MARS= Market Share
EXENVC= External environmental cost
INTENVC= Internal environmental cost
a_{0} = Intercept or constant term of the model
a_1 and a_a = Parameters to be estimated.
µ= Error term.

RESULTS AND DISCUSSION

Descriptive Analysis

Table 1. Descriptive Statistics.

Variables	Obs	Mean	Std. Dev.	Min	Max
MARS	50	12.40859	3.495654	3.535633	7,492243
EXEVC	50	1,946385	2,506433	1,564932	2.406392
INEVC	50	2.593755	1.406943	2.453222	4.405422
SIZ	50	14.59743	3.495832	2.460694	2,404322

Source: Author's Computation (2022)

Table 2. Correlation Matrix.

	MARS	EXTEVC	INTEVC	SIZ
MARS	1			
EXEVC	1.1869	1		
INEVC	1.2740	1.0993	1	
SIZ	1.0898	1.0740	0.3956	1

Source: Author's Computation (2022)

Table 1 indicated that the mean value of market share was 7.492243, with lowest and highest values of 3.535633 for market share. Table 4.1 also provided mean values of 1.564932 billion naira and 2.406392 billion naira for internal environmental cost and external environmental cost respectively with the minimum

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

value and maximum value of 2.453222 billion naira 4.405422 billion naira for external environmental cost, 1.564932 billion naira and 2.406393 billion for internal environmental cost.

According to Table 2, there is a positive association between market share and internal environmental cost, external environmental cost, and company size. The coefficients for each of these relationships were 1.1869, 1.2740, and 1.0898 correspondingly. In addition, the findings shown in Table 2 demonstrated the presence of a positive association between market share and other factors, with result of correlation value of 1.2942, 1.2324, and 1.0638 for market share, external and internal environmental cost, respectively. In addition, the association coefficients shown in Table 2 were as follows: 0.0993 for the external environmental cost and the internal environmental cost; 0.0740 for the external environmental cost and the company size; and an examination of the reported correlation coefficient in Table 2 has shown that there is no problem of multi-collinearity among the explanatory variables. This is demonstrated by the fact that the degree of the interrelation among most of the pairs of variables that are included in the models is relatively weak.

Table 3. Estimation Result.

SHORT RUN RESULT					
Variable	**Coefficient**	**Probability**	Variable	Coefficient	Probability
EXCT	**-1.453463**	**0.005**	EXCT	-1.453433	0.002
C	**1.4253532**	**0.001**	C	-6.634324	0.032
D(INTVC)	**-0.563254**	**0.003**	D(INTVC)	-2.453335	0.045
D(MARS)	**0.0543435**	**0.610**	D(MAR)	-0.045369	0.343
Hausman 2022 Test: 0.46 (p= 0.1.454 > 0.05)					

Source: Author’s Computation, 2022

According to Table3, there was a negative short-run relationship between the cost of the internal environment and market share, with a coefficient of -1,453433 (p= 0.002 >0.05). This link was not statistically significant. On the other hand, the size of the company had a positive influence on market share, with a co-efficient of 4.6344324 (p = 0.032 > 0.05), although this effect was not significant. With probability value of 0.001 0.05 indicating considerable speed of adjustment at a 5 percent level of significance, the reported ECT(-1) revealed that approximately 31 percent of the short run discrepancies were rectified annually. This was supported by the fact that the probability value indicated considerable speed of adjustment.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Table 4. Estimation Result.

SHORT RUN RESULT					
Variable	**Coefficient**	**Probability**	Variable	Coefficient	Probability
ECT	**-1.453463**	**0.032**	ECT	--2,42453	0.000
C	**1.4253532**	**0.007**	C	1.4455695	0.343
D(EXTEVC)	**-1.563254**	**0.0034**	D(EXTEVC)	-0.543406	0.343
D(MARS)	**1.0543435**	**0.323**	D(SIZ)	0.4223095	0.001
Hausman 1978 Test: 1.53 (p=0.6757 > 0.05)					

Source: Author's computation, 2022.

There exist a short run positive and significant relationship between external environmental cost and market share, as evidenced by a coefficient of 1.4455695 and a significance level that was more than 0.05, as can be seen in Table 4. According to the data shown in ECT(-1), around 31 percent of the short run differences were resolved every year. In addition, according to the stated p-value of 0.001 0.05, significant evidence of significant speed of adjustment was found in the study at the level of significance of 5%.

Discussion of Findings

The coefficient [1,4455695 (p=0.001)], which is a clear indication that factors were held constant for each percentage in external environmental cost, revealed a statistically significant increase in market share for the corporation of 0.098 percent.

The external environmental cost positively affected market share, a measure of performance. In addition, the findings indicated that the external environmental cost had positive and significant influence on market share [0.4223095 (p=0.001)], which indicated that an increase of 1 percent in the external environmental cost resulted in a significant increase of approximately 0.08 percent. Market share of listed businesses that were sampled for the research was significantly impacted by the internal environmental cost, as indicated by the reported coefficient estimate of 0.3245129 (p=0.001 0.005). There was a positive relationship between costs of the external environment and market share in the short run. The correlation coefficient was 0.105341, and the significance level for the relationship was more than 0.05 (p = 0.466). As shown by the ECT(-1), around 31 percent of the short term anomalies were rectified on an annual basis. In addition, according to the stated probability value of 0.001 0.05, the study demonstrated a significant amount of speed of adjustment at the level of significance of 5%.In the short term, there was a negative

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

association between the cost of the internal environment and market share, with a coefficient of -0.3357347 (p = 0.318 > 0.05) which is a clear indication that external environmental cost has a positive and long run significant relationship with market share as this result is in conform with the result of Mohammed and Kamaljeet, (2015), Olaniyan et. al, (2021), Osisanwo and Atanda, (2010), Abdul and Mustafa, (2016) and Ackers, (2019).

However, this relationship was not statistically significant. On the other hand, the size of the company had a positive influence on market share, although this effect was not significant (p = 0.546 > 0.05), and the coefficient was 0.269218. With a reported probability value of 0.001 0.05 indicating considerable speed of adjustment at a 5 percent level of significance, the reported ECT(-1) revealed that approximately 31 percent of the short run discrepancies were rectified annually. This was indicated by a considerable speed of adjustment at a 5 percent level of significance.

Conclusion and Recommendations

This study established that both internal and external environmental costs influence market share of manufacturing firms in Nigeria positively,

The study concluded that there is a positive relationship between CSR activities such as internal environmental cost and external environmental cost through the donation to the society where they operate their business and other social and infrastructural facilities as this reflect in their annual financial statement as external cost incurred during the year.

Recommendation

Premise on discoveries and conclusion of this study, the following recommendations are presented:

- Manufacturing firms in Nigeria should take full advantage of external environmental cost by objectively spending more on the environment of the business especially via their corporate social responsibility (CSR)
- Manufacturing firms should also ensure that more that they spend relatively less of internal environmental cost alongside external environmental cost so as to reduce the contribution of external environmental cost to financial performance measured in terms of profit after tax
- Also, manufacturing firms should also look into other means of improving the internal environment even when less is being spent on employee safety.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Reference

[1] Abdul, H. I., Mustafa, M. H. (2016). Board diversity and corporate social responsibility in Jordan. *Journal of Financial Reporting and Accounting*, *14(*2), 279-298.
[2] Ackers, B. (2019). Corporate social responsibility assurance: how do South African publicly listed companies compare? *Meditari Accountancy Research*, *17*(2), 1–17.
[3] Adam, Y., Andah, R. A., & Saadiva, N. H. (2016). Corporate governance mechanisms and voluntary disclosure in Saudi Arabia. *Research Journal of Finance and Accounting*, *4*(4), 25-36.
[4] Adams, R., & Ferreira, D. (2019). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, *94*(1), 291-309.
[5] Adegbite, E. (2015). Good corporate governance in Nigeria: Antecedents, propositions and peculiarities. *International Business Review*, *24*(1), 319-330.
[6] Adegbite, E. (2018). Corporate governance regulation in Nigeria. *Corporate Governance: The International Journal of Business in Society*, *12*(2), 257-276.
[7] Adekanmi, A. D., Adedoyin, R. A. & Adewole, J. A. (2015). Determinants of Socio-Environmental Reporting of Quoted Companies in Nigeria. *Journal of Research in Business, Economics and Management*, *4 (4), 459-471*.
[8] Adelopo, I. (2016). Voluntary disclosure practices amongst listed companies in Nigeria. *Advances in Accounting*, *27*(2), 338-345.
[9] Aguilera, R. V. (2015). Corporate governance and director accountability: An institutional comparative perspective. *British Journal of Management*, *16*(1), S39-S53.
[10] Aguilera, R., Rupp, D., Williams, C., & Ganapathi, J. (2017). Putting the S Back in CSR: A multi-level theory of social change in organizations. *Academy of Management Review*, *32*(3), 836–863.
[11] Ahmad, N. B. J., Rashid, A., & Gow, J. (2017). Board independence and corporate social responsibility (CSR) reporting in Malaysia. *Australasian Accounting, Business and Finance Journal*, *11*(2), 2017, 61-85.
[12] Hilda, R., Hope, E.R. & Nwoye, M.V. (2017). The association between integrated reporting and information asymmetry. Unpublished Msc thesis submitted to Eramus school of Economics, Eramus University Rotterdam.
[13] Ibrahim, B.S., & Garba, A. (2017). The association between outside directors, institutional investors and the properties of management earnings forecast. *Journal of Accounting Research*. *43*(3), 343-337.
[14] Igbekoy T.A., Alade M.S., & Oladele, R. (2019). Corporate social responsibility as a conflict between shareholders. *Journal of Business Ethics 97*(1), 71–86.
[15] Lawal, B. (2016). Re-duplication of corporate governance codes and the dilemma of firms with dual regulatory jurisdictions. *Corporate Governance*, *16*(3), 476-489.
[16] Michaels, A. (2017). Relationship of corporate social responsibility disclosure on information asymmetry and the cost of capital. *Journal of Management Control*, *28*(3), 251-274.

[17] Mohamed Yunos, R. (2017). *The effect of ownership concentration, board of directors, audit committee and ethnicity on conservative accounting: Malaysian evidence.* (Doctoral dissertation). Retrieved from http://ro.ecu.edu.au/theses/155/

[18] Mohammed, N.Z.A., & Kamaljeet, S. (2015). Integration of corporate social responsibility into corporate governance: New model structure and practice: A case study of Saudi company. *European Journal of Accounting and Finance Research*, *13*(5), 1-19.

[19] Olaniyan, N.O., Ayodele, E.J., Owoniya, B.O., & Christine Kabasinguzi (2021). Corporate Social Responsibility on the Competitive Performance of Multinational Companies in Nigeria. *Multidisciplinary Journals of Development*, Vol 10. Issue 1, pp. 96-112.

[20] Olaniyan, O.N., Efuntade, A.O., Efuntade, O.O. (2021). Corporate Social Responsibility and Firm Financial Performance in Nigeria: Mediating on Ethnical Responsibility *Annals of Spiru Haret University. Economic Series, 21*(1), 25-47.

[21] Osisanwo, S.S. & Atanda, L. (2010). Corporate social responsibility in China: Window dressing or structural change? *Berkeley Journal of International Law, 28*(1), 64–100.

[22] Sukanmi, A.R. (202o). *Corporate social responsibility reporting in developing countries: the case of Bangladesh*. Aldershot: Ashgate.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

WORK STRESS, RISK-TAKING PROPENSITY, AND RESILIENCE AS DETERMINANTS OF PSYCHOLOGICAL WELLBEING IN THE POLICE FORCE

Foluso Philip ADEKANMBI[1], Steve Olusegun ADEGOKE[2], Wilfred Isioma UKPERE[3]

[1,3] Department of Industrial Psychology and People Management, College of Business & Economics, University of Johannesburg, Auckland Park Kingsway Campus, Corner Kingsway & University Road, PO Box 524, Auckland Park, 2006, South Africa, Email: foladex12@yahoo.com, wiukpere@uj.ac.za

[2] The Department of Psychology, Faculty of the Social Sciences, University of Ibadan, University Road, Ibadan, Oyo State, Nigeria, Tel.: +27843757355, +2348086804070, +27115592069, Email: olusegunsteveadegoke@gmail.com

How to cite: ADEKANMBI, F.P., ADEGOKE, S.O., & UKPERE, W.I. (2022). "Work Stress, Risk-Taking Propensity, and Resilience as Determinants of Psychological Wellbeing in the Police Force." *Annals of Spiru Haret University. Economic Series, 22*(2), 283-290, doi: https://doi.org/10.26458/22216

Abstract

This study evaluates the impacts of work stress, risk-taking propensity, and resilience on psychological wellbeing in Nigeria's Police Force. Its sample was extracted from four (4) police stations in Ibadan, Oyo State of Nigeria. They are the Iyaganku, Eleyele, Orita Challenge, and Iwo Road testing ground police stations. This study has adopted a cross-sectional survey method, where the current scholar randomly distributed the study's questionnaires. Nonetheless, from the 350 questionnaires floated, 319 were suitable for study and analyzed using Statistical Packages for Social Sciences (SPSS version 27). The present study conducted standard and hierarchical multiple regression analysis in testing the stated hypotheses and concludes that work stress and *risk-taking propensity significantly reduce psychological wellbeing. In contrast, resilience increases it in Nigeria's Police Force. It further settles that work stress, risk-taking propensity, and resilience significantly and jointly determine psychological wellbeing. Work stress, however, determines more significantly the psychological wellbeing of police officers than risk-taking propensity, resilience, and their combination matrix. Consequently, this paper advocates the need to reinforce stress management training among police officers to promote healthy lifestyles and improve psychological wellbeing. Also, Nigeria's Police college should incorporate risk-taking concepts on the job to help them exhibit better risk-taking behaviors and maintain improved psychological wellbeing. Moreover, Nigeria's Police Force should adopt strategies for promoting resilience levels, raising police officers' positive emotions to recover from their adverse experiences. Besides, there is a severe need for psychological interventions to prepare police officers for the hurdles ahead. So, it is required that government make provisions for a salary increase, incentives, organizational support programs, and initiatives that can strengthen the coping styles of police officers for better psychological health and wellbeing.*

Keywords: *police; stress; risk; behavior; positivity; Nigeria.*

JEL Classification: J11, J16

Introduction

Wellbeing could be physical or psychological (Ryff, 2018). Psychological wellbeing is the primary goal of humans considered necessary to feel healthier psychologically, linked to an individual's reaction to daily events and personal feeling discovery (Duan et al., 2016; Thomson et al., 2018). The Longman Dictionary of Contemporary English (2017) indicated that psychological wellbeing is a positive mental, social, and physical state of health. It is the lack of disease and a whole condition of social, mental, and physical wellbeing (World Health Organization, 2012). Employees' psychological wellbeing has generated a measure of concern and notice by human resources managers and psychologists. Every business requires employees in an outstanding mental state to succeed and tolerate the continuous revolutions in work (Ferreira, 2012). Hence, individuals' self-reports on their mental health are becoming a center of passionate discussion in public policy (Steptoe et al., 2015).

Stress is the basis of life. Everybody experiences it. Slight stress could be necessary for stirring people towards admirable success. Nevertheless, when it becomes more severe, it can appear perilous and harmful to their psychological and physical wellbeing (European Agency for Safety & Health at Work, 2002). Stress is a multifaceted concept and therefore has no commonly-accepted description; instead, it is described differently. Stress could be adapting to conditions that upset an individual's mental or physical performance (Adegoke, 2011). Moreover, work has a fundamental responsibility to individuals' lives, such as providing regular income, affecting an employee's health, and establishing self-esteem (Theme Filha et al., 2013). Thus, stress remains one of the consequences of work (Kortum, 2014). A few professions, such as the military, aircraft crew, and police force, place individuals under a remarkably high-stress level, resulting in susceptibility to a heart ailment. However, several other investigations on work stress have paid attention to white-collar professions (Ogundele, 2004; Kortum, 2014). The police force has been noted to cause so many officers significant stress. For instance, in Nigeria, police officers, particularly those posted to the observable policing sections, preventing crimes, are more predisposed to psychological stresses (Ogundele, 2004).

Studies on resilience have increased considerably over the past twenty years. Resilience now receives more focus from professionals involved in policy-making and practice concerning the quality of life and wellbeing (Windle, 2010). Resilience refers to the capacity to sustain or recuperate mental wellbeing, notwithstanding suffering adversity (Wald et al., 2006). Ledesma (2014, p. 1) defines resilience as "the ability to bounce back from adversity, frustration, and misfortune." Scholars from different professional fields, including psychology, sociology, psychiatry, and biological fields; including genetics, epigenetics, endocrinology, and neuroscience, have been studying resilience (Herrman et al., 2011).

Police officers face several work-related wellbeing and safety threats. At least one police officer is killed every three months; several are battered, contracting infectious diseases (Claire & Clucas 2012). These threats may increase over time due to amplified demands on police officers, prevalent contagious diseases, widespread shiftwork and strain, common illicit drug use, and increased inclination amongst delinquents to attack officers (Adegoke, 2011). Reducing susceptibility hangs on recognizing these risk factors and implementing efficient avoidance strategies. These conditions suggest that factors affecting the psychological wellbeing of police officers be investigated in our macro society. For example, in Ibadan, one of the cities in the Oyo State of Nigeria, a Divisional Police Officer was shot dead during an investigation of Aja-ile (known as the hidden den underground for the rituals) Gbelekale along the Ibadan expressway (Adegoke, 2011). From this episode, what do you think about his family and other officers in the police job?

The Nigerian police force has been under severe stress from internal and external influences in the last few years. The present increased occurrence of distress in the Nigerian Police System is significantly influenced by terrorism (for instance, Boko-Haram Sect and the like) on the people of Nigeria (Adegoke, 2011). Thus, scholars need to focus on the related issues that contribute to psychological disequilibrium among police employees, intending to provide suitable interventions for the affected population. Therefore, to understand and increase psychological wellbeing within Nigeria's Police Force, this paper investigates the impacts of the vital factors capable of ensuring psychological wellbeing. While the effects of some variables on employees' psychological wellbeing of employees have been investigated in prior studies, the influence of work stress, risk-taking propensity, and resilience on the psychological wellbeing of police officers in Nigeria has not yet been explored. Thus, the present research adds to the literature and remains relevant for human resources practices, employment relations, and higher learning.

Literature Review

This paper's literature review looks into constructs such as work stress, risk-taking propensity, resilience, and psychological wellbeing.

1.1 Work stress and psychological wellbeing

Work stressors influence an individual's work-life sense of balance and perceived wellbeing. Khamisa et al. (2016) posited that prolonged work stress reduces psychological wellbeing, resulting in lesser job satisfaction. There is a noteworthy link between work stress, psychical and psychological wellbeing, and perceived quality of life (Duxburry et al., 2014). Furthermore, Mangwani (2012) noted that several South African police officers had been identified with depression as they encountered numerous difficulties at work and failed to handle their work stress. According to previous studies, much research confirmed the negative effect of work stress on employee mental wellbeing (Akintayo, 2012; Adegoke, 2014). Kazi (2016) noted that work stress is significantly negatively correlated with psychological wellbeing among female teachers in Pakistan. Also, Higgins et al. (2014) indicated that work stress significantly affects certain facets of mental wellbeing and employees' quality of life. Work stress and pressure are connected with increased depression levels, reduced psychological wellbeing, and poor

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

quality of life (Wilkinson, 2013). Besides, an investigation conducted in the United States confirmed that work stress among African American females was negatively linked to psychological wellbeing (Yvonne Glass, 2014). Furthermore, a negative relationship exists between work stress and psychological wellbeing among manufacturing workers in China (Wang et al., 2017). Grant-Vallone and Ensher (2011) noted that employees who reported high work stress significantly scored lower on the measure of perceived psychological wellbeing. Hence, they suggested that high work stress predicts employees' poor psychological wellbeing. To assess more clearly the impact of work stress on the perceived psychological wellbeing within Nigeria's police force, this paper states its first hypothesis:

H1. Work stress significantly determines psychological wellbeing within Nigeria's police force.

1.2 Risk-taking propensity and psychological wellbeing

Shen et al. (2016) noted that individuals with a high risk-taking propensity level have better psychological wellbeing. Akinnawo and Fayankinnu's (2010) and Lasisi's (2013) investigations concluded that risk-taking propensity is a significant predictor of psychological wellbeing among military men. In combat or training, the risk is essential for military/police service (Killgore et al., 2008). Thus, it may be necessary to say that a propensity to take risks has, in some instances, been regarded as a desirable attribute for military personnel (Momen et al., 2010). Yet, Lee (2014) noted that military personnel with a high level of risk-taking propensity are capable of engaging in riskier behaviors, such as poor eating habits (skipping meals) and greater use of various substances (energy drinks, performance enhancers, tobacco, and alcohol). These behaviors are capable of damaging their mental health. Kelley et al. (2012) found that risk-taking propensity is associated with greater engagement in binge drinking, getting angry, yelling at others, getting into fights, and threatening others. These resultant behaviors lead to decreased psychological wellbeing. Reinforced by the studies on risk-taking propensity and psychological wellbeing stated above, the present study hypothesized that:

H2. Risk-taking propensity significantly determines psychological wellbeing within Nigeria's police force.

1.3 Resilience and psychological wellbeing

Resilience has been found to enhance psychological wellbeing and improve overall performance (Robertson et al., 2015). Having high resilience levels, people

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

can raise positive emotions to recover from their adverse experiences. Hence, high resilience level increases an individual's psychological wellbeing (Luthar et al., 2000). Kirmani et al. (2015) research has established a positive correlation between resilience and psychological wellbeing. Furthermore, studies have noted that resilience positively correlates with psychological wellbeing. They concluded that participants with an increased resilience level would have high psychological wellbeing levels (Bigdeli et al., 2013; Jin & Kim, 2017; Abiola et al., 2017; Chow et al., 2018). Also, Archana and Singh (2014), Malkoc and Yalcin (2015), and Panchal et al. (2016) have indicated a significant and positive correlation between resilience and psychological wellbeing. A study has supported that resilience effectively enhances the psychological wellbeing of an individual (Souri & Hasanirad, 2011). Besides, in their investigation, Idris et al. (2019) indicated that resilience is a good determinant of students' mental wellbeing. Dey and Beena Daliya (2019) demonstrated a significant impact of resilience on psychological wellbeing in support of this position. A systematic review submitted that resilience had a substantial and positive relationship with psychological wellbeing among nursing students (Li & Hasson, 2020). Moreover, Güngör and Perdu (2017) confirmed that youth resilience is related to their psychological wellbeing. To understand the influence of resilience on psychological wellbeing within Nigeria's police force, the present research has projected the following hypothesis:

H3. Resilience significantly determines psychological wellbeing within Nigeria's police force.

Thus, according to the stated literature, the following proposition is worded:

H4. There is a significant differential independent and joint influence of work stress, risk-taking propensity, and resilience on psychological wellbeing within Nigeria's Police Force.

The present research aimed to add to the literature by investigating work stress, risk-taking propensity, and resilience as determinants of psychological wellbeing to significantly imply a practical model to attain and increase psychological wellbeing within the Police Force.

Methodological Background

This paper embraced a cross-sectional survey method. The present researchers floated questionnaires among the participants to test the current investigation's hypotheses and collect data on their opinions on work stress, risk-taking propensity, resilience, and psychological wellbeing. Study participants consent to participate in the research, as the present study was introduced and permission was requested. Hence, surveys were administered to 350 police officers from four (4) police stations in Ibadan, Oyo State of Nigeria. They are the Iyaganku, Eleyele, Orita Challenge, and Iwo Road testing ground police stations. Thus, the present investigators motivated voluntary input from the participants and ensured respect for ethical matters. Three hundred and nineteen (319) questionnaires were retrieved, concluded fitting to usage, cleaned, and analyzed with a Statistical Packages for Social Sciences (SPSS version 27). This paper conducted standard and hierarchical multiple regression analysis in testing the stated hypotheses. Meanwhile, the current research piloted reliability analyses to achieve the measure's local reliability.

This paper's questionnaire has segments:

3.1 Section A – Participants' demographics

This segment contains the participants' demographics, such as religion, age, gender, marital status, education qualification, working experience, and income level.

3.2 Section B: Work stress scale (WSS)

This section consists of a 10-item scale measuring work stress adopted by Reis et al. (2010). The reliability of the scale showed internal consistency of α = .80. It is a five-point rating scale of "never = 0, almost never = 1, sometimes = 2, fairly often = 3, and very often = 4". However, the present study attains a Cronbach's alpha coefficient of α = .88.

3.3 Section C: Risk-taking propensity scale (R-TPS)

This part of the questionnaire contains a 23-item risk-taking propensity scale by Alfred (2003). The author noted an internal consistency of α = .84, while the present study achieved a Cronbach's alpha coefficient of α = .90. It is rated on a 5-point Likert scale varying from "strongly disagree = 1 to strongly agree = 5".

3.4 Section D: Resilience scale (RS)

The six (6) items of the brief resilience scale (BRS) adopted in the current study were developed by Ahern et al. (2006). Items 1, 3, and 5 are positively expressed, and items 2, 4, and 6 are negatively phrased. It has a reliability Cronbach's alpha of α = .89. The current investigation has reported a Cronbach's alpha of α = .88. This scale has a 5-point Likert response format: "1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree".

3.5 Section E: Psychological wellbeing scale (PWS)

This segment consists of a 22-item psychological wellbeing scale developed by Flanagan, Van Heck, and Vingerhoets (2001). Participants could specify how they felt throughout the last month for each item. Response categories are scored on a 5-

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

point Likert scale ranging from "not at all true = 1" to "totally true = 5". The authors reported a Cronbach's alpha of α = .86, while the current study reached a Cronbach's alpha of α = .92

However, the present investigation conducted a trial study to spot any likely problems earlier and authenticate the measure's effectiveness.

Results

4.1 Descriptive Statistics

The findings from the data analyzed in this paper are presented below:

Table 1 below demonstrates that 199 respondents were male, while 120 were female. The table further shows that 96 participants were 25-34 years old, 127 were 35-44 years old, 32 were 45-50 years old, and 64 were 51 and above. The table also specifies that 187 respondents practiced Christianity, 102 practiced Islam and 30 other religions of their choice. Besides, the table indicates that 161 respondents were single, 142 were married, and 16 were separated or divorced. Moreover, the results showed that 128 participants were National Diploma/Higher National Diploma holders, 95 Bachelors of Science/ Master of Science holders, and 96 had Other Professional Qualifications. The respondents' work experience category indicated that 96 respondents had 1-5 years of work practice, 159 had 6-10 years of work experience, and 64 had 16 years and more year's work experience. Furthermore, the present results included that 96 participants earn less than 50,000 naira monthly, 160 between 50,000 and 100,000 monthly, and 63 participants earn over 100,000 monthly.

4.2 Inferential Statistics

Hierarchical Multiple Regression was used to measure the ability of an independent variable (work stress) to determine levels of psychological wellbeing after controlling for the influence of risk-taking propensity and resilience. It was also used to measure the capacity of two independent variables (work stress and risk-taking propensity) to determine psychological wellbeing levels after controlling for the influence of resilience. Furthermore, it measured psychological wellbeing levels at the three independent variables (work stress, risk-taking propensity, and resilience).

Work stress was entered in step 1, and Tables 2 and 3 show that work stress explained 89% ($F(1, 317) = 2579.807$, $p < .001$) of the variance in psychological wellbeing. After entry of work stress and risk-taking propensity at step 2, Tables 2 and 3 show that the total change explained by the model was 92%, $F(2, 316) = 1907.516$, $p < .001$. Hence, the two independent measures described an extra 3.3%

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

of the change in psychological wellbeing after controlling for resilience, R squared change = .033, F change (1, 316) = 136.062, p < .001 (See Table 2). Furthermore, after entry of work stress, risk-taking propensity, and resilience at step 3, Tables 2 and 3 indicate that the toral variance shown in the model was 93%, F (3, 315) = 1303.296, p < .001. So, the three independent measures explicated an added .2% of the variation in psychological wellbeing, after controlling for resilience, R squared change = .002, F change (1, 315) = 8.179, p < .001 (See Table 2). In the final model as shown in Table 4, all the three independent measures had significant differential independent influence on psychological wellbeing, with work stress showing a higher beta value (β = -.773, p < .001) than risk-taking propensity (β = -.242, p < .001) and resilience (β = .045, p < .001). Also, the result of Model 3 from Table 2 indicates that work stress, risk-taking propensity, and resilience significantly and jointly impact psychological wellbeing within Nigeria's police force (R = .962, R2 = .925, F = 1303.296, p < .01). The p-value is enough. This result infers that work stress, risk-taking propensity, and resilience significantly and jointly induced a 96.2% psychological wellbeing variation. So, the hypothesis is accepted: there is a significant differential independent and joint influence of work stress, risk-taking propensity, and resilience on the psychological wellbeing of Nigeria's police force.

Table 1. Demographics of participants within Nigeria's manufacturing industry.

Features	**Category**	**Frequency**	**Percent (%)**
Gender	Male	199	62.4
	Female	120	37.6
	Total	**319**	**100.0**
Age	25-34	96	30.1
	35-44	127	39.8
	45-50	32	10.0
	51 and Above	64	20.1
	Total	**319**	**100.0**
Religion	Christianity	187	58.6
	Islam	102	32.0
	Others	30	9.4
	Total	**319**	**100.0**
Marital Status	Single	161	50.5

Annals of Spiru Haret University. Economic Series Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

	Married	142	44.5
	Separated/Divorced	16	5.0
	Total	**319**	**100.0**
Educational qualification	ND/HND	128	40.1
	B.Sc./M.Sc.	95	29.8
	Other Professional Qualifications	96	30.1
	Total	**319**	**100.0**
Work Experience (in years)	1-5	96	30.1
	6-10	159	49.8
	16 and Above	64	20.1
	Total	**319**	**100.0**
Income	Less than 50000 Monthly	96	30.1
	Between 50000 and 100000 Monthly	160	50.2
	Over 100000 Monthly	63	19.7
	Total	**319**	**100.0**

Source: Author's fact-finding

As stated in the paragraph above, all the three independent measures had significant differential independent influence on psychological wellbeing, with work stress showing a higher beta value ($\beta = -.773$, $p < .001$) than risk-taking propensity ($\beta = -.242$, $p < .001$) and resilience ($\beta = .045$, $p < .001$). Hence, work stress significantly and negatively influences the psychological wellbeing of Nigeria's police force. The p-value is adequate. Thus, the suggested hypothesis is confirmed: work stress significantly determines psychological wellbeing within Nigeria's police force. Also, the stated results show a significant negative influence of risk-taking propensity on psychological wellbeing within Nigeria's police force. The p-value is acceptable. Therefore, the indicated hypothesis is confirmed: risk-taking propensity significantly determines psychological wellbeing within Nigeria's police force. Furthermore, the stated result shows that resilience significantly and positively determines psychological wellbeing within Nigeria's police force. The value p is adequate. Thus, the earlier hypothesis is accepted: resilience significantly determines psychological wellbeing within Nigeria's police force.

Table 2. Model Summary of Hierarchical Multiple Regressions showing the differential joint influence of work stress, risk-taking propensity, and resilience on psychological wellbeing within Nigeria's police force.

Model Summary[d]									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	F Change Sig
1	.944[a]	.891	.890	2.41547	.891	2579.807	1	317	.000
2	.961[b]	.924	.923	2.02270	.033	136.062	1	316	.000
3	.962[c]	.925	.925	2.00011	.002	8.179	1	315	.005

a. Predictors: (Constant), Work Stress
b. Predictors: (Constant), Work Stress, Risk-Taking Propensity
c. Predictors: (Constant), Work Stress, Risk-Taking Propensity, Resilience
d. Dependent Variable: Psychological Wellbeing

Source: Author's fact-finding

Table 3. ANOVA table showing the level of variances in psychological wellbeing within Nigeria's police force according to the independent measures (work stress, risk-taking propensity, and resilience).

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15051.847	1	15051.847	2579.807	.000[b]
	Residual	1849.532	317	5.834		
	Total	16901.379	318			
2	Regression	15608.522	2	7804.261	1907.516	.000[c]
	Residual	1292.858	316	4.091		
	Total	16901.379	318			
3	Regression	15641.243	3	5213.748	1303.296	.000[d]
	Residual	1260.136	315	4.000		
	Total	16901.379	318			

a. Dependent Variable: Psychological Wellbeing
b. Predictors: (Constant), Work Stress
c. Predictors: (Constant), Work Stress, Risk-Taking Propensity
d. Predictors: (Constant), Work Stress, Risk-Taking Propensity, Resilience

Source: Author's fact-finding

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Table 4. Summary of Hierarchical Multiple Regressions showing the differential independent and joint influence of work stress, risk-taking propensity, and resilience on psychological wellbeing within Nigeria's police force.

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B					Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	101.074	.987		102.403	.000	99.132	103.016					
	Work Stress	-2.091	.041	-.944	-50.792	.000	-2.172	-2.010	-.944	-.944	-.944	1.000	1.000
2	(Constant)	107.775	1.007		107.072	.000	105.794	109.755					
	Work Stress	-1.737	.046	-.784	-37.858	.000	-1.828	-1.647	-.944	-.905	-.589	.564	1.772
	Risk-Taking Propensity	-.186	.016	-.242	-11.665	.000	-.217	-.155	-.759	-.549	-.181	.564	1.772
3	(Constant)	103.475	1.803		57.389	.000	99.927	107.022					
	Work Stress	-1.712	.046	-.773	-37.004	.000	-1.803	-1.621	-.944	-.902	-.569	.543	1.842
	Risk-Taking Propensity	-.187	.016	-.242	-11.833	.000	-.218	-.156	-.759	-.555	-.182	.564	1.773
	Resilience	.165	.058	.045	2.860	.005	.051	.278	.270	.159	.044	.940	1.063

a. Dependent Variable: Psychological Wellbeing

Source: Author's fact-finding

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

This paper confirmed that work stress significantly and negatively determines the psychological wellbeing of police officers in Nigeria. This observation assumes that an increase in the work stress of Nigeria's police officers will substantially reduce their psychological wellbeing. The position is consistent with prior empirical evidence that prolonged work stress reduces psychological wellbeing, resulting in lesser job satisfaction (Khamisa et al., 2016). It also supports Mangwani's (2012) opinion that several South African police officers have been identified with depression as they encountered numerous difficulties at work and failed to handle their work stress. The present finding further corroborates Wang's (2017) position that a negative relationship existed between work stress and psychological wellbeing among manufacturing workers in China. Furthermore, the current result supports the position of Higgins et al. (2014), who indicated that work stress significantly affects certain facets of mental wellbeing and employees' quality of life. It also corroborates the opinion of Grant-Vallone and Ensher (2011), who opined that employees who reported high work stress significantly scored lower on the measure of perceived psychological wellbeing.

Similarly, this paper has established a significant and negative impact of risk-taking propensity on the psychological wellbeing of Nigeria's police officers. Hence, the current results imply that the more police officers take risks in their work, the poorer their psychological wellbeing is. These findings add to some scholars' existing view (for example, Lee, 2014; Kelley et al., 2012) that a high risk-taking propensity makes the military personnel engage in riskier behaviors to reduce their psychological wellbeing. On the other hand, this result failed to support the opinions of some scholars (Akinnawo & Fayankinnu, 2010; Lasisi, 2013; Shen et al., 2016) that individuals with a high risk-taking propensity level have better psychological wellbeing.

In addition, the current result established that resilience significantly and positively determines the psychological wellbeing of police officers in Nigeria. This result concludes that police officers in Nigeria will have better psychological wellbeing the more resilient they are. Hence, the current result supports Robertson et al. (2015), who noted that resilience enhances psychological wellbeing and improves overall performance. These findings also validate the position of Kirmani et al. (2015), who has established a positive correlation between resilience and psychological wellbeing. The present findings further corroborate the findings of Shamsuddin (2019), which confirmed that resilience is a good determinant of students' psychological wellbeing. The current result also supports Li and Hasson

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

(2020) that resilience significantly and positively correlates with psychological wellbeing among nursing students.

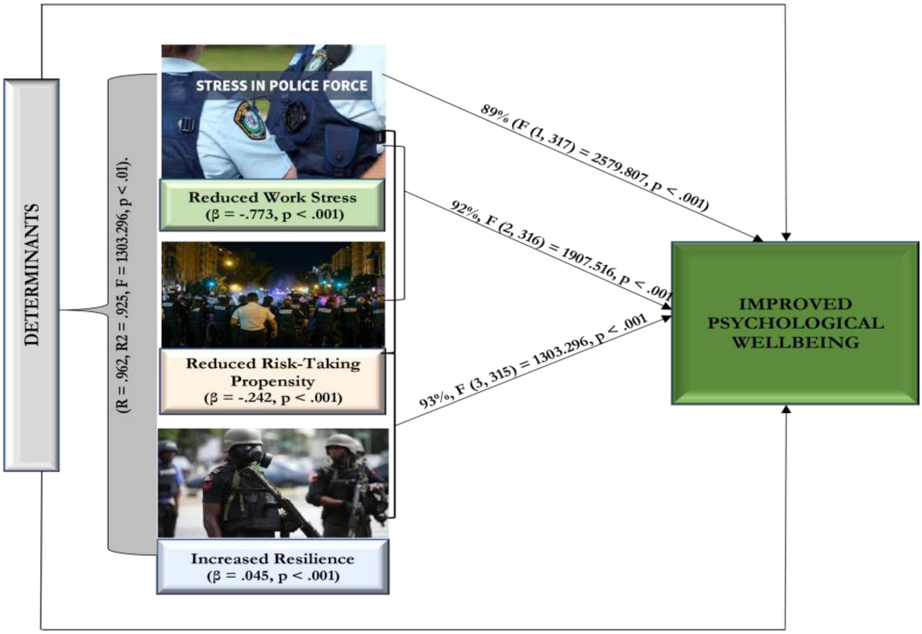


Figure 1. Model for attaining and increasing psychological wellbeing within the police force.
Source: Author's findings

In the steps taken to determine the differential independent and combined effects of work stress, risk-taking propensity, and resilience in the variation of psychological wellbeing within Nigeria's police force, the current results established that all the three independent measures had a significant differential independent impact on psychological wellbeing, with work stress recording a higher beta value. This infers that work stress significantly determines the psychological wellbeing of the police offers in Nigeria more than their risk-taking propensity and resilience. The final model (Step 3) of the current results also shows that the combination of the three measures impacted psychological wellbeing more than other combination matrices. Hence, work stress, risk-taking propensity, and resilience induced a 96.2% psychological wellbeing variation within Nigeria's

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

police force. The different 3.8% variation in psychological wellbeing within Nigeria's police force is predicted by measures not considered in the current study. These results validate the proposed statement: there is a significant differential independent and joint influence of work stress, risk-taking propensity, and resilience on psychological wellbeing within Nigeria's police force.

Consistent with the current results, this paper aimed: to add to the literature by investigating work stress, risk-taking propensity, and resilience as determinants of psychological wellbeing to significantly imply a practical model to attain and increase psychological wellbeing within the police force. Thus, the empirical model in figure 1:

Conclusions

The present study concludes that work stress and risk-taking propensity significantly reduce psychological wellbeing. In contrast, resilience increases it in Nigeria's Police Force. It further settles that work stress, risk-taking propensity, and resilience significantly and jointly determine psychological wellbeing. Work stress, however, determines more significantly the psychological wellbeing of police officers than risk-taking propensity, resilience, and their combination matrix. Therefore, these stated variables predict psychological wellbeing in Nigeria's Police Force. Nevertheless, the following recommendations are helpful:

• This paper advocates the need to reinforce stress management training among police officers to promote healthy lifestyles and improve psychological wellbeing as psychological wellbeing has a positive relationship with employee job performance. Therefore, increasing knowledge of stress management can help enhance wellbeing among police officers.

• Also, Nigeria's Police college should introduce or incorporate risk-taking concepts on the job. This will give the officers more knowledge about appropriate and inappropriate risk-taking behaviors before engaging in such. Consequently, it will help them exhibit better risk-taking behaviors and maintain improved psychological wellbeing in their profession.

• Similarly, the study found that high work resilience led to maximum psychological wellbeing among police officers in Ibadan, Oyo State of Nigeria. Hence, Nigeria's Police Force should adopt strategies for promoting resilience levels, raising police officers' positive emotions to recover from their adverse experiences.

• From the results, it is recommended that there is a severe need for psychological interventions that can prepare police officers for the hurdles ahead.

The ability to bounce back matters so much in facing daily challenges because their job is stressful and demands high risk. So, it is required that government make provisions for a salary increase, incentives, organizational support programs, and initiatives that can strengthen the coping styles of police officers for better psychological health and wellbeing.

References

[1] Abiola, T., Olorukooba, H., & Afolayan, J. (2017). Wellbeing elements leading to resilience among undergraduate nursing students. *International Journal of Africa Nursing Sciences, 7*, 1-3. https://doi.org/10.1016/j.ijans.2017.05.001.

[2] Adegoke, T. (2011). Effect of occupational stress, hazards, and working environment on the psychological wellbeing of industrial workers in Ibadan metropolis, Nigeria. *Nigerian Journal of Clinical and Counselling Psychology, 17*(1), 63-84. https://www.ncbi.nlm.nih.gov/pubmed/28337094.

[3] Adegoke, T. (2014). Effects of occupational stress on the psychological wellbeing of police employees in Ibadan metropolis, Nigeria. *African Research Review, 8*(1), 302-320. https://doi.org/10.4314/afrrev.v8i1.19.

[4] Ahern, N., Kiehl, E., Sole, M., & Byers, J. (2006). *A Review of Instruments Measuring Resilience. Issues in Comprehensive Pediatric Nursing; 29 (2): 103-125.* https://doi.org/10.1080/01460860600677643.

[5] Akinnawo, E., & Fayankinnu, E. (2010). The traumatic experiences and psychological health of women working in two male-dominated professions in Nigeria. *Gender and Behavior*, *8*(2), 3314-3324. https://doi.org/10.4314/gab.v8i2.61949.

[6] Akintayo, D. (2012). Working environment, workers' morale, and perceived productivity in industrial organizations in Nigeria. *Education Research Journal*, *2*(3), 87-93. https://www.resjournals.com/ERJ.

[7] Archana, K.U. & Singh, R. (2014). *Resilience and Spirituality as Predictors of Psychological Well-being among University Students,* 227-235. https://api.semanticscholar.org/CorpusID:152219849

[8] Bigdeli, I., Najafy, M., & Rostami, M. (2013). The relation of attachment styles, emotion regulation, and resilience to wellbeing among students of medical sciences. *Iranian Journal of Medical Education, 13*(9), 721-729. http://ijme.mui.ac.ir/article-1-2694-en.html.

[9] Chow, K. M., Tang, W. K. F., Chan, W. H. C., Sit, W. H. J., Choi, K. C., & Chan, S. (2018). Resilience and wellbeing of university nursing students in Hong Kong: A cross-sectional study. *BMC Medical Education, 18*(1), 1-8. https://doi.org/10.1186/s12909-018-1119-0.

[10] Dey, P., & Beena Daliya, R. (2019). The effect of resilience on the psychological wellbeing of orphan and non-orphan adolescents. *Indian Journal of Mental Health, 6*(3), 253. https://doi.org/10.30877/IJMH.6.3.2019.253-260.

[11] Duan, W., Guan, Y., & Gan, F. (2016). A brief inventory of thriving: A comprehensive measurement of wellbeing. *Chinese Sociological Dialogue, 1*(1), 15-31. https://doi.org/10.1177/2397200916665230.

[12] Duxbury, L., Higgins, C., Smart, R., & Stevenson, M. (2014). Mobile technology and boundary permeability. *British Journal of Management, 25*(3), 570-588. https://doi.org/10.1111/1467-8551.12027.

[13] European Agency for Safety and Health at Work. (2002). Research on changing world on work.

[14] Ferreira, N. (2012). Hardiness in relation to organizational commitment in the human resource management field. *SA Journal of Human Resource Management, 10*(2), 1-10. https://doi.org/10.4102/sajhrm.v10i2.418.

[15] Glass, Y. N. (2014). *African American Women, Psychological Well-being, Religiosity, and Stress, 96.* http://rave.ohiolink.edu/etdc/view?acc_num=kent1416416324.

[16] Grant-Vallone, E. J., & Ensher, E. A. (2011). Opting in between Strategies used by professional women with children to balance work and family. *Journal of Career Development, 38*(4), 331-348. https://doi.org/10.1177/0894845310372219.

[17] Güngör, D., & Perdu, N. (2017). Resilience and acculturative pathways underlying psychological wellbeing of immigrant youth. *International Journal of Intercultural Relations, 56*, 1-12. https://doi.org/10.1016/j.ijintrel.2016.10.005.

[18] Herrman, H., Stewart, D. E., Diaz-Granados, N., Berger, E. L., Jackson, B., & Yuen, T. (2011). What is resilience? *The Canadian Journal of Psychiatry, 56*(5), 258-265. https://doi.org/10.1177/070674371105600504.

[19] Higgins, C., Stubbs, W., & Love, T. (2014). Walking the talk (s): Organizational narratives of integrated reporting. *Accounting, Auditing & Accountability Journal, 27*(7), 1090-1119. https://doi.org/10.1108/AAAJ-04-2013-1303.

[20] Idris, I., Khairani, A. Z., & Shamsuddin, H. (2019). The influence of resilience on the psychological wellbeing of Malaysian university undergraduates. *International Journal of Higher Education, 8*(4), 153-163. https://doi.org/10.5430/ijhe.v8n4p153.

[21] Jin, J. I., & Kim, N. C. (2017). Grit, academic resilience, and psychological wellbeing in nursing students. *The Journal of Korean Academic Society of Nursing Education, 23*(2), 175-183. https://doi.org/10.5977/jkasne.2017.23.2.175.

[22] Kazi, S. (2016). Impact of social support on the relationship between stress and wellbeing among female teachers in Pakistan. http://eprints.utm.my/id/eprint/78984/

[23] Keil, M., Wallace, L., Turk, D., Dixon-Randall, G., & Nulden, U. (2000). An investigation of risk perception and risk propensity on the decision to continue a software development project. *Journal of Systems and Software, 53*(2), 145-157. https://doi.org/10.1016/S0164-1212(00)00010-8.

[24] Kelley, A. M., Athy, J. R., Cho, T. H., Erickson, B., King, M., & Cruz, P. (2012). Risk propensity and health risk behaviors in US army soldiers with and without psychological disturbances across the deployment cycle. *Journal of Psychiatric Research, 46*(5), 582-589. https://doi.org/10.1016/j.jpsychires.2012.01.017.

[25] Khamisa, N., Peltzer, K., Ilic, D., & Oldenburg, B. (2016). Work-related stress, burnout, job satisfaction and general health of nurses: A follow-up study. *International Journal of Nursing Practice, 22*(6), 538-545. https://doi.org/10.1111/ijn.12455.

[26] Killgore, W. D., Cotting, D. I., Thomas, J. L., Cox, A. L., McGurk, D., Vo, A. H., . . . Hoge, C. W. (2008). Post-combat invincibility: Violent combat experiences are associated with increased risk-taking propensity following deployment. *Journal of Psychiatric Research, 42*(13), 1112-1121. https://doi.org/10.1016/j.jpsychires.2008.01.001.

[27] Kirmani, M. N., Sharma, P., Anas, M., & Sanam, R. (2015). Hope, resilience, and subjective wellbeing among college-going adolescent girls. *International Journal of Humanities & Social Science Studies, 2*(1), 262-270. https://api.semanticscholar.org/CorpusID:56330431.

[28] Kortum, E. (2014). The WHO global approach to protecting and promoting health at work. *Creating Healthy Workplaces: Stress Reduction, Improved Well-being, and Organizational Effectiveness. Aldershot: Gower,* 23-35. http://www.worldcat.org/oclc/867929069.

[29] Lasisi, A. (2013). Path-analytic study of effects of some psycho-demographic factors on work-stress and organizational commitment of Nigerian police in southwestern Nigeria. *Unpublished Ph.D. Thesis Submitted to the Department of Guidance and Counselling, University of Ibadan, Nigeria.*

[30] Ledesma, J. (2014). Conceptual frameworks and research models on resilience in leadership. *Sage Open, 4*(3), https://doi.org/10.1177/2158244014545464.

[31] Lee, J. E. (2014). An exploratory analysis of the correlates of risk-taking propensity in Canadian military personnel. *Psychology, 5*(01), 53. https://doi.org/10.4236/psych.2014.51010.

[32] Li, Z., & Hasson, F. (2020). Resilience, stress, and psychological wellbeing in nursing students: A systematic review. *Nurse Education Today, 90*, 104440. https://doi.org/10.1016/j.nedt.2020.104440.

[33] Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*(3), 543-562. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1885202/.

[34] Malkoç, A., & Yalçin, I. (2015). Relationships among resilience, social support, coping, and psychological wellbeing among university students. *Türk Psikolojik Danışma Ve Rehberlik Dergisi, 5*(43), 35-43. https://dergipark.org.tr/en/pub/tpdrd/issue/21463/230060.

[35] Mangwani, G. B. (2012). Suicides in the south African police service: A study of contributory factors and recommendations. Unpublished Master's degree. A dissertation submitted to the Ishvore University of Technology, Pretoria, South Africa.

[36] Momen, N., Taylor, M. K., Pietrobon, R., Gandhi, M., Markham, A. E., Padilla, G. A., . . . Sander, T. C. (2010). Initial validation of the military operational risk-taking scale (MORTS). *Military Psychology*, *22*(2), 128-142. https://doi.org/10.1080/08995601003638942.

[37] Ogundele, S. O. (2004). *Rethinking west African archaeology* John Archers. http://www.worldcat.org/oclc/607666101.

[38] Panchal, S., Mukherjee, S., & Kumar, U. (2016). Optimism in relation to wellbeing, resilience, and perceived stress. *International Journal of Education and Psychological Research, 5*(2), 1-6. https://api.semanticscholar.org/CorpusID:212538142.

[39] Robertson, I. T., Cooper, C. L., Sarkar, M., & Curran, T. (2015). Resilience training in the workplace from 2003 to 2014: A systematic review. *Journal of Occupational and Organizational Psychology*, *88*(3), 533-562. https://doi.org/10.1111/joop.12120.

[40] Ryff, C. D. (2018). Wellbeing with soul: Science in pursuit of human potential. *Perspectives on Psychological Science,* *13*(2), 242-248. https://doi.org/10.1177/1745691617699836.

[41] Shen, W., Yuan, Y., Liu, C., Yi, B., & Dou, K. (2016). The development and validity of a Chinese version of the compound remote associates' test. *The American Journal of Psychology, 129*(3), 245-258. https://doi.org/10.5406/amerjpsyc.129.3.0245.

[42] Souri, H., & Hasanirad, T. (2011). Relationship between resilience, optimism and psychological wellbeing in students of medicine. *Procedia-Social and Behavioral Sciences, 30*, 1541-1544. https://doi.org/10.1016/j.sbspro.2011.10.299.

[43] St Claire, L., & Clucas, C. (2012). In sickness and in health: Influences of social categorizations on health-related outcomes. In J. Jetten, C. Haslam, & S. A. Haslam (Eds.), The social cure: Identity, health, and well-being (pp. 75–95). Psychology Press.

[44] Steptoe, A., Deaton, A., & Stone, A. A. (2015). Subjective wellbeing, health, and ageing. *The Lancet, 385*(9968), 640-648. https://doi.org/10.1016/S0140-6736(13)61489-0.

[45] Theme Filha, M. M., Costa, Maria Aparecida de Souza, & Guilam, M. C. R. (2013). Occupational stress and self-rated health among nurses. *Revista Latino-Americana De Enfermagem, 21*, 475-483. https://doi.org/10.1590/S0104-11692013000200002.

[46] Thomson, L. J., Lockyer, B., Camic, P. M., & Chatterjee, H. J. (2018). Effects of a museum-based social prescription intervention on quantitative measures of psychological wellbeing in older adults. *Perspectives in Public Health, 138*(1), 28-38. https://doi.org/10.1177/1757913917737563.

[47] Wald, J., Taylor, S., Asmundson, G. J., Jang, K. L., & Stapleton, J. (2006). Literature review of concepts: Psychological resiliency.

[48] Wang, W., Zhao, J., Zhang, W., & Wang, Y. (2015). A conceptual framework for risk propensity, risk perception, and risk behavior of construction project managers. Paper presented at the *Proceedings 31st Annual ARCOM Conference, Association of Researchers in Construction Management, Lincoln, UK,* 165-174. https://api.semanticscholar.org/CorpusID:44217825.
[49] Wang, Z., Liu, H., Yu, H., Wu, Y., Chang, S., & Wang, L. (2017). Associations between occupational stress, burnout, and wellbeing among manufacturing workers: Mediating roles of psychological capital and self-esteem. *BMC Psychiatry, 17*(1), 1-10. https://doi.org/10.1186/s12888-017-1533-6.
[50] Wilkinson, M. (2013). *Work-Life Balance and Psychological Well-being in Men and Women.* https://api.semanticscholar.org/CorpusID:148118876.
[51] Windle, G. (2011). What is resilience? A review and concept analysis. *Reviews in Clinical Gerontology, 21*(2), 152-169. https://doi.org/10.1017/S0959259810000420.
[52] World Health Organization. (2012). *Good Health Adds Life to Years: Global Brief for World Health Day 2012*. World Health Organization. https://apps.who.int/iris/handle/10665/70853.
[53] Zuckerman, M., & Kuhlman, D. M. (2000). Personality and risk-taking: Common biosocial factors. *Journal of Personality, 68*(6), 999-1029. https://doi.org/10.1111/1467-6494.00124.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

CULTURAL DIFFERENCES IN BUSINESS VALUES PERSPECTIVE AND MANAGER-EMPLOYEE HARMONIZATION

Tural AKBARZADA
Akademia WSB, University of Dabrowa Gornicza, Zagrebie Dabrowskie, Silesia, Poland, Tel.: +48513408323, Email: akberzadetural@gmail.com

How to cite: AKBARZADA, T. (2020). "Cultural Differences in Business Values Perspective and Manager-Employee Harmonization." *Annals of Spiru Haret University. Economic Series, 21*(4), 291-307, doi: https://doi.org/10.26458/22217

Abstract
In the research, manager-employee harmony is examined in the perspective of business values. Since manager-employee compatibility is the subject of study in the perspective of work values, the values that emerge as a result of the work values of the managers and employees and the work values of the employees regarding their managers are also determined as a prerequisite, since the fit can be determined and guides the research.

Keywords: *work values; manager-employee work values harmony; employee perceptions; cultural differences.*

JEL Classification: M12

Introduction

In addition to the general life values of individuals, there are values that they exhibit in business life and that they reflect on business processes within the organization. It is stated that these values, which are called work values, affect the attitudes, behaviours, and perceptions of individuals during work.

Considering that managers have business values as well as employees, it can be stated that the fact that these two, who are in constant interaction with each other and as a team, have similar business values, will increase the quality of mutual interaction. It may be possible to increase the job satisfaction of employees through the manager-employee interaction (leader-to-leader interaction) that reaches a high level.

In addition to the general life values of individuals, there are values that they display in their business life, which are called business values. The concept of work values is explained as personal expectations about what is desired in relation to work or career, rather than a person's feelings about a particular job, but as general attitudes and behaviours in the workplace. It is stated that work values affect attitudes, behaviours and perceptions related to work and differ from person to person. From this point of view, it can be thought that the work values of the individuals working in the organization come together and that the attitudes and behaviours are shaped in line with the values. In the related literature, it is stated that when employees perceive that the values that are important to them are the same and similar in their colleagues, they feel more comfortable with these people, they can establish closer relationships and they are partially satisfied with their jobs. Considering that managers have their own business values, just like employees, it can be said that managers and employees, who are in constant interaction with each other and in teams, have similar business values, which will increase the quality of mutual interaction. It is believed that the harmony of these two within the framework of business values will increase the quality of manager-employee interaction (leader-member interaction) and will have positive effects on employees' job satisfaction.

The purpose of this research is to examine the effects of manager-employee fit on job satisfaction and leader-member interaction in the perspective of business values. Since manager-employee harmony is examined in the perspective of work values, the values that emerge as a result of the work values of managers and employees and their perceptions of their managers are also questioned within the scope of the research, as a prerequisite for determining the fit and guiding the research.

Research methodology

In the study, Schwartz's (2001) Work Values Scale was used to measure the work values of managers and employees. Schwartz (1992) grouped the 40 individual values he determined into 10 different value types. He also argued that the unique values of different cultures would find a place in one of 10 different value types. These value types are power, achievement, hedonism, activation (stimulation), self-direction (self-direction), universalism, benevolence, tradition, conformity, and security. (Schwartza, 2001, Kamil M. Kozan, Canan Ergin, 1999)

Schwartz reduced the 40 values to the individual level and created ten basic value types and grouped these values in two main dimensions. Schwartz named the first of the value dimensions as Openness to Change / Conservative Approach. Openness to change includes values of self-direction and mobilization and consists of values that reveal the emotional and intellectual interests of individuals. Conservative approach, on the other hand, includes the values of security, conformity and tradition, and it includes values that allow the continuity and clarity of individuals' relationships with people, institutions/traditions they are close to. The second value dimension is called Self-Transcendence / Self-Development. Self-transcendence includes values of universality and benevolence, and self-actualization includes values of power and achievement. Self-actualization values consist of values that allow individuals to act in their own interests, even at the expense of others. Self-transcendence values, on the other hand, include the values that lead the individual to give up his selfish goals for the benefit of all people and nature, near or far. Among the ten value types, only pleasure (hedonism) can take place in both openness to change and self-improvement values. (Arzu Şener,2007)

Measuring the Concordance of Business Values of Managers and Employees

In the related literature, it is stated that manager–employee fit is one of the four dimensions of person–environment fit (person–work fit, person–organization fit, person-group fit, and person–manager fit). This dual relationship between the person and others, which is thought to be the last form of the concept of person-environment fit, is the harmony between person and coworkers (Antonioni & Park, 2006) (David Antonioni, Heejon Park, 2001), manager and subordinate (Kristof-Brauwn, 2000; Van Vianen et al., 2011) are emphasized. After determining the dimensions of person-environment fit, it is stated that one of the important discussion topics in the literature is about how to measure manager-employee fit. In this framework, it is stated that basically, manager-employee value congruence can be measured in three ways (Kristof-Brauwn, 2000).

1) It is seen that the measurements with direct methods are based on the perceptions of individuals and in this context, it is generally applied in the form of three or four-item survey questions. In this context, the studies of Cable and DeRue (2002) and Lauver and Kristof-Brown (2002) are given as examples of studies in which perceived fit is directly measured (Mert Aktaş, 2011). Since the participants determine the values that are compatible with themselves in the direct method measurement of fit, it provides researchers with a simple way to measure the fit

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

and allows the evaluation of the value fit at the perceptual level. However, Kristof (1996) stated that if the value characteristics are not clearly expressed, one cannot be completely sure of the results of the direct measurement of the fit and criticized this measurement method.

2) Another method used to determine the manager-employee value fit is the fit that is desired to be determined by third parties who share the same work environment with the employees. In this way, the manager-employee value congruence to be measured is evaluated by the immediate environment (Mustafa Tepeci, A.L. Bart Bartlett, Mustafa Tepeci, A.L. Bart Bartlett, 2002).

3) The third way applied in the measurement of manager-employee value congruence; It is a method of applying the same scale to the participants both in questioning their own work values and in determining the work values of their managers. Then, the sum or correlation of the differences between the obtained scores is evaluated as concordance. The smaller the sum of the differences between the scores obtained, the greater the fit. In other words, the lower the difference between the absolute values of the scores given by each of the participants to each item in the scale, the greater the agreement between the two. It can be said that as the difference between the scores of the scores and the scores of the managers' perceptions of the work values decreases, the compatibility of the work values of the employees and managers increases.

Business values and business values perspective – manager - employee compliance

It is stated that man is a being who changes the world, dominates the world and creates values, and determines his preferences in life in line with the values he believes in (Yüksel Özden, 2005). Hodgkinson states that the most important function of values is to guide behaviours and provide individuals with unique standards (Christopher Hodgkinson, 2008).

Therefore, it can be said that values, as internal references that are constantly referenced, affect the decisions and lives of individuals. At the same time, the individual living in the society evaluates others in line with a set of value standards (Tülay Turgut, 1998).

However, another function of values for the individual is; it guides the emergence of social cognition, which facilitates the adaptation of the individual to his environment (Jennifer A. Chatmana, 1989). For this reason, individual or organizational values and value systems have been accepted as one of the main research topics studied by different disciplines (Mesut Sağnak, 2004). It has been determined by various researchers that there is a value system that varies from society to society, and it has been proven that each society has values specific to its own culture or that the order of importance of common values existing in all cultures differs. Therefore, it is understood that individuals, who are members of the society they belong to, have some values that reflect to them from the culture of the society, apart from the values that come from their own personality and genetic factors. As a matter of fact, in related studies, it is suggested that the values that guide attitudes and behaviours are formed by three basic factors. These suggested factors are genetics, environment and culture are emphasized (Mesut Sağnak, 2004).

Individuals have values that they display in business life as well as their general life values. It is stated that these values, which can be called work values, affect attitudes and behaviours and perceptions in the organization. Since organizations are accepted as social structures that can learn like their members and gain various experiences from their experiences, they create their organizational culture, in other words their values, by coding the results they derive from the past into routines that direct behaviour (Edgar H. Schein B, 2009).

Thus, the values of the organization and the work values of the employees come together, and an exchange of values emerges. It is observed that the main task falls to the managers in realizing and maintaining the positive attitudes and behaviours of the employees towards their organizations in this value exchange. It is thought that the managers, who have an important role in ensuring the adaptation of the employees to the organization and thereby gaining efficiency from their employees, can be effective in increasing their job satisfaction and keeping them in the organization by determining the work values of their employees as accurately as possible. Considering that managers have business values as well as employees; It can be stated that the fact that managers and employees, who are in constant interaction with each other and in teams, have similar business values, will increase the quality of mutual interaction. It is believed that the harmony of these two within the framework of business values will increase the quality of manager-employee interaction (leader-member interaction) and will have positive effects on employees' job satisfaction.

Business Values

Organizations maintain their continuity with the activities carried out by the human power coming together, within the hierarchy of authority and responsibility, by division of work and work. It is mentioned that the harmony of subsystems and employee behaviours within the organization is important in maintaining the continuity of this unity with success (Binali Doğan, 2007).

Within the framework of this understanding, the importance of work values in the regulation of interpersonal relations and the harmony of systemic behaviours is tried to be revealed (Anat Bardi, Shalom H. Schwartz, 2003, Elizabeth A. Amos, Bart L. Weathington, 2008, Jennifer Dose, 1997). For this reason, before mentioning the concept of business values, the concept of value and its functions, the relationship of the concept of value with close concepts and the classifications made for the concept of value are mentioned.

Value Concept

The concept of value can sometimes be perceived in quite different and different ways, such as preferences among lifestyles, basic assumptions about the place of human beings in the world, the target of any need, attitude or desire, and sometimes cultural value and social value (Lewis R. Aiken, 1985).

In addition, it is possible to define the general standards by which values, attitudes, behaviours and beliefs are formulated (Jennifer Dose, 1997, Lewis R. Aiken, 1985) as the ideas, acceptances and beliefs shared by the members of the society (Şükrü Ünalan, 2004). Values, implicitly or explicitly, are defined as concepts that help to differentiate individuals or groups, to choose among the forms, means or results of existing behaviour, and explain them as organized summaries of experiences. He also argues that these mental networks are also connected with the emotional system and gain continuity and significance in the face of changing environmental stimuli (Tülay Korkmaz Devrani, 2010).

Before making a definition of value, Rokeach (1973) drew attention to his basic assumptions about the nature of human values (Milton Rokeach, 1973):

1) The total number of values an individual has is relatively (relatively) small.

2) Individuals attribute the same values to different degrees.

3) The regulation of values takes place within value systems.

4) Culture, society, institutions and the personality of the individual are influential in the development of the individual's values.

5) The importance of value becomes evident and clearly observed in everything that is of interest to the social sciences.

In this framework, Rokeach accepted value as the tendencies and beliefs that guide the emergence of a certain behaviour or attitude and defined it as "a certain

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

behaviour style preferred individually or socially against the purpose of life or a permanent belief in the purpose of life".

Geert Hofstede, who has done cross-cultural research on values, defines value as a great tendency to prefer certain situations over others (Milton Rokeach, 1973). Schwartz defines value as a social actor that helps to choose behaviours, evaluate events and people, explain behaviours, and expresses it as desirable goals that serve as principles that guide people in their lives (Shalom H. Schwartz b, 1999).

Dose value is defined as developing standards related to the work environment or work, in which individuals determine what is right and evaluate the importance of their preferences (Dose, ibid, p.227-228.).

Elizur, Borg, Hunt, and Beck (1991) define value as the degree of importance that society attaches to a value against an object, behaviour and situation belonging to a certain society (Dov Elizur, Ingwer Borg, Raymond Hunt, Istvan M. Beck, 1991). Connor and Becker also state that values can be thought of as beliefs about desired end states underlying thought and behaviour processes (Patrick E. Connor, Boris W. Becker, 1975).

In the light of these definitions, attention is drawn to two issues regarding values; First, definitions are concentrated in meanings, consequences, functions, and goals. The second is that values are viewed as preferences or priorities. Values in a hierarchy according to their importance are not always in harmony, and differences can be seen from society to society and between individuals. Or an individual's value may be replaced by a more important value. This change is not a change in the value system but can be accepted as a rationalization of the behaviour. From this point of view, values are a feature of individuality as well as collectivism and provide rationality in socially unacceptable behaviours (Hofstede et al., p. 20).

In this framework, it is possible to define values as the mental, emotional and cognitive perceptions that individuals use to guide and determine their behaviour, and also to evaluate the individuals and situations around them, which individuals learn unconsciously through their needs, desires and experiences, and are also transferred to them through the society and culture they live in.

Locke (Edwin A. Lockea, 1976) suggested that employees feel more comfortable with some of their friends and managers they work with when they think "this person looks like me/interprets the situation from my point of view".

At the same time, it has been determined that most of the studies on the subject have determined that the values that are important to them are the same and similar in their colleagues, and they are partially satisfied with their jobs (Thomas J. Kalliath, Allen C. Bluedorn, Michael J. Strube, 1999).

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

However, it has been determined that different cultures, regions and generations will create differences between values and especially the culture of the society, family, school and friend groups and religious teachings are the reasons for the differences in business values. It has been suggested that as a result of value differences that may arise due to the mentioned factors, the possibility of conflict of managers and employees may increase (Umut Kubat, 2007). In the light of this information, it can be thought that the perception of employees, colleagues and managers that their work values are compatible with each other is important in terms of both individual outputs and organizational results.

Business Values as Factors Affecting Compliance – Behaviour Relationship

It is stated that the reason for the acceptance of the importance of values in explaining human behaviour and their interest in social scientists is the functional relationship that is accepted to exist between value and behaviour (Çiğdem Kağıtçıbaşı, 1996).

Values cannot be designed without action, nor can they be handled independently of the person who created them. For example, values such as justice, friendship and honesty can exist thanks to fair, friendly and honest people who carry and realize these values in themselves.

However, although it is possible to talk about a value or a set of values that stand out among the values and dominate the others, it cannot be right to state that any behaviour exhibited is determined by a single value. Individuals have value groups that are believed to develop more than one and hierarchically. Considering the necessity of finding harmony/harmony between the value areas that individuals have, it can be thought that a certain behaviour is compatible and in relationship with more than one value (Erol Güngör, 1998).

Figure 1. **Value-Attitude-Behavior relationship**
Source: Tulay Korkmaz Devrani, a.g.e., p.60.

In particular, it is stated that most studies not only accept the important contribution of the guiding role of values, but also make value definitions in this

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

direction (Gregory R Maio, James M. Olson, Mark M. Bernard, Michelle A. Luke, 2003). In summary, according to these researchers, values show their effects on behaviours through attitudes (Figure 1).

For example, it has been found that changes in students' job choices six years after their education programs are clearly due to changes in their values (Gratton Kemp, 1960).

Within the framework of the same perspective, England and Lee (1974) expressed their views on the attitudes and behaviours that people's value systems may lead from the point of view of managers. According to them, personal value systems of managers (George W. England, Raymond Lee, 1974):

1. Perception of situations and perspectives on problems,
2. Making decisions and solving problems,
3. Perspective and interpersonal relationships with other individuals and groups,
4. Both organizational and individual success,
5. It affects the degree to which organizational pressures and goals are accepted or resisted.

It also sets limits on what ethical behaviour is or is not. In this case, it can be stated that managers will regulate their decisions and behaviours in line with their value systems. Feather (1995) determined that people act in accordance with their values and make their choices. He adds, however, that most behaviours occur spontaneously and that people rarely think about value priorities in their daily lives.

In fact, with the emergence of behaviour after conscious decisions, the probability of values influencing behaviour increases (Norman T. Feather, 1995). From this point of view, it can be concluded that employees do not think about priorities related to their values and what is important to them, unless there are compelling conditions while displaying their work-related attitudes and behaviours.

1) Work values of employees are measured by Schwartz's Work Values Scale, which consists of 40 statements. Each item is scored on a 5-point Likert scale (1- Not at all like me, 2- Not like me, 3-Like me a little, 4- Like me, 5- Very much like me).

2) Schwartz's 40-statement Business Values Scale was presented to the employees again, this time using a 5-point Likert scale for their managers' work values (1- Not at all like him, 2- Not like him, 3- A little like him, 4- Like him, 5 - He looks a lot like him) evaluations are requested.

3) Obtaining the sum of the absolute values of the differences, the scores given by the participants in the framework of the 5-point Likert scale to the 40 value statements, in which they determined their own work values, are subtracted from

each other, using the same value expressions to determine the perceived work values of their managers.

Manager-employee work values congruence is found by summing the absolute values of these 40 different value expressions. Since the negative or positive difference between the employees' work values and the employees' managers' perceptions of work values does not make a difference on the value fit result, the absolute values of the differences are taken. Work values scores of 40 statements can have a range of 1 to 160. It is emphasized that the large values of the differences indicate low degree of agreement, while the low values of the differences indicate high agreement.

Since Schwartz's work values scale will be subjected to explanatory factor analysis in order to determine the work values that will emerge as a result of both the employees' work values and the employees' perceptions of their managers' work values, the method mentioned will be implemented with the remaining statements as a result of the factor analysis. After the explanatory factor analysis, the sum of the absolute values of the differences between the value expressions related to the work values of the employees determined to be common and the value expressions of the employees' perceptions of the managers' perceptions of the work values will give a determinative result.

Data collection and analysis

Demographic Characteristics of Participants

When the demographic characteristics of the participants are examined (Table 15), it is seen that 36.4% of the participants are male and 65.4% are female, and the age distribution is mostly 26-30 years (71 participants, 34.6%) and 31-40 years old (73 participants, 35.6%. It is understood that more than half of the participants (110 participants) are at graduate or higher education level due to their profession. It is understood that 49 (21.5%) of the participants are in managerial positions in the institution they work, and they fulfil their duties as clinical director and laboratory supervisor. Of the 156 participants (78.5%) working in other positions; It was determined that they fulfilled their duties as embryologist, biologist, laboratory technician, nurse and specialist doctor and were in a subordinate position. In terms of the time spent by the participants in their profession; 1- 20 people (9.7%) who have been working for 5 years; It is seen that there are 35 people (17.2%) who have been working for 6-10 years. It has been determined that the majority of those who have completed 11-15 years in their profession (71 people - 34.6%).

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

Table 1. Demographic characteristics of the participants.

n=205		Frequency	%
Gender	Male	71	34.6
	Female	134	65.4
Age	25 and under	20	9.8
	26-30	71	34.6
	31-40	73	35.6
	41-50	25	12.2
	51-60	13	6.3
	60 and upper	3	1.5
Education	Specialist Physician (Women's Hospital)	32	15.7
	Specialist Physician (others)	22	10.7
	Master degree and upper	56	27.3
	Bachelor degree and college	74	36.1
	MYO	21	10.2
Address	Clinical director	27	13.2
	specialist (doctor)	24	11.7
	lab supervisor	22	10.7
	Biologist	58	28.3
	Embryologist	32	15.6
	Nurse	32	15.6
	lab technician	10	4.8
Time in occupation	1-5 years	20	9.7
	6-10 years	35	17.2
	11-15 years	71	34.6
	16-20 years	37	18.0
	20+	7	3.4
Participants' tenure	1-5 years	85	41.5
	6-10 years	50	24.4
	11-15 years	48	23.4
	16-20 years	15	7.3
	20+	7	3.4
Region	Baku	114	55.61
	Marmara	7	3.41
	Ege	17	8.29
	Lankaran	41	20
	Akdeniz	6	2.93
	Ganja	14	6.83
	Black Sea	6	2.93

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Considering the tenure of the participants in their institutions, 85 people (41.5%) who have been working in the organization for 1-5 years, 50 people (24.4%) of their employees for 6-10 years, 48 people (23.4%) who have been working for 11-15 years have been found. It is observed that most of the participants (55.61%) work in the centres in different regions of Azerbaijan and Turkey.

Table 2. Total variance explained in the factor analysis of the business values of the managers.

Initial intrinsic value of Factor Loads					Sum of Squares
Components	**Total**	**Percentage of variance**	**Total %**	**Percentage of total variance**	**Percentage of total explained variance**
1.	4,422	24,566	24,566	17,930	17,930
2.	2,548	14,158	38,724	14,921	32,851
3.	2,203	12,241	50,965	13,305	46,156
4.	1,631	9,061	60,026	11,050	57,206
5.	1,380	7,665	67,691	10,485	67,691
6.	1,191	6,614	74,305		
7.	1,005	5,583	79,887		
8.	,876	4,866	84,754		
9.	,715	3,971	88,725		
10.	,602	3,343	92,067		
11.	,354	1,964	94,031		
12.	,296	1,647	95,678		
13.	,258	1,433	97,111		
14.	,199	1,108	98,219		
15.	,128	,709	98,928		
16.	,094	,524	99,452		
17.	,050	,276	99,728		
18.	,049	,272	100,000		

In the research, Schwartz's Business Values scale was used in two ways. First, managers and employees were asked to evaluate their own business values in line with the items in the questionnaire. Second, the same survey was applied to the employees, this time asking them to score their managers' perceptions of their

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

business values. In this direction, explanatory factor analysis (to determine the work values of the managers, to determine the work values of the employees and to determine the perceptions of the employees about the managers' work values) was applied to the same scale three times.

In addition to the above-mentioned findings of the scale of managers' job values, the data on the reliability of the scale were evaluated using the Cronbach's Alpha coefficient, an internal consistency model based on the average of the correlation between the scale items. As a result of the reliability analysis, it is expected that the alpha coefficient varying between “0” and “1” values should be higher than 0.60 in order to say that the scale is reliable 537.

In summary, five business value dimensions were determined for managers and employees, who were asked to identify their own business values. The business values determined in this direction are:

1) Self-improvement, 2) Hedonism, 3) Openness to change, 4) Conservatism, 5) Self-Transcendence (Figure 2).

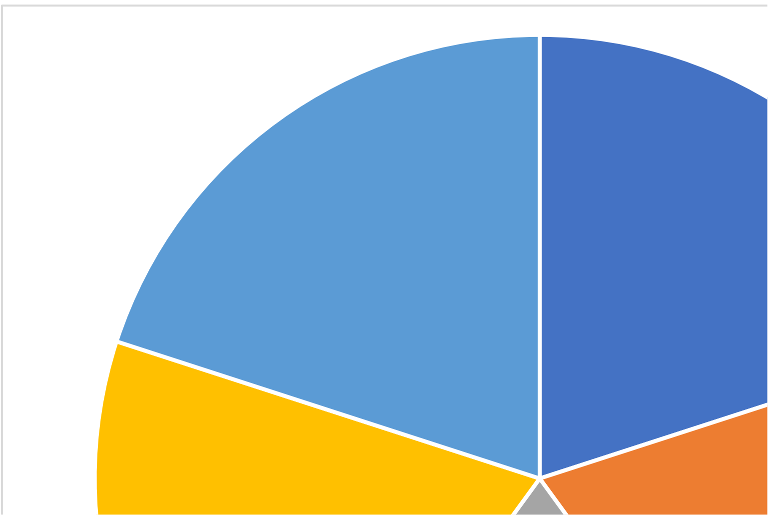


Figure 2. The business values determined by the managers within the scope of the research

Explanatory factor analysis was applied to Schwartz's Work Values Scale, which was applied to measure the perceptions of the employees. The suitability of the data for factor analysis was examined with the Kaiser-Meyer-Olkin (KMO) coefficient and the Barlett Sphericity test.

Four dimensions of work value emerged that employees perceived regarding their managers' work values. The work values determined in this direction can be listed as: 1) Self-Transcendence, 2) Self-improvement, 3) Hedonism, 4) Conservatism.

Conclusion and Discussion

It is possible to define the concept of value as preferences among lifestyles, basic assumptions about human's place in the world, the target of any need, attitude or desire, general standards by which attitudes, behaviours and beliefs are formulated, ideas, acceptances and beliefs shared by the members of the society. It is stated that individuals create their own value system by learning and being influenced by the society they live in, the group they belong to, the family they grow up in, the school and the circle of friends. At the same time, the most important function of the values; It is emphasized that it guides the behaviours and provides original standards to individuals. Therefore, it can be said that values are individual standards that guide the attitudes and behaviours of individuals, help people make judgments about the behaviour of others, and support them in making sense of the situations, actions and objects they are in. It is known that work values, like general values, affect the attitudes, behaviours and perceptions of individuals during work. It is emphasized that business values act as a kind of glue that integrates individuals with each other, especially in times of crisis or unexpected environmental changes. In summary, work values can be defined as the characteristics that the individual seeks in his job, the satisfaction and rewards, the desired behaviour style, the degree of importance that the individual attaches to a particular result that he or she wants to achieve from the workplace, as well as the attitude and behaviour that the individual shows towards the job in general, apart from the feelings he/she feels towards a particular task.

In the light of the research carried out, it is understood that business values may differ or resemble from society to society, as is the case with social culture. It is stated that the differentiation in business values is not only due to the characteristics transferred from the society in which they live, but also differences are observed in terms of age, gender, period and geography, occupational groups, title and position

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 2/2022

within the organization. It is also claimed that values are generally similar for everyone, only changes in importance. Although there are some differences in terms of the work values that individuals have, the most important thing is to ensure the harmony of the employees with each other and with the organization within the framework of their work values. In this respect, managers have important duties.

Managers who know their employees correctly and can accurately determine their needs and expectations are expected to be more successful in achieving their goals. When it is accepted that values are the antecedents of attitudes and behaviours, it is stated that it is possible to understand the work values of employees through attitudes and behaviours. In this way, it is thought that managers can identify employees who they think have values similar to or close to their own business values and employees who they believe have values different from their own business values.

The fact that managers develop different relationships with each subordinate and that these relationships affect the behaviour of managers and subordinates forms the basis of the leader-member interaction theory. It is stated that managers prefer to have more relationships with people who are compatible with their own values, and subordinates positively perceive the supportive attitudes and behaviours of their managers. It has been revealed through research that employees who believe that a relationship based on trust has been established between them and their managers want to take on more responsibility by going beyond their employment contracts, and that they have more work-related motivation.

Thus, it is understood that employees who interact with their managers at a high level make more effort, talent, skill and contribution to meet the needs and requirements of the organization. It is stated that, thanks to the high-quality interaction established with their managers, subordinates develop more positive relationships based on information sharing, help, emotional support and trust. The theoretical part of the research emphasizes the relationship between manager-employee work values harmony, leader-member interaction and job satisfaction in the perspective of business values. According to the results of the research, although it was determined that there was a statistically significant difference in some of the work values of the managers and employees, it was determined that the work values of the two groups were generally compatible with each other.

In the continuation of the analysis, the similarities and differences between the perceptions of the employees regarding the work values of the managers and the work values of the managers were determined. It has been concluded that there are differences between the perceptions of the employees about the work values of their managers and some of the values found in their managers.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

References

[1] Amy L. Kristof, “Person–Organization Fit: An Integrative Review of Its Conceptualizations, Measurements, and Implications”, Personnel Psychology, 49(1), 1996, s.1–49.
[2] Anat Bardi, Shalom H. Schwartz, “Values and Behaviour: Strength and Structure of Relations”, Personality and Social Psychology Bulletin, 29, 2003, s.1207-1220.
[3] Annelies E.M. Van Vıanen, Chi-Taı Shen, Aichia Chuang, “Person–Organization And Person–Supervisor Fits: Employee Commitments In A Chinese Context”, Journal of Organizational Behaviour, 32, 2011, s. 906-926.
[4] Barry Z. Posner, Warren H. Schmidt, “Managerial Values Across Functions”, Group and Organization Management, 12(4), 1987, s. 373.
[5] Barry Z. Posner, “Values and the American Manager: A Three-Decade Perspective”, Journal of Business Ethics, 91(4), 2010, s.457.
[6] Christopher Hodgkinson, Yönetim Felsefesi, Örgütsel Yaşamda Değerler ve Motivasyon, Çev: İbrahim Anıl, Binali Doğan, Beta Yayım,1.bs, İstanbul, 2008, s.142.
[7] Daniel M. Cable, D. Scott DeRue, “The convergent and discriminant validity of subjective fit perceptions”, Journal of Applied Psychology, 87(5), s. 875–884.2002
[8] David Antonioni, Heejon Park, “The Effects of Personality Similarity on Peer Ratings of Contextual Work Behaviours”, Personnel Psychology, 54, 2001, s. 354.
[9] Dov Elizur, Ingwer Borg, Raymond Hunt, Istvan M. Beck, “The Structure of Work Values: A Cross Cultural Comparison”, Journal of Organizational Behaviour, 12, 1991, s. 22.
[10] Edgar H. Schein b, The Corporate Culture, Survival Guide, Francisco: Jossey-Bass., 2009, s.22-23.
[11] Edwin A. Lockea, “The nature and causes of job satisfaction”, İçinde: Dunnette, M.D. (Ed.), Handbook of Industrial and Organizational Psychology, Rand McNally, Chicago, IL, 1976, s. 1327.
[12] Elizabeth A. Amos, Bart L. Weathington, “An Analysis of The Relation Between Employee-Organization Value Congruence and Employee Attitudes”, The Journal of Psychology, 142(6), 2008, s.615-631.
[13] Geert Hofstede a, Culture’s Consequences: International Differences in Work Related Values, Sage Publications, London, 5.bs, 1984, s.110.
[14] George W. England, Raymond Lee, “The Relationship Between Managerial Values and Managerial Success in the United States, Japan, India and Australia”, Journal of Applied Psychology, 59, 1974, s.411.
[15] Gratton Kemp, “Changes in values in relation to open-closed systems”, The Open and Closed Mind: İnvestigations into the Nature of Belief Systems and Personality Systems, Eb. By. Milton Rokeach, New York, Basic Books, 1960, s.335-345.
[16] Gregory R Maio, James M. Olson, Mark M. Bernard, Michelle A. Luke, “Ideologies, Values, Attitudes and Behaviour”, Handbook of Social Psychology, Ed. By. John D. DeLamater, New York, Kluwer Academic/Plenum Publisher, 2003, s.298.

[17] Jennifer A. Chatmana, "Improving Interactional Organizational Research: A Model of Person- Organization Fit", Academy of Management Review, 14,1989, s. 339.
[18] Jennifer Dose, "Work Values: An İntegrative Framework and İllustrative Application to Organizational Socialization", Journal of Occupational and organizational Psychology, 7 , 1997, s.236.
[19] Kamil M. Kozan, Canan Ergin, "The Influence of Intra- Cultural Value Differences on Conflict Management practices", The International Journal of Conflict Management, X.(3), 1999, s.249-267.
[20] Kristof-Brown, Zimmerman-Johnson, a.g.e., s. 281-342.
[21] Kristy J. Lauver, Amy Kristof-Brown, "Distinguishing between employees' perceptions of person–job and person–organization fit", Journal of Vocational Behaviour, 59(3), s.454–470.2002
[22] Lewis R. Aiken, Psychological Testing and Assessment, Allyn and Bacon, Fifth Ed., Boston, 1985, s.244.
[23] Mert Aktaş, "Kültürel değerler ve Kişi Örgüt- Kişi İş Uyumu İlişkisi: Kavramsal Bir Çerçeve", Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 26, 2011, s.15.
[24] Milton Rokeach, The Nature of Human Values, The Free Press, New York, 1973, s.5.
[25] Norman T. Feather a, "Values, Valences, And Choice: The Influence of Values on the Perceived Attractiveness and Choice of Alternatives", Journal of Personality and Social Psychology, 68(6), 1995, s.1136.
[26] Patrick E. Connor, Boris W. Becker, "Values and The Organization: Suggestions for Research", Academy of Management Journal, 18 (3), 1975, s. 551.
[27] Robert R. McCrae, "Human Nature and Culture: A trait Perspective", Journal of Research in Personality, 2004, s.4
[28] Shalom H. Schwartz b, "A Theory of Cultural Values and Some Implications for Work", Applied Psychology: An International Review, 48 (1), 1999, s.24-25.
[29] Thomas J. Kalliath, Allen C. Bluedorn, Michael J. Strube, "A Test of Value Congruence Effects", Journal of Organizational Behaviour, 20(7), 1999, s. 1177.
[30] Tülay Korkmaz Devrani, "Kişisel Değerlerin Kuramsal Yapısı ve Pazarlamadaki Uygulamalar", Eskişehir Osmangazi Üniversitesi İİBF Dergisi, 5(1), 2010, s.50.
[31] Umut Kubat, "İmalat Sektöründe İş değerleri ile Kişilik Özellikleri Arasındaki İlişkinin İncelenmesi", T.C. Akdeniz Üniversitesi Sosyal Bilimler Enstitüsü, İşletme ABD, Yüksek Lisans Tezi, 2007, s.11.
[32] Yüksel Özden, Eğitimde Yeni Değerler Eğitimde Dönüşüm, Ankara, Pegem A Yayıncılık, 5.bs, 2005

ISSN: 2393-1795
ISSN-L: 2068-6900

EDITURA FUNDAȚIEI *ROMÂNIA DE MÂINE*