

Annals of Spiru Haret University

# Economic Series

Volume 14(23), issue 2, 2023  
ISSN: 2393-1795 | ISSN-L: 2068-6900



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# 2023



EDITURA FUNDAȚIEI ROMÂNIA DE MÂINE

# ***Annals of Spiru Haret University***

**Economic Series**  
**Volume 14(23), Issue 2, 2023**

**Publishing House of *România de Măine* Foundation**  
**Bucharest, 2023**

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## 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.

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

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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 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.

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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

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www.editurafrm.ro

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

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

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## FOREWORD

**How to cite:** GURGU, E. (2023). "Foreword". *Annals of Spiru Haret University. Economic Series*, 23(2), 15-34, doi: <https://doi.org/10.26458/2320>

According to an article written by Jo Harper published in DW on the 11th of June 2023, it appears that until recently, the biggest economic problem was galloping inflation. Now, however, falling prices for commodities such as wheat and energy are prompting fears of a global economic recession.

According to the Bloomberg Commodity Spot Index, food prices hit record highs in May 2022, two months after Russia invaded Ukraine. In the previous two years, food prices had already risen by 40%, according to IMF data. For 2023, however, forecasts show a 21% reduction in food prices.

Commodity prices have already been falling for some time, notes Ayhan Kose, deputy chief economist at the World Bank. "Falling commodity prices are partly due to fragile global economic growth, but this should not be seen as a threat of a possible global recession," Kose told DW. "Although the global economy is weak, we do not expect it to slip into a recession in 2023/24. But it is not out of the question, given the worsening of risk conditions."

Ukraine pass from the granary of the world to minefields. His forecast is based on the fact that stress in the banking sector of the US and other strong economies will not spread globally. The decrease in the World Bank's commodity price index in 2023 would be due, according to Kose, to the reorientation of exports of important raw materials from Russia and Ukraine, the mild winter and the slowdown in global economic activities, an aspect observed recently.

The destroyed dam can cause price increases. The UN's Food and Agriculture Agency (FAO) records the prices of the most traded foods, such as cereals, dairy products and vegetable oils. According to the FAO price index, food costs would have fallen by 22% last year. Vegetable oils became cheaper the most: by 48% the prices of palm oil, soy, rapeseed and sunflower oil fell. Almost half of the sunflower oil traded worldwide is produced in Ukraine. After the Russian invasion, prices for this commodity exploded - now, as exports resume, prices are falling. And wheat and corn prices are down 25 percent from their record highs of a year ago. According to the World Bank, the extension of the Black Sea grain initiative

until July 2023 further eased the situation. But it is not known whether the Black Sea export agreement will be extended beyond July, which could cause further problems in grain supplies.

"The fighting between Russia and Ukraine has led to the destruction of a large hydrological dam, which again raises concerns about the maintenance of grain exports from the crisis territory via the Black Sea," points out Ole Hansen, head of commodity strategy at Saxo Bank. in dialogue with DW.

In the areas of southern Ukraine affected by the destruction of the dam, there are huge agricultural areas. Rebuilding the dam will take years, which could greatly affect Ukraine's ability to protect its grain-producing regions from flooding, fears Scott Irwin, professor of agricultural sciences at the University of Illinois.

Grain from Ukraine is bankrupting Polish farmers. There is a carousel of energy prices. The war in Ukraine generated other drastic economic consequences last year, in 2022. According to the S&P 500 stock index, the value of companies in the energy sector increased the most in 2021 and 2022. In 2022, the increase was 50%, after Russia's invasion of Ukraine, which caused the price of crude oil to rise. Things have changed in the meantime. The energy sector has lost 5% of its value since the start of the year, while the market is up 8%.

According to forecasts, energy prices will drop this year by 26 percent. The price of a barrel of Brent crude oil will be around 84 dollars (78 Euros) in 2023, which is 16% less than last year's average. The price of gas will be reduced by 50% compared to 2022 in Europe and the US, while coal will be cheaper by 42% compared to the previous year.

Expanding liquefied natural gas (LNG) capacities would be the reason for easing pressure on gas markets, according to the Energy Information Administration, the US energy information authority. The reduced supply could lead to a further increase in the price of crude oil, amid current problems in the field: the shutdown of some export pipelines in Iraq, wildfires in Canada, protests in Nigeria and maintenance work in Brazil, as well as reduced production by OPEC+.

Germany, LNG terminal and China's influence on metal prices. In China, domestic consumption is recovering more slowly than expected, leading to lower prices in the metal industry. In 2022, demand for metals in the construction industry was 23% lower. Weak growth in this industry leads to lower demand for steel, aluminum and copper. And the increased supply of metals led to a decrease in their prices. Major producers such as Rio Tinto, Vale and Glencore increased

their supplies. How stable metal prices will remain in 2023 depends, according to the World Bank, on China's production growth.

Inflation remains a problem. The massive increase in energy and food prices was reflected in 2022 in rising inflation. After peaking in the second half of 2022, "inflation is likely to decline slowly in 2023 amid slowing global economic growth, resolution of supply issues and lower commodity prices," Kose expects. "A cheapening of raw materials will certainly lead to lower global inflation." But Kose points out that inflation will remain above target in the world's major economies until 2024. "The cheapening of raw materials will be just one of the factors that central banks have to take into account in their fight against inflation."

According to an article published on the European Commission page on May 15, 2023 by European experts Veerle Nuyts and Laura Berard, it appears that the European economy continues to show resilience in a difficult global context.

Falling energy prices, easing supply constraints and a strong labor market supported moderate growth in the first quarter of 2023, dispelling fears of a recession. This better-than-expected start lifts the growth outlook for the EU economy to 1.0% in 2023 (compared to 0.8% in the winter interim forecast) and to 1.7% in 2024 (compared to 1.6 % in winter forecasts). Upward revisions for the euro area are of a similar magnitude, with GDP growth currently estimated at 1.1% in 2023 and 1.6% in 2024. Amid persistent pressures on core prices, inflation was , also revised upwards compared to the winter scenario, reaching 5.8% in 2023 and 2.8% in 2024 in the euro area.

Lower energy prices boost growth prospects. According to Eurostat's preliminary signal estimate, GDP grew by 0.3% in the EU and by 0.1% in the euro area in the first quarter of 2023. According to leading indicators, this growth should continue without interruption in the quarter second.

The European economy has managed to limit the negative impact of Russia's war of aggression against Ukraine, coping with the energy crisis by quickly diversifying its supply and by significantly reducing gas consumption. The significant reduction in energy prices ripples through the entire economy, leading to lower production costs for businesses. In turn, consumers see a decrease in energy bills, although private consumption should remain at a low level, as the pace of wage growth remains below inflation.

As inflation remains high, financing conditions are set to tighten further. While the ECB and other EU central banks are expected to be nearing the end of the interest rate hike cycle, recent financial sector turmoil is likely to increase pressure

on the cost of and access to credit, slowing the pace of growth investments, especially those in the residential sector.

Core inflation is revised upwards but is set to decline gradually. After peaking in 2022, headline inflation continued to decline in the first quarter of 2023 amid a sharp reduction in energy prices. Core inflation (i.e. total inflation excluding the energy and unprocessed food sectors) is proving to be more persistent, however. It hit a record high of 7.6% in March 2023, but is expected to decline gradually over the forecast period as profit margins absorb higher wage pressures and financing conditions tighten. April's 2023 flagship estimate of the harmonized index of consumer prices in the euro area, released after the spring forecast deadline, shows a marginal decline in the core inflation rate, suggesting that it may have peaked in the first quarter, according to forecasts. On an annual basis, euro area core inflation is expected to average 6.1% in 2023, before falling to 3.2% in 2024, remaining above headline inflation in both forecast years .

The labor market remains resilient in the context of the economic slowdown. The resilience of the EU economy is currently underpinned by a stronger than ever labor market. The EU unemployment rate reached a new record high of 6.0% in March 2023, and participation and employment rates reached unprecedented levels.

The EU labor market is expected to have only a moderate reaction to the slower pace of economic expansion. Employment growth is forecast at 0.5% this year, after which it would slow to 0.4% in 2024. The unemployment rate is expected to remain just above 6%. The pace of wage growth has accelerated since the start of 2022, but has so far remained well below inflation. Wage growth is expected to be more sustained amid persistently tight labor markets, strong increases in minimum wages in several countries and, more generally, pressure on workers to regain purchasing power.

Public deficits are expected to decrease, especially in 2024. Despite the introduction of support measures to mitigate the impact of high energy prices, strong nominal growth and the removal of the last remaining measures from the pandemic caused the EU's aggregate public deficit to fall further to 3.4% of GDP in 2022. In 2023 and, more importantly, in 2024, falling energy prices should allow governments to phase out energy support measures, leading to further deficit reductions of up to 3.1% and 2.4% respectively % of GDP. The EU-wide debt-to-GDP ratio is projected to fall steadily to below 83% in 2024 (90% in the euro area), but will remain above pre-pandemic levels. There is a great heterogeneity of the budget trajectories in the member states.

Although inflation may support the improvement of public finances in the short term, this effect will dissipate over time as debt repayment costs rise and public spending is progressively adjusted to the higher price level.

The risks of a negative evolution of the economic outlook have increased. More persistent core inflation could further constrain household purchasing power and require a stronger monetary policy response with broad macro-financial ramifications. Moreover, further episodes of financial crisis could again lead to increased risk aversion, leading to a more pronounced tightening of lending standards than estimated in these forecasts. An expansionary fiscal stance would further fuel inflation, counteracting the effects of monetary policy measures. In addition, new challenges to the global economy may arise as a result of turmoil in the banking sector or broader geopolitical tensions. On the positive side, more favorable developments in energy prices would lead to a faster decline in headline inflation, with positive spillover effects on domestic demand. Finally, there is lingering uncertainty, driven by Russia's ongoing invasion of Ukraine.

The publication of the forecasts includes, for the first time, an overview of the structural economic characteristics, recent performance and prospects for Ukraine, Moldova and Bosnia and Herzegovina, which were granted candidate status by the Council in June and December 2022 to the EU. These forecasts are based on a number of technical assumptions regarding the evolution of exchange rates, interest rates and commodity prices, based on information available up to 25 April 2023. For all other source data, including public policy assumptions, these forecasts take into account information available up to and including April 28 2023. Unless new policies are announced and properly detailed, projections assume current policies will be maintained. The European Commission publishes two sets of detailed forecasts (in spring and autumn) and two sets of intermediate forecasts (in winter and summer) every year. Interim forecasts include annual and quarterly GDP and inflation figures for all Member States for the current year and the year ahead, as well as aggregated data for the EU and the euro area. The European Commission's summer 2023 economic forecasts will update the GDP and inflation forecasts and are expected to be presented in July 2023.

Another interesting article in this context is published on [traficmedia.ro](http://traficmedia.ro) by the author Petronela Badescu, on the 28th of June 2023. The article reiterates that the world economy seems to be recovering, but it is more of a surface improvement.

According to an Uppy analysis, global growth forecasts for 2023 and 2024 remain well below pre-pandemic levels, which will significantly affect the volume of world trade.

Many companies are reviewing their budgets for 2023 and preparing those for 2024, but it is a difficult undertaking in the current context, illustrated by the discrepancies between the economic forecasts developed by the main international institutions.

According to the World Bank, global growth is forecast to slow from 3.1% in 2022 to 2.1% in 2023. The assessment is slightly more optimistic than the one in January 2023, which was for growth of 1.7% for the current year. However, the slowdown has huge consequences, especially in emerging and developing economies. On the other hand, the slight improvement in forecasts for 2023 does not mark the beginning of a real recovery, as they have been revised downwards for 2024. The World Bank estimates in its updated forecast for June 2023 that global real GDP will increase by 2, 4% in 2024, instead of 2.7%, which was in the forecast last January.

Estimated GDP growth in advanced economies rises from 0.5% to 0.7% for 2023, but falls from 1.6% to 1.2% for 2024. The United States will grow more than expected initially in 2023 of 1.1%, but the GDP growth rate is expected to fall to 0.8% in 2024, instead of 1.6%, as forecast last January. For the euro zone, the World Bank estimates a growth of 0.4% in 2023 and 1.3% in 2024, much more pessimistic forecasts than those of the European Commission, of +1.1% and +1.6% respectively.

Global forecasts for 2023 were revised upwards mainly due to a favorable reassessment of China's outlook (+5.6% instead of +4.3%), but also a significantly lower than expected recession in Russia (-0, 2% instead of -3.3%).

The IMF and OECD are more optimistic. The OECD, in its updated forecast for June, predicts global growth of 2.7% in 2023 and 2.9% in 2024. The IMF, which published its last update in April 2022, forecasts global growth to reach 2, 8% this year, before recovering slightly to 3.0% in 2024. The slowdown is mostly in advanced economies, notably the euro area and the UK.

If the figures of these institutions sometimes differ, they still agree on one point: the extremely fragile and uncertain context. The world economy appears to be gradually recovering after suffering the impact of the pandemic and Russia's war in Ukraine, and the IMF sees several causes of this recovery: the reopening of the Chinese economy, the regained fluidity of supply chains and the lull in energy and

food markets . However, the institution believes that this is an improvement on the surface, while deep down tensions are rising.

On the [cursdeguvernare.ro](https://cursdeguvernare.ro) page there is another interesting article launched on June 8, 2023 by the author Razvan Diaconu in which he talks about the fact that the OECD has a gloomy optimism, drawing attention to the fact that the world economy will have a hard time recovering, the key being the balance on which central banks will find on key interest rates.

The global economy will experience a slight recovery, but lingering risks are serious, after the shocks caused by the Covid pandemic and the war in Ukraine, persistent inflation and the tightening of monetary policies by the main central banks that are trying to bring prices back under control, the Organization for Cooperation and Economic Development (OECD).

The Paris-based organization's latest Economic Outlook report forecasts global GDP expansion of 2.7% this year and modest growth of 2.9% in 2024, both below the 7-year average. before the pandemic.

The US, China and the Eurozone will have the same relative slowdown in the resumption of economic growth, while inflationary pressures will be stronger than in the pre-pandemic period.

The economic climate creates a particular challenge for central banks, as they must respond to inflationary pressures that are proving to be stronger than anticipated, while not affecting the development of the economy, the OECD says.

"Of course, central banks must remain vigilant and carefully weigh both sides of the risk," Clare Lombardelli, the organization's chief economist, told a news conference.

"Obviously they should not tighten monetary policy too much, beyond the point where that would have a bigger impact on growth than on prices. So this is a delicate balance for central banks, but today we are saying that they will have to maintain tight monetary policy until it is clear that inflation is coming down sustainably to the target value, and that means core inflation as well as headline inflation ", he also said.

The statements come a day after the World Bank warned that the global economy is in a precarious state and headed for a substantial slowdown in growth later this year as interest rate hikes begin to drag on the global economy.

Central bank boards face the specter of imminent decisions on whether to suspend or continue the steepest cycle of interest rate hikes since the 1980s, with both the Fed and the ECB set to make monetary policy decisions next week.

The OECD says that the effects of previous hikes are increasingly felt - particularly in property and financial markets - but the strongest effects will be seen later this year and in 2024. But it is not entirely clear what the magnitude of these interferences will be in the real economy, while inflation may persist for a longer period than anticipated.

"Significant uncertainty remains about the outlook for the global economy and major risks to the outlook are to the downside," the OECD says.

Still, central banks are being urged to maintain tight policies and even raise interest rates further if necessary until there are clear signs that inflationary pressures are easing over the long term.

The OECD says authorities should make full use of liquid financial instruments if restrictive policies create market stress, and that governments in emerging economies could temporarily intervene in the foreign exchange market or control capital flows to avoid destabilizing economies.

To help central banks limit the demand-side pressures that drive inflation, governments should allocate targeted financial support to the most vulnerable households, the organization recommends.

According to available data, the funds allocated to cushion the energy price shock are still considerable in Europe and generally undefended, which also puts pressure on public finances already bearing higher debt burdens after the Covid pandemic.

"The options for fiscal policymakers are clearer, but not easier to implement, given the inherent political sensitivity of policy choices with direct redistributive effects," Lombardelli said.

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 the economy. Whether or not they succeeded in responding to the challenges, we leave it to you to determine.

In the first paper published in the present issue, entitled *Scan Your Life in the Digital Era*, the author **Roxana-Daniela PAUN** says that "distance doesn't separate people, silence does!" Artificial intelligence is a reality and it evolves every day, it simplifies life where it is used in the human's interest, being already applied in many fields. Is there any risk of moving away from the noble goal of being at the service of the collective good and of being used against people to limit fundamental rights and freedoms?, is a main question addressed to us by the author Paun Roxana. Is there any risk that the totalitarian society will re-establish

itself, this time on a global level?, the author asking us again. The current study presents, in summary, a first analysis of the latest developments in this field, starting from the Chinese experience, as far as it is known and popularized regarding facial recognition made by artificial intelligence for monitoring citizens for the social credit system.

The authors **Dorcas D. OTTO** and **Wilfred Isioma UKPERE**, in their paper named ***Digitalisation of Work Processes in the Nigerian University System(NUS) under the New Normal*** are telling us that the global spread of the coronavirus (COVID-19) has left a world with changing work situations in its trail. What started as some innovative electronic processes (e-processes) to enhance workflow and ensure effective service delivery in the Nigerian University System (NUS) gained momentum during the COVID-19 period and has opened new and bright opportunities for e-processes in the aftermath of COVID-19. However, in spite of the numerous advantages of a progressive digitalisation of work processes in the NUS, the perceived challenge has been that of mixed reactions from the workforce. While a few of the workforce appear to be equipped and favorably disposed to the new normal, a larger proportion seem unprepared and somewhat apathetic to the present demands for a 21st Century efficient and effective service delivery methods in the NUS. The objective of the paper is to appraise the introduction, benefits and challenges of e-processes in the NUS especially in post COVID-19 era. It relied on primary (participant observation) and secondary (documents) sources of data and was guided by the Innovation Diffusion Theory. The paper explored critical issues of e-processes and result-oriented management under the new normal in the NUS and made appropriate recommendations for both management and staff. In view of its flexibility and benefits, the paper concludes that, so far, digitalisation of work processes in the NUS has expanded the speed and efficiency of processing documents, thereby, enhancing the welfare of stakeholders

The paper entitled ***Evaluation of Impact of Modern Technology, Demand and Supply on Real Estate***, written by author **Fidan HASANLI**, the author is telling us that the real estate industry is undergoing digital transformation, which affects its working conditions, market appearance, and economic growth factors. The characteristics and operations of real estate markets will be demonstrated in detail which is covered by both basic methods that have remained immutable for centuries and specific possibilities that have recently emerged. The prime idea is to identify industry alterations, the impact of digital transformation, investment decisions, expected future evolutions related to demand and supply, and regression

analysis using Ordinary Least Square method which is used to evaluate the data that falls to the plane and variables that go beyond the restrictions in case of Azerbaijan. This paper provides some particular aspects of real estate within economic terms, to show how technological advancements could provide a comprehensive dataset with expected growth rates, real estate risk management, economic evaluation of real estate investment projects, real estate economics and most importantly demand and supply. The study supports fluctuation of prices in this market is mostly based on macro and micro economic levels.

In the article called *Socio-Economic Perspectives in Terms of Social and Physical Space Interactions*, the author **Isakov BAKTYBEK** explores the interplay of social and physical space interactions in low-income communities in the Kyrgyz Republic. Through a literature review and field research in several villages, the author argues that economic behavior and outcomes are shaped by a complex interplay of social, cultural, and economic factors. The thesis statement of the article is that a comprehensive analysis of the ways in which social and physical space interact is required to gain a deeper understanding of the mechanisms that drive socio-economic interactions in these communities. By shedding light on this complex interplay, the study provides insights into the factors that drive socio-economic development and informs policies and interventions to support these activities. This article contributes to the existing literature on socio-economic development in low-income communities and highlights the importance of considering social and physical space interactions. The findings have significant implications for policymakers and development practitioners in Kyrgyz Republic and other similar contexts

In their paper entitled *The Incidence of the Pandemic Context on the Social Exclusion and Material Deprivation in Romania*, the authors **Antonia MANDALAC** and **Mariana IATAGAN** are telling us that in Romania, social exclusion highlights a reality that removes the perspectives of sustainable development of social equity and economic stability. The pandemic context caused a major discrepancy between national socio-economic environments, placing Romania first in the European ranking regarding the level of social exclusion and material deprivation. The insufficient space of the labor market, the intensity of unemployment, the government restrictions imposed to limit the pandemic context argue the alarming statistics of social exclusion, while the policies and strategies implemented to ensure an honorable standard of living for the Romanian population do not show notable results, limiting the possibilities reducing the level

of poverty. The purpose of the article is to measure the level of social exclusion and material deprivation in Romania, formulating sustainable proposals for improving the quality of life of people whose socio-economic status is at the limit of existence.

The academic paper named *A Deconstruction of Frustration –Aggression-Theory of Political Violence: Nigeria*, written by the authors **Frank O. ETIM** and **Wilfred I. UKPERE**, set out to deconstruct and reconstruct Ted Roberts Gurr's (1970) theory of relative deprivation, frustration-aggression as contained in his work 'Why Men Rebel' (1970). The study used descriptive research design and evaluated the capacity of the theory which was created to explain political violence in Africa and Asia in the colonial era, to also explicate why intense relative deprivation, frustration and aggression arising from the avalanche of poor governance in postcolonial African states such as Nigeria and many others, have not culminated into political violence and rebellion. The study presented numerous data obtained through observation and analysis of events in Nigeria, Africa and case-studies of American, French, English and Russian rebellions and distilled qualitative data which indicated lack of association between the variables. The application of the study design revealed first the state as the source of relative deprivation, frustration and aggressions of the citizenry when they are denied access to the public values which they feel entitled. Secondly, it further discovered that there are no direct correlations between relative deprivation, frustration and aggression as initially conveyed by the theory since 1970. Furthermore, it exposed that there is an intervening variables identified as 'Social Movements' or 'Civil Society Organizations (CSOs), which harness relative deprivation, intense frustration and aggressions from the sufferers and convert them to other set-of-actions which may not be political violence and rebellions but could be advocacy towards the expansion of the mechanism for supply of public good or values and to make it accessible to many to address relative deprivation. The study concluded in the light of its findings, the initial theory require deconstruction and reconstruction to include 'Social Movement' as a principal component, it is only then that it could be applied in the analysis of issues in postcolonial African and Asian states.

**Mihaela AGAGIU** and **Mariana IATAGAN**, in their research paper named *Socio-Economic and Innovative Perspectives of the Hospitality Industry in Romania under the Incidence of Global Challenges and Risks* are telling us that the hospitality industry in Romania is faced with a number of factors that unbalance the sustainable prospects of this industry, mentioning: the incidence of

the pandemic context, the increase in inflation, the general increase in prices, the increase in electricity and heat tariffs, as well as the increase in the salary level of employees integrated in the activity the hospitality industry. Starting from 2020, tourist operators face the decrease in the number of tourists, as well as the exponential increase in costs resulting from the provision of tourist activity. Looking from this perspective, organizations operating in the hospitality industry are exposed to global socio-economic risks, limiting the innovative perspectives necessary for the development of this industry. Through the article, the incidence of negative socio-economic perspectives on the hospitality industry is measured, identifying the main factors that determined the decrease in the activity and profitability of economic organizations. The content of the article focuses on the innovative perspectives of the hospitality industry, presenting rural tourism and psychotherapeutic tourism as a pillar of tourism recovery and resilience identified in the national context.

In their paper entitled *Tourist Market in the Current Post-Pandemic Context*, the authors **Mariana DRAGUT** and **Elena GURGU** are telling us that the negative effects of the COVID -19 pandemic on the tourist traffic and the tourism sector have been felt globally, but to different extents, depending on the tourism regions and countries. In Romania, the decrease recorded in tourist traffic during the pandemic period has been severe, but within the limits of the average recorded in European Union Member States and with considerably different values, depending on the categories of tourist destinations in the country. The main challenge for Romania remains carrying out a large-scale promotion campaign on the foreign markets related to its tourist offer, given the modest results obtained so far in attracting foreign tourists, despite the tourism potential that it has. The post-COVID-19 period could represent a reset of tourism in Romania.

This article of **Elitsa PETROVA**, called *From Traditional to Modern Forms of Crises – A Brief Analysis of Human Crises* presents the variety of types of crises in human society. The reader is briefly introduced to the essence and content of the concept of crisis, as well as the concept of the human security, which emphasizes that in addition to traditional security threats, the world nowadays faces a number of modern forms of global threats. The crises caused by military conflicts; crimes against humanity; usage of weapons of mass destruction; terrorism and organized crime; natural crises and environmental degradation; economic crises and poverty; social crises; health and infectious disease crises; crises caused by globalization and by a change in the value system and morality of

people; political and governance crises are presented in more detail in order to fully achieve the informative goal of the article.

The authors **Samuel Gbadebo ODEWUMI**, **Umar Obafemi SALISU** and **Forson Ibraheem ABDUL-AZEEZ**, in their paper entitled *Modelling the Economic Influence of Transport System on Tourism Performance. The Experience from Lagos State, Nigeria* are telling us that globally, travel and tourism opportunities are highly sought-after by most nations, but very few developing nations, including Nigeria, play good supporting roles to benefit from the profitable and lucrative industry. The reasons for this are not unconnected to the poor investment in tourism infrastructure, especially transport, to support tourism activities and sustain tourism performance. It is against this background that this study modeled the economic influence of the transport system on tourism performance using Nigeria's Lagos State experience. This study is anchored on an ex-post facto research design and relies on quantitative data from the relevant ministries of the Lagos State Government. Both descriptive (charts and graphs) and inferential (multiple linear regression analysis) statistics were methods of data analysis. Major findings revealed that only the annual revenue from transport system services out of the nine (9) evaluated performance indicators showed internal consistency and a positively increasing growth pattern. Furthermore, research found that the level of transport investment has a statistically significant relationship with the performance of the tourism industry ( $F \frac{7}{4} 112.112, p = 0.000 < 0.05$ ). Meanwhile, findings also revealed that there is a statistically significant relationship between the transport system's revenue and tourism performance ( $F \frac{4}{7} 31.696, p = 0.000 < 0.05$ ). Given these, this study affirmed that the tourism performance greatly depends on the transport system's investment and revenue and concluded that the fluctuating and poor tourism performance in Lagos State, Nigeria, is a function of the transport system's economic influence. Thus, this study recommends, among others, consistent investment and improvement in the transport system, most especially the infrastructure that will support tourism activities and increase tourism revenue.

The paper entitled *Community Perceptions Of Tourism Development In Rural Area Of Tsatsane Lesotho*, written by the authors **Palesa Edith PHASUMANE**, **Darlington ONOJAEFE**, **Phelokazi STUMA** and **Wilfred Isioma UKPERE** investigated community perceptions of tourism development and identified their relationship between tourism development projects and business opportunities in

Tsatsane community, Lesotho. This investigation was done using a qualitative research method to understand the relationship between respondents perceptions of tourism development projects and associated business opportunities. Using purposive random sampling techniques, 30 respondents—19 community members, 2 community leaders, and 9 stakeholders—were chosen and interrogated. After the choice, both qualitative and quantitative data were gathered using a semi-structured questionnaire that was constructed. While collecting quantitative data by email, the qualitative data used a self-administered questionnaire conducted in-person. Thematic analysis was used to organize the themes that emerged from the replies after they were received. Using Atlas Ti.8, similar themes were gathered and transferred. The study finds a statistically significant relationship between tourism development projects and recurrent themes like new knowledge of tourism-related business opportunities like job creation, increased trade, and education. About 5% of respondents have different opinions.

The paper called *Consumer Dining Duration and Spending: The Role of Emotional Labour Practice in the Restaurant Industry* of the authors **Samuel SIXPENCE, Paul MUKUCHA, Leonard MUZANENHAMO, & Wilfred I. UKPERE** centres on examining the link between emotional labour and dinning duration within the restaurant industry. In this study emotional labour practice was modelled as one of the crucial predictors of dining duration. This is a multiple case study methodology using a cross sectional approach. The target population was 480 dyads encounters in 6 of the most popular fast food restaurant chains in Harare. Some 214 seat-in customers were the unit of analysis while wait staff were the unit of observation. In terms of responses, 200 responses were attained and were deemed sufficient for meaningful Structural Equation Modelling. The quantitative approach employed a self-completed structured questionnaire in collecting data. A structural equation modelling was run to test the direct effects, a multi-group structural equation modelling was run to test the moderating effects of categorical variables, and a moderated multiple regression was run to test the moderation effects of the latent variables. The study revealed various factors that influence the connection between emotional labour and dinning duration such as the gender factor of the people involved, the rate and strength of the interaction between restaurant employees and the clients. The outcome directed that emotional labour is positively associated with consumer dining duration. The consumer dining duration is in turn associated with consumer expenditures within the restaurant. However, all the hypothesised moderators had no statistically significant effect. The study

recommended the use of emotional labour as one of the predictors for increased revenue in the restaurant industry through increased consumer spending as mediated by the dining duration under the scenario of excess capacity and limited demand.

The paper written by **Foluso Philip ADEKANMBI** and **Wilfred Isioma UKPERE**, named *Perceived Employee Financial Well-Being in the Banking Industry in the 4IR Period: Assessing Predictors' Impacts* evaluates the influences of financial behavior, work engagement, and work engagement on financial well-being within Nigeria's Banking Industry. Its sample was taken from four (4) banks in the Nigerian states of Lagos and Oyo. They include First Bank of Nigeria, First City Monument Bank Plc, United Bank for Africa Plc, and Zenith Bank Plc. The present researcher dispersed the questionnaires at random for this cross-sectional survey. Nevertheless, 382 of the 400 questionnaires sent met the criteria for investigation and were examined using SPSS version 28. The present investigation conducted standard multiple regression and zero-order correlation analyses to test the stated hypotheses and conclude that positive financial behaviors and employee work engagement considerably increase financial well-being. In Nigeria's banking industry, financial stress, on the other hand, worsens financial well-being in the 4IR period. It further establishes a link between financial behavior and financial stress and a good correlation between financial behavior and work engagement. Furthermore, the study discovered a negative association between financial stress and work involvement in Nigeria's banking industry during the 4IR period. It also confirms that work engagement, financial stress, and financial behaviors substantially determine financial well-being. Consequently, this paper advocates banks helping employees become more financially literate and responsible by offering financial education to their staff. Also, employers must take action to reduce financial stress among employees. Resources and assistance can help reduce financial stress and enhance employee well-being in the present 4IR period. Moreover, banks may use tactics including offering chances for employee growth, encouraging work-life balance, and cultivating a positive work environment to boost engagement in the banking industry.

The study of the authors **B. O. OGinni, I. O. Ayantunji, A. Awolaja, A. S. Adesanya & H. O. Ojodu**, called *A Study of Human Resource Management Policies, Practices and Employee Commitment: Evidence From Nigerian Small And Medium Enterprises (SMEs)* investigated HRM policies and practices on employee commitment to determine their relationship and effects on

employee commitment using the SMEs in the South-West, Nigeria as the unit of analysis. The study identified recruitment and selection, training and development, compensation and reward systems, performance appraisal, working conditions, and employee participation as the prevailing HRM policies and practices in the SMEs and singled out compensation and reward systems, working conditions, and employee participation. A multi-sampling technique and survey research method was adopted while copies of questionnaires were administered to 369 respondents. It was found that there exists a positive relationship between HRM policies and practices and employee commitment while compensation and reward systems, working conditions, and employee participation in decision-making have more effects than other variables and  $R^2$  of 76% can also explain the variation on employee commitment. It was concluded that among all the activities embarked upon by the SMEs, in South-West, Nigeria towards the attainment of business objectives, HRM policies, and practices have a more significant effect on employee commitment most especially compensation and reward systems, working conditions, and employee participation. Thus, it is recommended that reward systems should be made competitive through environmental surveys and objectivity should prevail in the practice of the HRM policies.

The authors **Samuel SIXPENCE**, **Julius TAPERA** and **Wilfred I. UKPERE**, in their paper entitled *Resetting the Human Resource Strategy for Organizational Performance in Zimbabwe Urban Councils* are telling us that while literature is awash with evidence that links strategic human resource management to organizational performance, little is known on sustaining the relationship dynamics within a public sector context that is operating under polarized conditions. This study explores the challenges faced in implementing the human resource strategy within urban councils in Zimbabwe to unearth solutions that are sensitive to a polarized work environment. A case study approach was used to collect data from the 32 urban councils in Zimbabwe which are classified into four categories namely, cities, municipalities, towns and local boards. Stratified sampling was used to identify nine urban local authorities for data collection and purposive sampling identified the participants for interviews. The point of saturation was reached after interviewing 18 participants and the data was analyzed using the atlas.ti. This study revealed, a misalignment of the human resource function and the organizational goals, a serious financial resource crisis and a lack of trust between key stakeholders. The study contributes to the development of human resource competencies that respond to the organizational needs in a polarized environment.

Further, incorporate the adoption of technology in the human resource strategy and foster a culture of supporting soft skills such as team work and collaboration from the level of elected officials down to the entire workforce.

The article of the authors **Valentin KULETO and Elena GURGU**, named ***The Impact of Employer Branding on Organizational Performance: A Comprehensive Analysis*** investigates the relationship between employer branding and organisational performance, identifying the underlying mechanisms contributing to enhanced performance. Next, the authors analyse various aspects of employer branding, including its influence on talent attraction, employee engagement, retention, and overall productivity. Finally, the authors provided insights on how organisations can strengthen their employer brand to optimise performance. In the competitive labour market, employer branding plays a crucial role in an organisation's ability to attract and retain top talent, directly influencing organisational performance. This article examines the relationship between employer branding and organisational performance by exploring its effects on talent attraction, employee engagement, retention, and overall productivity. It also offers insights on strengthening an organisation's employer brand to optimise performance.

Employer branding, an organisation's reputation as an employer, can provide a competitive advantage by creating a motivated, engaged, and productive workforce. A strong employer brand attracts high-quality candidates, reducing recruitment time and cost and ensuring a diverse and talented candidate pool. Organisational culture, work environment, compensation and benefits, growth opportunities, and corporate social responsibility contribute to developing a strong employer brand. Effective employer brand communication across multiple channels, such as corporate websites, social media, and job advertisements, is essential to attract top talent. Employer branding events and employee advocacy can further strengthen the brand. Assessing the employer brand's strength can help organisations identify areas of improvement and gauge their attractiveness in the job market.

Employee engagement and satisfaction are closely linked to an organisation's employer brand. Factors such as leadership, job design, recognition and rewards, work environment, and opportunities for growth and development contribute to employee engagement and satisfaction. Assessing employee engagement and satisfaction can provide valuable insights into their perceptions of the organisation and commitment to its goals. Engaged and satisfied employees exhibit higher performance, productivity, and innovation levels, leading to improved organisational outcomes.

**Pedro Uwadum ADAGBOR, Abibat Motunrayo ADEBOLA, Bukola Linda OJEABURU and Wilfred Isioma UKPERE**, in their paper entitled *The Effectiveness of Health and Safety Programmes in Addressing Occupational Diseases and Injuries at Manufacturing Facilities in Ibadan Southwest Local Government of Oyo State, Nigeria* are telling us that people now spend many years of their adult lives at jobs where they are exposed to various hazardous chemicals, unsafe acts, and other diseases because of population growth and rapid technological advancements. Occupational diseases and injuries may arise because of risk factors in the workplace. This study examined health education as panacea to occupational diseases & injuries in Ibadan Southwest Local government of Oyo state, Nigeria. Descriptive survey research design was adopted, and the population comprises of all workers in Ibadan South-West Local government of Oyo state. The sample size was 250 respondents selected using simple and multi-stage sampling techniques to cover the forty-eight manufacturing companies in the area. A self-structured questionnaire was employed for data, which were analyzed using frequencies, percentages, and chi-square at 0.05 alpha level. It was found that the prevalence rate of occupational diseases in the facility had ( $\chi^2=81.94$ ,  $p<0.05$ ), the extent to which occupational health and safety programs was promoted had ( $\chi^2=71.51$ ,  $p<0.05$ ), the effectiveness of occupational health and safety programs had ( $\chi^2=64.94$ ,  $p<0.05$ ). Based on the findings, health education is a panacea to occupational diseases and injuries in Ibadan South-West Local government of Oyo state, Nigeria. It was therefore recommended that Government should provide regular health training programs to review, promote, and maintain occupational health strategies. Manufacturing companies/facilities should employ adequate qualified health educators to enlighten the workers on the risks associated with occupational diseases and injuries.

**Bakyt KAPAKOV**, in the scientific paper called *Conditions and Factors Affecting Positive Investment Climate in the Kyrgyz Republic* is telling us that in the context of globalization, the investment attractiveness of a country is essential for the economy of the country. The purpose of this paper is to explore the factors affecting the inflow of foreign direct investment in the example of the Kyrgyz Republic as a member of the Eurasian Economic Union (EAEU). The paper introduces the ways and changes in the country's investment activities and explains how the country attempts to attract investors and improve state legislation, ideology, and economic policy to create a favorable investment climate. The investment climate discussed in this paper as a set of factors plays a decisive role in

attracting investment to the country's economy. In addition, this paper identifies the factors determining investment climate that depend on political stability, the transparent legal framework, the tax coefficient, and the attractive benefits, and concludes by emphasizing that all of these factors create a favorable climate for investors and help the Kyrgyz Republic to form a positive investment image.

In the study called *Economic Investigation of Lagrange Multiplier if Cost of Inputs and Budget Size of a Firm Increase: A Profit Maximization Endeavor*, written by the authors **Devajit MOHAJAN** and **Haradhan Kumar MOHAJAN**, the method of Lagrange multiplier is considered to investigate profit maximization policy. In the twenty first century global economy faces serious complexities. Sensitivity analysis of economic firms becomes essential part of sustainable economic environment. The method of Lagrange multiplier is a very useful and powerful technique in multivariable calculus that is applied in economic models to obtain higher dimensional unconstrained problem from the lower dimensional constrained problems. This paper proceeds with Cobb-Douglas production function, where 6×6 bordered Hessian and 6×6 Jacobian are used to examine sensitivity analysis efficiently and elaborately.

We hope that ASHUES 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.

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*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**



## SCAN YOUR LIFE IN THE DIGITAL ERA

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*Motto: The truly good man is only the one  
who could have been bad and wasn't - Nicole Iorga*

**How to cite:** PAUN, R.D. (2023). "Scan Your Life in the Digital Era". *Annals of Spiru Haret University. Economic Series*, 23(2), 37-55, doi: <https://doi.org/10.26458/2321>

**Abstract:**

*"Distance doesn't separate people, silence does!" Artificial intelligence is a reality and it evolves every day, it simplifies life where it is used in the human's interest, being already applied in many fields. Is there any risk of moving away from the noble goal of being at the service of the collective good and of being used against people to limit fundamental rights and freedoms? Is there any risk that the totalitarian society will re-establish itself, this time on a global level? The current study presents, in summary, a first analysis of the latest developments in this field, starting from the Chinese experience, as far as it is known and popularized regarding facial recognition made by artificial intelligence for monitoring citizens for the social credit system.*

**Keywords:** *database, artificial intelligence, digital life, facial recognition, citizen monitoring for the social credit system*

**JEL Classification:** *O36*

## Introduction

Confucius (Chinese philosopher- 551 BC- 479 BC) identifies three methods of acquiring wisdom: the first is reflection, which is the highest, the second is imitation, the easiest, the third is experience, which is the most bitter.

In this study, I invite the reader to reflect, knowing that already in history the ancestral generations have repeatedly experienced totalitarian, dictatorial societies, confirming the third way identified by the great philosopher, experience, which is the most bitter. Rightly follows the question of what is the connection between artificial intelligence, modern technologies and the totalitarian, dictatorial society.

What could be dangerous for the fundamental human rights and freedoms, (Magna Charta Libertatum – June 15, 1215, liberties/customary customs, Bill of Rights, 1689 – freedom of expression, no punishment/excessive/inhumane treatment, Bill of Rights, 1781 – development liberties, Declaration of the Rights of Man and Citizen, 1789 – individual rights / collective; women's rights; equal rights), and these acquired over time, with generations of sacrifice. Unfortunately, we recently experienced the pandemic that literally shut down the entire planet, limiting fundamental human rights and freedoms for medical reasons (Roxana-Daniela Paun, 2021)

History will record the evidence that is now beginning to emerge, like oil on water, restoring the truth. Manipulation and disinformation techniques used by the leaders of the world according to the manual (Disinformation Treaty - From the Trojan Horse to the Internet Vladimir Volkoff, 2009) cannot keep all the nations of the world away from the truth, sooner or later, those who really want to know the truth, will do it!

The current generation is at a crossroads, as were our predecessors during the previous industrial revolutions: 1700 - the invention of the steam engine which led to the emergence and development of factories and the textile industry; 1800- when manufacturing production was replaced by mass production, along with the development of steel production and electricity; 1900 - the invention of the computer and the Internet, 2000, the beginnings of research in the field of artificial intelligence, 2010 the launch by the Rockefeller foundation of the document "Scenarios for the future of technology and international development", 2020 the emergence of Artificial Intelligence (AI).

Using the Internet, the source of digital information, where you can find real information but also a lot of manipulation, from the apocalyptic scenarios of the disappearance of the planet, of alien invasion, which by the way, now their

existence is recognized in the galactic space in which Earth is a planet like any other; we can easily realize that the manipulation through fear and the denial of some truths that are later confirmed, represents the way to sleep the consciousness of the planet's populations! (Roxana-Daniela Paun, 2022)

### **1. Artificial intelligence and manipulation of the masses through permanent monitoring through facial scanning**

Starting from sci-fi books and movies, we find that technology has evolved almost identically to what was written and played in the movies: Jules Verne's submarine already seems like history, the flight to other planets is a reality, the use of the laser from Star Wars is now a reality in delicate and difficult medical procedures, teleportation and time travel will be confirmed for the public as soon as possible, being already scientific evidence of the phenomena that take place in the Bermuda triangle, the Philadelphia phenomenon, etc.

The publication by the New York Times of a book by the Chinese president of Google and Microsoft's research division, named after Kai Fu Lee, book entitled: "The Superpowers of Artificial Intelligence, China, Silicon Valley and the New World Order". ("AI super power, China, Silicon Valley and the New World Power"), speaks for itself about preparing nations for the future. Do you remember the very appropriate period, of the medical dictatorship, when FB and Twitter accounts were closed, blogs with uncomfortable guests, whose opinions could not be censored in a live broadcast, online newspaper pages, information from the virtual environment regarding the pandemic, regarding the doctors who were dismissed from their positions if they had a different opinion than the orders given by the center, televisions were closed that tried to enlighten the population that had no other source of information, at that time, than the Internet!

"And in a society where everyone is digitally connected, the state can instantly turn someone into an outcast when algorithms make them radioactive, even to their own family members." (<https://reactionarii.home.blog/2020/09/26/sistemul-de-credit-social-care-se-apropie/> 2020)

In China, artificial intelligence uses facial recognition to monitor citizens for the social credit system - is an article published on September 26, 2020! The article details excerpts from the book Live Not By Lies ("Don't live by lies") and warns the reader of author Rod Dreher's belief that: the "velvet totalitarianism" that is coming our way will be based on a social credit system similar to that used by

Chinese to control the masses and compel them to conform without having to resort to "hard" methods.

It is interesting that, although the facts presented in the article, as quoted in the book, are real, being also taken over by the American journalist John Lanchester („China is about to become something new: a totalitarian state empowered by artificial intelligence," "The project aims not only to create a new kind of state, but also a new kind of human being who has fully internalized the demands of the state and the completeness of its supervision and control. Internalization with reason is actually the goal: state agencies won't even need to step in to correct the citizen's behavior because the citizen himself has already done it."), nevertheless, there are reactions at the end of the article that tend to discredit and ridicule these events that take place spend in China, a doctor's point of view. (Aaron Kheriaty, MD, 2020 "Dispatch from the Front: In our psychiatric clinic I now see people of all political stripes who honestly believe the Apocalypse is coming. Literally. And I don't mean psychotic or manic individuals. Otherwise completely healthy people are terrified")

All those who throughout history managed to make revelations that, with all the opposition of those in power, crossed history and remained to be revealed to posterity, and proved to be real, in the times in which they lived, they were considered crazy, discredited, removed from their professions and even hospitalized in mental institutions, etc.

Do you think that by chance the archives of the American security services are secret for 50 years? It is the age of the contemporary generation with the events that should or should not be revealed as truth. For the rest, libraries can burn, we have enough examples in history, and now, when information is stored in servers, in the digital age we have entered and which is only at the beginning, it is all the easier . With a simple click on the computer key, or with a virus, the information disappears, the digital identity of the person disappears, and without it the person no longer exists.

## **2.Social credit, the road to the digital era and the disappearance of money in physical format.**

For a totalitarian state like China, it is not a shocking thing, but for the rest of the planet, can anyone guarantee, at this time, that this system cannot be generalized?

A concrete argument, we can also find it in the indicated article, states that: "we have evidence that the American industry is preparing for the implementation of a

social credit system here in the USA. A reader who is an engineer sends me a briefing on this, and says that the central takeaway would be that the American high-tech industry is ready and willing to do it here.” (<https://reactionarii.home.blog/2020/09/26/sistemul-de-credit-social-care-se-apropie/>)  
 2020-Social Credit Market by Physical and Cyber Infrastructure (Sensors, Video Cameras, Biometrics, Computer Vision), Software (Machine Learning, Data Analytics, APIs), Use Cases, Applications, Vertical Integration and Regions 2020-2025)

The company that sells this report is indicated in the article, and a selection of this report can be found in the appendix to this study. If you study carefully, including the content of the annex regarding the book "Social Credit Systems are becoming Adjunct Health Protection Solutions", does anyone doubt that the pandemic was part of the plan to forcefully introduce this plan to introduce social credit at the planetary level through the use of databases using AI, which will control EVERYTHING that moves on the planet?

Is it, in this context, justified to alarm world public opinion?

It is also interesting, how long will the material exist on the net? Why hasn't it been deleted or banned yet, as happened in many other situations during the pandemic, with information that was not approved, especially when it was proven scientific that things were not as the authorities presented them?

Beyond all these aspects, the fundamental problem remains, when the population will wake up that has the necessary training to enlighten others as well, the many, who currently allow themselves to be drawn into the mirage of convenience and comfort in which you expect someone else to work and you to receive social assistance, because that's all the state is for...?!?

Why did no one make a connection between the pandemic and the plantar lockdown as the first step towards giving up the current money and creating the digital currency, which is already a reality and the stages are advanced?

However, what is the connection between giving up cash and money in physical form in favor of a digital tool that is much easier to use, but also to monitor, a progressive element... but... does anyone still realize that "the road to hell is paved with good intentions???"

Why China? A totalitarian state, where fundamental human rights and freedoms DO NOT EXIST!, from where it is difficult to find real information about what is happening, and precisely because, it seems hallucinatory,...no one takes seriously that a system is being experimented there of life, of slavery, which can then be generalized.

Respect for fundamental rights and freedoms is a wish in totalitarian states and still a reality in EU member states. Artificial intelligence is a reality and it evolves every day, it simplifies life where it is used in the interest of man, being already applied in many fields. (Roxana-Daniela Păun, 2022)

It is undeniable the evolution of society and many fields of research that use modern technologies and AI in the discovery of new treatments for the cure of so far incurable diseases, this to consider only the medical field. However, who guarantees that the generalization of AI in the monitoring of every individual on the planet does not reduce to the point of cancellation fundamental human rights and freedoms recognized and applied by so many generations? It is a rhetorical question, to which we still do not have an answer, except only from the post-pandemic reality where, through the successive lock-downs, ALL fundamental human rights and freedoms have been violated, but the future and the way in which they react or not each individual will generate the fulfillment or not of the prophecies and/or forecasts of specialists for or against AI.

One thing is certain, that the entire society at the global level is obliged to adapt first to the experiments, which are then generalized and become, through their imposition by law, mandatory, depending on how those who are imposed react or not new rules that forcefully change their lives. Which of these forecasts, prophecies, forecasts, or whatever they are called according to their authors, will be confirmed as such or will be modified in the future, no one can know, however, in the post-pandemic period, many of the "conspiracy theories" from that period they proved true.

There remains another question that awaits an answer: to what extent should we accept AI in our lives? The exclusive use of technology brings you to the stage of dependence, which also affects the ability of the brain to think without the support of technology. The human's natural ability to adapt is affected. A simple experiment can be an exercise in adapting and orienting a person without a mobile phone, without location applications (waze, google - share location, etc.) for example in a crowded city, behind the wheel of a car. The explanation: the brain is waiting for the application to give it the route to follow and then distributive attention is no longer used, panic sets in, especially if you also have horns that stress you, or around you there are streets with prohibited access. The whole brain is blocked and it is demonstrated by the specialists of other disciplines that in a state of fear, of maximum stress, the person remains paralyzed by fear, without reacting, or with prohibited reaction times.



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At that moment, after years in a row someone else decided in your place, offering you comfort (according to the dictionary definition, comfort: The totality of material conditions that ensure a civilized, pleasant, comfortable and hygienic existence.), i.e. "civilized, pleasant existence, and above all the lack of care", you become indifferent if you still have the rights and freedoms you once had, with which you were born, but which belong to you only because you were born in this century!

### **3.The role of the pandemic in the implementation of population control through AI**

After the end of the pandemic, information from a Rockefeller Foundation report, published by the president of Ghana (former lawyer specialized in human rights), began to appear in an interview that went around the world in the online environment and where it is read from the depopulation agenda of the planet financed by Bill Gates, Fauci and the respective foundation.

Summarizing, the vulnerability of the immune system, through the lack of contact between people, with bacteria and viruses that activate the immune system of each person to fight as it has done since the beginning of man's existence on earth, has generated an increase in the risk of illness, through the lack of movement in the air free.

The effects of the world lock-down by keeping in quarantine for as long as possible led to the destruction of the economies of those countries/regions. The destruction of economies in turn generated social disturbances, unemployment, the drastic reduction of jobs with the disappearance of economic activities, service provision, the breaking of the food chain caused the beginning of a lack of food, which continues with the creation of the food crisis at the level globally, to accept new food resources made in laboratories, etc.

Non-compliance with the rules of the lock-down was manipulated to blame the populations that went to get their hair cut and walked outdoors (we also remember the closure of parks and outdoor recreation places) for the manifestation of freedoms that had consequences unlucky. The new and tougher quarantine, experienced and applied differently in Europe, the USA, Australia, Canada, but also in other countries of the world, is the optimal solution for maintaining the state of fear, which will paralyze the attitudes of people who have complied, to some extent measure, willingly renouncing their rights and liberties, being lied to that they are doing it for the common good, knowing that the mass media did not report the uprisings of citizens in the various states during this entire period.

Despite the medical opinions of some immunologists, who began to react and explain that the medical measures and procedures adopted by governments at the recommendation of the WHO, which later became mandatory, are not effective, and are even dangerous in the medium and long term for people's health divided every country, region, continent and even the whole planet into pro and anti-vaccinists. However, social networks were invaded by images, photos, live or recorded films, with the uprisings of free citizens from democratic states who demanded their rights and freedoms back, information that could not be stopped, even if accounts were closed of FB, televisions, etc.

Extrapolating, gradually, the modern man of the contemporaneity accepted out of fear, with great ease, through manipulation, the harsh experiments during the pandemic, which were different, for example in the European states (Different lockdowns in the EU states, experiments in the theater half of the hall with a mask, half without, then testing all the spectators if they got infected or not?!?), turning the entire planet into an experimental laboratory. An example of an experiment: what protection do you have in a closed pool from panels??? As if the air only circulates near the panel.

However, the hilarious measures, scientifically unjustified, the plan revealed by the president of Ghana by reading the report (Rockefeller - Lockstep 2010) of the mentioned foundation which foresees the stages of the planned global pandemic, after the creation of a contagious virus but with a low mortality rate, detailed steps by phases, with the general diagram and predicted results, compulsory vaccination and certification plan for everyone, with vaccination verification/certification protocols (digital ID); they generated and fed fear in the entire population of the world, and this changed the behavior in the medium and long term at the individual level.

At the psychological level, everyone's behavior has changed, loneliness even generating mental illnesses, treated of course with drugs for the enrichment of Big Pharma. If vaccines are no longer sold, drugs for mental illnesses developed post-pandemic are sold.

In the same document cited in the interview of the president of Ghana (Nana Akufo Addo, President of Ghana, former lawyer specializing in human rights Nana Akufo-Addo was inaugurated as the President of Ghana in 2017), the new economy model Microsoft Patent 060606 is explicitly mentioned, the cryptocurrency system that uses data of bodily activity, based on human behavior and the disposition to obey. Version of the technology seen in the episode "15

million merits" from the TV series "Black Mirror" (See min. 12.30 of the interview of the president of Ghana regarding the plan to depopulate the planet recorded in a report of the Rockefeller foundation from 2010), in which water, food, shelter and other essential elements are used as a weapon to force the implementation of the New Economic System based on earned credit points to -ensures you the necessities of life, to survive, if you comply with the system and do not oppose it, that is exactly the system applied in China, the subject of our analysis. In a dictatorship like the one in China, whoever does not obey is sanctioned, loses credit points and can no longer secure the things necessary for survival. Goodbye rights and freedoms! And this foreseen since 2010, at the time when the whole planet was quietly dealing with development, progress, not realizing what it was going to "experience", according to the report, which until now is proven by what was revealed by the president of Ghana, and not only that they realize gradually, step by step, according to the scenario considered until recently a conspiracy, in order to be discredited and not attract the attention of humanity, except at a moment when things are so advanced, that nothing can frustrate their diabolical plan!

An example where AI is already being used is the car of the future, the autonomous car, without a driver. Advantage, you will have time to do something else on the way to work, long-term effect, assured urban transport, the disappearance of personal cars, currently used argument, the reduction of carbon emissions. And again, sci-fi films from the 1990s-2000s produced by Hollywood are becoming reality. The movie "Equilibrium" is another example of our future that is getting closer! (I recommend watching it for those who haven't seen it yet!)

Another material made by HBO on 12 Dec 2018 about China's "Social Credit System" Has Caused More Than Just Public Shaming is edifying to understand how AI is introduced in the life of the common man. ([https://www.youtube.com/watch?v=Dkw15LkZ\\_Kw-](https://www.youtube.com/watch?v=Dkw15LkZ_Kw-) China's "Social Credit System" Has Caused More Than Just Public Shaming (HBO) 12 dec. 2018 DONG HUO TANG ZHAI, RONGCHENG)

*„China is testing a new plan to urge its citizens to do more good and be more trustworthy - the Social Credit System. It's kind of like the American credit score, except it tracks far more than financial transactions. It tracks good — and bad — deeds. Part of the system is a neighbor watch program that's being piloted across the country where designated watchers are paid to record people's behaviors that factor into their social credit score. A high score could bring you lower interest loans and discounted rent and utility bills, but if your score is low, you can be*

*subjected to public shaming or even banned from certain kinds of travel, life gets hard. China's economy has exploded over the past decades, economic reforms required banks to be able to evaluate individuals looking to borrow money to buy houses or start new businesses. Fraud and excess borrowing were rampant because most people didn't really have much of a credit history. To measure its citizens' trustworthiness, in 2014, The State Council laid out a plan that aims to build a centralized database to evaluate individuals and organizations based on their financial and social behaviors. The program is scheduled to be nationwide by 2020, which means every Chinese citizen will be tracked, scored, and receive perks and restrictions accordingly." (presenting the film China's "Social Credit System" Has Caused More Than Just Public Shaming (HBO) 12 dec. 2018)*

### **Conclusions**

**Is there any risk that the totalitarian society will re-establish itself, this time on a global level?** At the World Economic Forum in Davos, 2020, the historian, philosopher, author Yural Noah Harari, speaks from the podium of the forum about the dangers of AI: "rise of the data colonialism and digital dictatorship."

Listen to everyone, but think with your mind, because you will walk with your feet. In a virtual environment where there are many fake news, but where there are also credible sources, but which are eliminated from the virtual space because they do not fit into the ideological line of the moment, "He who learns, but does not think, is lost, but also that who thinks, but does not learn, is in great danger. (one of the 10 laws of Conficius)

Corroborating what Nicola Iorga said: "As those who do not learn from the mistakes of history, they are condemned to repeat them", we note that just as the Spanish flu pandemic of 1918-1919 wreaked havoc in the USA, then it expanded and in France, Belgium and Germany, after 100 years, the Covid pandemic is repeating history.

In the sphere of economic crises, after the crisis of 1929-1933, after 85 years, the liquidity crisis of 2018, again repeated the template of the crisis of 1933, another proof that human history repeats itself, and people from different generations and paradoxically from highly evolved and developed societies, repeats the mistakes of previous crises, proving that it is for nothing that they have specialists from all fields, including historians, who are not heard by those who have to manage the fate of the peoples of the world in different eras!

Digital life in the digital age that is still at the beginning, that is, our entire life, including commercial transactions, is monitored automatically, in the databases in the servers that use AI, and the credit-based society begins to take shape when money in the form physics disappear, and this moment is very close. The financial world is already used to cryptocurrencies and their fluctuations on the monetary markets, and the return to the gold standard, at the beginning of monetarism, seems like a chimera, and by no means a saving solution that could get the world out of the crisis.

Which crisis? Here appears the ever-increasing sphere of crises with which we are threatened as if to confirm the "so-called conspiracy theories", which part of them are already confirmed by everyday realities! Health crisis, liquidity crisis, economic crisis, energy crisis, renewable resources crisis, ecological crisis, water crisis, etc....

**Concluding** on the Chinese social credit system, Chinese with high social credit scores earn privileges. Those with a more modest score find that everything is more difficult for them in everyday life. They are not allowed to buy high-speed train tickets or plane tickets. The doors of certain restaurants are closed to them. Their children risk not being allowed to pursue higher education. He may lose his job and find another one with great difficulty. And a social credit violator will find himself isolated, because the algorithmic system also relegates those connected to him.

Could this be the model that wants to be generalized at the planetary level? It remains to be seen, and the future will confirm or deny what is currently already a reality in Chinese society.

However, Europe should learn from what is constructive and generates positive results in the short and long term in society, for example in the way adults treat the baccalaureate in Asian countries.

South Korea, Japan and China, the centers of intelligence, respect the exam period in a way that demonstrates care and concern for the training of the young generation, ensuring equal conditions for all young people who appear for their maturity exam!

Thus, all activities that produce noise are stopped completely on exam days, so as not to disturb the students' concentration; in South Korea taxi drivers transport students to high schools without payment; there are companies that give all employees time off to ease traffic on the days when the national baccalaureate is scheduled.

The baccalaureate in China, the financial center of the world, where in June there are three exams per day of two and a half hours each, is treated with great seriousness by the authorities, who have regulated pecuniary sanctions for those who make noise (constructions, urban transport, etc.) during the national exams. Education in the mentioned countries is placed in the first place, even if it is unanimously recognized that it puts a lot of pressure on young people who later develop mental disorders generated by stress and the belief that this exam is decisive for their future and that of their family. (This pressure has a legal explanation, because in these countries, the labor legislation does not provide for the European pension. Thus, parents who have reached the age at which they can no longer work, remain in the responsibility of the children, receiving only a compensation at the last salary, considered as a fund of retirement. Hence the tradition of the three generations raising the same roof, Grandparents raise grandchildren and extend their lives by remaining active, parents work and support children at schools and universities, and children learn. When they create their own family, it is also the exchange of generations, according to the same model.)

There are cases in South Korea where young people who were not at the top of the ranking in the regular exams, including the baccalaureate and admissions to top universities, committed suicide as a result of social, parental, family pressures, etc.

**The use of AI in neurotechnology, for the development of the implant that will connect the human brain, therefore the man of the future, to the computer, directly by thinking**

Confirming as if once again the speed with which AI is progressing, on December 1, 2022, Elon Musk, the head of Tesla, SpaceX and other start-ups, during a presentation of the progress of Neuralink, the company that belongs to him, confidently declared that "in six months, his neurotechnology start-up Neuralink will be able to implant its first connected device in a human brain, to communicate with computers directly through thought", informs AFP, quoted by hotnews.ro (<https://economie.hotnews.ro/stiri-it-25936291-elon-musk-spune-conectarea-creierul-uman-computer-prin-dizpozitivul-neuralink-sase-luni.htm> - 1 dec 2022)

Confident in his own investments in people and technology, Musk confirms that he "submitted all the documents to the FDA" (the agency responsible for public health in the United States), in order to receive approval from the competent American structures, and estimates that "within six months he will could have the first implant in a human". This statement comes after as early as 2018, Musk declared, in a public presentation at Neuralink, that he aims to obtain the approvals

by the end of 2020. Then, he declared, at a another conference, that they hope to begin human testing by the end of 2021, after receiving FDA approval.(20/08/2022) (<https://www.digi24.ro/stiri/externe/elon-musk-incearca-sa-obtina-un-acord-cu-dezvoltatorul-de-cipuri-cerebrale-synchron-dupa-ce-neuralink-compania-sa-a-ramas-in-urma-2054215->)

So things are not working as Elon Musk wants, the proof is in the investigation launched after 1500 monkeys, pigs and sheep died in the experiments to implant wireless chips in the brain. The news published on Dec 6, 2022 by New York Post and picked up in Europe (<https://www.activenews.ro/stiri/Cipurile-implantate-in-creier-de-Elon-Musk-s-ar-putea-sa-mai-astepte.-Compania-Neuralink-este-anchetata-dupa-ce-1500-de-maimute-porci-si-oi-au-murit-in-experimentele-de-implantat-cipuri-wireless-in-creier-177999-6-dec-2022>), confirms that the realm of human connection through AI, practically robotizing the human being, a divine creation, is far from being realized, as the supporters and executors of the New World Order want , which they no longer shy away from talking about, as happened a few years ago, when this topic was also considered to be the fruit of some people's conspiracy theories! The hijacking of the initial humanitarian intentions, to save people with serious illnesses and disabilities, is and remains a mechanism that has also been carried out on the occasion of other military experiments, which were then used on civilians as well.

*"Elon Musk's Neuralink, a medical device company, is under federal investigation for potential animal welfare violations amid internal employee complaints that its animal tests are being rushed, causing unnecessary suffering and death, according to filings reviewed by Reuters and sources familiar with the investigation and the company's operations, the NewYorkPost reports."*

In May 2022, Synchron, Elon Musk's Neuralink rival, begins testing the implant on the human brain.(<https://evz.ro/synchron-rivalul-neuralink-al-lui-elon-musk-incepe-testarea-implantului-pe-creier-uman.html> 15 mai 2022)

"Human trials on six severely paralyzed patients in the United States enrolled in the company's new clinical trial in New York and Pittsburgh to enable them to control digital devices hands-free using only their thoughts have begun," as the firm is the only company that received US Food and Drug Administration (FDA) approval to conduct "clinical studies of a permanently implanted BCI. The company's innovative BCI technology uses blood vessels as natural highways to the brain. The paperclip-sized device called the Stentrode is implanted into the brain's motor cortex via the jugular vein in a minimally invasive procedure, (...) to

translate brain activity into a standardized digital language, allowing patients to perform everyday tasks daily, such as texting, emailing, online shopping and accessing telehealth services without using their hands."

*"The company's new clinical trial, Command, is being conducted under the FDA's first Investigational Device Exemption (IDE). An IDE authorizes the use of a device in a clinical trial to collect data about its safety and effectiveness. "The Command study advances the development of Synchron's technology through the feasibility stage as we prepare for our pivotal trial," said Tom Oxley, CEO and founder of Synchron. Instead of piercing the skull, the Stentrod is fed through the patient's vein until it reaches the brain. "*(<https://evz.ro/synchron-rivalul-neuralink-al-lui-elon-musk-incepe-testarea-implantului-pe-creier-uman.html>- 15 mai 2022)

We see quite tough competition in this field, especially after Bill Gates, the founder of Microsoft, and Jeff Bezos, the founder of Amazon, invested in the start-up called Synchron. This is also confirmed by reality, Synchron being one step ahead of Neuralink, (<https://evz.ro/jeff-bezos-si-bill-gates-fondeaza-o-companie-care-concureaza-cu-neuralink.html>- 10 ian 2023)

At the very end of the article, the result of the Pew Research Center survey, published in March 2022, showed that only 13% of Americans believed that technologies like Neuralink would be a good idea for society. About 78 percent of the 10,260 adults surveyed said they would not want a brain implant. In conclusion, Americans are hesitant about such technologies."

The authors of the article state that "our awareness of the potential abuse of any technology is the power to create a society that ensures that our natural rights are protected, according to the Conservative Daily News. "

The conclusion of what the digital world offers us can also be represented by the fact that using a computer, with an intelligent programmer, a specially created software, based on AI, can also result in the image of an impressive house in Bucharest, made by a photographer in the Art Nouveau style, and became viral on social networks, but.... which does not exist in reality! This brings up the dangers of replacing reality with artificial intelligence.

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**Annex** - extract from art. "The Coming Social Credit System", analysis 26 Sep 2020- Rod Dreher- source: <https://reactionarii.home.blog/2020/09/26/sistemul-de-credit-social-care-se-apropie/>

Includes evidence that American industry is preparing to implement a social credit system here in the US, according to the author's opinion.

Social Credit Market by Physical and Cyber Infrastructure (Sensors, Video Cameras, Biometrics, Computer Vision), Software (Machine Learning, Data Analytics, APIs), Use Cases, Applications, Vertical Integration and by Regions 2020 -2025) July 2020.<sup>1</sup>

*"The honest jargon of bureaucrats masks a sinister reality:*

*Initially a trend largely perpendicular to public safety and internal security concerns, the market for social credit system infrastructure will eventually become an established component with a leading role in both public and business policies. This means that the systems will eventually be used for a variety of issues related to commerce and lifestyles, from risk assessment (access to credit, financing fees, insurance, etc.) to accessibility within public spaces, such as at concerts, sporting events and other places where the public gathers. Individuals with a high social score in the social credit market will benefit from preferential access to both real and digital assets.*

*The social credit system infrastructure includes analog and digital means of surveillance, Internet-connected devices such as smartphones and personally worn accessories, sensor-enabled physical objects in security systems, and surveillance*

<sup>1</sup> <https://www.researchandmarkets.com/reports/5134311/socialcredit-market-by-physical-and-cyber>

*devices that use biometrics and computer vision. Technologies include wireless broadband (WiFi, LTE, 5G), IoT, artificial intelligence (AI) algorithms, and big data analytics platforms, including related processes and procedures. Even though each of these systems has market value individually and can be used separately for various purposes, it is the convergence of these otherwise disparate technologies that will facilitate value within the social credit market. For example, combined AI and IoT systems will be used to identify important events that require immediate intervention, as opposed to those that will simply be archived.*

*An important thing to note here is the tremendous potential for overlap between the technologies used for social credit systems and other solutions such as public safety, homeland security, and many types of smart city management applications, including smart transportation (roads and streets, parking lots, autonomous vehicles, etc.), smart buildings, environmental monitoring (light, temperature, pressure, etc.). Many of these infrastructure elements are already included in smart city implementation projects, so they will be multifunctionalized to support the social credit market as well."*

The link of the company that sells:

<https://www.researchandmarkets.com/reports/5134311/socialcredit-market-by-physical-and-cyber>

***Presentation of the book: Social Credit Systems are becoming Adjunct Health Protection Solutions***

This is the only report of its type to assess market opportunities for infrastructure support of the social credit market. The report evaluates market drivers, use cases, and consequential impacts/implications (anticipated and likely unanticipated) for social credit market implementation and operation.

The report also evaluates some of the leading companies that are anticipated to drive social credit market evolution. This report includes detailed quantitative analysis driven by market needs with forecasting for all major infrastructure elements from 2021 to 2026.

**Select Report Findings:**

- The COVID-19 pandemic has facilitated substantial interest in citizen monitoring solutions
- Infrastructure to support social credit systems represents a \$16.1B global opportunity by 2026
- Cameras and other optical equipment for social credit systems will reach \$723M globally by 2026

- Advanced computing will be used in conjunction with AI to provide nearly flawless identification and tracking
- Various forms of biometrics will be used for identity verification as well as verifying the presence/location of people
- Starting as tangential to public safety and homeland security, the social credit market becomes mainstream by 2026
- Social credit systems represent the ability to identify (mostly people but also some “things”) and track activities for purposes of grading behaviors and applying “social credit” scoring. A given grading/scoring methodology depends largely on social credit system objectives and metrics.

However, most systems will have socially acceptable behaviour at their core. This presents both a challenge and an opportunity as a combination of government, companies, and society as a whole must determine “good”, “bad”, and “marginal” behavior within the social credit market.

Beginning as a trend largely orthogonal to public safety and homeland security concerns, the market for social credit system infrastructure will ultimately become a mainstream component of both business and public policy.

This means that systems will ultimately be used for a variety of commerce and lifestyle-related issues ranging from risk assessment (access to credit, financing fees, insurance, etc.) to accessibility within public places such as concerts, sporting events, and other assemblies. High social scoring individuals within the social credit market will be granted preferred access to both real and digital assets.

Social credit system infrastructure includes analogue and digital surveillance, Internet-enabled devices like smartphones, wearable devices, security systems, sensor-enabled physical objects, and surveillance devices that use biometrics and computer vision. Technologies include broadband wireless (WiFi, LTE, and 5G), IoT, AI algorithms, and big data analytics platforms, processes, and procedures.

While each of these systems has market value individually, and are deployed separately for various purposes, it is the convergence of these otherwise disparate technologies that will facilitate value within the social credit market. For example, combined AI and IoT systems will be leveraged to identify important events that require immediate action versus those that are merely archived.

It is important to note that there is great overlap between the technologies used for social credit systems and other solutions such as public safety, homeland security, and smart cities applications of many types including smart transportation (highways and surface streets, parking, autonomous vehicles, etc.), intelligent

buildings, environmental monitoring (light, temperature, pressure, etc.). Many of these infrastructure elements are already planned for smart city implementations and will, therefore, be multi-purposed including support of the social credit market.

In terms of physical infrastructure, social credit systems will rely upon various forms of equipment and platforms including sensors, biometrics, cameras, and other optical devices, computer vision systems, and other advanced computing platforms.

Cyberinfrastructure includes platforms, devices, and software to support data processing and correlation with identity information, which shall leverage AI, IoT, and advanced data analytics. The main purpose for all the aforementioned infrastructure elements is to capture data, which must be stored and acted upon as appropriate.

At the heart of social credit, systems are large-scale data repositories that may store virtually any type of data that may be correlated to or associated with citizens and businesses in terms of both identity and behaviors.

This includes raw observational data as well as listings (white, grey, red, and black) and meta-data to tie together data elements and allow for ease of information queries. Without the use of AI and big data technology, it would be problematic to implement social credit market systems in a meaningful way as massive amounts of disparate data must be correlated.

With the purchase of this report at the **Multi-user License or greater level**, you will have access to **one hour** with an **expert analyst** who will help you link key findings in the report to the business issues you're addressing. This will need to be used within three months of purchase.

## DIGITALISATION OF WORK PROCESSES IN THE NIGERIAN UNIVERSITY SYSTEM UNDER THE NEW NORMAL

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**How to cite:** Otto, D.D. & Ukpere W.I. (2023). "Digitalisation of Work Processes in the Nigerian University System under the New Normal". *Annals of Spiru Haret University. Economic Series*, 23(2), 56-74, doi: <https://doi.org/10.26458/2322>

### Abstract:

The global spread of the coronavirus (COVID-19) has left a world with changing work situations in its trail. What started as some innovative electronic processes (e-processes) to enhance workflow and ensure effective service delivery in the Nigerian University System (NUS) gained momentum during the COVID-19 period and has opened new and bright opportunities for e-processes in the aftermath of COVID-19. However, in spite of the numerous advantages of a progressive digitalisation of work processes in the NUS, the perceived challenge has been that of mixed reactions from the workforce. While a few of the workforce appear to be equipped and favourably disposed to the new normal, a larger proportion seem unprepared and somewhat apathetic to the present demands for a 21st Century efficient and effective service delivery methods in the NUS. The objective of the paper is to appraise the introduction, benefits and challenges of e-processes in the NUS especially

*in post COVID-19 era. It relied on primary (participant observation) and secondary (documents) sources of data and was guided by the Innovation Diffusion Theory. The paper explored critical issues of e-processes and result-oriented management under the new normal in the NUS and made appropriate recommendations for both management and staff. In view of its flexibility and benefits, the paper concludes that, so far, digitalisation of work processes in the NUS has expanded the speed and efficiency of processing documents, thereby, enhancing the welfare of stakeholders.*

**Keywords:** *Digitalisation, electronic processes, remote work, virtual meetings, work processes, new normal*

**JEL Classification:** *O3; I2*

## **1. Introduction**

The issue of digitalisation of work processes with regard to the Nigerian University System (NUS) under the New Normal is in the context of a post coronavirus (COVID-19) era, as this has brought about a new mode of work. Globally, the emergence of COVID-19 in 2019 onward led to severe restrictions on person to person interactions and in some cases, person to animal contacts which necessitated countries to implement several shut downs, lock downs and social distancing policies in order to curb the rapid spread of the deadly virus. While the international community grappled for solutions to contain the menace, technology was employed to interface between humans which facilitated virtual real time interactions as a way forward. Even though there is now a vaccine for the virus, the introduction and expanded use of technology to enhance work processes by way of virtual interactions has led to changing work situations worldwide in post COVID-19.

In Nigeria, before COVID-19, what started as some innovative electronic processes (e-processes) in order to enhance workflow and ensure speedy service delivery in the NUS, gained momentum during the COVID-19 period and has thrown open new and bright vista of opportunities to further digitalise work processes for efficient and effective work output and outcome in the aftermath of COVID-19. However, inspite of the numerous advantages of a progressive digitalisation of work processes in the NUS, the perceived challenge has been that of mixed reactions from the workforce. It was anticipated that as institutions of higher learning and research, Nigerian universities will embrace the new mode of

work or changing work situations overwhelmingly but the practical reality on ground suggests otherwise. In the meantime, while a few of the workforce appear to be equipped and favourably disposed to the new normal, a larger proportion seem unprepared and somewhat apathetic to the present realities and demands for a 21<sup>st</sup> Century efficient and effective service delivery methods in the NUS. It is in light of this that this paper seeks to explore the digitalisation of work processes in the NUS under the new normal.

## **2. Objective**

The objective of this paper is to appraise the introduction and benefits of electronic processes (e-processes) in the NUS and the challenges emerging from digitalisation of work processes in post COVID-19 era, with a view to charting the way forward under the new normal.

## **3. Methodology**

The paper is essentially qualitative in its outlook with historical and descriptive analysis. It relied on both primary and secondary sources of data. Participant observation is the primary source of data. Simply, observation is the act of watching something happen. Observation is one of the major characteristics of the scientific method. Through observation, the historical trends and dynamics, that is, the ‘why’ and ‘how’ of things happening can be gained firsthand; it can lead to accurate descriptions and explanations of such happenings; it can be used to complement related studies; and it can be used to explore new and emerging phenomena (Obasi, 1999). Consequently, the author’s direct involvement as a staff in the administrative cadre during the introduction and expansion of e-processes in a Nigerian public university both as an administrative officer and as a principal officer, spanning over three decades, immensely contributed to the insight, descriptions and analysis of this work. The scope of this participant observation by the author covered pre-COVID-19 period; work during COVID-19 era; and post COVID-19 work processes and challenges.

On the other hand, secondary sources of data for the paper include documents and internet resources. Documents here comprise all literature such as journal and newspaper articles, books, official reports and bulletins as well as other written materials which were produced for some other purposes than for the benefit of the author. Accordingly, the data gathered from both primary and secondary sources were synchronised and analysed systematically in line with the objective of this paper.

#### **4. Clarification of concepts**

Brief operational definitions of some concepts employed in this work may be helpful at this point, although, they are explained in some detail in related sections of the paper. Key concepts to be clarified here include Digitalisation/Electronic Processes (E-Processes), Work Processes, the Nigerian University System, and the New Normal. Other related technical concepts used are defined or clarified where they are mentioned in the paper.

##### ***4.1 Digitalisation/electronic processes (E-Processes)***

In this context, digitalisation or electronic processes (e-processes) refers to the introduction and continuous, increasing use of technological means and devices to aid and speed up work and service delivery where before, manual instruments and channels have been employed as the basic practice or mode of work. Here, the continuous and progressive use of technological means and devices do not replace human intelligence but only serve as new innovative methods to aid workforce to perform better, efficiently and effectively. The expected end results are standardised, transparent and objective work practices; increased output and outcome; better and speedy service delivery; less organisational stress; and value-added workforce.

##### ***4.2 Work processes***

Simply, this refers to the institutional and hierarchical arrangement of personnel, work schedules and performance appraisal methods in an organisation. The essence of work processes entail who coordinates the workforce, how duties are performed and who is responsible for what and when? These processes can be undertaken through physical tools and activities otherwise known as analogue processes or through substantial reliance on technological gadgets and means commonly called digital or electronic processes.

##### ***4.3 The Nigerian University System (NUS)***

The Nigerian University System is made up of all federal government universities, state government owned universities, privately-owned universities and the management systems that keep them functioning including staff and students, inter-university centres, all degree awarding institutions and the statutory regulatory agency which is the National Universities Commission (NUC) (Mafiana, 2019).

##### ***4.4 The New Normal***

The New Normal in the Nigerian University System (NUS) refers to the substantial reliance on technological gadgets and means in the work processes

which predominated the mode of work during the COVID-19 period and which seems to have persisted because of its health risks reduction and speedy service delivery benefits.

### **5. Theoretical framework**

The theoretical framework employed in this paper is the Innovation Diffusion Theory by Rogers (2003). The Innovation Diffusion Theory postulates that new knowledge and innovation are not uniformly adopted by all stakeholders, there are the few that may quickly adapt to the new innovation, there are a large population who may join later and there are the laggards who will find it difficult to adapt to the new ethos. This is precisely what is playing out in the introduction of e-processes or digitalisation of work processes in the NUS under the new normal. So far, there is a large segment of the workforce that are yet to adapt to the new technology which has come to stay. It is this group that must be encouraged to update their tools to cope with the new normal.

Fundamentally, this theory helps us to understand the learning abilities and dispositions of different individuals when new approaches are introduced in an organisation and the challenges that this posits for the emerging trend. The theory highlights that every individual can learn, but, just not on the same day, or in the same way. With this insight, it will then become easier to proffer result-oriented, practical solutions to integrate and streamline the new methods into the system proactively.

Accordingly, this theory has guided the design of this paper in terms of articulating the challenges at hand, the objective, descriptions and analysis as well as recommendations made. In the final analysis therefore, the strength of the conclusion of this paper is derived from insights gained from this theory and actual observation and verification of the trend of things.

### **6. The Nigerian University System (NUS) in the New Normal**

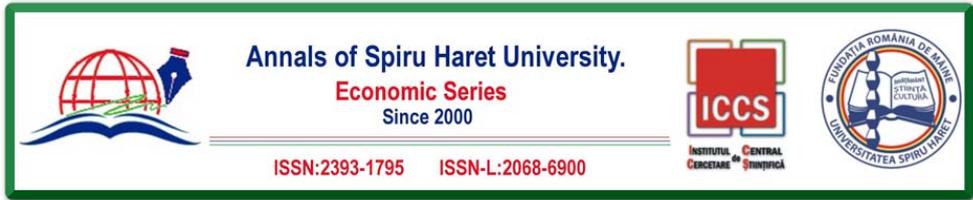
Education is defined in various ways. Fafunwa (1974) defined education as the aggregate of all the processes by which a child or young adult develops the abilities, attitudes and other forms of behaviour positive to the society in which he or she lives. Education may also be defined as the whole processes of continuous socialisation throughout life (Okoh, 2000; Enaowho, 2000; El Rufai, 2006). In line with these definitions, education is divided into non-formal, informal and formal or structured education, which is also referred to as school system or modern education.



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Modern education in Nigeria dates back to 1842 when missionaries arrived at Badagry and set up a school named Nursery of the Infant Church (Fafunwa, 1974; Otto, 2005). Due to the benefits of education, government intervened in 1873 by introducing grants to these private providers of education. Modern education is structured into primary, secondary and tertiary. The university system is a key segment of tertiary education. In Nigeria, the first university college is the University College, Ibadan, which was established in 1948. In 1960, University of Nigeria, Nsukka was established as the first full fledged university in Nigeria. By 1962, there were five universities largely owned by regional governments. These were: University of Nigeria, Nsukka (owned by Eastern Region); University of Ife, Ile-Ife (owned by Western Region); Ahmadu Bello University, Zaria (owned by Northern Region); while University of Lagos and University of Ibadan were owned by the Federal Government. In 1975, these universities were taken over by the Federal Military Government as it controlled university education exclusively. However, beginning from 1980, State Governments were allowed to establish universities and by year 2000, privately run universities became permissible. The NUS has grown phenomenally. University education now is on the concurrent list. As at January 2023, there were 221 universities in Nigeria, 111 were privately owned, 50 were owned by the Federal Government, and 60 belonged to State Governments (Rasheed, 2023). These institutions and the management systems that keep them functioning including staff and students, inter-university centres, all degree awarding institutions and the National Universities Commission (NUC) constitute the Nigerian University System (Mafiana, 2019).

The mode of service delivery in the NUS was mainly analogue or the traditional method of face-to-face interactions and meetings in offices or other designated points. This is in spite of paucity of funds especially for public universities where fund allocations have been dwindling in real terms. Consequently, inefficiencies, delays in service delivery, and drudgery among others characterised the system. With the introduction of global system for mobile communications (GSM) in 2001, universities began to explore their use for improved service delivery, gradually abandoning the analogue method. COVID-19 pandemic gave further impetus which ushered in a pervasive use of electronic processes in the management of the day-to-day administrative activities in the Nigerian University System, which has continued post COVID-19, generally impacting on speed of service delivery, cost and value of output.



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The point is, the aftermath of COVID-19 pandemic has thrown up a new mode of conducting operations, which is an alternate of the pre-existing operational ethos. So, whereas before COVID-19, meetings, conferences, classes, and examinations, respectively, must be conducted together in one place with everybody physically present, post COVID-19, technology can be relied upon to achieve the same objective with people far apart. The NUS is under a new ethos. This is imperative for the NUS which is an intellectual community widely recognised as an advanced community responsible for transmission of high quality knowledge, attitudes, and skills for the sustenance of the individual, the nation and the world at large (Gurin, 2014).

Clearly, what has come to be known as the New Normal therefore, is the reality of work ethos in and post COVID-19 era. The emergence and spread of the *China virus* with its high level of contagion created a need for people to limit person to person contact and to some extent human to animal contact in order not to be infected by the deadly virus across the world. The pandemic had no respect for age, status or geography. So, universities and different strata of education were inclusive. The isolation as was observed, was not momentary. The COVID-19 pandemic began in 2019 and pervasively continued its spread till mid 2021 when its vaccines became available to many parts of the world. Even at that, as at 12th December, 2022, the spread of the coronavirus was still on-going in many countries (<https://covid19.who.int> retrieved on 12/12/2022). While the COVID-19 pandemic discouraged person to person interaction, survival and human sustenance cannot go on efficiently without human interaction. It is in resolving this challenge that technology has been brought in to forge human interaction with minimal or no person to person contact. Thus, even with no person to person contact production of goods and services continue to flow with no fear of any adverse effect of the contagious disease. Depending on the sector and nature of work, services can be provided from very remote places to people in far away environments with minimal or no physical contact at all. Exchange of ideas, opinions and perspectives can go on.

In the university system, the New Normal has come to mean continued or expanded use of online and technology to provide services that enhance administration, teaching and learning including staff and students' matters, such as meetings, examinations, conferences, promotion assessment, and many others. This is a new phenomenon that was extensively encouraged in the university system as a response to the COVID-19 pandemic and has now come to be seen as normal. This, therefore, is the New Normal.

### **7. Remote work as an emerging work ethos in the Nigerian University System**

Remote work may be defined as the practice of employees carrying out their official jobs, duties and assignments from locations other than the centrally operated office of the employer for such activities. These locations could include employee's home, a coworking or other shared spaces, a private office or any other place outside of the traditional corporate office building or campus (<https://www.vmware.com>>content retrieved on 20/10/2022). Remote work could also mean flexible working arrangements where employees can work from their homes, coworking spaces, coffee shops or other places that are not owned by the firm (<https://velocityglobal.com>>blog retrieved on 16/11/2022).

It is a type of flexible working arrangement that allows an employee to work from remote locations outside of corporate offices. Remote work is also referred to as working from home (WFH) or telecommuting (<https://www.gartner.com>>retrieved on 20/10/2022).

In point, remote work or working from home (WFH) or telecommuting refers to flexible work arrangements where a staff, in our context, a university professional administrative staff is allowed or encouraged to attend to his or her official assignments from any convenient locations other than his or her assigned office location, often aided by electronic or telecommunication facilities. Such convenient locations could be his or her home, transport terminals, hotel rooms, among other places, and at periods which may be outside of strictly official hours. Remote work encourages work beyond official time which may enhance greater outcomes due to the expanded time available for work beyond the regular office hours. Increasingly, across the globe, the advantages of WFH are being realised and different agencies are exploring these benefits to provide services to their clients and other stakeholders.

### **8. Technology, virtual meetings and workflow under the New Normal**

Virtual meeting by definition is a form of communication that enables people in different physical locations to use their mobile or internet connected devices to meet in the same virtual room (<https://www.webex.com>> retrieved on 20/10/2022). It is the use of telecommunication to facilitate human interaction and communication among people in different locations in a virtual room or a meeting point bringing different people, opinions and perspectives to arrive at decisions in real time, though physically located at different places (Ukpere, 2022).

A virtual meeting may also be described as a meeting where people from different locations interact through the use of phone text, video and audio

telecommunication facilities. A virtual meeting is unlike the usual face-to-face or contact meeting. It is a web activity or a web conference using internet applications. It is an online meeting, where at least two people engage themselves in an exchange of ideas, information or perspective. The essence of virtual meetings is to create a forum for exchange of ideas using electronic processes, especially when face-to-face meetings are unrealistic or ill-advised as it was in the heat of COVID-19 pandemic.

Virtual meetings can also take the form of hybrid, in which some of the attendees are physically present at the designated venue of the meeting while some others attend from different locations elsewhere. Remote work and virtual meetings, therefore, may simply be said to mean a new mode of service delivery where the use of electronic-processes (e-processes) are leveraged upon to provide efficient and timely services in spite of the constraints of space and time.

## **9. The pros and cons of electronic processes (e-processes)**

### ***9.1 The pros of electronic processes***

As stated above, both remote work and virtual meetings centre on the use of e-processes in facilitating service delivery, which in our context is the Nigerian University System. Interestingly, COVID-19 did not initiate the New Normal, it only catalysed it. Many universities in Nigeria and elsewhere have already adopted e-processes, such as e-Senate (paperless Senate), e-Examinations, e-Transcript processing, and so on, prior to the emergence of COVID-19 (Otto, 2008; Otto, Otto & Ukpere, 2020). According to Ogunmodede et al. (2022), the search for and use of media spaces that can provide real time audio and visual communication between individuals in different physical locations dates back to the 1980s.

E-processes have many advantages over the traditional (analogue) mode of service delivery (Isbasoiu, & Ukpere, 2011). These advantages include economy, efficiency, speed and objectivity, among others. For instance, with e-Senate Meetings, the huge sums of money spent to purchase paper and other accessories could be saved. In addition, there are other logistic costs that can be minimised, including cost of the movement of hardcopy folders to members at their various locations. Above all, the stress associated with the compilation and management of the entire process on the schedule officers is significantly alleviated. These advantages also exist in many other e-processes including Computer Based Tests (CBT) (Aguolu, et al., 2019). Again, members who are unable to physically attend the meeting can make their contributions from wherever they are, which may

enrich decisions of Senate or any other virtual meeting in the university. This could lead to efficiency. E- processes are generally faster, for example, the results of computer-based examinations can be known as soon as the candidate clicks the 'Submit' button (Isbasoiu & Ukpere, 2011; Gurgu, et al., 2019). Meeting folders can be distributed to and received by all members of any committee, including Senate via email, by a single click on the 'Send' button on the computer, smart phone or any other electronic device. E-meetings reduce the huge pile of papers required for the traditional mode of meetings, thus optimising office space required for work. As automated processes, e-processes are very objective as the machines have no opinions, emotions or subjective judgments which could tilt results or outcomes to favour cronies. In virtual conferences, chat boxes provide opportunities for virtual attendees, to raise questions and comments without fear of intimidation by senior colleagues (Ogunmodede et al., 2022).

E-processes have come to stay post COVID-19. With e-processes, typical of the New Normal, distance is no longer a major challenge in the Nigerian University System, as staff can connect to virtual meetings across the world from any location they are. They can as well provide their services from their homes and any location to relevant stakeholders, in so far there is web coverage in these locations. Work can be done throughout the day and at weekends (24/7), thus enhancing deliverables to stakeholders.

Though not all activities are amenable to WFH, many administrative functions in the university, at least, as they are currently in the Nigerian University System can conveniently be done remotely. These include student registration processes, e-filing and records maintenance, meetings, counselling, training, information dissemination, among others. The benefits of virtual meetings and WFH are obvious, the issues are more about stakeholder perceptions and the availability of required tools to drive the process.

### ***9.2 The cons of electronic processes***

E-processes also have their limitations. For instance, erratic power supply in Nigeria is a major challenge for the smooth running of e-processes. The technology (including the associated hardware and software) is largely foreign and its intensive use can impact on scarce foreign exchange. This is more so, given the paucity of funds in the universities. There is also the need for continuous availability of internet connectivity.



The information and telecommunication experts of the respective universities can guide the university or the department on which platform to use based on the particular need of the services to be rendered, among other variables.

Social media platforms such as WhatsApp, Telegram, Facebook, Instagram, and others, are used to achieve interactions mostly among family members, friends and colleagues, and in some cases employed for information dissemination, remote work and virtual meetings. However, as the name implies, these are *social media* platforms and may not be advisable for use for formal or official communications and meetings. Therefore, necessary precautions must be taken to ensure that sensitive official information or records are not compromised, sent to, and/or put in the possession of unauthorised persons or groups.

## **12. Managing workforce in the Nigerian University System under the New Normal**

A typical university is a huge community though sizes may vary at different universities. Universities are large and complex organisations with myriad of activities (Ogbugo, 2013). Managing such systems or societies require strong interpersonal skills and abilities to communicate and work with a community of diverse orientations. By their very nature, universities attract and retain people with heterogeneous backgrounds, that is, people from different cultural persuasions, so, ab initio, a university is prone to conflict unless properly managed. This is why a body of rules and codes or manuals are put in place to guide conduct in universities (Otto & Ukpere, 2020). The code of conduct or rules define what is acceptable conduct, what is a nuisance and what is an offence in universities as a workplace.

The code of conduct or regulations define the reporting patterns, career structure and expectations of workers and management. For instance, in a typical university in Nigeria, the administrative structure will show that there are principal officers of the university. These would be the Vice-Chancellor and his or her Deputies, the Registrar, the Bursar and the University Librarian. These are the core management staff who are saddled with the day-to-day running of universities. As Chief Executive and Academic Officer, the Vice-Chancellor is responsible for managing the university (Federal Government of Nigeria, 2004). He or she is Chairman of Senate and all internal committees and boards, though he or she may delegate such powers to his or her appointees.

The Registrar is in charge of administrative duties, who by law is the Chief Administrative Officer and is responsible to the Vice-Chancellor for the day-to-day administrative work of the university except as regards matters (financial affairs) for which the Bursar is responsible (Akanji, 2018; Federal Government of Nigeria, 2004). He or she is the custodian of the university records and oversees administrative staff and activities including recruitment, staff promotion, student affairs and public relations in many universities. He or she is also the Secretary to Council, Senate, Congregation, Convocation and other committees. To this extent, the onus of managing staff ultimately, is the responsibility of the Vice-Chancellor and the Registrar, though the bulk of the work is administrative and under the Registry. Due to size, the day-to-day administration is delegated to line staff, such as Directors, Deans, Heads of Department and other Unit heads on a day-to-day basis. It is possible that a Registrar may never see or know a staff in the university throughout his or her tenure of office in the university. Staff matters get to the notice of administration on special occasions such as exceptional performance requiring commendation or promotion. Other issues such as annual leave, or when a need arises for staff redeployment to another department/unit or for discipline, can also attract the attention of central management. Staff are known and supervised by their functional heads of department or unit who ensure that the staff are at work and are performing optimally. So, management is largely a delegated duty in universities in Nigeria.

Management generally is the art or science of achieving goals, targets, or results through people and agents. It may also be defined as the art of achieving results through the utilisation of men and materials. It is about optimising resources or production factors to achieve outcomes. In the university, key outcomes expected are learning, teaching, research and community service. For the professional administrative and technical staff, they are involved with providing specialised ancillary services, such as admissions, data processing, storage and retrieval of records, ensuring consistent application of rules, among others (Tascovici, et al., 2012). The relevant unit head already has a delegated duty from the Registrar to achieve the key performance indicators of his or her unit. For instance, what is expected of the admissions officer, is timely admission of qualified candidates into the university in accordance with the university regulations. For Personnel (Human Resource) Officers, the expectation is different. Similarly, that of the Student Affairs Officer or Faculty Officer may be different though all largely involve processing and retention of records with a view to ensuring that stakeholders are

better served, leading to more research outcomes, greater learning, teaching and enhanced community service. The Registrar through his or her subordinate officers must ensure planning, effective organisation, and control outcomes of his or her subordinates. To achieve these outcomes, the Registrar, through the supervising officers, who are the unit heads or leaders need to:

- (i) Set achievable goals and targets
- (ii) Coordinate effectively
- (iii) Motivate and discipline
- (iv) Ensure availability of work tools including laptops, internet connectivity, and other tools required to drive WFH

These are briefly explained below:

- (i) Set achievable goals and targets

To achieve efficient results from working from home (WFH), supervising officers must set measurable and achievable goals for the staff, more so, because these staff working from home will supervise themselves or at least will be out of the immediate reach of the supervisor. The only way to confirm if they are working is when they achieve the set goals. If they do not achieve the goals, necessary sanctions should apply. And these sanctions should be consistently applied to all similar situations. It is important to advise that these goals should be measurable and should be set in concert with the staff concerned in order to ensure that such volume of work can be achieved within the given time. Because it is measurable, subjectivity can be minimised as failures will be obvious to both the staff and the supervisor.

- (ii) Coordination

In view of the size and plurality of universities including the various services they offer, effective coordination could be a challenge if the management is inefficient. The various aspects of the Registry must have coordinating officers who should ensure that activities under their units are done optimally. Such coordinators should reach individual members of staff under them at intervals to ensure seamless operations and where there are challenges, timely identify and resolve them. In this way, duties are coordinated as well as the staff. In fact, it is in this respect that university organograms provide for Senior Deputy Registrar or Director of Academic Affairs in the Registry to coordinate all academic records and units; the Director of Personnel Affairs or Senior Deputy Registrar in charge of staff matters; Council Affairs, Student Affairs, and such others.

- (iii) Motivate and discipline

It is the practice in some places that unit heads meet with their staff regularly and they collectively plan on what and how to achieve set goals or desired outcomes. Once this is done, and agreements on targets have been arrived at, staff are allowed free hand to work at flexible hours. If such a staff needs to go for school runs, market or places of worship, he or she does so knowing fully well that there would be a time of appraisal. If the duty is to serve students such as registration, the minimum number of students registerable online per day is known both to the staff and the supervisor, the staff also may be motivated to ensure that no student complains of delays. If the work is achieved efficiently, then commendation, prizes, promotions or some specific actions of management to encourage others to emulate could follow. On the other hand, if a staff takes an undue advantage of WFH to sleep, loiter and fails to achieve targets, rules of consequences should follow. These may include reassignment to a different schedule, low appraisal scores, denial of annual leave, among others. Agreeably, these sanctions are difficult to achieve particularly in public universities due to sentiments or emotions of different dimensions which is currently plaguing the system, leading to low productivity and corruption. However, they are achievable especially with the use of e-processes, which can automatically time out when deadlines are not met. The role of discipline is critical in managing staff anywhere including universities (Ndu, 2016; Makinde, 2016).

(iv) Availability of work tools

Remote work and virtual meetings require the availability of technical experts that may be called upon when there are technical challenges in soft and hard ware. It also requires a pool of computer literate personnel who are conversant with the use of e-processes. These are in addition to the enabling environment which includes the various hardware and software, such as laptops, desktops, internet connectivity (data), among others, without which virtual meetings cannot take place. Management must proactively provide these items. Where it is not feasible for management to provide all the needed items, management could reach a compromise with staff by offering some stipends in lieu of items provided by the staff concerned. Staff require to be trained and updated with skills for the New Normal.

**13. Recommendations**

To beneficially adopt virtual meetings and remote work, the management of each university may need to:

- I. Approve, formalise and document the use of virtual processes as an operational procedure for meetings, and remote work (working from home) in the particular university.
- II. Employ and retain an adequate pool of technical staff who will resolve technical issues.
- III. Encourage non-information technology compliant staff to retool or upgrade their skills which is a minimum requirement of the new mode of service delivery referred to as the New Normal.
- IV. Provide staff with the required laptops, internet connectivity and power supply. Where these are unavailable, an allowance in lieu of these provisions may suffice. However, sensitive information must not be given to careless staff to process at home.
- V. Create its own template for virtual meetings which can be printed on a one-page sheet/flyer. The soft and hard copies should be circulated to staff, to enable them to be on the same page.
- VI. Streamline and simplify its email system and encourage staff to get used to email communications. This is necessary as appropriate email correspondences (sending of the Agenda and other working documents/briefs via email before meeting dates) precede fruitful virtual meetings, and the bulk of remote work is done via emails.
- VII. Institutionalise a rolling basic information and communication technology (ICT) training for management and staff on common operating standards for virtual meetings, so that redeployment of staff will not affect operations in the university.
- VIII. Ensure coordination of work and staff, set measurable goals for each staff, which should be regularly evaluated and rewarded, and if there are infractions, the staff responsible for these infractions should be sanctioned appropriately. This is the way forward in this New Normal in Nigerian universities. This new ethos holds promise of benefits for universities in Nigeria. Universities that are yet to cue in are encouraged to do so.
- IX. Nigerians need to enhance their abilities to produce computer hardware as well as software, if not, the importation of these critical resources will erode the lean purse of the country and generate unemployment in the country.

On their part and for their own good, to be able to cope in the Nigerian University System under the New Normal, staff need to:

- I. Make themselves available for training and re-training programmes, whether physical or virtual.
- II. Take advantage of every training organised for them by the university management or by professional bodies such as the Association of Nigerian University Professional Administrators (ANUPA), Nigerian Institute of Management (NIM), Chartered Institute of Personnel Management (CIPM), among others; be teachable, intentional and make deliberate effort to be IT compliant and improve their skills, as knowledge gained or skills acquired is an asset primarily to the staff.
- III. Manage their time and other resources well, to achieve set goals or targets.
- IV. Check their email boxes often, at least thrice a day, and respond to mails promptly.
- V. Prepare adequately and professionally, in scheduling and participating in virtual meetings. Proper and timely preparation prevent poor performance:
  - Always put your *mic* on mute, except when you have been granted permission to speak.
  - Make use of a headphone or an earpiece to maximize your hearing especially if your environment is noisy.
  - Learn how and when to use the “chat box” and “raise hand” options respectively. If expected to turn on your camera:
    - Dress properly.
    - Sit upright.
    - Ensure you are in a professional (table and chair) setting; you cannot have a bed, hangers, clothes, etc., in your background.
    - If you are using a phone or a tablet, ensure it is on landscape (horizontal) mode.
    - The camera of your device should be set appropriately in such a way that shows your portrait and not just showing one side of your face.
    - Ensure you have good lighting
- VI. Never abuse any privilege given to them to work from home.

#### **14. Conclusion**

Conclusively, the world of work is changing fast post COVID-19. Technology, especially telecommunication is being pervasively used to enhance the mode of service delivery in different sectors across the globe. This is applicable to

universities in Nigeria. Unlike the situation pre COVID-19, when official work was routinely provided mainly from office premises, in the post COVID-19, several administrative functions are efficiently performed through many technological platforms with better and greater outcomes. These include virtual meetings through Zoom, Skype, Microsoft Team (MS Teams), Google Meet, and many more. The use of remote work has also expanded the speed and efficiency of processing documents, therefore, enhancing the welfare of stakeholders. This is the new reality.

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## EVALUATION OF IMPACT OF MODERN TECHNOLOGY, DEMAND AND SUPPLY ON REAL ESTATE

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**How to cite:** HASANLI F. (2023). “Evaluation of Impact of Modern Technology, Demand and Supply on Real Estate”. *Annals of Spiru Haret University. Economic Series*, 23(2), 75-93, doi: <https://doi.org/10.26458/2323>

### **Abstract:**

*The real estate industry is undergoing digital transformation, which affects its working conditions, market appearance, and economic growth factors. The characteristics and operations of real estate markets will be demonstrated in detail which is covered by both basic methods that have remained immutable for centuries and specific possibilities that have recently emerged. The prime idea is to identify industry alterations, the impact of digital transformation, investment decisions, expected future evolutions related to demand and supply, and regression analysis using Ordinary Least Square method which is used to evaluate the data that falls to the plane and variables that go beyond the restrictions in case of Azerbaijan. This paper provides some particular aspects of real estate within economic terms, to show how technological advancements could provide a comprehensive dataset with expected growth rates, real estate risk management, economic evaluation of real estate investment projects, real estate economics and most importantly demand and supply. The study supports fluctuation of prices in this market is mostly based on macro and micro economic levels.*

**Keywords:** *real estate, property and rent, savings, digital transformation, real estate investment*

**JEL Classification:** *R30*

**Introduction**

Thousands of extremely astute businessmen, often backed by millions of dollars, are working tirelessly to alter the way real estate is currently used, traded and operated. Although people are living longer due to the advances of modern medicine, when they retire the new stage of their lives begin where they need to be carefree and to have a proper budget to handle their own place. In this period, each and every person needs to find a place with the professional assistance. Professional assistance in Real State is quite essential in this period of time as investment might be risky however the correct chosen investment strategy can make the best use of ones investment in both time and money. Experienced investors totally accept that the successful solution that can make a big difference is focusing on big picture [Turner & Dorkin, 2018]. Nevertheless, it is quite challenging to predict the evolution of budgeting of this industry in near future, it will be useful to assess the existence of new solutions in order to accelerate the process of meeting the needs of the customers within the acceptable budget.

According to an early 2014 Federal Reserve study, more than 40% of non-commercial real estate owners had at least \$1.00 in equity in their primary residence and 40% had \$10,000 in household real estate equity. According to a 2015 Yahoo Finance survey, approximately 10% of respondents believe they are equipped for an economic downturn. The real estate investment management industry is experiencing a dramatic cultural shift as a result of the global financial crisis of 2007-2009, climate change pressures, rapid urbanization, and COVID-19. It is no longer sufficient to simply guarantee high, consistent returns investors.

**Table 1. Advantages and Disadvantages of Real Estate Investing**

<b>Advantages</b>	<b>Disadvantages</b>
Offers capital appreciation	In most cases illiquid
Steady income	Requires massive amount of capital outlay
Might be bought with leverage	Might require active management
Diversifies portfolio	Impact of highly local factors is probable

From the above table it can be observed that it might be risky to neglect some side effects of capital appreciation. The biggest risk in this scenario is that the homeownership market suddenly changes and people stop purchasing property.

However the one who is interested in it needs to be an agile investor who is willing to get in and out of investment quickly. [Fregonara et al., 2017]

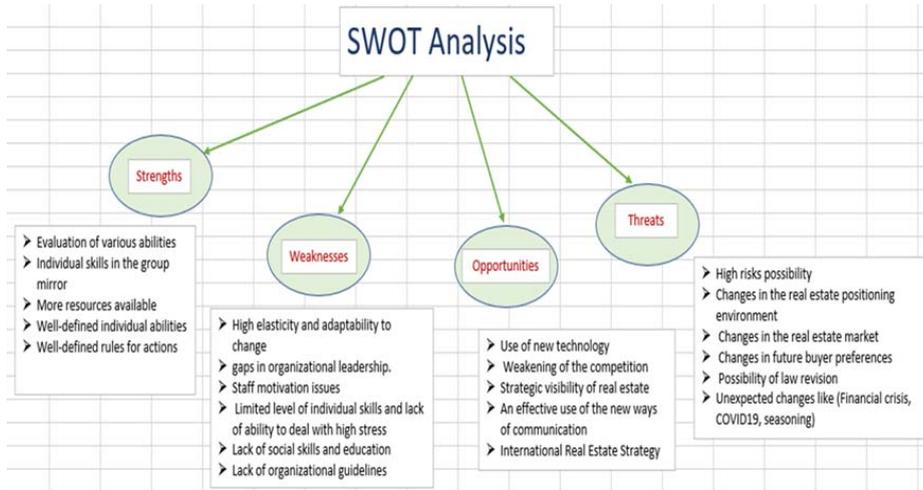
There is a significant distinction between the words real estate and real property. Real estate refers to a particular parcel of land, whereas real property refers to the interests, benefits, and rights associated with real estate ownership [Ezebilu, 2017]. The legal meaning of real estate includes the following tangible components:

- Land
- All natural elements of soil, such as trees and minerals
- All human-made structures connected to land including buildings and site improvements etc.

Furthermore, all permanent building attachments, such as plumbing, heating systems, and so on, as well as built-in items like cabinets and elevators, are typically considered real estate. Real estate has no intrinsic worth as it is the rights, or interests, in real estate that have value according to an old saying, “Under all is the land”. People's social and economic activities are supported by their land. It is a wealth-generating and as well as a physical commodity which is affected by both advanced technology and determinants of demand.

### ***Technology in Real Estate***

The impact of the technological revolution on the real estate business is complex, as is forecasting changes in this sector. The real estate business operates in a relatively traditional and conservative manner. This is undoubtedly due to the unique character of real estate and its performance in the legal, technical, economic and social domains. Consequently, the real estate market itself is less open to the expansion of innovation, due to institutional and legal limitations serving, among others, the protection of real estate transactions. However, current worldwide data delineates that technology is also entering this industry, and future technological advancements may profoundly transform the entire real estate sector in particular trading. Technology changes the way we operate in the real estate market but, while we can observe innovative solutions and new business models, we must also be aware that we are dealing with a traditional business in which technology enters gradually. [Malkowska, 2020]



**Fig. 1. SWOT Analysis of Real Estate Industry**

Real estate is an information-intensive industry [Geideman & Krause, 2016]. The data on the basis of which analyses, predictions and decisions are made originates from several different sources and are of varied nature. Most of them are location-specific, reflecting the patterns of local real estate markets. To exemplify below table depicts average price and average price per meter for each district of Baku, the capital of Azerbaijan.

**Table 2. Average Price and Average Price per Meter in Districts of Baku, Azerbaijan**

District	Average price (AZN)	Average price per meter (AZN)
Nasimi	≈ 185,174	≈ 1,668
Yasamal	≈ 152,562	≈ 1,540
Sabail	≈ 195,730	≈ 2,113
Khatai	≈ 143,555	≈ 1,418
Binagadi	≈ 118,880	≈ 1,404
Narimanov	≈ 179,438	≈ 1,658
Nizami	≈ 109,142	≈ 1,355
Sabunchu	≈ 88,647	≈ 1,186
Surakhani	≈ 68,145	≈ 1,027
Khazar	≈ 62,871	≈ 950
Garadagh	≈ 65,472	≈ 960
Pirallahi	≈ 45,883	≈ 996
<b>Average in Baku</b>	<b>≈ 148,907</b>	<b>≈ 1,515</b>

According to the above table the highest housing price is witnessed in Sabail district. Subsequently, Nasimi follows the same pattern by being close behind at 185,174 AZN. In the Khazar and Pirallahi districts inclination declines with the lowest real estate prices.

Technological advancements allow for the collection of an increasing variety of data, including big data based on human behavior detected via the Internet. There are distinguished three kinds of data used in real estate, including traditional and technological data sources [Geideman & Krause, 2016]:

1. Core information – Information which is based on sale transactions, lease transactions, mortgage information, assessment values etc.;
2. Spatial information – It is the extra-locational information including data outside of the property which is available from Geographic Information Systems (GIS) such as geographic information, road network data, spatial economic indicator etc.;
3. Peripheral data – The main exception of peripheral data is that it is about the data about people that is automatically gathered. The advancement of cloud computing provides numerous advantages to both large and small and medium-sized businesses. Primary benefits of cloud computing for large organizations are improved control over data centers and lower costs.

Renting a house is the most 'never going out of style' requirement. There is a wide range of investment in this sector, from affordable housing to luxury resorts to office buildings. There are startups that provide people with the most convenient way to access services over the Internet with just a few clicks [Saul & Baum, 2020]. Based on the project plan that could be used in the near future due to the excessive demand, users might get a proper requested information such as getting real estate advisory, analysis helping with selection, application filling, guiding, fully/semi furnished apartments. Social networking sites such as Facebook, video content sharing sites including YouTube, Instagram, blogs and knowledge sharing tools like Wikipedia are the most well-known types of social media. The virtual environment may be used to share the company's message to its business associates [Öztürk & Batum, 2018]. Nowadays, clients of the real estate industry benefit from the use of technology and social media. It is an essential tool to enable this industry to get proper insight about the requirements of the clients, to communicate within this business or generally for goodwill. Through internet investors and clients may have an access to the range of information in the most convenient way, controls perception and increases quantity of demanded. As the result of recent

technological advancements, big data has significantly high impact on the outbreak of quantity and quality of relevant data [Diebold, 2020]. In this sector proper provision of information is the essential factor. It is a sector in which the primary product has several characteristics including fixed location, high capital intensity, differentiation, value reliance. Rights of the properties are transferred in transactions entail a large number of stakeholders. It is worth to mention that the real estate market is diverse, and trade on real estate industry includes a wide range of products. Aside from property assets, the this industry offers many services such as consulting, analysis, valuation, real estate management, real estate finance etc.

### *How to invest in real estate*

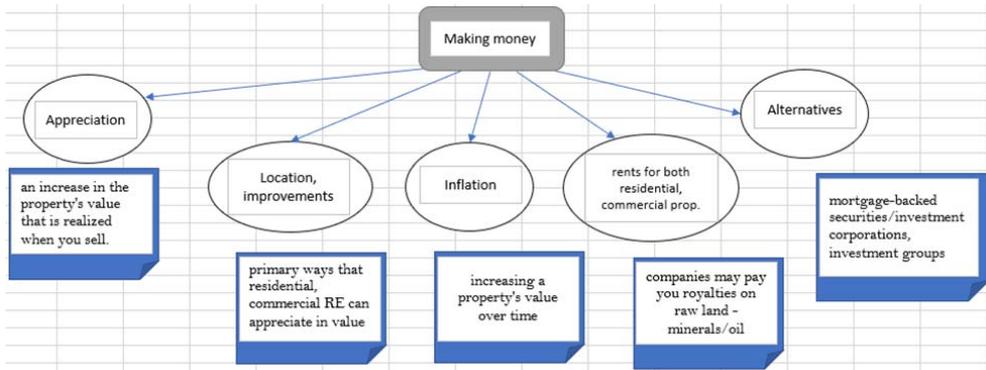
Stocks, bonds, savings, currencies, and real estate are all options for people to put their money into something sufficient. One of the most common reasons people invest in real estate is to attain financial independence, but there are other factors to consider [Turner & Dorkin, 2018]. It is quite obvious that listing property at 5% above current market provides a tenfold sales advantage than pricing at 15-20%. A house that is overpriced will suffer from a lack of exposure; the longer it is on the market, the more difficult it will be to sell, and it will still remain constant after price reductions are made to attract buyers [Ezebilo, 2017]. People contribute for real estate investing because they want financial freedom. So, the owner or the investor should consider appreciation, cash flow, depreciation, leverage and tax benefits while engaging in real estate.

Have you ever received a box of chocolates as a gift over the holidays?

There are many choices, you need to take a little bite of each one to figure out what exactly you're going to find inside. Learning how to invest and deal with the key factors of demand in real estate is like that box of chocolates. There are dozens of different ways to make money as a real estate investor, and it's up to the each individual to choose the niche that is wanted to get into [Tajani et al., 2017]. Every real estate transaction involves money. One of the essential factors in this case is the interest rate you make on your money each year which is called return on investment (ROI). For example if the invested money is 400\$ and additional gain is 120\$ then ROI is going to be 30% for total of 520\$ which means you started with 400\$ and ended up with 520\$ after a year of return of 30%. This is the simple way which is used by real estate. Formula of return on investment is shown below:

$$ROI = (V1 - V0) / (V0)$$

V1 is the ending balance and V0 is the starting balance.

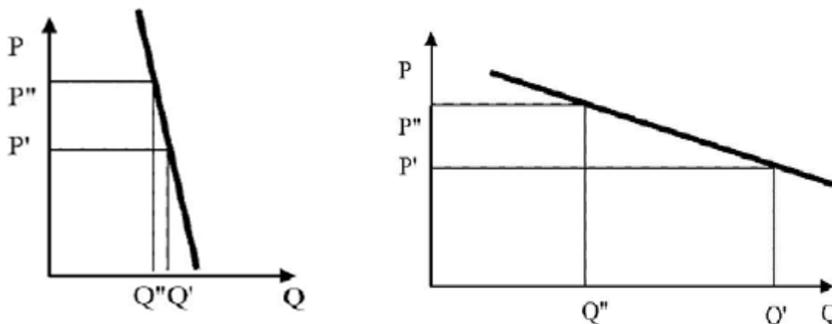


**Fig. 2. Purchasing Power**

While you may get five times your money due to inflation when you sell, many other goods cost five times as much to buy too, so purchasing power in the current environment is still a factor. Property owners have much more than dollars and cents tied up. But value becomes a reflection of the buyer's perspective when that property is put up for sale and buyer will shop the market, compare available homes, and try to find the very best value. Consequently, when the seller is ready to list their home, they need to step back and sharpen their focus. [Barreca et al., 2017]

***Real estate Demand and Supply***

This industry maybe considerably specific and even idiosyncratic in a number of ways, but basic economic principles-principles of demand and supply are still followed by real estate market.



**Fig. 3. Fundamental Law of Demand**

Real estate demand, according to traditional economic theory, can be defined as the number of units requested at different prices.

This line graph helps to conceive demand as a schedule, as illustrated in Figure 3, rather than a single quantity that is called the basic law of demand. It states that the quantity demanded decreases with price. In case of real estate terms, a smaller amount of space or fewer units are demanded at higher prices. [Hall, 2020]

The idea of effective market demand is embedded in the definition of demand that shows the pattern where demand backed up by purchasing power. In some cases, we may also need to concentrate on ex-ante demand which is also called desired demand in real estate analysis. This is the aggregate quantity of a good that is desired before consumers interact with the market.

#### **Demand Sensitivity to Price/Rent Changes: Price Elasticity of Demand**

The sensitivity of quantity demanded to price changes is an essential feature of the demand curve. The notion of price elasticity of demand summarizes this sensitivity. In simple words, the price elasticity indicates how much the quantity demanded decreases in reaction to a surge in price. It can be shown by hypothetical estimate when the price elasticity of housing is estimated to be -0.8, the number of housing units requested will fall by 0.8% if the average price of housing rises by just 1%. In general, demand is deemed to be inelastic if the price elasticity is less than 1. As was mentioned in the Figure 3, demand is not sensitive to price increases where the demand is inelastic which means when price soars considerably in a high pattern there is witnessed small decreases in quantity demanded. Demand in the real estate industry is also inelastic. In other case, demand could be elastic if the price elasticity is greater than 1. If this theory is applied to the housing market even if there is a small percentage of increase in price, then there is a considerable dive in the amount of space that is available. [Brzezicka & Kobylinska, 2021]

In order to determine price elasticity the prime concept that should be considered is the supply of substitutes. In this industry, demand is going to be elastic once it has a lot of substitutes rather than the luxury housing with fewer ones and less elastic demand. This also explains why the majority of businesses housed in metropolitan regions by serving local population. This region compared with the local market has less elastic demand because of fewer substitutes.

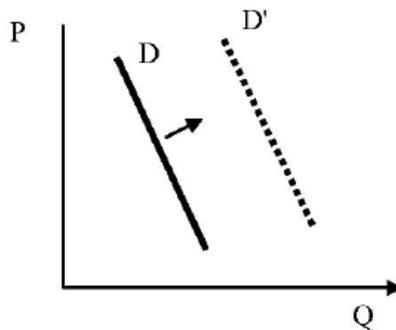
The effects of price elasticity differ once there is a glance from micro level while investors assess the fluctuations in price, its impact on revenue and macro

level considering wider view into the number of quantity demanded evaluating changes in market prices. Investors try to achieve inelastic demand as if price goes up or rents soar, revenue of the company surges. [Haiying Ma & Jiangqiao Li, 2017]

Although above mentioned rules explain the law of demand, there could be a specific scenario where the fundamental law of demand is being violated. This effect arises from the effects of analyzing price changes. In the period of increase in housing demand with the concomitant results of price increase, some analysts may consider that the law of demand is not applied. The same assumption can be witnessed in case of rising prices of rents and absorption. The law of demand claims that when the actual prices increase inclination of demand is negative based on the price elasticity. Although in this case, the law of demand is violated, it stills follows the rules of economic theory. In previous example surge in demand is the dependent of future expected price rather than the actual one avoiding any other kinds of changes triggering demand. So, it is essential to find out the difference between the actual and expected price increase. [Hall, 2020]

**Exogenous Determinants of the Demand in Real Estate Market**

Despite what have been discussed, price changes are not the only factor that quantity demanded is depending on. There are other factors including exogenous ones that creates shift in the demand schedule [Cunha & Lobao, 2021].



**Fig. 4. Demand shifts**

Forecasts of these variables can be very useful in assessing real estate market prospects and finding real estate investment opportunities. Classification of exogenous determinants for real estate is based on 4 below mentioned factors:

### 1) Expectations

Expectation of the potential customers, firms may differ depending on the changing needs of modern era and thus, causing changes in demand. As was mentioned previously, based on several analyses on future expected costs people may consider purchasing real estate which can increase the quantity demanded. To exemplify, alterations in the growth forecast rates of firm can conclude changes for the demand in commercial housing. It is pretty obvious that the office firm in a quickly expanding market may require more space due to the expected future growth rather than the similar business in a stable market.

### 2) Prices of Substitutes

The price of substitutes may cause changes in demand for real estate. Increase in apartment rents is most likely to cause a shift to the right of the demand curve for single-family housing prices. The prime reason of this shift is likely to be the need in switching from the renting of houses to home-ownership because of the rise in prices.

### 3) Market Size

The inclination occurring due to the market size impact on real estate demand is positive. Depending on the property type, there are several market size factors including population, employment, or output which affect the demand of housing industry. In the case of housing and retail, the essential exogenous determinant is household size, whereas for office space, office employment is considered as the most significant market-size variable. Meaning that for the same price level and bigger size of the market, more real estate will be demanded for square footage. Wealth of the population has the direct impact on residential real estate as while the price is constant and income surges buying a house could be more affordable for the households.

### 4) Income

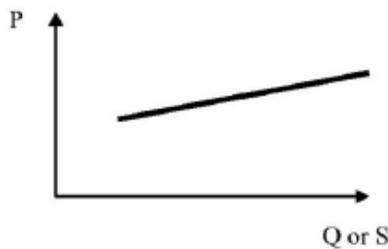
Income fluctuations may have an indirect impact on demand for industrial space. In most cases, demand shifts are because of the effect of office employment on company space as there is a direct relationship between income and employment. The rise of income establishes the need of hiring more employees to meet the increase in demand of office space. The same case can surge the need of warehouse as well. Due to the increase in income of population consumption of goods will hit the peak and wholesalers may choose to expand their storage.

**Real Estate Supply**

Supply in case of real estate defines the amount of housing units available at different prices. The supply curve states that greater quantity is provided at higher prices. There are 3 essential categories-new construction, short-run aggregate supply and long-run aggregate supply to distinguish in supply concept in order to give a broader inside.

- The Long-Run Aggregate Supply

Long-run aggregate supply delineates the relationship between long-run prices including rents and overall quantity of units supplied in the long run.



**Fig. 5. Long-run aggregate supply**

This specific approach is used either whenever there is a request for long run cross-market analysis or for identifying long-run behavior of housing market. Nevertheless, this concept creates various hardships when operationalized.

- The Short-Run Aggregate Supply

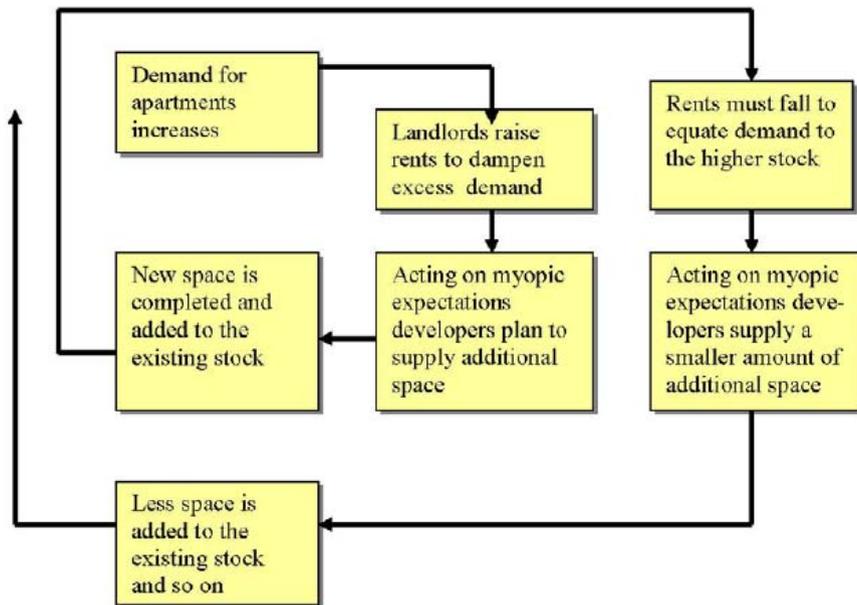
The overall stock of a market at a particular point in time is referred to as the short-run aggregate supply.



**Fig. 6. Short-run aggregate supply**

As can be seen from the above graph, real estate stock is fixed in short run. This is because of the construction lag which is the time required to complete the development of the building. This process is happening approximately between 6-24 months for office, residential and industrial projects. Due to this fact, short run supply is considered to be price insensitive and price inelastic.

Stock flow model is the way how the new construction concept applies in the real life scenarios.



**Fig. 7. Stock flow model**

### **Assessing Demand-Supply Market Inefficiencies and Market for Real Estate Assets**

Sometimes this market fails to be at equilibrium due to exogenous shocks and several detrimental effects. These are construction lags that were already mentioned, lack of information and long-term lease.

Construction lags – This refers to the late response of supply to demand and price fluctuations and can last from several months to years.

Lack of information – With the proper provided project specific information it is more realistic to evaluate transactions that is not readily available. That is because this market is quite diverse considering location and quality. In order to avoid these inefficiencies related with the prevention of demand from adjusting price fluctuations buyers conduct searches.

Long-term leases - Long-term leases impede timely adjustment of current rates to changes in supply and demand, as well as timely adjustment of space consumption to changes in market rates.

These inefficiencies are present in all property types and show the effects in different levels. In the retail markets and apartments these factors are witnessed more severe, building lags are longer, and lease contracts are shorter.

Because real estate is a long-lasting capital good, its supply and demand is decided by an asset, or capital. There should be equilibrium between demand and supply in this market. As a result, the price of a house is heavily influenced by how many households want to own property and how many units are accessible for purchase. Similarly, the price of shopping center space is determined by how many investors want to own it and how many centers are accessible for proper investment. Therefore, although increase in demand for the assets results in an increase in price, increase in supply will depress it considering the other factors which are stable. [Nanda, 2019]

The supply of new real estate assets comes from the building sector and is determined by the asset's price in relation to the cost of replacing or constructing it. This means if demand for land ownership surges unexpectedly, with a fixed supply of assets, prices will increase consequently. As this space enters the market, demand is met, and prices continue to fall back.

The occupiers of space, who are owners, companies and households, drive demand for real estate use. Space is the factor of production and its use is determined by firm output levels and the relative expense [Natsvaladze & Beraia, 2018]. Households distribute their money similarly, consuming many commodities considering space. Demand for the tenants is the dependent of the income which is divided in terms of not only housing but also other commodities such as recreation, clothing and food. The amount of owning the space is the yearly outlay which is required to acquire the required use of real estate for both businesses and households. Rent is established in the property market for the utilization of space, not for the ownership. The supply of space is provided in the asset and property

market. The prime job of property market is to find out a rent level where the demand for space use matches the supply of it. [Vincenzo & Pierfrancesco, 2018]

In recent years, the biggest threat to this sphere is new entrants trying to take advantage of high-growth industry. Competition is very fierce due to the large number of competitors, low overall profitability of all companies based on the availability of information and accessibility of technology. Nevertheless, in this area, investors need to be versatile to survive. Customers tend to look for the best service, cost packages which should be one of the focus points. Another trick that cannot be neglected is the advantage of the right ‘buying Real Estate’ season.

### **Descriptive Analysis and Results**

Using regression model for real estate assessment has a number of advantages. Real Estate market neglected its plus points unlike the retail industry that accepted the utilization of regression analysis on the site selection. Regression analysis is ideal for huge amounts of data. Although it is considered nearly impossible to have a thorough understanding of every local real estate market in the country, regression analysis may assist in narrowing this search. [Burton, 2021]

By following the results of existed findings, multiple regression dataset is calculated to show the correlation and regression between the dependent and independent variables for the last 22 years in Azerbaijan. Regression method helps analyze the impact of explanatory variables on the prices of real estate and GDP Growth. The model itself verifies impact of alterations in inflation, unemployment, lending and deposit interest rates, and direct foreign investment (FDI) on GDP Growth which is a dependent variable. So clear is it that, these results of the used variables can suffer from the other unexpected factors that come from other determinants which are covered by error term creating bias. This can be one of the prime limitations. Depending on the determinants that are ignored, model in this study might suffer from endogeneity problem. Dataset consists of dependent variable which is GDP Growth and independent variables including inflation, unemployment, interest rates and FDI. There are also control variables such as average adjusted wage of the population, trade balance and number of residential housing. Used variables in dataset and the relationship between them are provided by the utilization of Descriptive Statistics with the measure of dispersion, association and central tendency. According to the data covering 22 years Ordinary Least Squares (OLS) regression results is provided using Python’s statmodels module.

OLS Regression Results			
Dep. Variable:	y	R-squared:	0.839
Model:	OLS	Adj. R-squared:	0.718
Method:	Least Squares	F-statistic:	6.933
Date:	Mon, 20 Mar 2023	Prob (F-statistic):	0.00142
Time:	00:08:24	Log-Likelihood:	-60.863
No. Observations:	22	AIC:	141.7
Df Residuals:	12	BIC:	152.6
Df Model:	9		
Covariance Type:	nonrobust		

Fig. 8. Summary of OLS Regression Results Driven from Python in case of Azerbaijan

Understanding of OLS is quite explicit as it provides with the best fitting line for all data that is spread and minimize square of errors. It means that regression line does not reach out for each data instead partial relationship is provided between the variable and slope. The sum of squares of variations showing observed values and the ones in the plane are minimized and coefficients are determined by this process. [Burton, 2021]

Number of observations is 22 from where degree of freedom or DF Residuals can be calculated in the form of “n-k-1” by subtracting number of variables plus 1 from the number of observations which will be 12. DF Model is just the explanatory variables that are used to predict the output. Some independent variables can be ignored depending on the less impact on dependent ones. Sample variability of the parameter used in the model can be witnessed from the analysis as well. In most cases, covariance type in the analysis is nonrobust depending on the non-elimination of data in order to calculate covariance. This term refers to the change between 2 variables in relation to each other. The scatter of data values around the fitted regression line is calculated using coefficient of determination. Once the value of R-squared is higher, it is a pointer of smaller difference between

observed data. In this case, 84% denotes that the model is able to explain the variation in output variables by input variables. The reason of the difference between the R squared and adjusted R squared is the insignificant variables of the model as in adjusted R squared insignificant variables are omitted. The difference is not high and that is a positive indicator. F statistics is 6.933 and Prob (F-Statistics) is 0.00142. These values help to evaluate the accuracy of the null hypothesis. P value is less than the 10% significance level and therefore, it denotes strong evidence against null hypothesis. We reject the null hypothesis. [Banas et al., 2021]

	coef	std err	t	P> t	[0.025	0.975]
const	63.0531	13.641	4.622	0.001	33.331	92.775
inflation	-10.8449	5.900	-1.838	0.091	-23.699	2.009
unemp	-237.3035	46.987	-5.050	0.000	-339.679	-134.928
lending interest rate	-88.1831	31.108	-2.835	0.015	-155.961	-20.405
deposit interest rate	-30.2491	18.645	-1.622	0.131	-70.874	10.376
FDI	-75.2639	16.819	-4.475	0.001	-111.910	-38.618
unemp deposit interest rate	67.2871	27.254	2.469	0.030	7.905	126.669
unemp lending interest rate	166.2270	35.319	4.706	0.001	89.273	243.181
unemp FDI	302.7053	56.568	5.351	0.000	179.454	425.957
lending interest rate FDI	128.7886	34.586	3.724	0.003	53.433	204.144
Omnibus:	2.540	Durbin-Watson:	1.936			
Prob(Omnibus):	0.281	Jarque-Bera (JB):	1.243			
Skew:	0.553	Prob(JB):	0.537			
Kurtosis:	3.368	Cond. No.	112.			

Fig. 9. OLS Regression Results and Work of Model

Log likelihood determines the goodness level to reach out to the maximum level of likelihood estimator. The natural logarithm function is negative for values less

than one and therefore negative result is possible. It is used to compare coefficient values for each variable in the process of creating the model. AIC and BIC are both used to compare the efficacy of models in the process of linear regression, using a penalty system for measuring multiple variables. These numbers are used for feature selection of variables.

Furthermore, we can set the objective function based on the results provided by OLS model.

$$Y=63.05-10.84\text{Inf}-237.3\text{Unemp}-88.18\text{LendR}-30.25\text{DepR}-75.26\text{FDI}+67.29\text{UnempDepR}+166.23\text{UnempLendR}+302.71\text{UnempFDI}+128.79\text{LendRFDI}$$

Depending on the above function if there is a surge in inflation rates or unemployment the GDP Growth will go down, accordingly and vice versa.

A low standard error in comparison to a high coefficient results in a high t statistics which indicates the coefficient that is highly significant. T-statistics is used in order to measure P values. In this case, P-value of inflation is 0.091. It can be said that there is 9.1% chance that the inflation has no effect on GDP Growth. Nevertheless, it seems unemployment has 0 P-value which indicates that the data is statistically significant since it is less than the 10% significance level. Therefore, we can reject null hypothesis and say that unemployment is controlling GDP Growth.

In the model, omnibus is equal to 2.54 which is almost far from 0 and its probability is 0.281. Omnibus is used for checking purposes of the normality of residuals. Prob(Omnibus) is 0.281 indicating that there is 28.1% chance that the residuals are normally distributed. Durbin-Watson (has value between 0-4) is 1.936 and checks the autocorrelation showing if the value is close to 2 or not and if the number is close to 2 then it means autocorrelation was not detected as in this case. It is preferable for the value in the model to be between 1 and 2. Additionally, it is worth to mention that p value is never absolute 0. Sometimes the statistical software displays the p value as 0, depending on the settings concerning the numbers of digits to be displayed.

## Conclusion

To recapitulate, real estate is significant economic industry to talk about as it makes use of a big amount of capital as well as a significant section of the labor. It focuses on the relationship between developments in these markets and the financial sector to determine under what circumstances real estate booms and busts can develop and how they can affect the health and stability of the financial system

thoroughly. Due to the modern era and technological advancements this industry is currently facing with the evolvement which affects quantity demanded positively. Today's investors and customer of real estate market are able to successfully adapt to the current market and to use the modern tools. Nevertheless, demand of the housing market is still affected by exogenous determinants in micro and macro level. In order to give a broader insight statistical data was driven covering 22 years of period in Azerbaijan considering economic terms. This article is recommended in order to find out the adapted view and current market reaction in terms of investment, demand and supply and modern technology era in real estate industry. With the help of OLS model it can be determined that the actual output shows that fluctuations in GDP Growth rates have a significant influence by taking into account unemployment, inflation, FDI, current level of interest rates and number of residential housings. Hypothesis depicts that the ups and downs in the economic growth pointers have statistically significant impact on the proper housing system of the country and modern era faces only with the availability of big data.

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## SOCIO-ECONOMIC PERSPECTIVES IN TERMS OF SOCIAL AND PHYSICAL SPACE INTERACTIONS

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**How to cite:** BAKTYBEK, I (2023). “Socio-Economic Perspectives in Terms of Social and Physical Space Interactions”. *Annals of Spiru Haret University. Economic Series*, 23(2), 94-103, doi: <https://doi.org/10.26458/2324>

### **Abstract**

*In this article, the author explores the interplay of social and physical space interactions in low-income communities in the Kyrgyz Republic. Through a literature review and field research in several villages, the author argues that economic behavior and outcomes are shaped by a complex interplay of social, cultural, and economic factors. The thesis statement of the article is that a comprehensive analysis of the ways in which social and physical space interact is required to gain a deeper understanding of the mechanisms that drive socio-economic interactions in these communities. By shedding light on this complex interplay, the study provides insights into the factors that drive socio-economic development and informs policies and interventions to support these activities. This article contributes to the existing literature on socio-economic development in low-income communities and highlights the importance of considering social and physical space interactions. The findings have significant implications for policymakers and development practitioners in Kyrgyz Republic and other similar contexts.*

**Key words:** *social and physical space interactions, low-income communities, Kyrgyz Republic*

**JEL Classification:** I31

## I. Introduction

Imagine you're walking through a bustling bazaar in the heart of Bishkek, the capital city of the Kyrgyz Republic. You're surrounded by the sights and sounds of vendors hawking their wares, shoppers haggling over prices, and children darting between stalls. As you navigate the crowds, you notice something interesting - certain vendors seem to attract more customers than others, even though their goods are similar in quality and price. Why is this the case? What factors influence these social and economic interactions in physical space? These are the questions that drive our study of socio-economic perspectives in terms of social and physical space interactions in the Kyrgyz Republic. In this article, we aim to explore the complex interplay between social and physical space in shaping economic outcomes in the Kyrgyz Republic. Drawing on a range of sociological and anthropological theories, as well as our own field research in the region, we seek to shed light on the factors that drive economic behavior and social interaction in this unique context. Our findings have important implications for policymakers and social scientists interested in understanding the ways in which social and economic dynamics are shaped by physical space, culture, and politics. By exploring the complex relationships between individuals, groups, and institutions in the Kyrgyz Republic, we hope to contribute to a broader understanding of the complex interplay between social and economic forces in our increasingly interconnected world. Join us on this journey as we explore the fascinating world of socio-economic perspectives in terms of social and physical space interactions in the Kyrgyz Republic.

## Literature review

Socio-economic perspectives in terms of social and physical space interactions have been the subject of a range of theoretical frameworks and empirical studies from diverse disciplines. A review of the literature on this topic highlights the importance of considering the complex ways in which social and physical space interact to shape economic behavior and outcomes in low-income communities. Aguiar's (2015) literature review highlights the role of social networks in microfinance and how these networks influence economic behavior. In the context of Kyrgyz Republic, social networks can play a crucial role in shaping economic outcomes, particularly in rural areas where access to formal financial institutions is limited. Understanding the ways in which social networks intersect with economic behavior can provide valuable insights into the mechanisms that drive socio-

economic interactions in this context. Benería's (2015) critical examination of gender, development, and globalization emphasizes the importance of considering the gendered dimensions of socio-economic interactions. In Kyrgyz Republic, gender plays a significant role in shaping economic outcomes, with women often marginalized in the formal economy. Understanding the gendered dimensions of economic behavior and interactions can help to identify barriers to economic empowerment and inform policies and interventions to address these challenges. Bourdieu's (1984) classic work on the sociology of taste provides a framework for understanding how social and cultural factors shape economic behavior and consumption patterns. In the context of Kyrgyz Republic, understanding the ways in which cultural factors intersect with economic behavior can provide insights into the mechanisms that drive socio-economic interactions. For example, the emphasis on hospitality and gift-giving in Kyrgyz culture can influence economic behavior and shape social and physical space interactions. Chant's (2014) critical examination of the gendered dimensions of poverty and inequality emphasizes the need to consider the ways in which gender intersects with socio-economic factors in shaping economic outcomes. In Kyrgyz Republic, women are often marginalized in the formal economy and may face significant barriers to economic empowerment. Understanding the ways in which gender intersects with economic behavior can inform policies and interventions to promote gender equality and economic empowerment. Cross's (2018) overview of the anthropology of tourism highlights the ways in which tourism can both facilitate and hinder socio-economic interactions in local communities. In Kyrgyz Republic, tourism has become an increasingly important sector of the economy, particularly in rural areas. Understanding the ways in which tourism interacts with social and physical space can provide insights into the mechanisms that drive socio-economic interactions in this context. Derya and Abazov's (2018) critical examination of ethnicity, nationalism, and conflict in the post-Soviet era emphasizes the ways in which political and cultural factors influence socio-economic interactions. In Kyrgyz Republic, ethnic tensions and political instability have had significant impacts on the economy and on social and physical space interactions. Understanding the ways in which political and cultural factors intersect with economic behavior can help to identify barriers to economic development and inform policies and interventions to address these challenges. Dicken's (2015) overview of the changing contours of the global economy highlights the ways in which globalization has reshaped socio-economic interactions around the world. In Kyrgyz Republic, globalization has had

significant impacts on the economy, particularly in the areas of trade and investment. Understanding the ways in which globalization interacts with social and physical space can provide insights into the mechanisms that drive socio-economic interactions in this context. Kohl and Faris's (2020) study of informal economies in the Kyrgyz Republic emphasizes the importance of considering the ways in which informal economic activities intersect with formal economic structures. In Kyrgyz Republic, informal economic activities play a significant role in the economy, particularly in rural areas. Understanding the ways in which informal economic activities intersect with formal economic structures can help to identify opportunities for economic development and inform policies and interventions to support these activities. Kwon's (2019) study of urbanization and social change in Kyrgyz Republic emphasizes the importance of considering the ways in which urbanization shapes social and physical space interactions. In Kyrgyz Republic, urbanization has been accompanied by significant changes in the economy and in social and cultural practices. Understanding the ways in which urbanization intersects with socio-economic factors can provide insights into the mechanisms that drive socio-economic interactions in this context. Li and Wu's (2018) study of the role of trust in economic development highlights the importance of social and cultural factors in shaping economic behavior and outcomes. In Kyrgyz Republic, trust is an important factor in economic interactions, particularly in the context of informal economic activities. Understanding the ways in which trust intersects with economic behavior can provide valuable insights into the mechanisms that drive socio-economic interactions in this context. Lom and Fournier's (2016) study of the role of social capital in economic development emphasizes the importance of social networks and trust in shaping economic outcomes. In Kyrgyz Republic, social capital plays a significant role in the economy, particularly in the context of informal economic activities. Understanding the ways in which social capital intersects with economic behavior can provide insights into the mechanisms that drive socio-economic interactions in this context. Shamsul's (2015) study of the role of culture in economic development emphasizes the importance of considering the ways in which cultural factors shape economic behavior and outcomes. In Kyrgyz Republic, cultural factors such as hospitality and gift-giving can influence economic behavior and shape social and physical space interactions. Understanding the ways in which culture intersects with economic behavior can provide valuable insights into the mechanisms that drive socio-economic interactions in this context.

Taken together, these 12 literatures provide a broad overview of the theoretical frameworks and empirical studies that have addressed the problem of socio-economic perspectives in terms of social and physical space interactions. These literatures highlight the importance of considering the complex ways in which social and physical space interact to shape economic behavior and outcomes in low-income communities, and provide valuable insights into the mechanisms that drive socio-economic interactions in Kyrgyz Republic.

### **Methodology**

The methodology for this study involved conducting field research in several villages of Kyrgyz Republic. The author of this study has extensive experience conducting sociological field research in Central Asia, and used this experience to design an appropriate research methodology. The author interviewed 40 people living in these villages, both men and women, in order to gain a comprehensive understanding of the socio-economic perspectives in terms of social and physical space interactions in these communities. The author also lived with the participants to gain a deeper insight into their daily lives and to understand the context in which these interactions take place. In order to select the villages for the study, the author used a purposive sampling technique, selecting villages that were representative of the wider region in terms of their socio-economic characteristics. The author conducted semi-structured interviews with the participants, focusing on topics such as their economic activities, social networks, and cultural practices. The author also conducted participant observation to gain a better understanding of the participants' social and physical space interactions. The author took steps to ensure the ethical conduct of the research, obtaining informed consent from all participants and protecting their privacy and confidentiality. The data obtained from the interviews and participant observation were analyzed using thematic analysis, identifying common themes and patterns in the participants' socio-economic perspectives and their social and physical space interactions. Overall, the methodology used in this study aimed to provide a comprehensive and nuanced understanding of the complex ways in which social and physical space interact to shape socio-economic perspectives in Kyrgyz Republic.

### **A. Thesis statement**

Based on the literature review and field research conducted in several villages of Kyrgyz Republic, this article argues that socio-economic perspectives in terms of social and physical space interactions are shaped by a complex interplay of

social, cultural, and economic factors. The thesis statement of this article is that a deeper understanding of the mechanisms that drive socio-economic interactions in low-income communities in Kyrgyz Republic requires a comprehensive analysis of the ways in which social and physical space interact to shape economic behavior and outcomes. This analysis should take into account the cultural practices and social networks that shape economic behavior in these communities, as well as the formal and informal economic structures that influence access to economic opportunities. By highlighting the importance of considering the complex ways in which social and physical space interact in low-income communities, this study aims to provide insights into the factors that drive socio-economic development in Kyrgyz Republic and inform policies and interventions to support these activities.

### **B. The impact of political factors on social and physical space interactions**

Political factors have a direct impact on the social and physical space interactions in the Kyrgyz Republic. The country has faced several political upheavals since independence, including the Tulip Revolution of 2005 and the 2010 Revolution, both of which resulted in changes in government and the political landscape. These events have had a significant impact on the country's economy and society, which has, in turn, influenced social and physical space interactions. Political instability and corruption are two major factors that affect the way people interact with each other and their physical environment. The findings of the study indicate that political instability and corruption have created a sense of distrust among the population. This distrust affects social interactions, with people becoming increasingly wary of strangers and outsiders. The fear of theft or violence in public spaces has led to the privatization of space, with people preferring to interact within the confines of their homes or private spaces. The privatization of space is not limited to the physical space but also affects social interactions. People tend to interact more within their social groups or with people from their own socio-economic class, leading to a sense of social segregation. This trend is exacerbated by the fact that people who live in poverty-stricken areas tend to have limited access to public space, which further isolates them from the rest of society. Political factors also have an impact on how physical space is used in the Kyrgyz Republic. For example, the lack of government regulation in urban planning has led to the haphazard development of cities, with no regard for public spaces or the needs of the people. This has resulted in a lack of public space, which is essential for fostering social interaction and community building. Moreover, the

political situation has also had a direct impact on the economy, which affects social and physical space interactions. Economic instability and the lack of job opportunities force people to migrate to urban areas, leading to the growth of informal settlements. These settlements lack basic amenities and services, which creates a sense of alienation and disconnection from the rest of society. In conclusion, political factors have a significant impact on social and physical space interactions in the Kyrgyz Republic. Political instability, corruption, and lack of government regulation have created a sense of distrust and isolation among the population. This, in turn, affects social interactions and the use of physical space, with people preferring to interact within their private spaces. The impact of political factors on the economy further exacerbates the problem, leading to the growth of informal settlements and the lack of basic amenities and services, which perpetuate the sense of isolation and disconnection.

### **C. The influence of economic factors on social and physical space interactions**

The economic conditions of a country are crucial in shaping its social and physical space interactions. In the Kyrgyz Republic, a largely rural and agrarian society, the economy plays a significant role in determining how people interact with each other and their environment. The findings of this study reveal the impact of economic opportunities and disparities on social and physical space interactions. One of the most significant economic factors that influence social and physical space interactions is the lack of economic opportunities in rural areas. The majority of the population in the Kyrgyz Republic lives in rural areas, where opportunities for education and employment are limited. This has led to migration to urban areas in search of better opportunities. However, urban areas also face their own economic challenges, including limited employment opportunities and a high cost of living. These economic disparities have created a sense of competition for resources and space, which in turn affects social and physical space interactions. The emergence of informal settlements and bazaars is another example of the influence of economic factors on social and physical space interactions. Informal settlements, or shantytowns, are often created by migrants who cannot afford formal housing in urban areas. These settlements are characterized by poor living conditions and lack of basic services, such as water and sanitation. The residents of these settlements often have limited access to public spaces and are forced to create their own social and physical spaces within their communities. Bazaars, on the

other hand, are informal marketplaces that serve as a source of livelihood for many people in the Kyrgyz Republic. These marketplaces have a significant impact on social and physical space interactions, as they often serve as a hub for community activities and social gatherings. Moreover, the economic conditions of a country also affect the distribution of resources and infrastructure, which in turn affects social and physical space interactions. For instance, the lack of basic infrastructure, such as roads and electricity, in some rural areas affects the mobility and accessibility of residents, making it difficult for them to interact with each other and their environment. Similarly, the distribution of public services, such as healthcare and education, affects the social and physical space interactions of people, as it determines their access to basic services. In conclusion, economic factors play a crucial role in shaping social and physical space interactions in the Kyrgyz Republic. The economic disparities between urban and rural areas, the emergence of informal settlements and bazaars, and the distribution of resources and infrastructure are some of the key factors that influence how people interact with each other and their physical environment.

#### **D. The intersectionality of cultural, political, and economic factors on social and physical space interactions**

Social and physical space interactions are shaped by a variety of complex factors that intersect and interact with each other. This article has explored the socio-economic perspectives of social and physical space interactions in the Kyrgyz Republic, with a particular focus on the cultural, political, and economic factors that influence these interactions. The traditional Kyrgyz culture of hospitality and community has a significant impact on social and physical space interactions. This culture is deeply ingrained in the Kyrgyz society and influences the way people interact with each other and their physical environment. The respect for elders and the importance of family ties shape social and physical space interactions, and people value social connections over personal space. However, political factors such as political instability and corruption have created a sense of distrust among the population, which affects their interactions with each other in social and physical spaces. The fear of theft or violence in public spaces has led to increased privatization of space, with people preferring to interact within the confines of their homes or private spaces. Economic factors are also significant in shaping social and physical space interactions in the Kyrgyz Republic. The country's economy is based on agriculture and mining, with a significant portion of

the population living in rural areas. Economic opportunities and disparities have a direct impact on how people interact with each other and their physical environment. For example, the lack of economic opportunities in rural areas has led to migration to urban areas, which has in turn led to increased competition for resources and space. The intersectionality of cultural, political, and economic factors on social and physical space interactions is crucial to understanding the complexity of the Kyrgyz society. These factors are intertwined and interact with each other in complex ways. For example, the traditional Kyrgyz culture of hospitality can be undermined by the fear of theft or violence in public spaces, which is influenced by political instability and corruption. Economic opportunities and disparities can exacerbate competition for resources and space, which can further exacerbate tensions between different social groups. In conclusion, this study has highlighted the importance of understanding the socio-economic perspectives of social and physical space interactions in the Kyrgyz Republic. By taking into account the intersectionality of cultural, political, and economic factors, policymakers and practitioners can design more effective and sustainable interventions that address the complex challenges facing the country. Understanding these factors is crucial for developing policies and interventions that aim to improve social cohesion and reduce inequalities in the country.

### **Conclusion**

This study sheds light on the intricate relationships between socio-economic factors and social and physical space interactions in the Kyrgyz Republic. The findings of this study highlight the importance of considering the intersectionality of cultural, political, and economic factors in shaping these interactions. Culture plays a significant role in shaping social and physical space interactions in the Kyrgyz Republic. Traditional cultural values, such as hospitality and respect for elders, continue to shape the way people interact with each other and their physical environment. This suggests that efforts to promote social cohesion and reduce inequalities must take into account the cultural context of the country. Political factors also play a significant role in shaping social and physical space interactions in the Kyrgyz Republic. Political instability and corruption have created a sense of distrust among the population, which in turn affects their interactions with each other in social and physical spaces. This highlights the need for political reform and greater accountability to rebuild trust among the population. Economic factors, such as disparities in economic opportunities and competition for resources and

space, also have a direct impact on social and physical space interactions. This suggests that efforts to address social and economic inequalities must take into account the spatial dynamics of the country, and consider how economic development can promote greater social cohesion and equality. By understanding the complex relationships between socio-economic factors and social and physical space interactions in the Kyrgyz Republic, policymakers and practitioners can design more effective and sustainable interventions to address the country's challenges. Such interventions may include community-based approaches that take into account cultural and social dynamics, as well as economic development policies that prioritize the needs of marginalized communities. In conclusion, this study underscores the importance of a holistic and intersectional approach to understanding and addressing social and physical space interactions in the Kyrgyz Republic. By recognizing the multifaceted nature of these interactions, policymakers and practitioners can work towards creating a more inclusive, equitable, and sustainable society.

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## THE INCIDENCE OF THE PANDEMIC CONTEXT ON THE SOCIAL EXCLUSION AND MATERIAL DEPRIVATION IN ROMANIA

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**How to cite:** MANDALAC, A. & IATAGAN, M. (2023). “The Incidence of the Pandemic Context on the Social Exclusion and Material Deprivation in Romania.” *Annals of Spiru Haret University. Economic Series*, 23(2), 104-116, doi: <https://doi.org/10.26458/2325>

### Abstract

*In Romania, social exclusion highlights a reality that removes the perspectives of sustainable development of social equity and economic stability. The pandemic context caused a major discrepancy between national socio-economic environments, placing Romania first in the European ranking regarding the level of social exclusion and material deprivation. The insufficient space of the labor market, the intensity of unemployment, the government restrictions imposed to limit the pandemic context argue the alarming statistics of social exclusion, while the policies and strategies implemented to ensure an honorable standard of living for the Romanian population do not show notable results, limiting the possibilities reducing the level of poverty. The purpose of the article is to measure the level of social exclusion and material deprivation in Romania, formulating sustainable proposals for improving the quality of life of people whose socio-economic status is at the limit of existence.*

**Keywords:** *social exclusion, material deprivation, social equity, economic stability, pandemic context*

**JEL Classification:** J71

### Introduction

In Romania, the intensity and unpredictability of the pandemic context resulted in a major discrepancy between the socio-economic environments identified at the national level, intensifying the negative perspectives attached to social exclusion and the risk of severe material deprivation. Looking from this perspective, every variation produced by an imbalance identified at the macroeconomic level contributes directly and decisively to the intensification of the level of social exclusion and severe material deprivation. According to specialist studies undertaken at the international level, Romania is facing an alarming reality: the statistics stated by Eurostat for the year 2021 place the national area in first place in the ranking of the risk of social exclusion and material deprivation. The perspectives drawn by means of the negative statistics stated at the European level move Romania away from achieving the objectives of sustainable development, recording major deficiencies in the achievement of Objective 1 - No poverty.

The overflowing importance attached to the static and dynamic analysis of social exclusion and material deprivation under the direct influence of the pandemic context derives from the need to quantify the devastating effects of the socio-economic imbalance installed at the national level, sizing the incidence of the pandemic in accordance with the statistical information developed by the specialists integrated in the activity the National Institute of Statistics of Romania.

Basing the discrepant image between the development regions identified at the national level, this research highlights the impact of the pandemic context propagated on Romania, offering an objective vision attached to the differences recorded in the efficiency of the implementation of national policies and strategies designed to eradicate social exclusion and material deprivation. Through the elaborated content, a differentiated and uneven impact of the pandemic context is highlighted, arguing through the incidence of unemployment, the limitation of the ability to provide a remunerated activity according to legal regulations and through the generalized decrease in the standard of living in the poorly developed regions of Romania.

The direct correlation between the specialized literature written on the socio-economic imbalance characterized by the intensity of social exclusion and material

deprivation and the argued content of the present research facilitates the visualization of the direct impact highlighted between the intensity of the pandemic context and the variables integrated in the research. By means of the relevant information extracted from the specialized literature, the causes, size and effects of social exclusion and material deprivation are effectively outlined, substantiating the conceptual approach attached to the subject addressed.

### **Literature review on the topic addressed**

Defined as a macroeconomic phenomenon that propagates a negative effect on the honorable level of existence of the population, social exclusion seen from the perspective of the pandemic context emphasizes the systematic disadvantage of individuals, a scenario that reflects an inadequate social cohesion or integration at the level of society (Kalinowski, 2022, 146). Looking from this bleak perspective, the pandemic context has boosted social exclusion through the intensification of the following causes (Tudorache, 2022, 146):

- The deepening of the inequalities highlighted within the vulnerable categories of citizens by limiting access to education, medical services and constraining the access of disadvantaged people to the labor market;
- The increase in the intensity of technical unemployment, a scenario that coincided with the considerable decrease in incomes, limiting the financial sustainability attached to citizens;
- The intensification of racial discrimination and the limitation of the possibilities of achieving an honorable living attached to these people.

The devastating effects attached to social exclusion propagated a tragic outcome on disadvantaged communities, forcing 34.5% of the total population in Romania to lose the right to an honorable standard of living, being condemned to the risk of social exclusion and the repercussions denoted by the conditions of existence carried out below the poverty line (Eurostat, 2022).

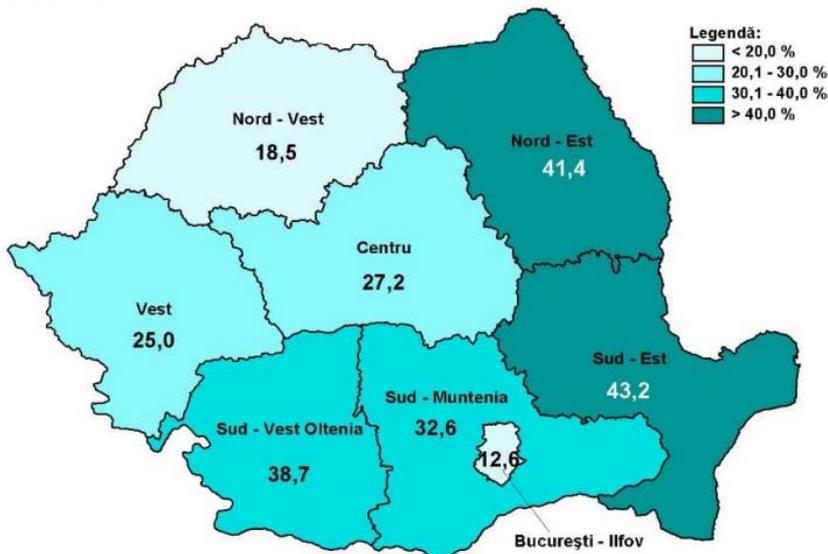
The concept attributed to severe material deprivation describes the acute lack of financial resources necessary to ensure the minimum conditions attached to an honorable living. The pandemic context has directly and decisively restricted the financial level of people identified in vulnerable categories, severely limiting the possibility of fully covering basic human needs (Nicholas and Rajan, 2023, 181). The previously stated scenario led to the inability of vulnerable people to honor their monthly financial obligations or to insure their food needs, intensifying the inability of these people to procure medical services or ensure continuity of the children's educational path.

### Theoretical foundation

The empirical dimension attached to this research is derived from the specialized literature identified through digital resources, respecting the criteria of relevance and novelty of the information. The statistical data integrated into the dimensioning of social exclusion and material deprivation were extracted from the document entitled "Dimensions of social inclusion in Romania" developed by specialists integrated into the activity of the National Institute of Statistics of Romania. Aiming at the dynamic analysis of the two indicators under the direct impact of the pandemic context, relevant data recorded at the level of 2020 and 2021 were processed.

### Content of the article

The unpredictability of the pandemic context propagated on the development regions identified at the national level boosted the registration of socio-economic discrepancies that led to the intensification of the risk of social exclusion. Looking from this bleak perspective, the level of 2020 emphasizes the following aspects attached to the indicator regarding the level of social exclusion identified at the national level:

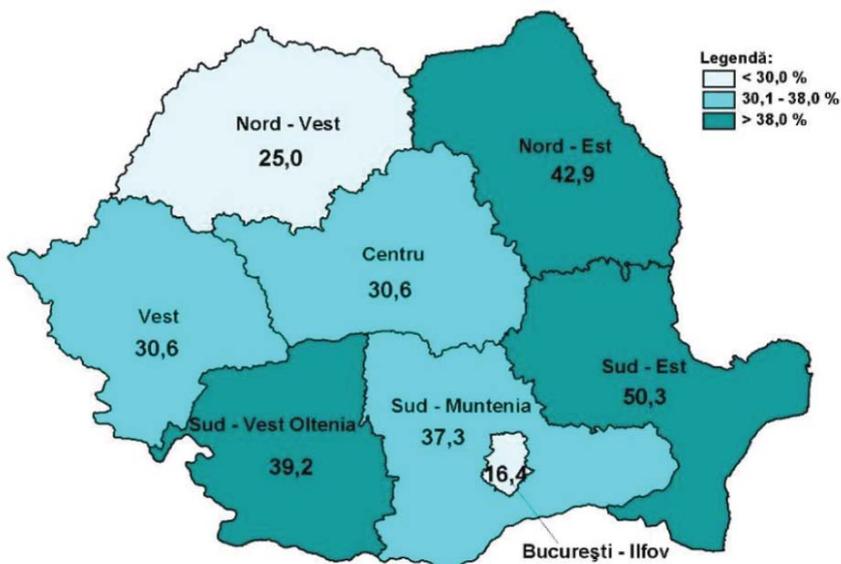


**Figure no. 1. Share of the population at risk of poverty or social exclusion analyzed according to national development regions (2020)**

Source: National Institute of Statistics of Romania, *Dimensions of social inclusion in Romania*, (2020) p. 40

In accordance with the information measured by the specialists of the National Institute of Statistics, the incidence of the pandemic context highlighted in 2020 resulted in reaching alarming levels of the risk of social exclusion. The South-East region reached the highest share of the population identified as being at risk of poverty and social exclusion, equaling 43.2 percent. Maintaining the previously stated negative trend, the North-East Region emphasizes the fact that 41.4% of the total resident population faces a strong socio-economic imbalance. Presenting a lower level of the indicator, the North-West Region faces the phenomenon of social exclusion in a proportion of 18.5%, while the Bucharest-Ilfov Region underlines the lowest level of the indicator analyzed from a national perspective – 12.6%.

The socio-economic imbalance intensified by the incidence of the pandemic context led to an increase in the risk of poverty and social exclusion, reaching the following values in 2021:



**Figure no. 2. Share of the population at risk of poverty or social exclusion analyzed according to national development regions (2021)**

Source: National Institute of Statistics of Romania, *Dimensions of social inclusion in Romania*, (2021) p. 42

In accordance with the statistical information presented previously, it is highlighted that the incidence of the pandemic context has intensified the existing socio-economic imbalance in the Southeast Region, with the risk of poverty and social exclusion reaching 50.3 percent in 2021. Maintaining the negative trend recorded in 2020, the North-East Region of Romania reached an alarming level of the indicator in 2021, equaling 42.9 percent. The Bucharest-Ilfov region maintains the lowest level of the risk of poverty and social exclusion recorded at the national level, equivalent to 16.4 percent.

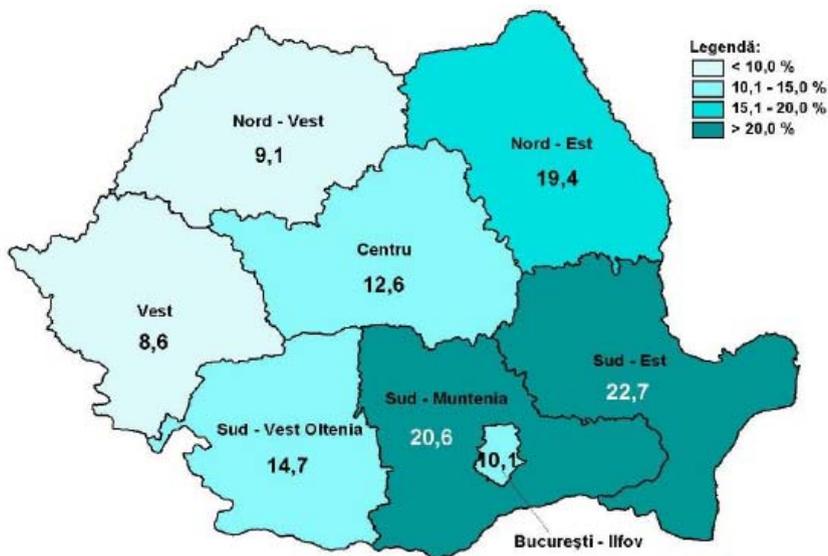
Compared to the level attached to the risk of poverty and social exclusion highlighted in 2020, 2021 shows the following negative dynamics:

- 1) South-East Region: increase of the indicator from 43.2% to 50.3%, equaling 16.43 percent;
- 2) North-East Region: increase of the indicator from 41.4% to 42.9%, equal to 3.62%;
- 3) South-West Oltenia Region: increase of the indicator from 38.7% to 39.2%, the premises presenting an insignificant increase in the risk of poverty and social exclusion, equaling the percentage of 1.29%;
- 4) South-Muntenia region: during the analyzed period, the indicator increased from 32.6% to 37.3%, the recorded increase equaling 14.41 percent;
- 5) Center Region: the increase in the risk of poverty and social exclusion caused the indicator to increase from 27.2% to 30.6%, signaling a dynamic equivalent to 12.5 percent;
- 6) West Region: the increase of the indicator from 25% to 30.6% resulted in the increase of the risk of poverty and social exclusion by 22.4 percent;
- 7) North-West Region: the incidence of the pandemic context caused the alarming increase in the risk of poverty and social exclusion from 18.5% to 25%, the increase equaling 35.13 percent;
- 8) Bucharest-Ilfov region: the increase of the indicator from 12.6% to 16.4% determined the increase of the risk of poverty and social exclusion by 30.15% during a single year.

The pandemic context intensified the bleak perspectives attached to the risk of poverty and social exclusion identified at the national level, causing a strong socio-

economic imbalance in the North-West Region (35.13%) and the Bucharest-Ilfov Region (30.15%). The dynamic analysis of the indicator registered under the risk of poverty and social exclusion highlighted the reduced incidence of the pandemic context on the highlighted indicator in the South-West Oltenia Region (1.29%) and in the North-East Region (3.62%). The argument supported to motivate the previously stated scenario coincides with the significant values of the indicator before the installation of the pandemic context.

The severe material deprivation recorded at the national level in 2020 analyzed from the perspective of the development regions highlights the following values:



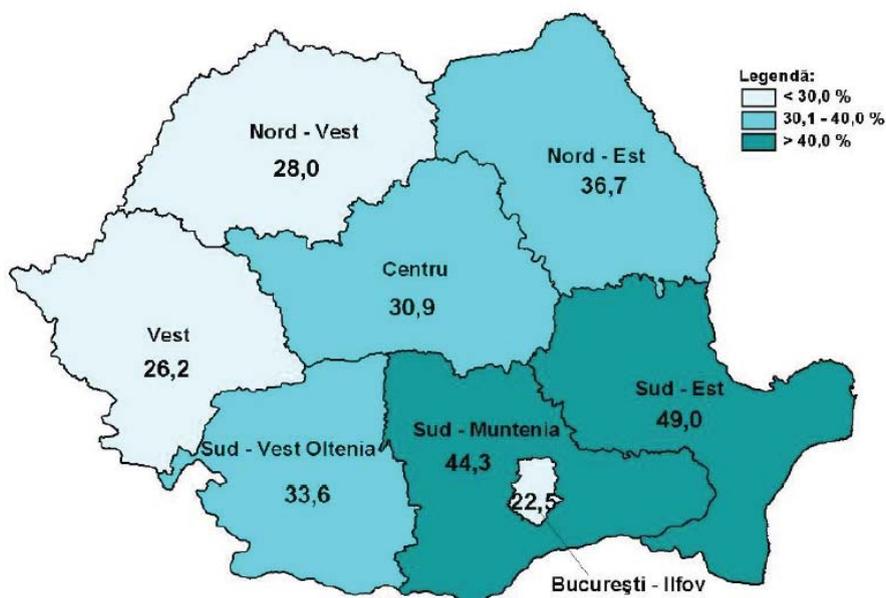
**Figure no. 3. Share of the population under severe material deprivation analyzed according to national development regions (2020)**

Source: National Institute of Statistics of Romania, *Dimensions of social inclusion in Romania*, (2020) p. 47

The incidence of the pandemic context determined the deepening of socio-economic inequalities identified at the national level, a situation in which the South-East Region recorded the maximum value of the indicator regarding the risk of severe material deprivation, reaching 22.7 percent. The Sud-Muntenia region ranks 2nd in the analysis of the incidence of the pandemic context on the risk of

severe material deprivation, registering 22.6 percent among the resident population. The North-West region highlights low values of the indicator, signaling only 9.1% of the total regional population that cumulatively meet the conditions attached to the risk of severe material deprivation. It is noted that the Western Region recorded the lowest value of the analyzed indicator from a national perspective under the pandemic context, reaching 8.5 percent.

The accumulation of factors stemming from the imposition of the framework for limiting the incidence of the pandemic context forced a significant share of the population to register, involuntarily, under the right of persons under the direct influence of severe material deprivation. The inability of the labor market to maintain a secure and sustainable framework necessary to cover the basic needs of citizens has resulted in an alarming increase in the risk of severe material deprivation, noting the following weights attached to the indicator:



**Figure no. 4. Share of the population under severe material deprivation analyzed according to national development regions (2021)**

Source: National Institute of Statistics of Romania, *Dimensions of social inclusion in Romania*, (2021) p. 44

Under the direct impact of the pandemic context, the dynamic recorded by the evolution of the risk attached to severe material deprivation has reached alarming levels. Looking from this perspective, 49% of the population residing in the South-East Region faced the risk of severe material deterioration in 2021. Maintaining the previously stated negative statistics, 44.3% of the total residents of the Sud-Muntenia Region were registered in the category of people identified as being at risk of severe material deprivation, presenting the inability to satisfy their basic needs. The pandemic context analyzed from the perspective of the Western Region determined that 26.2% of the total population faced severe material deprivation. The Bucharest-Ilfov region shows the lowest level of the indicator analyzed from a national perspective, exposing 22.5% of the total population to the repercussions of severe material deprivation.

Compared to the figures recorded in 2020, the pandemic context has had a negative impact on the existing economic and social sustainability at the national level, the dynamics highlighted in 2021 presenting the following evolution of the analyzed indicator:

- 1) South-East Region: the incidence of the pandemic context determined the increase in the risk of severe material deprivation from 22.7% to 49%, boosting the incidence of the indicator by 115.85%;
- 2) South-Muntenia region: in the period 2020-2021, the level of severe material deprivation increased from 20.6% to 44.3%, the number of people unable to meet their basic needs increased by 115.04%;
- 3) North-East Region: the increase in the number of people at risk of severe material deprivation is noted, the indicator increasing from 19.4% to 36.7%, an increase argued by means of the 89.17 percent;
- 4) South-West Oltenia Region: the analyzed region is facing an alarming increase in the number of people at risk of material deprivation, the indicator increasing from 14.7% to 33.6%, the increase being argued through the 128.57% revealed in the analyzed period;
- 5) Center Region: the pandemic context endangered the socio-economic sustainability of the residents of the Center Region, the indicator regarding the risk of severe material deprivation increased from 12.6% to 30.9%, the increase being equal to 145.23 percent;
- 6) Bucharest-Ilfov region: the incidence of the pandemic context determined an increase in the indicator regarding the level of material deprivation from 10.1% to 22.5%, marking its dimensioning by 122.77 percent;

- 7) North-West Region: the repercussions of the pandemic context highlighted an alarming socio-economic reality, a scenario in which the number of people at risk of severe material deprivation increased from 9.1% to 28%, the level of the analyzed indicator in 2021 placing by 207.69% above the level of the indicator attached to 2020;
- 8) West Region: the negative incidence of the pandemic context has determined the increase in the risk of severe material deprivation from 8.6% to 26.2%, limiting sustainable prospects for regional development. The dynamics of the indicator is quantified by means of the 204.65 percent.

The dynamic analysis attached to the risk of severe material deprivation underlines the harmful incidence of the pandemic context on the socio-economic sustainability registered in the North-West (207.69%) and West (204.65%) Regions. Compared to the incidence of the pandemic context analyzed from the perspective of the risk of poverty and social exclusion, the risk of severe material deprivation has reached alarming levels.

The personal vision related to the deep socio-economic imbalance driven by the unpredictability of the pandemic context foresees the need to implement the following relevant aspects:

- 1) Updating regional policies and strategies related to reducing the risk of poverty, social exclusion and severe material deprivation, ensuring disadvantaged communities the right to an honorable standard of living;
- 2) Accessing European funds for Romania's enrollment in the right to sustainable development objectives, offering people who benefit from an honorable standard of living facilities to support the conditions of existence. Looking from this perspective, the need to ensure the continuity of the "Support for Romania" programs is implied, offering disadvantaged people the right to meet their food needs;
- 3) The sustained increase in the tariff level of conventional energy removes the sustainable prospects attached to disadvantaged people, government intervention representing a mandatory condition for the financial support of people who do not have the resources necessary to cover basic expenses. The need to secure funds to support the government program through which disadvantaged people in Romania benefit from real support in paying the equivalent of current energy bills, offering them sustainable financial support, is highlighted.

The public bodies that have political-administrative competence must focus on the recovery of the highlighted situation at the national level, eradicating the devastating effects of the pandemic context.

### **Conclusions**

In conclusion, the pandemic context boosted the increase in the level of poverty, social exclusion and material deprivation in Romania, forcing the population identified in vulnerable socio-economic perspectives to carry out their existence under unimaginable conditions.

Looking from the perspective of the early stage of the repercussions of the pandemic context identified at the national level, the year 2020 registered certain regions at an increased risk of poverty and social exclusion. The South-East region reached the highest share of the population identified as being at risk of poverty and social exclusion, equaling 43.2 percent. Maintaining the previously stated negative trend, the North-East Region emphasizes the fact that 41.4% of the total resident population faces a strong socio-economic imbalance. Presenting a lower level of the indicator, the North-West Region faces the phenomenon of social exclusion in a proportion of 18.5%, while the Bucharest-Ilfov Region underlines the lowest level of the indicator analyzed from a national perspective – 12.6% . The pandemic context intensified the bleak perspectives attached to the risk of poverty and social exclusion identified at the national level, causing a strong socio-economic imbalance in the North-West Region (35.13%) and the Bucharest-Ilfov Region (30.15%).

The incidence of the pandemic context determined the deepening of socio-economic inequalities identified at the national level, a situation in which the South-East Region recorded the maximum value of the indicator regarding the risk of severe material deprivation, reaching 22.7 percent. The Sud-Munteania region ranks 2nd in the analysis of the incidence of the pandemic context on the risk of severe material deprivation, registering 22.6 percent among the resident population. The dynamic analysis attached to the risk of severe material deprivation underlines the harmful incidence of the pandemic context on the socio-economic sustainability registered in the North-West (207.69%) and West (204.65%) Regions. Compared to the incidence of the pandemic context analyzed from the perspective of the risk of poverty and social exclusion, the risk of severe material deprivation has reached alarming levels.

Future research perspectives involve the integration into the dynamic analysis of the indicators regarding the risk of poverty, social exclusion and material deprivation attached to the year 2022, quantifying the repercussions of the pandemic context at the same time as the level of efficiency of the government programs implemented to ensure the resilience of Romanians intensely affected by unpredictability and the harmfulness of the pandemic context.

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## A DECONSTRUCTION OF FRUSTRATION – AGGRESSION-THEORY OF POLITICAL VIOLENCE: NIGERIA

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**How to cite:** ETIM O. F. & UKPERE I. W. (2023). “A Deconstruction of Frustration – Aggression-Theory of Political Violence: Nigeria” *Annals of Spiru Haret University. Economic Series*, 23(2), 117-139, doi: <https://doi.org/10.26458/2326>

### **Abstract:**

*The work set out to deconstruct and reconstruct Ted Roberts Gurr’s (1970) theory of relative deprivation, frustration-aggression as contained in his work ‘Why Men Rebel’ (1970). The study used descriptive research design and evaluated the capacity of the theory which was created to explain political violence in Africa and Asia in the colonial era, to also explicate why intense relative deprivation, frustration and aggression arising from the avalanche of poor governance in postcolonial African states such as Nigeria and many others, have not culminated into political violence and rebellion. The study presented numerous data obtained through observation and analysis of events in Nigeria, Africa and case-studies of American, French, English and Russian rebellions and distilled qualitative data which indicated lack of association between the variables. The application of the study design revealed first the*

*state as the source of relative deprivation, frustration and aggressions of the citizenry when they are denied access to the public values which they feel entitled. Secondly, it further discovered that there are no direct correlations between relative deprivation, frustration and aggression as initially conveyed by the theory since 1970. Furthermore, it exposed that there is an intervening variables identified as 'Social Movements' or 'Civil Society Organizations (CSOs), which harness relative deprivation, intense frustration and aggressions from the sufferers and convert them to other set-of-actions which may not be political violence and rebellions but could be advocacy towards the expansion of the mechanism for supply of public good or values and to make it accessible to many to address relative deprivation. The study concluded in the light of its findings, the initial theory require deconstruction and reconstruction to include 'Social Movement' as a principal component, it is only then that it could be applied in the analysis of issues in postcolonial African and Asian states.*

**Keywords:** Relative Deprivation, Frustration, Aggression, Social Movements, Political Violence

**JEL Classification:** P11

### **Introduction and Background**

Ever since John Dollard, Neal Miller, Leonard Doob, Orval Mower and Robert Sears created the 'Frustration-Aggression theory which was revised by Leonard Berkowits (1939-1969), the theoretical perspective of analysis, was then condensed in 'Why Men Rebel' by Robert Ted Gurr (1970). Students, analysts and scholars have applied this framework in the light of a unilineal correlation between 'Frustration-Aggression' arising from 'relative deprivation' as if it culminate into political violence and rebellion against the source of the frustration each time it occurs. It is instructive to note that since this text was published, there had not been any attempt to revisit the theory in the light of postcolonial dynamics of political violence. This is because the text and theory was an attempt to provide explanation for persistent political protests in Africa and Asia under colonialism. The pertinent question to interrogate would be how does the theory explicate political protests and rebellion in postcolonial states in the same continent and beyond? This provided the impetus for this study aimed at making the theory capable of explicating same phenomenon in the postcolonial state

It is against this submission that this study sought the ‘deconstruction of the context to enable one make logical analysis of how to respond to the sources which precipitate relative deprivation, each time citizens rise to demand good governance from the duty-bearers.

It would be recall that every State is individual-writ-large, wherein everyone had moved from the state of nature into the republic to mitigate the inconveniences of the state of nature where everyone was the judge to the propriety of his or her actions. The republic granted the advantage of politics of scale, consequent upon the social contract which had taken place. Everyone had conceded a fraction of his/her inalienable rights to legitimize the authority of the leviathan. The Leviathan also known as the Government, besides being the agent of the citizens, had the primary duty of mitigating the first conditions which pushed men/women into the republic, the security of lives and property. The Leviathan had to conduct governance – the art of distributing political and administrative authority in the most effective and equitable manner so as to drive development (value-addition) among the citizens.

The colonial states however, were created out of conquest which pulled people together for commercial colonial purposes; people who hitherto may not had wanted to be together in the same republic. This *ab-initio* set the ground for conflict in colonially created states, coupled with re-settable colonial administration. This fundamental psychology of conflict in the colonial state was not accommodated in Ted Gurr’s theoretical postulation. This is one of the elements which provided impetus for this current work.

In colonial and postcolonial states, very often governance was and is conducted in ways and manner which incrementally reduces the individual space, constrict the freedom and obstruct the exercise of individual freedom, all of which culminate into Citizens-Government trust deficit. Dysfunctional development in the state means that the state is no longer meeting the expected needs of the citizens. This often generate frustration in the psyche of the individual citizens in the state, and when there is no intervention to address the rising frustration, it cascade into aggressive behavior, ultimately culminate into anomic political participation.

At this point the citizens respond become anti-social and react violently against the public utilities in the absent of the government concern for their rights. The citizens responses to poor governance then and now, does not seem to follow the Ted Gurr’s Relative Deprivation ((relative deprivation a perceived discrepancy between men’s value expectations and their value capabilities. Value expectations

are the goods and conditions of life to which people believe they are rightfully entitled. Value capabilities are the goods and conditions they think they are capable of attaining or maintaining, given the social means available to them (Gurr, 1970 p 13). Frustration-Aggression political violence and rebellion paradigm. This is the rational for seeking the reconstruction and deconstruction of the theory.

In Nigeria there was  $\neq$ ENDSARS in 2020 which was essentially a demand by the Youth for a nation that works for them. They demanded a fair treatment for the police so as to reduce the transfer of their ‘frustration’ with the Nigerian Police System on the Nigerian citizens which seemed to have been the case, given the treatment they received from the SARS personnel on the road when they had not been proven to be robbers. They therefore generated a five point demands on the state, which included; (i) immediate release of all arrested protesters, (ii) Justice for all deceased victims of police brutality and appropriate compensations for their families (iii) Setting up an independent body to oversee the investigation and prosecution of all reported police misconduct within a period of 10 days, (iv) carrying out psychological evaluation and retraining of all disbanded SARS operatives before they can be deployed (this should be verified by an independent body). (v) The government should increase police salary and they should be adequately compensated for protecting lives and property of the citizens. These demands were to strengthen the Nigerian Police force, the machinery for internal security meant to safe their lives and property. It did not follow the pattern prescribed in Ted Gurr’s (1970) postulations.

The frustration of the Nigerian youth brought them together into a ‘social movement’ a loose association led by several ‘Show-Business leaders’ to express the demands and requested the state to address them for the common good. We would refer to the group as  $\neq$ ENDSARS movement. They did not resort to violence conduct which primarily serves as a data for this discourse.

However, this act coupled with the series of frustrating governance in Nigeria in the last seven (7) years, have not led to the kind of reactions recently experienced in Sudan, Sri Lanka, Sierra Leone and Ghana. It is situation such as this that has led to this inquiry with the aim of deconstruction and reconstruction of the theory to strengthen its further usage in analysis by students, analyst and social scientists in general. It is a criterion for theory to have its fallibility, definitional clarity, identification of relevant variables of various levels of analysis and applicability to a large universe of events for analysis (Gurr, 1970 p 17). It is only after reconstruction that it would be able to analyze colonial and postcolonial situations.

The central thesis of the theory is that in order to understand the protests, we must first of all take cognizance of 'relative deprivation felt by the citizens of the countries in these continents that generated the popular discontents. Secondly, that the relative deprivation felt by the people justified their anomic actions and thirdly, their inability because of the source of their discontent and relative derivation prompted their resort to political violence and rebellion. Put differently, persistent frustration produces aggressive behavior which translates to political violence and rebellion.

### **Research Questions**

- i) To what extent does absence of good-governance in the state frustrate the individuals to violence conduct?
- ii) What precipitates the individual to join 'social movements' rather than resort to political violence?
- iii) Are there other political factors such as the State's actions which may spark political violence other than frustration-aggression?
- iv) Could there be extant 'relative deprivation and frustration, yet it does not cascade to political violence? These issues would guide the discourse descriptively through the desk reviews to evaluate cases, affirming or repudiating the research questions.
- v) How does this explicate the Nigerian situation?

### **Objectives of the study**

The intentions of the treatise are;

- i) To establish that it is not all cases of frustration-aggression that culminate in violent political action being conveyed in the theory.
  - i) To examine the role of the individual in the state, when governance is dysfunctional.
  - ii) To interrogate if there is a direct correlate between relative deprivation-frustration and political violence.
  - iii) To identify the intervening variables which do not create direct relationship between relative deprivation-frustration and aggressive political conduct?
  - iv) To provide an alternative explanatory theory of political violence in the state.
  - (v) To examine its applicability in the Nigerian situation.

### **Statement of the Problem**

The problem addressed in this study was that the postulations of John Dollard, Neal Miller, Leonard Doob, Orval Mowrer and Robert Sears (1939) as reviewed by Leonard Berkowitz (1969) and condensed by Robert Ted Gurr in his classic 'Why

*Men Rebel'* (1970) wherein it is stated that when men perceived themselves as entitled to a value in the state and are persistently frustrated from accessing it, aggressive instinct is activated, and this predisposes him to political violence and rebellion. If frustrations are sufficiently prolong or sharply felt, aggression is quite likely, if not certain to occur (1970 p 37). Berkowitz, in his reformation of the theory averred that the perception of frustration arouse anger. Aggressive responses tend to occur only when they are evoked by an external cue, that is, when the angered person sees an attackable object or person that he associates with the source of the frustration (1970:34). This is the only time that violence actions and rebellion are ignited, short of this, the violence is bottled-up. In other words, when there is obstruction to these expectations and to the responses to obtain what they considered entitled to from the state, frustration is created, which ignite aggression. In the view of 'frustration-Aggression political violence theory' this automatically results into political violence and rebellion. Whereas Berkowitz differ and this study further refute such correlation, all of which made the agitation for the theoretical reconstruction a categorical imperative.

The crux of the problem is that the above theory have always been presented as if there is a unilineal correlation between 'relative deprivation, 'frustration and aggression terminating in violent political actions' whenever it occur. This is because in many submissions by postgraduate students, scholars, analysts and administrators, there seemed to have been *apriori*' assumptions that every situation which generate 'relative deprivation of the individual and group', creates frustration-aggression which culminates in violence political conduct.

The concern of this work is that if there existed such a correlations which explained political violence and rebellions under colonialism, what then has changed that the theory does not present such a relationship in the postcolonial state? Why is the theory unable to explain why such variables do not culminate in political violence in post-colonial states in Africa and Asia currently? This is why we seek the deconstruction which actually refers to the interrogation, of traditional assumption about identity, certainty and the truth. Deconstruction seeks different angles of perception in order to correct the assumption and specify the type of political violence (Harcourt, 2016). This is because there are several classes of state sponsored political violence against its citizens, particularly in Africa and Asia.

The situation analysis revealed that there is no unilineal correlation; because there exist several intervening variables before political violence and rebellions occur from frustration and aggression. Consequently, we contend and accept that;

(i) persistent frustration-aggression generate very serious disappointment, being denied what one consider himself entitled; (ii) We also oppose that this state of psychology does predisposes one into violent actions automatically as conveyed by Ted Robert Gurr's submission. (iii) We contend further, that the deprived person(s) ideally would seek to align with other persons who also suffered similar relative deprivation in order to create a stronger power-base to respond to the elements generating the frustrations. (v) There are other variables which could precipitate deprivation but which do not lead to political violence or rebellion such as the minority status of the social group as the case of the African-Americans as minorities and as it was in Apartheid South Africa as in most other polities.

It is only when the theory is reconstructed as proposed herein that 'frustration-aggression' would lead to the formation of 'Social Movement' for the creation of a power base before it would be capable to cause political protest and rebellion and conversely, when it does not create 'social movement as advocated herein, it is incapable of translating 'frustration-aggression' into political violence and rebellion. It could generate anomie political participation which is not in a significant scale. It is important to note that the frustrated and aggressive person(s) would not be able to confront the state, until they must have come into a social movement to harness their power. This is because the source of frustration-aggression is often the state acting directly or through its agents with full backing of the instrument of power, which the relatively deprived persons do not have hence absorb the pains in a bottled-up anger which he carry about.

We must take notice, that the state exudes government generated inequalities (refusing to recognize the rights of some communities and extending public values to them especially in Africa where there is deficit of leadership). It is the state which generates repressive policies which intensify frustration-aggression as was the case in Apartheid South Africa, and denial of rights in some states on religious, racial or linguistic basis. Consistent poor governance which abound in Nigeria and most African and Asiatic states, is a major source of relative deprivation, frustration and aggression visited on the citizenry. Collective violence is at the level of 'Social Movements'. Thus, rather than Frustration-Aggression and political violence theory, it should be 'Frustration-Aggression Social Movement theory-deconstructed and reconstructed as this would mean the Social Movement as intervening variables could convert frustration –aggression to another set of social actions rather than political violence and rebellion. This explains the situation in Africa, Nigeria and Asia.

### **The basis of the Problem**

The problematic of this study arose from the fact that there is considerable cases of frustration-Aggression arising from relative deprivation in African states and specifically in Nigeria in the last seven years and counting, and yet it has not cascaded into political violence and rebellion. Though in few African states, Sudan, Ghana, and Senegal are exceptions, while in Asia; Sri-Lanka is acting out and partially in Nigeria. Given the avalanche of poor governance and state generated relative deprivation, the theory has been incapable of explicating the seeming peace in the continent and particularly in the Nigerian situation. We therefore observed;

i) That there is no unilineal correlation between ‘relative deprivation, frustration-aggression and political violence’. This is because there would always be several intervening variables which may divert or control frustrations from culminating into aggressive actions. This is the case when the individual realized they do not have the *skills, qualifications or the majoritarian status* to obtain the goals. The citizens, who are indeed frustrated by certain actions of the state, may be forced to still obey the law or rules of the state though grudgingly. The rule of obedience in the state could have been the internationalization of the prevailing norms and habits from the state. Consistent frustration by the state to meet the needs of the citizenry may lead to the second intervening variable being the formation of a ‘Social Movement’ such as *#ENDSARS* movement in Nigeria in 2020, the ‘Mau-Mau’ in Kenya, MEND in the Niger- Delta zone of Nigeria and IPOB in the South-eastern States of Nigeria. These social movements mitigate the relative deprivation, frustration and aggressive instinct, though they may resort to certain anomic participation to obtain attention from the State. This upholds the thesis of this study that there is no direct association with political violence because of the present of several mitigating variables, one of which is the Social Movement.

ii) Secondly, it is not all act of frustration by the state which precipitates violent reaction. This is because it is only when such act must have accumulated to a high degree as the *#ENDSARS* in Nigeria without mitigation such as the NPF exploitation of the youths. It however results of into non-violent protest until the state reacted much more violently. The question then is to what degree would the frustration get before it transform into violent political protest?

iii) Thirdly, frustration may not necessarily result into aggression which is just one of the numerous options, but could also lead to ‘withdrawal syndrome’ from the activities which generated it. In this context both the individual and the larger

society become less interested in the activities of the government of the day. They may become indifferent to events in the state. Frustration in this case, generated a different outcome rather than aggressive behavior.

In democracies where the majorities have their way, and the minority their say, many frustrated persons would not resort to aggressive behavior, but look up to the next election date to remove the agents of frustration, mobilized by the Social Movements.

### **Social Movements**

It is a loosely organized effort by a large group of people (all of whom must have suffered relative deprivation) to achieve a particular goal typically a social or political one such as (Afenifere, Odua People Council, Niger Delta Forum etc. all in Nigeria). It may be form to resist or undo a social change (Shannon, 2011). Social movement set agenda or influence politics in a way to vitiate further frustration thereby mitigating the aggressive component of state generated frustration. Mario Dani (1992) had described it as a network of informal interactions consisting of plurality of individuals groups or organizations, who mainly engaged in political or cultural conflict on the basis of shared political identity. Charles Tilley on the other hand, described it as a series of contentions performances displayed and campaigns by which ordinary people make collective claims on others. (Tilley, 2004). A vehicle in which ordinary people participate in politics. Sidney Tarrow (2005) posited that they are collective challenges by people with common purpose and solidarity in a sustained interactions with elites, opponents and authorities. It is not a political party but an advocacy group. It is now clear that its formation is based on collective identity, shared normative orientation, concern for change of the status –quo and when they achieve success or failure, they eventually dissolves or ceases to exist (James and Van-seeters). What is critical in these conceptions of Social Movement is that they share concern for change of the status-quo. Thus, when the source of ‘frustration-aggression changes and share the values for everyone or those who consider themselves entitled, then the frustration-aggression ceases or translate to other usage and not political violence and rebellion. This affirmed the postulation of this study that Social Movements convert the predisposing factors into other uses rather than violence.

In the context of this study, the Social Movement which emerged in the light of persistent frustration-aggression of the people of the Niger Delta, led to the formation of several Social Movement such the South-South People Assembly (SSPA), Niger Delta Volunteer Force (NDVF etc.). The campaigns and the

engagements of the Social Movements led to the creation of the Ministry of Niger Delta and Niger Delta Development Commission (NDDC). Thus, the frustration-aggression of the Niger Deltan could not translate to political violence and rebellion as postulated by Ted Robert Gurr (1970). This is the essence of the deconstruction and reconstruction of the theory to be able to provide foundations construction of and analysis of social issues in postcolonial states.

There are three (3) major elements of Social Movements and these are; Sustained campaigns to make claims on target authority, repertoire- press statements to the press expressing their positions. This is often followed by demonstrations, public meetings, petitions etc. The third being their ‘Worthiness, Unity in Numbers and Commitments (WUNC) in the pursuit of the claims.

One of the factors which have mitigated frustration is widespread education, this has enable people and group to invent several ways of addressing state directed frustration thereby reducing considerably the propensity of aggression culminating to political unrest. Conversely, where universal education has not been allowed to flourish, there exists high probability of frustration–aggression culminating into socio-political violence. The other factors which have mitigating effect on frustration-aggression include; freedom of speech, association and the contents of Universal Declaration of Human rights.

### **The Procedure of the Study**

The study strategy adopted for the generation of primary and secondary data was ‘descriptive design’ meant to obtain data concerning the current status of the phenomena of relative deprivation, frustration-aggression and how it culminates into political violence. It was directed at determining the situation analysis, if indeed every act of frustration in governance have direct correlation with political violence. The goal was to describe ‘what existed’ at the time of the study with respect to the variables and the conditions which precipitated political violence. It was meant to seek information to explicate the relationship between frustration and aggression for the purposes of decision-making (Ndiyo, 2005 p.70). The documentary analysis of instances of political violence relating to revolutions was very instructive in this regard, it specified the nature of frustration and how it directly culminates in aggressive political violence.

The scientific process of descriptive study consisted of (i) skillful observation of the situation analysis and intelligent identification and description of the characteristics of the population involved. (b) The identification of the variables (poor governance) which accounted for the behavioral characteristics of the

population in the context. (c) It sought to establish regularities in the behavior of the frustrated and aggrieved population in the context. (d) This approach was useful in decision-making and in predicting group behavior after prolong observations. (e) Once the factors catalyzed the behavior of the population had been identified over time-then the behavior of the population could then be relatively predicted. It was assumed that when the variables and the behavior of the population have been observed over time, they would always behave in a particular manner (McCandles, 1970 p). The method was considered apt because we were concerned with the characteristics of the population, the frequency and the trend of those who transcended into violence in the face of frustration with poor governance. Since Robert Ted Gurr's (1970) work not much has been done in the area of this study, the approach then became very appropriate.

Procedurally, the design involved the observations of governance to identify instances of frustration-aggression in order to derive data for analysis. It also include the identification of the population of the people of the lower and middle social classes who are mostly the victim of relative deprivation, then the evaluation of global revolutions to examine the correlations of frustration-aggression to political violence. This approach revealed both secondary and primary data for critical analysis. This was the strategy for the deconstruction of the theory, where there was no direct association between the incidences of relative deprivation, frustration, aggression and political violence. We studied major revolutions to ascertain the association between these variables.

**Theoretical Framework of Analysis:** Socrates-Crito Theory of Compliant

One of the intentions of this study was to explicate why in the face of dysfunctional governance the individual remained indifference to lack of good governance. In order to evaluate and justify the individual disposition in the state, we adopted the 'Socrates-Crito theory of compliant to the state.

Socrates (470-399) a Greek philosopher hailed from Athens. He was a teacher and set up the school 'Cycle' who's most outstanding student were 'Plato Aristone' and Xenophon. He created the mode of teaching known as Socratic dialogue (questions and answers session). His mission was to make the youths as good as God- he was then accused of blasphemy and went through one-day trial and obtained a dead sentence.

The trial of Socrates and the sentence appeared foreordained even before the evidence were advanced. A group of his friends conspired to free Socrates while

awaiting execution by taking him to a new location where he would be safe. Socrates refused to escape the dead sentence on the following facts;

- i) A social contract existed between the citizens and the state.
- ii) Any person in the state has ample opportunity to acquaint himself with the way of life in the community.
- iii) He observed the custom, traditions, institutional life the working rights and duties.
- iv) If all these are offensive, he/she may go elsewhere, which is more suitable and satisfactory.
- v) However, should he stay, he must accept the duties of a citizen as the price of his rights.

Socrates opined that an adult enters into a contract with the states which involves these terms; the state promises to protect the individual and to promote his well-being. In turn the individual promised to respect the state and to obey its laws. If an individual objects to a particular law, the contract requires him to obey it until he succeeds to secure a change through established procedures for that purpose as provided for in the law.

Socrates then told Crito that if he were to escape, he would have violated his promise to obey the law. He concluded that he was not prepared to repudiate his obligations merely because the law had worked to his detriment in this case, citizens should obey all of the laws, all of the time, being neither selective nor inconsistent.

Suppose the state defaults on its part of the bargain? Suppose it becomes self-serving and tyrannical at the expense of the people or denies them an effective opportunity to change an unjust law. Perhaps then the individual's obligation to obey the law would cease. It is instructive to note that the individual would not on his own confront the state but in conjunction with others in an organized manner through a social movement which would harness the collective deprivation of the people against the state. We could come against the state in a mass voting to displace the government, engage the state for change of public policies and lastly in a revolt where the state remains adamant to the democratic ventures for change.

The second analytical framework applied was *Relative Deprivation versus Insurrection* derived from Leon Trotsky. It conceived relative deprivation as a powerful motivator for social actions as people are pushed to theft, rioting or more peaceful protest actions against those depriving them of necessary items of life. Social Movements based on deprivation stem from four conditions; not having

items; knowing someone else has the item, wanting the items and believing it is possible to obtain these items. Trotsky averred in reality the mere existence of privation is not enough to cause an insurrection; if it were, the masses would always be in revolt' of greater importance is the existence among a group, or groups of a feeling that prevailing condition limit or hinder their economic activity (Trotsky cited in Crane Brinton, 1965 p.33). These feelings of relative deprivation must be raised to an effective fever pitch by propaganda, pressure-group actions, public meetings like the 'Boston Tea Party' did before it translate into public riots.

It is now clear from the above, that relative deprivation, frustration-aggression does not have association and do not culminate into political violence and rebellion but rather into other social actions and that political riots is just one of those social actions that may happen through the social groups. The outcomes may not be political violence but others which could accommodate and assuage the socially deprived group.

### **Data Presentation**

i) Nigeria, seven (7) years of governance under the President Buhari led government, Nigeria had been rated by the Global Terrorism Index (2019) as the third-worst nation prone to terrorism with no improvement since 2017. Aside from insurgency, banditry, kidnapping and secessionist violence pushing Nigeria towards the brink of collapse (Ayitogo, 2021), Unemployment currently stands at 33.3 per cent (approximately 60 per cent of the youth demographic) despite schemes such as N-Power, Conditional Cash Transfer, Government Enterprise and Empowerment Program (GEEP), Tradermon and Special Works Programme. The criteria of poverty, unemployment and underemployment, has multiplied (Olaniyi, 2022). Governance in Nigeria in the last seven (7) years had the commonest source of energy (npk kerosene) used by the lowest rung of the populace sold at N700.00 and Diesel (DPK) sold for N800.00. Inflation is at all time high at 19.5 per cent rendering the income of the middle class unsustainable. The current currency shortage after the printing of new denominations have led to crises only in the Southern States while the North remained calm with some political leaders acting in a reasonable manner, yet there are no civil society violence to the cash shortages. For all these frustrations cannot generate enough aggression to culminate in civil society anomic participation, then the correlation has obstructive variables.

Insecurity had spread from the North-East to every state with schools being forced to close. Corruption in the public service is widespread with Accountant General of the Federation taking away about N200 billion. The Nigeria Social Insurance Trust Fund (NSITF) has reported that the document relating to N17.158

billion were eaten by termites. According to the CBN, document relating to N6.7billion fuel subsidy were missing. In another development N5.9 billion was used to train 177 youth in telephone repairs (N33.3million per youth). The Pension Commission custodian of workers contribution fixed minimum monthly salary for staff at 2.5 million. The Educational sector had collapsed with tertiary education on strike (for seven months and counting).

The telecommunication sector and the electricity national grid collapse very often. The cumulative effect of the above is a revolution of rising frustration because people have not been able to meet the purpose for their existence in a state where they are paying various forms of taxation imposed on them. People are therefore consistently frustrated by the above incidences to achieve their goals, yet these politicized discontents have not translated into political violence.

ii) Resource Curse: This has become the major features of the African continent. Resource curse or the poverty paradox, is a spectacle where African countries with richness of resources such as fossil fuels (oil. Coal, gases, hydrocarbon) and inorganic resources which would have been translated into wealth end up having less economic growth, dysfunctional governance and worst economic outcomes and depend on international aids with the attendance outcomes where individuals and groups are unable to meet lives requirements for a better standard of living.

Estimates of African resources are on the whole tentative. Africa has 96 per cent of the former none-Communist world's diamonds, 60 per cent of its gold, 42 per cent of its cobalt, 34 per cent of its bauxite and 28 per cent of its Uranium. Africa's Iron reserves are probably twice those of the United States of America and Africa's reserves of Chrome are highest in the world outside of the (Committee of Independent States (CIS) old Soviet Union (Frank, 2021 p 93). The 54 states in the continent belong to the least developed states in the world, and are states which generate intense relative deprivation, frustration and aggression in large quantities to the citizenry with very little exception. Instead of these cascading into political violence and rebellion, men, women and the youths have refused to rebel according to the theory. They rather migrate to Europe through the Sahara desert and the Mediterranean Sea to become refugees in Europe. It is therefore a categorical imperative to deconstruct the theory to be able to explicate this phenomenon.

iii) Transfer of Allegiance to Social Movements

In this section, we evaluated the four known revolutions in the global scale, to ascertain if relative deprivations, frustrations and aggression suffered translated directly to revolutions. or social movements;

(a) The American Revolution 1765-1791, the American Merchants Committee (AMC) organized to resist measures of imperial control. They stirred up popular demonstrations and propaganda against the imperial British government. Similar organizations culminated into the Boston Tea Party. They served as social movements to heighten resentment against the relative deprivation of the British colonial administration. They galvanized those who suffered relative deprivations towards the goals of the state addressing the sources of frustration and aggression.

(b) The French revolution 1787-1789, the relative deprivation consisted of bourgeoisie and peasant resentment, the consequential economic poverty of the French who backed these American revolt, economic difficulty from poor harvest occasioned by prolong winter and the emerging renaissance which dispel the legitimacy of the 'Divine Rights of the King'. The *Societes des pensee* an informal social movement took the great ideas of the Age of Enlightenment to a higher degree thereby eroding the basis of legitimacy of the French king. This gradually turned into political agitation for reforms and finally helped steer election to the Estate-General of 1789 (Brinton, 1965 p 40). This eventually culminated in the 1789 notable event in France.

© The English revolution 1215-1219 King John 1 ruled over England as an absolute monarch, his words were laws. Consequent on his misrule, he taxed the English nobility, the barons, heavily and confiscated the church property. The arch-bishop of Canterbury Stephen Langton called on the barons (who served as the direct representative of the citizenry) to request a charter of freedom from the King. The Barons mobilized the serfs who alongside with them stormed on June 15, 1215 the Runnymede the official resident of the monarch and forced the King to sign a charter which was later to be known as 'Magna Carta'. This gave birth to constitutional monarchy restricting the role of the monarch in England. The nobility or barons formed a social movement (the 25 Barons) which metamorphosed into the modern legislature. They consummated the relative deprivation, frustration and the aggression of both the serfs and the nobility giving birth to a new society with rights and freedom of the individuals. They watched over the actions and in-actions of the Monarch and approved the expenditure of the monarch. They became the modern legislature (Frank, 2015 p 25).

(d) The Russian Revolution 1917-The Czarist government like anyone in Russia had citizens and social groups which were not able to access service adequately from it and therefore felt alienated in different degree. The inadequacy of values for everyone was due to several reasons ranging from enormous corruption and

ineffectiveness of the czar, peasants alienation because they got less than they contributed to the imperial Russian state, widespread dissatisfaction among the fighting force, and monarchical authority over the Orthodox Church as the basis of divine right of the king. The distrust of the priest's whose sermon became propaganda in favor of the czar. Those who felt distrust from the government were in the majority, hence, they constituted the Bolshevik as against the Menshevik who were complacent with the situation. The Bolshevik translated into a political party and challenged the frontiers of the State under the leadership of Victor Lenin. They did not only want to address the frustration-aggression of the Bolshevik, but choose to form the Government that would wither away relative deprivation, frustration and aggression and eventually form the government where these variables would not be the symbol of the state through the revolution.

### **Data Descriptions and Analysis**

The above case-studies generated enormous data to interrogate the problematic and validate the quest for the deconstruction of the theory. The theory which constituted the problem of the study is herein stated in Algebraic form as

$$(i) Rd + F + Ag = Pv + R$$

The legend would indicate that 'RD' is Relative Deprivation, 'F' is frustration, 'Ag' represents Aggression, 'Pv' – Political Violence and 'R' Rebellion.

The deconstructed theory would be stated as (ii)  $Rd + F + Ag + Sm = Epv + Pp$

Where 'Rd -Relative Deprivation, 'F'-frustration, 'Ag' Aggression, 'Sm' Social Movements', 'Epv'-Expanded Political Values, 'Pp'-Political Participation

Equation (i) contended as in the problematic that a direct correlation exists between the variables and political violence and rebellion while the data presented indicated to the contrary. The Equation indicated that there is no intervening variable social movement hence, no direct association between the variables to result in political violence.

Equation (ii) on the other hand, explicated that with Social movement or Civil Society Organizations expanded political values which assuage relative deprivation, through engagements, sensitization and public demonstrations with anticipation that the state would expand the scope of public values. These diminish frustration and convert aggression into political participation and inclusion. Political violence would only occur in extreme cases where the state remains impervious to social movement engagements for inclusiveness.

The translation of the above to the Nigeria case, indicated that there is an avalanche of relative deprivation in the governance space with about three (3)

persons that have jumped over the bridge into the Lagoon to take it no more. It took the Social Movement ‘Hashtag-ENDSARS’ to galvanize the deprived youths together to make a statement at Lekki –Toll gate. The State responded with military attack on the protesters killing several people in the process.

Social Movements or Civil Society Organizations (CSOs) are the cauldron in which the ideas as to how to address relative deprivation contain further frustration and aggression are generated. The data further showed that in the African continent where there is a resource curse and intensive frustration, there is also a short fall of Social Movements to aggregate and articulate how to vitiate the situation. This has made the conversion of relative deprivation of the citizenry into movements to be prolong, however in few countries where social movements had emerged, we had the Arab-Spring in 2011 that swept through the Maghreb states and pocket of other countries; Sudan, Ghana, Sierra Leone and Senegal.

The second case scenario, illustrated in the American revolt of 1776, the American Merchant Committee and Boston Tea Party as Social Movements said ‘No representation no taxation’, while the French rebellion had *Societes des pensee* ,..The English case had the Arch-Bishop of Canterbury, the barons and the serfs being mobilized against the Feudal King John 1, which culminated in the creation of the ‘25-Baron’ which translated into modern Legislature. The Russian political violence had the Bolsheviks arising to organize the women, workers and all those who suffered relative deprivation from the Czar into violence political overthrow of the establishment.

The analysis has demonstrated that the second algebra which included the social movement as an intervening variable could create positive political participation rather than anomic political violence which disrupts the system equilibrium. Consequently, the theory as contained in ‘Why Men Rebel (1970)’ indeed requires deconstruction and reconstruction as proposed herein. What would play the role of the social movement in Nigeria? The February 2023, presidential election may play the role.

### **Nigeria on the Precipice**

In this section of the study we looked at the application of the theory in Nigeria particularly in the period before during and after the 2023 elections. We herein posit that Nigerians are faced with considerable frustrations at both the individual and societal or external levels. It would be recalled that frustration arises from perceived persistent obstruction to individuals will or goal. A good number of Nigerians considered themselves entitled to good-life and happiness which Aristotle (384-322 BC) said is the highest good of man and the purpose of the state.

Nigerian are not excluded from this. For inexplicable reason, they have constantly been unable to achieve it. The response to this, is an emotional response defined by anger, annoyance and a sense betrayal swells up in him. This sense of anger translate to aggression. When it build-up to a very persistent and heightened level for the Nigerian to contain. This then disposes Nigerians to aggressive behaviour to solve the inherent problem in a way that may be harmful to the society. Currently Nigerians are stripping naked in Banks just to access their own money duly deposited in the banks.

This same Nigerians have not been able to access the most basic existential elements of life easily in the last eight (8) years. The frustration at this level arose from the fact that Nigerians are citizen of a very wealthy nation, hence the personal goal, desires and their instinctual drive grounded on ‘the wealth of Nation’ to have a higher standard of living, longer-life expectancy and a general positive Human Development Indices (HDI). However, these are not to because of the dominance of what the World Bank (1992) described the characteristics of bad governance. These include; failure to properly distinguish between what is public and what is private, leading to private appropriation of otherwise public resources...inability to establish a predictable framework for la and government behaviour in a manner conducive to development or arbitrariness in the application of laws and rules \*World Bank, 1992). This inclination consistently, create frustration on Nigerians because the boundaries between what is public and what is private is not define. Consequently, primitive accumulation by the political actors leave Nigerians with more hardship, frustration and dispose to aggressive behaviour.

External frustration happen when the conditions giving rise to the frustration of Nigerians occur outside of their control such as the insensitivity of the government to the plight of the citizenry. The object frustration confronting Nigerians include; (i) high and unpredictable cost of petroleum which drive the cost of living in the society occasioned by the states inability to fix the refineries but prefer to import refined petroleum product, and loose all the products associated with the use of the bye-product of petroleum refining. This have driven up the cost of the pump-price of Premium Motor Spirit (PMS) and kerosene use by the generosity of Nigerians.

ii) The rehabilitation of terrorist, Boko-Haram and without any program for the victims of their heinous acts who are languishing in Internally Displaced Persons (IDPs) camp. This is connected to the persistent state of insecurity in the country. This feeling of uncertainty and insecurity have consistently blocked many from fulfilling their needs at the individual and corporate level respectively.

iii) The persistent killing by specific group of others, yet to make the claim of killings openly yet the state fail to act appropriately there by creating anomic situation in the country.

iv) The collapse of the judicial institutions where in recent time, the pronouncement of the court appear to be that of the highest bidder. How could a person and political party which came in the fourth (4<sup>th</sup>) position in a general election (Imo State) be declared a winner in an election. How could people who contested presidential primaries and who were never candidates in a senatorial election, be declared legible to contest election by the supreme court.

v) How could the state claim not to know the locations of criminals in the forest, yet governors have met and have failed agreement with them, yet the state claimed to know their whereabouts.

vi) The ENDSARS episode embodied the frustration of Nigerians and the response of the state to the killings of Nigerians.

vii) The management of changing from the old to the new currency have driven Nigerians into the high level of frustration to the extent that Nigerians have to stripped naked in Banks before they could access their monies. Nigerians are at the tip of revolt.

**Aggression:** The cumulative effect of all these and the stubborn refusal of the state to address these sources of frustration predisposes Nigerians into a state of readiness which may result in hostile or violent behaviour, readiness to attack or confront the source of aggression (Brown, 1954).

#### **Elections 2023: The Ides of March**

Nigerians are currently at the bottled-up anger point. The impending election provides a window of pacifism to suppress the bottled-up anger on the expectation that there is a contestant they perceived as decent enough who would turn the rising frustration and expectation into satisfactory fulfillment of the Aristotelian good life which they have been denied for so long. Where this is further frustrated by manipulations of the election results, there may be an implosion of aggressive instinct into aggressive actions.

The election is therefore the 'Ides of March' a climax which may provide a spark for series of civil actions with an instant social movement as ENDSARS.

#### **Validation of the Research Goals**

In this section of the study report, we are set to validate the intentions of the study thus; (i) it is not in all cases of frustration-aggression that violent political conflict and rebellion occur. This is because the sufferer of relative deprivation in a

state, could be a member of a minority ethnic group, racial or religious sect that suffering majoritarian tyranny. We then alluded to the Nigerian state where intense social deprivation arising from poor governance in the last seven years and counting have been the case, yet not leading to popular uprising. This is in contrast to the Maghreb states where similar issue had led to the Arab-Spring, though there have been a return to the status-quo. We then posited that it is only when a Social Movement emerges to harness the intense anger, frustration and aggression into an organize force, that it can translate into collective social actions which often time is not violence in the state such as happened in the #ENDSARS in Nigeria.

(ii) In line with the submission above, we had identified that there is always an intervening variables between relative deprivation, frustration-aggression before it cascade into political rebellion. The intervening variable was acknowledged to be the Social Movement. In many climes they assumed the form of Civil Society Organizations (CSOs) which derived their funds not from the Government of the day and are therefore able to speak truth to the authorities. To this end, no direct correlation exists between these variables and political violence.

(iii) Taken from the first framework of analysis of the work ‘Socrates-Crito Dialogue’ the individual in the state is to obey the laws and not break them until the general election present the chance to effect the change that would mitigate relative deprivation, the frustration and aggression that is inherent in the system. The state obligates itself to promote the welfare of the citizens, and to provide a mechanism for changing the law when its ‘commands are unjust’. When it becomes self-serving and tyrannical at the expense of the people, or denies then an effective opportunity to change an unjust law... then the individual’s obligation to obey the law would cease Socrates educated Crito. Every citizen in the state is to be an active participant and eternally watch what is acceptable by the state and act accordingly.

(iv) We identified the elements of the intervening variables as; (a) the powerlessness of the individual against all powerful state; (b) the absence of Social Movement herein referred to as the Civil Society Organizations ready to harness the energies of all those who have baggage of relative deprivation, frustrations and aggression to demand accountability and justice from the duty bearers; (c) the decision to be careless about whatever the state does but to migrate on the basis of brain-drain in search of greener pastures, (d) Qualification to access public values when it is given on some criteria; (e) the minority status of the sufferer as a member of minority groups, race or ethnic group suffering majoritarian tyranny.

(v) Given the identification of the intervening elements which confront the individuals and groups which experience alienation, frustration and aggression, Ted Robert Gurr (1970) would do well to identify the predisposing factors to political violence and rebellion as relative deprivation, frustration and aggression as conveyed in ‘Why Men Rebel’ are but weak predisposing factors. The element that goad men to rebel are the Social Movements they belong rather than the factors identified in ‘Why Men Rebel.’

vi) Nigerians are face with frustration at the individual and societal levels. At the individual level, there are many obstacles, one of which is the incessant closure of universities. It is because of the state’s inability to provide the relevant infrastructure, many Nigerians complete four year programs in six years, which imply additional burden on them and their parents. It took almost one year to negotiate minimum wage of thirty thousand Naira with the State. At the time of approval, the poor management of the economy had vitiated the utility value of the amount. The petroleum price index is yet another source of external frustration. The inability of the state to address these generate frustration. The civil society organizations assume the roles of Social movements. The 2023 election serves as buffer, wherein Nigerians look-up to changing the situation. Where the election does not change the situation, then there may be an implosion as the ‘ides of march’.

### **Conclusion**

We had interrogated the theoretical construct that the source of the human capacity for political violence in colonial state was the relative deprivation, frustration against the incapacity to access public value which we considered ourselves entitled to and the subsequent aggressive disposition it generate. The theory explained political violence in Africa and Asia in the colonial but proved incapable in the postcolonial era.

The problematic of this study was that; (i) there are no direct correlations between relative deprivation, frustration-aggression and political violence and rebellion.

(ii) The theory is incapable of explicating why intense relative deprivation-frustration and aggression in Nigeria and African states have not culminated into several political protest and rebellion in the modern states. (iii) The theory requires both reconstruction and deconstruction to be able to be functional in modern descriptive analysis.

The study revealed the missing link which is the intervening variable which aggregate relative derivation with intense frustration and aggression to the ‘Social Movement’ sometimes referred to as Civil Society Organizations (CSOs) or revolutionary vanguard. Social Movements are geared towards altering the state’s modus operandi to provide more public values and make them accessible to all in order to vitiate relative deprivations that abound in the states. By so doing political unrest and rebellion are not often the outcomes of relative deprivation and its associated variables.

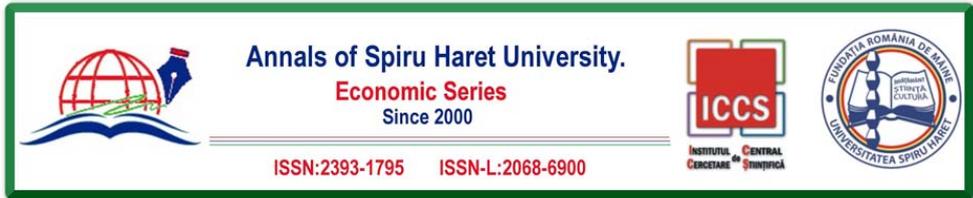
Nigeria, is not immune from social changes that often emerge when there is implosions caused by persistent frustration and undressed aggression.

In four of the case-studies of American, English, French and Russian revolutions, the uniformity found was the emergence of Social Movements to harness the citizens for change of the old regimes and not on individual basis. Against the backdrop of these revelations, the theory should then be restated with Social Movement having a prominent part in its caption as prescribed herein.

It is herein recommended that governance in Nigeria should eb base on the Periclean moral and political rightness and above all, on the Utilitarian principles of the greatest good for the greatest number. Where the the frustrations get heightened by stealing the mandates in which the election provide to change the situation, then the ‘Ides of March’ may take place.

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## **SOCIO-ECONOMIC AND INNOVATIVE PERSPECTIVES OF THE HOSPITALITY INDUSTRY IN ROMANIA UNDER THE INCIDENCE OF GLOBAL CHALLENGES AND RISKS**

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**How to cite:** AGAGIU, M. & IATAGAN, M. (2023). "Socio-Economic and Innovative Perspectives of the Hospitality Industry in Romania under the Incidence of Global Challenges and Risks." *Annals of Spiru Haret University. Economic Series*, 23(2), 140-150, doi: <https://doi.org/10.26458/2327>

### **Abstract:**

*The hospitality industry in Romania is faced with a number of factors that unbalance the sustainable prospects of this industry, mentioning: the incidence of the pandemic context, the increase in inflation, the general increase in prices, the increase in electricity and heat tariffs, as well as the increase in the salary level of employees integrated in the activity the hospitality industry. Starting from 2020, tourist operators face the decrease in the number of tourists, as well as the exponential increase in costs resulting from the provision of tourist activity. Looking from this perspective, organizations operating in the hospitality industry are exposed to global socio-economic risks, limiting the innovative perspectives necessary for the development of this industry. Through the article, the incidence of negative socio-economic perspectives on the hospitality industry is measured, identifying the main*

*factors that determined the decrease in the activity and profitability of economic organizations. The content of the article focuses on the innovative perspectives of the hospitality industry, presenting rural tourism and psychotherapeutic tourism as a pillar of tourism recovery and resilience identified in the national context.*

**Keywords:** *hospitality industry, innovation, rural tourism, psychotherapeutic tourism, recovery and resilience*

**JEL Classification:** L83, Z32

## **Introduction**

Like the entire economy, starting from 2020, the year of the outbreak of the COVID pandemic, the hospitality industry in Romania faced a number of factors that condemned it to an unpredictable decline, a decline amplified by the inflationary phenomenon, the general increase in electricity and thermal energy tariffs, such as and the decrease in the purchasing power of the entire population. The imposition of government restrictions to limit the incidence of the coronavirus has determined the temporary inactivity of HoReCa operators, who are recording irrecoverable financial losses, being one step closer to the imminence of insolvency and bankruptcy. The pandemic context has considerably limited the potential for development and innovation highlighted in the hospitality industry, forcing organizations to focus all their efforts towards the recovery of economic activity.

The end of 2021 coincided with the relatively optimistic prospects for the development of HoReCa activities in the absence of government constraints, establishing the premises for the recovery of the hospitality industry. Starting from 2022, the harsh reality condemned the HoReCa operators to concentrate their resources in the fight against the inflationary phenomenon, a phenomenon reflected in the exponential increase in conventional energy tariffs. The vicious circle of challenges and risks highlighted at the national level strongly unbalanced the foundation of the hospitality industry, establishing the premises attached to the decline of the only industry that provides Romanians with a moment of relaxation, contributing directly and decisively to the restoration of psychological balance.

The importance attached to the socio-economic and innovative perspectives of the Romanian hospitality industry under the influence of global challenges and risks derives from the need to quickly identify the factors that directly impact the

sustainability of the HoReCa industry, formulating viable proposals for the attribution of resilience. The hospitality industry is defined as an industry that decisively supports the formation of Romania's gross domestic product, and its decline coincides with the diminished prospects attached to economic growth analyzed from a national perspective.

The article aims to outline the challenges and risks attached to the hospitality industry, as well as to state the innovative perspectives highlighted in some bibliographic references, as well as through personal experience. In the literature study we focused on identifying the impact of negative socio-economic perspectives on the sustainability of the hospitality industry.

#### **Literature review on the topic addressed**

The hospitality industry has concentrated all its resources to confront the socio-economic reality denoted by the phenomena identified globally (Livandovschi, 2022, 121-124).

Factors-which endangered the sustainable development and the performance of the activities provided in the hospitality industry in optimal conditions derives from the imposition of government restrictions regarding the limitation of the incidence of the coronavirus, which coincided with the limitation of the activity of HoReCa operators, 75% of them reducing their ability to honor customers by up to 50% but also from the general increase in the level of inflation, which determined the decrease in the purchasing power of customers, they concentrating their financial resources to satisfy basic needs, causing the considerable decrease in the number of tourists (Armăsar, 2022, 179-184);

On the other hand, the exponential increase in electricity and heat costs boosted the level of expenses of HoReCa operators, considerably diminishing the ability of organizations to achieve the performance objectives attached to the profit and loss account (Fernandez et al, 2022, 174);

The general economic context limited the prospects for innovation and diversification of the tourism product;

The increase in the wage level caused the global increase in the expenses of the organizations identified in the hospitality industry, causing the decrease in the profitability margin

The following perspectives are mentioned as proposals regarding the recovery and resilience of the hospitality industry identified at the national level (Miao et al., 2022, 95):

- tilting the efforts of HoReCa operators in the development of organizational strategies that grant the attribute of sustainability to the activity under the influence of a turbulent environment, aiming at the establishment of the financial reserves necessary to ensure the continuity of the activity in risky conditions;
- access to European funds for the digitization of organizational activity, as well as for the implementation of innovative technologies in the field of renewable resources. This strategic opportunity eliminates the incidence of conventional energy consumption expenses, maximizing the indicator attached to the net profit of HoReCa enterprises (Bano et al., 2022, 431-442);
- adjusting tourist tariffs in accordance with the inflationary level, ensuring sustainability in the context of generalized price increases.

Tourism innovation has an imperative character. Global trends have substantiated the premises of psychotherapeutic tourism, presenting undeniable beneficial effects. International specialized studies have revealed an alarming aspect: 3 out of 4 employees, respectively 76.5% of the total number of people analyzed, mentioned the fact that they faced burnout syndrome during the last 5 years of professional performance (Buckley et al., 2022, 19-20)

The devastating effects of the burnout syndrome lead to psychological and emotional imbalances that are difficult to manage and eliminate, the human resource trained in entrepreneurial performance facing recurring states of anxiety, chronic stress, the temporary loss of cognitive abilities, and in extreme situations the burnout syndrome shows suicidal tendencies and even death. The harmful effects of the burnout syndrome also spread to the entrepreneurial performance of human resources, with organizations facing (Buckley et al., 2022, 19-20):

- deterioration of the yield and productivity of the human resource;
- increasing the number of medical leaves;
- diminishing the quality of the products made or the services provided;
- increase in the number of errors highlighted in the performance of tasks and assignments outlined through the job description.

We appreciate that the intensity and repercussions of the burnout syndrome are treated superficially by the human resource trained in entrepreneurial performance, which categorically refuses to contact a specialist in the field of psychotherapy. Aiming to eliminate the stereotypes attributed to psychotherapeutic counseling sessions and identifying the employees' openness to team-building activities, we highlighted the opportunity to integrate psychotherapeutic tourism into the entrepreneurial performance of the hospitality industry, outlining the premises of

an innovative hotel, focused on reducing the intensity of the burnout syndrome and harmonizing personal and professional balance of human resources.

The training in tourism performance of specialists in psychotherapy, neuroscience, neurolinguistic programming and coaching, specialized in leadership and the effective management of human resource potential, aims to re-approach conventional tourism, offering a new innovative perspective in the hospitality industry: psychotherapeutic tourism.

Rural tourism and agritourism showed a sustained growth under the pandemic context, the attraction of tourists towards panoramic guesthouses being emphasized. In Romania, this concept is promoted by the Green Hill Panoramic accommodation structure in Poiana Mărului. This unique accommodation structure offers tourists a perfect visual experience, identifying itself as an oasis of peace and relaxation (Armăsar, 2022, 179-184).

### **Research methodology**

The empirical approach of this article was substantiated by deepening the specialized literature, identifying the national and international bibliographic references that faithfully reproduce the challenges and risks of the hospitality industry under the influence of the global impact of the analyzed variables.

The innovation of the hotel industry is revolutionizing the performances highlighted at the national level, requiring sustained interest in identifying tourists' perceptions of tourism innovation.

The research on the identification of citizens' opinions, attitudes and perceptions regarding innovation in the tourism industry was carried out by means of a questionnaire distributed in the digital environment, facilitating the quick and efficient collection of research results.

The method of data collection required for marketing research analysis—assumed non-random sampling, the questionnaire being distributed predominantly through social networks, especially within tourist interest groups in Romania. Participation in the research was voluntary and aimed at identifying the opinions, attitudes and perceptions of the respondents regarding the innovation of the tourism industry.

The awarding of the veracity attribute is based on the collection of 105 responses from the active participants of the research, which allowed the interpretation of the valences of the innovation of the tourism activity in Romania.

The analysis and interpretation of the data collected through the questionnaire was carried out objectively, through statistical processing mediated by SPSS:

Question number 1: To what extent do you consider that there are four operators in Romania who have approached innovation in the hotel industry? (1 - to a very small extent and 5 - to a very large extent).

**Table no. 1. The extent to which respondents consider that there are four operators in Romania who have approached innovation in the hotel industry**

		Frequency	Percent	Valid Percent	Cumulative Percent
validity	To a very small extent	8	7.6	7.6	7.6
	To a small extent	13	12.4	12.4	20.0
	Average measure	40	38.1	38.1	58.1
	Largely	33	31.4	31.4	89.5
	To a very large extent	11	10.5	10.5	100.0
	Total	105	100.0	100.0	

Source: SPSS processing

According to the statistical information presented through the previous table, it is highlighted that 8 respondents, aggregating 7.6 percent, believe that in Romania the tourist operators who have approached innovation in the hotel industry exist to a very small extent. The small measure attached to the analyzed variable is supported by the perception of 13 research participants, resulting in 12.4% of the total recorded responses. The medium measure was indicated by 40 respondents, accumulating 38.1 percent, while the large measure was supported by 33 research participants, appearing as 31.4% of the total responses recorded. The 11 respondents who signaled a very high measure of the analyzed variable are represented by the 10.5 percent.

Question number 2: Which of the following hotel structures do you consider to be in the right of innovation?

<b>Table no. 2. The weight attached to hotel structures considered innovative</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
validity	Panoramic rural tourism	15	14.3	14.3	14.3
	Virtual tourism experience made through VR glasses	30	28.6	28.6	42.9
	Psychotherapeutic hotel	55	52.3	52.3	95.2
	Entrepreneurial hotel	5	4.8	4.8	100.0
	Total	105	100.0	100.0	

Source: SPSS processing

According to the information presented previously, it is highlighted that panoramic rural tourism was mentioned by 15 respondents, accumulating 14.3 percent. The virtual tourism experience achieved through VR glasses was supported by 30 respondents, equal to 28.6 percent. The psychotherapeutic hotel presents 52.3% of the total responses recorded, while the entrepreneurial hotel ticks 4.8 percent.

Question number 3: What do you consider to be the main benefits reported in the innovation of the tourism industry in Romania?

**Table no. 3. The weight attached to the benefits presented by innovative hotel structures**

		Frequency	Percent	Valid Percent	Cumulative Percent
validity	Increasing the level of employment	40	38.1	38.1	38.1
	Increase in turnover	17	16.2	16.2	54.3
	Increasing the interest of foreign tourists	2	1.9	1.9	56.2
	Increasing visibility and notoriety	8	7.6	7.6	63.8
	Driving competition	38	36.2	36.2	100.0
	Total	105	100.0	100.0	

Source: SPSS processing

According to the information presented previously, it is highlighted that 40 respondents, aggregating 38.1 percent, mentioned the increase in the level of occupancy as the main benefit attached to innovative hotel structures. The increase in turnover was supported by 17 research participants, equaling the percentage of 16.2%. The increase in foreign tourists' interest in innovative hotel structures marks the answers given by 2 respondents, representing 1.9 percent. Increasing visibility and notoriety was reported by 7.6% of all respondents, while boosting competition was reported by 36.2% of research participants.

Question number 4: What do you consider to be the main impediments reported in the innovation of the tourism industry in Romania?

**Table no. 4. The weight attached to the reported impediments in the innovation of the tourism industry in Romania**

		Frequency	Percent	Valid Percent	Cumulative Percent
validity	The limited nature of financial resources	27	25.7	25.7	25.7
	Reluctance of tourists to non-conventional methods of providing tourist and restaurant services	52	49.6	49.6	75.3
	Tourists' difficulty in operating digital applications	12	11.4	11.4	86.7
	Lack of interest in innovation	2	1.9	1.9	88.6
	The limited competencies of innovation specialists	12	11.4	11.4	100.0
	Total	105	100.0	100.0	

Source: SPSS processing

According to the information presented in the previous table, it is highlighted that 27 respondents, aggregating 25.7 percent, indicated the limited nature of financial resources as the main existing impediment in the innovation of the tourism industry at the national level. Tourists' reluctance to unconventional methods of providing tourist and restaurant services highlights 49.6% of the total responses recorded, while the difficulty of tourists in operating digital applications and the limited skills of innovation specialists assigned 11.4 percent each. Lack of interest in innovation is mentioned by 2 respondents.

### Conclusions

The main conclusions drawn from this research emphasize the negative incidence of the pandemic context and the inflationary phenomenon on the sustainability of the hospitality industry. The exponential increase in the price of consumer goods has led to a general decrease in the purchasing power of customers, a scenario in which the population directs its financial resources towards satisfying basic needs and less on the products and services offered by HoReCa operators.

The previously mentioned harmful factors led to the limitation of the activity of the hospitality industry, a situation which resulted in an increase in the number of enterprises that reached the scenario of insolvency or bankruptcy. The stated negative premises contributed directly and decisively to the decrease of the opportunity attached to the sustainable growth of the turnover and the indicator registered in the right of the net profit, removing the prospects of development and innovation of the hospitality industry.

The recovery and resilience of the hospitality industry can be achieved by accessing European funds that support the digitalization and innovation of HoReCa organizations, offering the strategic opportunity to align with international trends.

Psychotherapeutic tourism and panoramic rural tourism stand out as two of the innovative tourism perspectives highlighted at the national level, offering a perfect experience. The main conclusions drawn from the research present the following aspects:

- 40 respondents, aggregating 38.1 percent, believe that in Romania the tourist operators who have approached innovation in the hotel industry exist to an average extent;
- the need for innovation in tourism through the creation and development of a psychotherapeutic hotel presents 52.3% of the total responses recorded, representing the tourism innovation predominantly mentioned by the research participants;
- 40 respondents, aggregating 38.1 percent, mentioned the increase in occupancy as the main benefit attached to innovative hotel structures;
- 27 respondents, aggregating 25.7 percent, indicated the limited nature of financial resources as the main existing impediment in the innovation of the tourism industry at the national level. The reluctance of tourists to non-conventional methods of providing tourist and restaurant services highlights 49.6% of the total responses recorded, while the difficulty of tourists in operating digital applications and the limited skills of specialists in virtual reality assigned 11.4 percent each.

The future research directions outline the development of a research aimed at identifying the perceptions of HoReCa operators related to the current socio-economic perspectives, analyzing the real incidence of the negative factors that unbalance the activity of the organizations identified at the level of the hospitality industry.

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## TOURIST MARKET IN THE CURRENT POST- PANDEMIC CONTEXT

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**How to cite:** DRAGUT, M. & GURGU, E. (2023). "Tourist Market in the Current Post-Pandemic Context". *Annals of Spiru Haret University. Economic Series*, 23(2), 151-166, doi: <https://doi.org/10.26458/2328>

### **Abstract:**

*The negative effects of the COVID -19 pandemic on the tourist traffic and the tourism sector have been felt globally, but to different extents, depending on the tourism regions and countries.*

*In Romania, the decrease recorded in tourist traffic during the pandemic period has been severe, but within the limits of the average recorded in European Union Member States and with considerably different values, depending on the categories of tourist destinations in the country.*

*The main challenge for Romania remains carrying out a large-scale promotion campaign on the foreign markets related to its tourist offer, given the modest results obtained so far in attracting foreign tourists, despite the tourism potential that it has. The post-COVID-19 period could represent a reset of tourism in Romania.*

**Key words:** *tourism in Romania, COVID-19 pandemic, tourism recovery, evolution trends, strategy and innovation*

**JEL Classification:** Z32

## 1. Introduction

Tourism is the most important social, economic and cultural phenomenon in the world, being one of the most profitable sectors of the world economy. Romania is trying as much as possible to pay more attention to the development of tourism, In this sense, tourism development strategies and policies in Romania were created, tourism development programs, as well as other actions aimed at the development and innovation of tourism, in order to create or enhance a positive image of the destination brand.

Tourism and travel have been affected, after the onset of the COVID-19 pandemic, more than other economic activities, in many countries of the world, including Romania, due to the travel restrictions imposed by the authorities and the fact that, in certain periods, tourist reception structures with accommodation and food facilities for tourists were closed or could only operate within a limited capacity.

The aim of this paper is to perform a comparative analysis of the evolution of the tourism sector in Romania, after the onset of the COVID- 19 pandemic, compared to the other European Union countries and to the global developments, in order to identify some particularities of the situation in Romania. We believe that some conclusions of the performed analysis may be useful for tourism stakeholders, in the coming period, but also represent a basis for further research on some aspects related to the tourism sector and some categories of tourist destinations in Romania.

## 2. Literature review

### 2.1. Strategy and Innovation

As defined by Alfred D. Chandler, strategy is "the determination of a company's core long-term goals and objectives, as well as the adoption of courses of action and the allocation of resources to achieve those objectives" (Chandler, 1962, p. 21). Porter defined the term of "strategy" as "a broad formula, which guides a business's approach to compete on the market, defines its goals and establishes policies that will be needed to fulfill those goals" (Porter M., 1980, p. 62). In a different approach, strategy is "the framework that guides those choices that determine the nature and direction of an organization" (Tregoe, 1980, p. 142).

Innovation is a concept of interest in all fields of activity and has often been associated with human evolution. According to Schumpeter, innovation is the

introduction of new elements in a field of activity (Schumpeter, 1930, p. 8). According to Mohr, innovation means "a new use of existing products or a new market for products or even a new method of marketing." (Mohr, 1969, p. 35) According to Romanian authors, Ioan L.Gheorge P. and Monica B. (2010) innovation is described as "the introduction or modification of a new idea, product or service". (John L.Gheorge P. and Monica B., 2010, p. 12).

## **2.2. Tourism Marketing**

Marketing is "the development of all activities necessary to ascertain the needs and demands of the market, scheduling product availability, transferring ownership of goods, their physical distribution and facilitating the entire research process related to these issues." (McCarthy E., 1964, p. 3). In the opinion of other authors, marketing is "the economic and social process by which individuals and organizations meet their needs and desires through the creation, supply and exchange with stakeholders (customers) of valuable products and services" (Ph. Kotler et al. 2006, p. 6).

Tourism marketing can be defined as a managerial process through which tourism organizations identify the actual and potential dimensions of tourism demand, communicate with demand carriers (tourists) in order to acknowledge and assess their touristic needs and stimulate their desires, motivations and preferences in order to design and adapt the offer (tourism products and services) with the purpose of optimizing and satisfying their requirements and exigencies , maximizing organizational objectives at the same time (Balaure et al., 2005).

## **2.3. Innovative Marketing**

Andrews and Smith (1996) consider innovative marketing as a significant process that differentiates and helps the organization achieve a specific goal. (Andrews J., Smith D.C., 1996, p. 14). On the other hand, Clemmer (1998) explained that marketing innovation and creativity are the main elements that provide the key to success in an organization's business environment. (Clemmer J., 1998, p. 8). Haddad and Algadeer (2004) believe that marketing innovation reflects the firm's ability to continuously improve its products and services, which in turn helps to achieve major benefits for customers because their products and services will meet their needs in a unique way. (Haddad, Algadeer, 2004, p. 82).

## **3. Innovative marketing strategies in the Romanian tourism sector**

Tourism services are a category of leading products that must be promoted and distributed in consumer markets through a variety of methods and using different

electronic platforms and ideologies. By using different ways and platforms, tourism organizations are allowed to innovatively approach marketing strategies, in order to attract as many customers as possible. However, in many respects, the marketing challenges faced by tourism businesses are exceptional, due to the fact that some touristic products cannot be promoted in isolation from their competing and complementary products (Middleton and Clarke, 2001, p. 238). In addition to this challenge comes the fact that the tourism industry is part of the services sector, and the tourism product is mainly a range of services. Moreover, although tourism businesses are considered to be users of new technologies, there is still an under-utilization and under-exploitation of innovative technologies as strategic marketing tools.

The innovation of marketing strategies in Romanian tourism involves the introduction and use of new, modern concepts, adapted to the new digital era, so that tourist destinations become as visible and visited as possible. Innovating tourism marketing must be aimed at improving, modernizing, changing and adapting production methods, transport, changes in hospitality services, opening new market segments, etc. Tourism marketing innovation strategies focus mainly on the use of new technologies, materials, methods and energy sources in order to develop the tourism sector and increase its profitability.

In order to develop marketing strategies for the development of tourism in Romania, as complex and efficient as possible, it is necessary to use innovation as a tool for obtaining and applying the results of scientific thinking. From this point of view, tourism is an extremely vast field for innovation as a complex transversal socio-economic system. Tourism not only creates a new product or service, but also uses innovations introduced in other areas of management. For example, hotels, travel agencies, transport companies are widely used in the field of information technology development. Creating a tourist product, tourist services, booking plane and train tickets - all these processes have reached a new level with the introduction of the latest developments in information technology.

The main strategic factors of innovation that influence the development of tourism refer to the level of scientific and technological development, economic and political stability, the availability of the relevant legislative framework and other external factors. It also implies the availability of the necessary volume of natural and financial resources, as well as the level of development of the tourist infrastructure. In order to develop tourism in Romania, the developed tourism market and the degree and type of competition must be taken into account. Quality is another important factor for innovation and attracting tourists, as well as the availability of highly qualified staff in all areas of tourism. (Verma, R., 2008, p. 4).

In the tourism marketing sector, certain specific characteristics are identified, such as the fact that tourists are temporary, being exposed to an area of goods and services for shorter periods and they must immediately feel well, the difference between daily life and "escape from everyday life". Tourists seek relaxation, to be left with beautiful memories, which is why a marketing strategy that uses innovation should consider strategies that appeal to emotions. (Chron, 2019). Also, tourism marketing innovation strategies can establish promotion mechanisms and create more development opportunities by cooperating with the organizers of local festive and cultural events, horizontal alliances and integration of resources, etc. (Yeh, et al., 2019, p.23). The inclusion of innovation strategies in tourism marketing involves following current, modern market trends. Tourism marketing must keep pace with the dynamic developments of the industry, relating to the diversity of marketing in modern organizations.

Through marketing innovation strategies it is desired to achieve the proposed objectives in the most innovative and modern ways; the complexity of tourist services and the importance of intermediaries in the distribution of tourism products must be taken into account, as well as the criteria for choosing tourist services by consumers.

Innovation in marketing policy in the field of tourism must be based on efforts at a national level and requires a coherent set of action practices, based on specific programs. Any innovation-based marketing strategy must take into account identifying its target audience, attracting new customers by understanding the behavior of the consumer of tourist services, providing high quality services and using effective promotion tactics locally and globally. (Bizfluent, 2019, p. 3).

#### **4. Marketing tools and techniques related to new technologies**

The tourism industry was among the top five economic industries that took advantage of the opportunities offered by new technologies. Since 1980, advances in technology along with globalization, has led to the emergence of the concept of e-tourism, an important segment of e-commerce which involves the application of information and communication technologies in the tourism industry; it is considered to be the future of the tourism industry.

Digital marketing is a term that encompasses all marketing processes that take place through a variety of digital channels and gadgets in order to promote the products or services of a business. The term actually means implementing marketing ideas through the use of resources such as computers, laptops, tablets,

smartphones, digital panels, game consoles, mobile phones, digital magazines, catalogs or other digital media.

Online marketing (also known as Internet marketing or e-marketing), on the other hand, is defined as a subset of digital marketing. Online marketing involves the use of resources that require a direct connection to the World Wide Web (more specifically, the Internet) to promote a business's products and services.

The difference from online marketing is that digital marketing uses all digital platforms, digital channels and digital devices, whether online or not (including mobile marketing, video marketing, web television, etc.) . In other words, digital marketing is not limited to using the Internet. Most digital marketing activities revolve around the use of the Internet. Due to the fact that Internet access can be achieved from any type of device, we can therefore define online marketing as a component of digital marketing.

Today, in the modern world of digital business, communication between individuals and companies takes place, mostly, in the online environment, through a series of online tools and techniques. Among the most commonly used online tools are: websites, social networks, e-mail and blog, and in terms of online techniques, those that have the highest efficiency are: online advertising, online PR, online sales promotion, search engine optimization (SEO), social media marketing (SMM), e - mail marketing (via newsletter) mobile marketing (ex: through specific apps), viral marketing ("buzz" marketing or e-WOM), and online branding.

The accelerated interaction and the strong relationship between technology and tourism makes the use of information and communication technologies suitable for the target group to increase the competitiveness between organizations, between tourist destinations, but also changes the way individuals interact with the organization.

The Internet is an important marketing tool that offers tourism organizations competitive advantages, such as reducing costs, increasing revenue, conducting marketing research necessary for the development of the organization, or, in the other case, for national development, in order to identify present trends, make predictions and directing marketing and management efforts in an optimal manner.

The continuous development of information and communication technology applications makes e-tourism focus on consumer-centered technologies. Also, the adoption of new technologies makes tourism service providers more efficient towards their customers, gaining the opportunity to quickly restructure their communication strategy.

## 5. Research methodology

This paper is based on a longitudinal, quantitative, desk research, using mainly online data sources, but also in the classic format (Jupp 2010; Jugănaru1998).

In this article we have used, analyzed and interpreted some available statistical data on the evolution of the main indicators of tourist traffic at global, European and Romanian level, in the period after the onset of the COVID-19 pandemic, in an attempt to identify some causes of and explanations for the different evolution of these indicators, depending on the country, area or tourist region.

We have analyzed and compared a series of studies, statistical databases and reports of specialized or relevant organizations in the field of tourism, such as UNWTO, WTTC, but also Eurostat, etc., which presented the evolution of the tourism sector or that of some aspects related to it.

## 6. Findings

### 6.1. The evolution of international tourism during the COVID-19 pandemic

The number of international tourist arrivals globally plummeted by 72% in 2020 compared to 2019, from 1.466 billion to 405 million, and the value of receipts by 62%, from USD 1.483 billion to USD 546 billion.

Analyzing the evolution of the 5 major tourist regions of the world, as they have been designated by the UNWTO, we observe the decrease in the number of international tourist arrivals, globally, by 72% in 2020 compared to the previous year, and by 61% in 2021 compared to 2019. The most affected region was Asia-Pacific, with decreases of 84% in 2020 and 94% in 2021, followed by the Middle East (-73% and -75%, respectively) and Africa (-74% and -78%, respectively). The most moderate decreases were recorded in the Americas and Europe regions, with identical percentage values (-60% in 2020 and -62% in 2021).

The evolution of international tourist arrivals, by months, according to UNWTO data, shows that, worldwide, in the month of January of the year 2020, there was an increase of 2%, followed by a decrease of 14% in February, and then a real collapse (65% decrease) in March, 97% in April, 96% in May and 91% in June 2020, compared to the corresponding period in 2019. A slight increase followed in July and August, then the situation started to worsen again. The best situation was recorded in August 2020, -75% of the August 2019 level.

In the first months of 2021, the situation remained serious, with declines between 87% in February, 81% in May and 91% in June 2021, compared to the levels recorded in the corresponding periods of 2019. In the warm season, the

results were better (-63% in July and -53% in August and September), followed by slight decreases in arrivals in the following months.

In the first 3 months of 2022 the evolution was slightly better, from -66% in January to -60% in February and -56% in March, compared to the corresponding period of the year 2019.

In terms of international tourism receipts, the worst situation was recorded in the Asia- Pacific Region (-79% in 2021, compared to 2019), followed by the Americas and Africa (both with -61%), and the smallest decreases were recorded in Europe (-50%) and the Middle East (-52%).

For the first 3 months of 2022, compared to a 61% decrease globally, the number of international tourist arrivals recorded the smallest decreases, compared to the same period of the year 2019, in Europe (-43%) and the Americas (- 46%), and the most severe decrease in Asia-Pacific (-93%), with the slowest recovery (UNWTO, 2020 a).

## 6.2. The evolution of tourism in Romania in the 2019-2021 period

The privatization process in the field of tourism, which followed the change of the political regime at the end of the year 1989, in Romania, started slowly and lasted longer than in other activity sectors, which made the performances obtained to be relatively modest, compared to those of neighboring countries, such as Bulgaria and Hungary.

Romania's tourist accommodation capacity experienced a significant decrease after 1990, from 353,236 places in 1990 to 282,806 places in 1999 (mainly due to the removal from the tourist circuit of some old accommodation units, in which no investments were made for repairs and modernization), followed by a slight increase, so that in 2009 there were 303,486 places, and in 2019 there were 356,562 places. In 2020 and 2021, the accommodation capacity continued to increase, reaching 358,119 places, respectively 364,507. As for the number of tourist reception structures, it has grown significantly, from 3,213 in 1990, to 3,250 in 1999, 5,095 in 2009, and 8,402 in 2019. Even after the onset of the pandemic, the number of accommodation units continued to grow significantly, reaching 8,610 in 2020 and 9,146 in 2021, as many investments in building new units were underway. This increase in the capacity of tourist reception is primarily explained by the fact that many new, privately owned, mostly small-sized units, predominantly tourist villas and boardinghouses (guest houses/pensions), but also hotels, were built in the last two decades. At the same time, the level of comfort of classified tourist reception structures increased. Thus, the share of only 2.7% of the

number of places within tourist accommodation structures classified into the 3-star category in the year 1991 reached 39.6% in 2019, the share of those classified into the 4-star category rose from 0.26% to 17.6%, and those classified into the 5-star category from 0.3% to 2.5% (NIS, 2022).

However, Accommodation Capacity Net Utilization Index has seen significant decreases, from 46.7% in 1992 to 34.5% in 1999 and 28.4% in 2009. Ten years later, in 2019, the value of this indicator improved to 33.9%, yet it was still well below the level reached in 1992. Following the Covid-19 pandemic, this indicator fell dramatically to 22.8% in 2020, then rose slightly to 26.3% in 2021 (NIS, 2022).

The number of tourist arrivals in tourist reception structures with accommodation functions has experienced a sinuous evolution after 1990, in Romania, in terms of internal tourism, and especially in terms of international inbound tourism. Thus, compared to a total number of arrivals of 12,296,552 tourists in 1990, their number decreased by 58.45% until 1999, reaching 5,109,444, increasing then to 6,141,135 in 2009 and reaching a maximum of 13,374,943 tourists in 2019.

Regarding the total number of overnight stays (of Romanian and foreign tourists), the evolution was largely similar to that of the number of arrivals, with a spectacular decrease in the first decade, from 44,551,804 overnight stays in 1990, to 17,669,777 in 1999 and to 17,325,410 in 2009, followed by a considerable increase to 30,086,091 in 2019, which is still 32.5% lower than the one recorded in 1990 (NIS, 2022).

Due to the restrictions introduced during the pandemic period, the number of tourist arrivals in Romania decreased to 48% in 2020 compared to the 2019 level, the decrease being more severe in terms of foreign tourist arrivals (down to 17% of the 2019 level), and the number of total overnight stays also decreased to 48% compared to 2019. Moreover, the number of overnight stays by foreign tourists in Romania decreased even more compared to the Romanian tourists (down to 19%, compared to 2019).

According to the WTTC, the total contribution of travel and tourism to GDP formation in Romania has known a decrease by 44% in 2020 compared to 2019 and recorded an increase by 14.9% in 2021 compared to 2020; however, the decrease in 2021 was of 36.4% compared to 2019. While in 2019 tourism and travel had a 6.0% contribution to GDP, in Romania, in 2020 the contribution dropped to only 3.5%, and in 2021 it slightly increased to 3.8%.

Regarding the contribution of this sector to job creation, whereas in 2019 the number of jobs in this sector was 568,3 thousand, in 2020 it decreased by 11.5%, reaching 503 thousand, and in 2021 it increased by 5.6% compared to 2020, up to 531 thousand, representing 93.4% of the 2019 level. This loss of skilled workers is at least as serious as the financial losses of tourism operators in Romania, given that even before the pandemic it was very difficult to cover the shortage of staff especially because of the phenomenon of emigration of workers from Romania to other Western countries.

International visitor spending in Romania decreased from a level of USD 4,692.5 million in 2019 to USD 1,725.4 million in 2020 (- 63.2%), followed by a 9% increase in 2021 compared to 2020, reaching USD 1,882.6 million in 2021.

Internal (domestic) tourism spending in Romania decreased from USD 5,337.3 million in 2019 to USD 3,110.5 million in 2020 (-41.7%) and it increased by 39.8% in 2021, compared to 2020, reaching USD 4,348.2 million.

While in 2019 the ratio between domestic spending and international spending in Romania was 53% to 47%, the share of domestic spending rose to 70% in 2021, due to the travel restrictions imposed internationally during the COVID-19 pandemic.

In terms of the structure, the share of Leisure spending was, in 2019, 71%, compared to 29% - Business spending, reaching, in 2021, a share of 77%, compared to 23%.

The most important markets supplying international tourists for Romania in 2019 were Germany (11%), followed by Israel (9%), Italy (8%), US and Hungary (with 6% each). In 2021 Germany remained first (with 13%), but the order of the other countries changed, with France (10%) in second place, followed by Italy (8%), Israel (6%) and Hungary (5%).

As for outbound departures of Romanian visitors, while in 2019, as country of destination, Hungary was first (14%), followed by Greece and Italy (12% each), Bulgaria (10%) and Spain (8%), in 2021 Bulgaria (22%) was first, followed by Hungary (15%), Greece (12%), Italy (9%) and Turkey (8%), the first two being Romania's neighbors (WTTC, 2022).

### **6.3. The evolution of the main indicators of Romania's internal tourism, in the 2019-2021 period, by categories of tourist destinations and types of tourists**

We have analyzed the evolution of the number of tourist arrivals in Romania, both Romanian and foreign tourists, in the tourist reception structures with classified accommodation functions, as well as the number of overnight stays, per total and by main destination categories, using statistical data published by the

National Institute of Statistics of Romania (NIS, 2022). Thus, regarding the number of arrivals indicator, we can observe (Table no. 1) a decrease in the total number of arrivals (of Romanian and foreign tourists) in 2020, down to the level of 48%, compared to the level of the year 2019 and to 70% in 2021, compared to 2019. The main explanation for this negative evolution lies in the travel restrictions imposed after the onset of the COVID-19 pandemic. The decrease was much more severe for foreign tourists (inbound tourism) than for Romanian tourists (domestic tourism), down to a level of only 17% in 2020 and 31% in 2021, compared to 2019.

Regarding the main categories of internal tourist destinations, the evolution was quite different compared to the national average. Thus, the weakest results were recorded in Bucharest (the country's capital) and in the county seat towns/cities (excluding the city of Tulcea in the Danube Delta), with a level of only 38% per total arrivals in 2020 and 58% in 2021, compared to 2019, followed by the category "Other localities and tourist routes", where the decrease reached 48% in 2020 and 70% in 2021, compared to 2019, and the balneary resorts, with a decrease reaching 53%, respectively 82%, compared to 2019.

The smallest decreases were recorded in the tourist resorts on the Romanian Black Sea coast, where the decrease was 78% in 2020 and it reached, in 2021, almost the same level as in 2019 (more precisely, 99%), followed by the Danube Delta area, including the city of Tulcea, where a level of 71% was reached in 2020 and 82% in 2021, compared to 2019. But in this tourist area the most severe decrease in foreign tourist arrivals was recorded, down to only 7% in 2020 and to 29% in 2021 compared to 2019. The main explanation for this evolution could lie in the fact that in the countries of origin of the foreign tourists who used to come to the Danube Delta the travel restrictions imposed were more severe.

In the balneary resorts, the main cause for the large decline in tourist flows to these destinations was the fact that the Romanian authorities imposed very severe restrictions, going as far as banning certain categories of therapeutic procedures within the treatment centers.

In the resorts of the Romanian Black Sea coast, the better results obtained compared to other tourist areas of the country can be explained by the fact that other tourist destinations with coastal offers in countries where the Romanian tourists used to go in the previous years (especially Bulgaria, Turkey and Greece) were more difficult to access, due to the travel restrictions imposed by the authorities of each country, depending on the evolution of the number of COVID-19 infections.

**Table no. 1 The evolution of the number of tourist arrivals in tourist reception structures with tourist accommodation functions, according to tourist destinations, by type of tourists, in Romania, in the 2019-2021 period**

Tourist destinations	Types of de tourists	Years				
		2019	2020	Evolution 2020/2019	2021	Evolution 2021/2019
		Number of arrivals	Number of arrivals	Change %	Number of arrivals	Change %
<b>Total</b>	<b>Total</b>	13374943	6398642	48%	9370232	70%
.	<b>Romanians</b>	10691195	5944775	56%	8527409	80%
.	<b>Foreigners</b>	2683748	453867	17%	842823	31%
<b>Balneary resorts</b>	<b>Total</b>	1133359	601326	53%	924400	82%
.	<b>Romanians</b>	1098706	595762	54%	911438	83%
.	<b>Foreigners</b>	34653	5564	16%	12962	37%
<b>Coastal resorts, excluding the city of Constanta</b>	<b>Total</b>	<b>1153682</b>	<b>905266</b>	<b>78%</b>	<b>1142271</b>	<b>99%</b>
.	<b>Romanians</b>	1119401	899104	80%	1115593	100%
.	<b>Foreigners</b>	34281	6162	18%	26678	78%
<b>Mountain resorts</b>	<b>Total</b>	2305517	1295105	56%	1866402	81%
.	<b>Romanians</b>	2109378	1269109	60%	1816197	86%
.	<b>Foreigners</b>	196139	25996	13%	50205	26%
<b>Danube Delta area, including the city of Tulcea</b>	<b>Total</b>	<b>166411</b>	<b>118325</b>	<b>71%</b>	<b>137182</b>	<b>82%</b>
.	<b>Romanians</b>	146006	116797	80%	131224	90%
.	<b>Foreigners</b>	20405	1528	7%	5958	29%
<b>Bucuresti and county seat cities, excluding Tulcea</b>	<b>Total</b>	<b>6275835</b>	<b>2359090</b>	<b>38%</b>	<b>3660935</b>	<b>58%</b>
.	<b>Romanians</b>	4209530	1994058	47%	3017694	72%
.	<b>Foreigners</b>	2066305	365032	18%	643241	31%
<b>Other localities and tourist routes</b>	<b>Total</b>	2340139	1119530	48%	1639042	70%
.	<b>Romanians</b>	2008174	1069945	53%	1535263	76%
.	<b>Foreigners</b>	331965	49585	15%	103779	31%

Source: Author's own processing of INS Romania, Tempo-online data

Table no.2. The evolution of the number of overnight stays in tourist accommodation units, by tourist destinations and type of tourists, in Romania, in the 2019-2021 period

Tourist destinations	Types of de tourists	Years				
		2019	2020	Evolution	2021	Evolution
		Number	Number	Change %	Number	Change %
<b>Total</b>	<b>Total</b>	30086091	14579140	48%	20835314	69%
.	<b>Romanians</b>	24795253	13581775	55%	19002611	77%
.	<b>Foreigners</b>	5290838	997365	19%	1832703	35%
<b>Balneary resorts</b>	<b>Total</b>	4805188	2208832	46%	3361147	70%
.	<b>Romanians</b>	4688161	2187634	47%	3314599	71%
.	<b>Foreigners</b>	117027	21198	18%	46548	40%
<b>Coastal resorts, excluding the city of Constanta</b>	<b>Total</b>	4657955	3267464	70%	4218916	91%
.	<b>Romanians</b>	4534514	3246820	72%	4134964	91%
.	<b>Foreigners</b>	123441	20644	17%	83952	68%
<b>Mountain resorts</b>	<b>Total</b>	4810148	2613246	54%	3707917	77%
.	<b>Romanians</b>	4421424	2552251	58%	3613572	82%
.	<b>Foreigners</b>	388724	60995	16%	94345	24%
<b>Danube Delta area, including the city of Tulcea</b>	<b>Total</b>	380375	299766	79%	281078	74%
.	<b>Romanians</b>	333885	295084	88%	269974	81%
.	<b>Foreigners</b>	46490	4682	10%	11104	24%
<b>Bucuresti and county seat cities, excluding Tulcea</b>	<b>Total</b>	11055160	4119604	37%	6313310	57%
.	<b>Romanians</b>	7028229	3334463	47%	4911497	70%
.	<b>Foreigners</b>	4026931	785141	19%	1401813	35%
<b>Other localities and tourist routes</b>	<b>Total</b>	4377265	2070228	47%	2952946	67%
.	<b>Romanians</b>	3789040	1965523	52%	2758005	73%
.	<b>Foreigners</b>	588225	104705	18%	194941	33%

Source: Author's own processing of INS Romania, Tempo-online data

As regards the evolution of the number of overnight stays (Table 2), the evolution was somewhat similar to that of the number of tourist arrivals. Thus, per total (Romanian tourists, plus foreigners), the number of overnight stays in 2020 reached 48% of the level recorded in 2019, and in 2021 it reached 69% compared to 2019.

By main destinations, the most important decreases were recorded in Bucharest and the county seat towns/cities, reaching 37% in 2020 and 57% in 2021 compared to 2019, followed by "other localities and tourist routes", with decreases up to 47% in 2020 and 67% in 2021 compared to 2019, and by the balneary resorts, where the values were at the level of 46% in 2020 and 70% in 2021 compared to 2019.

The smallest decreases were recorded in the coastal resorts, up to 70% in 2020 and 91% in 2021, compared to the 2019 levels, and in the Danube Delta, up to 79%, respectively 74%.

In the mountain resorts, the results recorded were slightly above the national average (decreases to levels of 54% in 2020 and 77% in 2021, compared to 2019), with the observation that here the most significant decrease in the number of overnight stays of foreign tourists was recorded in 2020, reaching only 16%, and in 2021 it rose slightly to 24%, compared to the level reached in 2019.

#### **6.4. Evolution of tourism in Romania in 2023**

While the results recorded by the tourist traffic in Romania have been encouraging in the first months of 2022, as we are moving towards the second semester of the year, we can observe a series of worrying developments.

In 2022, almost 11.3 million people stayed in tourist establishments in Romania, an increase of 21.8% compared to 2021. But more than 17.2 million Romanians went to visit other countries.

In 2022, Romanian tourists accounted for 86% of the total number of arrivals in tourist establishments with accommodation function, while arrivals of foreign tourists accounted for only 14%. In total, 24,319,600 overnight stays were recorded in Romania last year, an increase of 17.8% compared to 2021. The average length of stays was 2.1 days for Romanian tourists and 2.2 days for foreign tourists.

By counties, the number of tourist arrivals in accommodation structures recorded higher values in Bucharest (1,480,800 persons), Constanța (1,253,500 persons) and Brasov (1,187,400 persons). The number of overnight stays was highest in Constanța (4,106,100), followed by Bucharest (2,937,900) and Brasov (2,212,100).

In 2023, Timisoara could be in the top 3, as the city takes the title of European Capital of Culture this year. More than 500,000 visitors are expected to stay overnight in Timisoara, both from home and abroad.

As far as foreigners choosing Romania as a holiday destination are concerned, there has been a positive development in recent years. If in 2019 more than 2.5 million tourists visited us, in the following year the figure dropped sharply to just over 400,000, but since 2021 the number has started to increase. And in 2022 there were over 1.5 million foreign tourists who came to discover Romania.

The good news for tourism entrepreneurs is the adoption of changes to the legislation on the establishment, with government support, of Destination Management Organizations in Romania at local, county, regional and national level. These would primarily boost the promotion activity of tourism destinations in Romania. The expectations of tourism entrepreneurs from these DMOs are very high, in particular regarding the drawing up, adoption and implementation of tourism promotion strategies at destination level (Government of Romania, 2022 a).

## **7. Conclusions**

The COVID-19 pandemic has led to a severe crisis in the tourism sector in Romania, due to the restrictions imposed by the authorities. Internal tourism, although considerably reduced, has recorded slightly better results than the inbound sector, which has been affected the most.

In Romania, as in other countries, some of the measures taken by the authorities seemed to have been sometimes unfounded, illogical, and especially unpredictable, seriously affecting the majority of the businesses in the hospitality sector. Furthermore, the losses suffered by them were not only financial, but also in terms of human resources, as a result of the departure of a significant number of qualified workers to other sectors, where there were no restrictions, or these restrictions were less severe. Tourism proved to be one of the less secure sectors of employment during the pandemic, as restrictions imposed by the authorities led to the closure of establishments or the drastic reduction of some activities. Nowadays, considerable efforts are being made to bring in workers from other countries, especially from Asia, to compensate, at least partially, for the shortage of skilled workers in the Romanian hospitality sector.

Studying the effects of these measures taken by the authorities during the pandemic on tourist traffic can be the basis for more detailed analyses of the causes and especially of the mistakes made during the pandemic, so that, if similar situations occur in the future, their repetition can be avoided. The analysis carried out in this paper can and needs to be deepened, especially regarding tourist destinations.

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## FROM TRADITIONAL TO MODERN FORMS OF CRISES – A BRIEF ANALYSIS OF HUMAN CRISES

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**How to cite:** PETROVA, E. (2023). “From Traditional to Modern Forms of Crises – A Brief Analysis of Human Crises.” *Annals of Spiru Haret University. Economic Series*, 23(2), 167-178, doi: <https://doi.org/10.26458/2329>

### **Abstract:**

*This article presents the variety of types of crises in human society. The reader is briefly introduced to the essence and content of the concept of crisis, as well as the concept of the human security, which emphasizes that in addition to traditional security threats, the world nowadays faces a number of modern forms of global threats. The crises caused by military conflicts; crimes against humanity; usage of weapons of mass destruction; terrorism and organized crime; natural crises and environmental degradation; economic crises and poverty; social crises; health and infectious disease crises; crises caused by globalization and by a change in the value system and morality of people; political and governance crises are presented in more detail in order to fully achieve the informative goal of the article.*

**Keywords:** crisis, security, human security

**JEL Classification:** D74, D8, I3

## Introduction

This article examines the variety of types of crises in human society. In order to more fully achieve the informative goal of the article, the reader is briefly introduced to the essence and content of the concept of „crisis“, as well as the concept of the human security which emphasizes that in addition to traditional security threats, the modern world faces a number of forms of global threats. The crises caused by military conflicts are presented in more detail; crimes against humanity; use of weapons of mass destruction; terrorism and organized crime; natural crises and environmental degradation; economic crises and poverty; social crises; health and infectious disease crises; crises caused by globalization and by a change in the value system and morality of people; etc.

### 1. Crisis – nature, characteristics and types

A number of alternative definitions of crisis exist in theory and practice. In the most general sense, the term „crisis“ implies an unwanted and unexpected situation that brings latent harm to individuals, organizations or society. Crisis is (Canyon, 2020):

- a serious threat to the basic structures or fundamental values and norms of a system, which in conditions of time pressure and extremely uncertain circumstances necessitates the making of vital decisions;
- a low-probability, high-impact event that threatens the viability of the organization and is characterized by uncertainty about cause, effect and means of resolution, and a belief that decisions must be made quickly;
- a damaging event or series of events that indicate conditions have arisen that exceed the organization's ability to cope with the task, generating consequences that may affect a significant part of the organization;
- change – sudden or developing those leads to an urgent problem that needs to be addressed immediately;
- any event that could seriously harm people, the reputation or the state of the organization;
- instability with a pronounced possibility of an undesirable result;
- any situation that poses a risk of escalation and increased intensity, interfering with the normal activity of the organization, endangering the positive image and damaging the bottom line of the organization.

In 2004, the UN High-Level Panel on Threats, Challenges and Change produced the report: A more secure world: our shared responsibility. (United Nations, 2004) According to the report and the recommendations of the UN Secretary General corresponding to it, the main threats to society and collective security are (United Nations, 2004):

- poverty;
- infectious diseases;
- the deterioration of the environment;
- military conflicts;
- genocide and related atrocities;
- the use of weapons of mass destruction;
- terrorism and transnational organized crime.

The broader concept of security emphasizes crises of a different nature in human society.

In this regard, the concept of human security emphasizes that, in addition to traditional security threats such as military operations, the modern world faces many new global threats as poverty, pandemics, chronic diseases, shortages of food and clean water, pollution of nature and loss of natural resources as a result of human activity, energy dependence, economic crises, demographic problems, organized crime and terrorism. Nowadays, the concept of human security as a paradigm is aimed at understanding global vulnerabilities causing crises and conflicts and includes economic security, food security, health security, environmental security, personal security, public security and political security (United Nations Development Program, 1994).

The main types of crises emerging globally are:

- military conflicts and military actions – wars, revolutions, uprisings, civil wars and infighting, coups, military conflicts on an ethnic or religious basis;
- crises caused by crimes against humanity – genocide and related atrocities, the use of weapons of mass destruction;
- crises caused by internal organized crime – murder, theft, violence, extortion, theft and abuse;
- crises caused by transnational organized crime – terrorism, sale of drugs and narcotic substances, prostitution, illegal donation and transplantation of human organs;

- natural crises and natural disasters – pollution of the natural environment, spills of hazardous materials, extinction of animal and plant species, critical reduction of natural resources, air pollution, destruction of the fertile soil layer, large day-to-day temperature amplitudes, earthquakes, floods, strong storms with hurricane winds, heavy snowfalls, landslides;
- economic crises and poverty – low wage levels, low purchasing power, poor living conditions, high unemployment rates, hyperinflation, high interest rates on loans, lack of investment, low GDP, low national income, low levels of international trade, negative trade balance, increased internal and external debt, states of bankruptcy;
- social crises – crises related to social policy, including marginal groups in society, various forms of discrimination, lack of social services; demographic crises;
- health crises;
- political and governance crises;
- technological crises – industrial accidents, accidents and crashes with equipment and vehicles, damage to important equipment, derailment of vehicles, refusal of the functioning of new technology, crises resulting from the use of IT, cyber-attacks;
- business crises – corruption, misappropriation of property, frauds, hostile takeovers, sabotage, discrimination, violence and aggression in the workplace;
- crises in education and science;
- cultural crises.

## 2. Crises in human society – an attempt for presentation

A crisis can be a natural event beyond the reach of human intervention, but it can also be a violent, man-made upheaval. Crises cause complex emergency situations and pose a threat to public security. They are often the result of a combination of events that lead to a synergy of hazards.

*War*, in its most popular sense, is a conflict between political groups involving hostilities of considerable duration and scale. Sociologists treat war as an institution recognized in custom or law. Armed conflicts of powerful states with isolated and powerless peoples are usually called pacification, military expeditions or explorations; in the case of small states, they are designated as interventions or repressions; and conflicts involving internal groups are defined as riots or uprisings. If the resistance is strong or prolonged enough, these conflicts can reach

a scale that qualifies them to be defined as „war“ (Frankel in Encyclopedia Britannica, 2022). Civil wars also have a negative impact on local and global peace and security. As a type of struggle between factions within a country, their goals can range from taking control of a particular region to completely changing government and state policy.

Crises caused by *crimes against humanity* include genocide and related atrocities, as well as the use of weapons of mass destruction. The most comprehensive definition of genocide can be found in the UN Convention on the Prevention and Prosecution of Genocide, which was adopted on December 9, 1948 and entered into force on January 12, 1951. Its main purpose is to preserve the existence of separate human groups and to affirm basic principles of humanity and morality worldwide. Article 2 of the UN Convention on the Prevention and Prosecution of Genocide contains an internationally recognized definition of genocide that has been incorporated into the national criminal law of a number of countries. Article 2 defines genocide as „any of the following acts committed with intent to destroy, in whole or in part, a national, ethnic, racial or religious group as such:

- (a) killing members of the group;
- (b) causing serious bodily or mental harm to members of the group;
- (c) deliberately imposing upon the group living conditions calculated to result in its physical destruction in whole or in part;
- (d) imposing measures designed to prevent births within the group;
- (e) forcible transfer of children from the group to another group. (United Nations, 1948).”

Genocide has probably been practiced throughout the whole human history, and in ancient times it was common for the victors in war to slaughter all the males of the conquered tribe. The events of the 20th century, however, were of an unsuspected global scale and led to the almost complete extermination of European Jews, Roma (Gypsies) and other groups by Nazi Germany during World War II (Andreopoulos, in Encyclopedia Britannica, 2022). In modern international law, the crime of genocide is part of the broader category of "crimes against humanity" defined by the Statute of the International Military Tribunal (Nuremberg Charter).

*Weapons of mass destruction* are weapon or device that is intended or has the capability to cause death or serious bodily harm to a significant number of people through the release, spread or impact of a biological agent, toxic or poisonous

chemicals, radiation or radioactivity. For the purposes of US Criminal law the weapons of mass destruction are defined as (US CODE: Title 18, § 2332a):

- any destructive devices – explosive, incendiary devices, poison gas bombs, grenades, rockets, mines, other device;
- any weapon that is designed or intended to cause death or grievous bodily harm through the release, distribution and exposure of toxic or poisonous chemicals or their precursors;
  - any weapon involving a biological agent, toxin, or vector;
  - any weapon that releases radiation and leads to radioactivity above levels dangerous to human life.

Modern weapons of mass destruction are nuclear, biological or chemical weapons. The world community's efforts to control the spread of WMD are anchored in international agreements such as the 1968 Nuclear Non-Proliferation Treaty, the 1972 Biological Weapons Convention and the 1993 Chemical Weapons Convention.

In 1947, in view of the devastating effects of the atomic bomb, the original developer of the concept, Albert Einstein, stated: „I do not know with what weapons World War III will be fought, but World War IV will be fought with sticks and stones (Einstein, cited in Nuclear Age Peace Foundation, 2010).“

*Organized crime* is a complex of highly centralized groups created to carry out illegal activities. Such groups engage in theft, fraud, robbery, kidnapping for ransom and demanding „protection“ payments (Encyclopedia Britannica, 2022). Here we also count the various forms of damage and loss of personal dignity, security, freedom, health, life of the victims through: traffic of people (including children), sexual slavery, forced prostitution and pornography, child prostitution and pornography, tourism for the purpose of taking advantage of sexual services, trade in human organs, etc.

*Transnational organized crime* undermines democracy, disrupts the functioning of free markets, drains national assets and halts the development of societies. National and international criminal groups pose a threat to the security of all nations. Serious manifestations of international crime, such as crimes against humanity, are investigated by the International Criminal Court, and in 2000 the United Nations adopted a Convention against Transnational Organized Crime.

The 20th century saw organized and specifically targeted actions to undermine the foundations of international security, such as terrorism and transnational organized crime. They are designed to cause terror and psychological fear through

violence, persecution and destruction of mainly civilian targets. Such actions are carried out by illegal, illegal organizations and aim to send a message to society or the government that is in power in a country. Terrorists attack national symbols to show their power and try to shock the foundations of the state, society or ideology they oppose. Terrorism has been practiced by political organizations with right-wing and left-wing aims, by nationalist and religious groups, and even by state institutions such as armies, intelligence services, and the police. Terrorists initiate kidnappings, hostage-taking, mass shootings, bombings, and suicide bombings. Targets include schools, shopping malls, bus and train stations, restaurants and nightclubs, both because they attract large crowds and because they are familiar places to the civilian population. Other main targets of terrorist acts are buildings that are important economic or political symbols, such as embassies, military depots or military-industrial plants (Jenkins, in Encyclopedia Britannica, 2022). While countering potential terrorist threats is mainly carried out by the police and special units of the ministries of internal affairs of the respective countries, military formations have more specific tasks such as guarding objects of national importance, controlling movement in their assigned areas of responsibility, patrolling in settlements and risk areas and others (Gluhchov, 2013).

According to Louise Shelley, transnational organized crime will be a defining problem of the 21st century, much like the Cold War in the 20th century and colonialism in the 19th century. (Williams, 1996)

*Natural crises* are associated with environmental degradation, including the depletion and pollution of air, soil and water resources, the destruction of ecosystems and the extinction of wildlife. They are defined as harmful and unwanted change related to the disturbance or destruction of the environment. Pollution is related to the introduction of new substances uncharacteristic of nature or exceeding the level of their normal concentration and can be radioactive, noise, light, electromagnetic, thermal and chemical pollution.

The UN defines environmental damage as „a reduction in the capacity of the environment and the inability to meet the social and environmental goals and needs of society“ (United Nations Office for Disaster Risk Reduction, 2010). Environmental protection is part of the modern doctrine of sustainable development of society, according to which in the process of consumption of the present generation must take into account the needs of future generations, and which requires the achievement of harmony between the ecological, economic and social spheres.

*Economic crises* are „closely related to recession in the economy, which is a downward trend in the economic cycle characterized by a decline in production, employment, a decline in household income“ (Encyclopedia Britannica, 2022), and a sharp change in the micro- and macroeconomic indicators of the economy. The increase in the level of poverty in an economy is a major effect of economic crises, appearing immediately after their occurrence and related to the decreasing incomes and increasing expenses of the population. Poverty is the inability to meet basic human needs of clean water, food, health care, education, clothing and shelter. According to the World Bank definition, it includes – low income and the inability to acquire basic goods and services necessary for the survival of individuals with dignity, low levels of health care and education, lack of access to clean water and sanitation, insufficient physical security and others.

According to a UN report: „At the root of poverty are the lack of choices and opportunities, the violation of human dignity...the lack of access to food and clothing, the lack of access to education and health care, the lack of work.“ It means insecurity, helplessness and isolation of individuals, households and communities, increased levels of violence and poor living conditions.” (United Nations, 2004). Poverty includes lack of income and resources for sustainable livelihoods, hunger and malnutrition, increasing morbidity and mortality, increasing homelessness, living in inadequate housing and unsafe environments, social discrimination and isolation of individuals, groups and segments of society, inability to participation in the civil, social and cultural life of society. Economic crises are accompanied by rising costs of living, making poor people less able to afford the purchase of certain goods and services. In times of economic crisis, they allocate a significant portion of their budget to food and can be particularly vulnerable to increases in food prices. The poor strata of the population are mainly directed towards buying cheaper products, and covering their costs for heating, lighting, water (satisfaction of existential life needs). There is a high risk of falling behind in education for children from low-income families, due to the family's inability to cover costs related to education and participation in the learning process.

The fight against poverty is a priority of social policy. Social policy is concerned with the welfare of society and the response to the multitude of societal challenges. According to the European Parliament it is „a plan or action of governmental or institutional institutions that aims to improve or reform society and includes:

- employment policy – setting the minimum wage, the role of collective bargaining between employers and trade unions, the organization of the pension system, unemployment benefits, sickness benefits, fair working conditions, ensuring health and safety at work, ensuring equal opportunities and access to the labour market;
- gender equality and anti-discrimination policies;
- improving health and eliminating inequalities through legislation and funding;
- adequate social protection of specific groups of the population, including disadvantaged persons and their integration into social life (European Parliament, 2022).“

The traditional social crises include high unemployment; low wages; the reintegration of young people; harmful working conditions; discrimination; violence, sexual harassment and stalking; lack of access to health care; dealing with racism. Infectious diseases are a typical example of a specific health and social crisis. These are infectious diseases, with enormous potential for transmission from person to person or species to another through the reproduction of disease-causing agents. According to the World Health Organization, the deadliest infectious diseases are lower respiratory tract infections, HIV/AIDS, gastrointestinal disorders, tuberculosis, malaria, measles, whooping cough, tetanus, meningitis (World Health Organization, 2004). We also saw the impact of the pandemic caused by Covid-19. The reduced level of social and health care, the lack of a health culture, and insufficient financing of the health sector led to health-threatening consequences and threaten global security. In addition to traditional social crises, new ones arise in society, caused by globalization and by changes in the value system and morals of people, for example: LGBT issues (such as same-sex marriage), the legal status of abortion, carrying and using weapons, euthanasia.

What is society's response!?

Already in the Treaty of Rome of 1957, the main social principle was laid down and it was an equality between workers. There is also a legal framework for working conditions and occupational safety, as well as legislation against discrimination in the workplace. The European Parliament proposed measures to facilitate the return to work of people with long-term illnesses and the integration of chronically ill people and people with disabilities, as a result of which the European Commission adopted the Disability Rights Strategy 2021-2030 (European Parliament, 2022).

## Conclusion

As a reaction to all these traditional and modern crises in human society, the concept of crisis management has emerged.

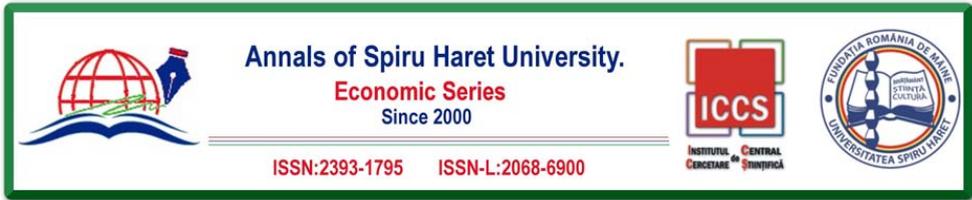
The origin of the term „crisis management“ could be found in the political sphere. American President J. F. Kennedy used this expression for the first time - during the Cuban Missile Crisis of 1962, when the confrontation between the USA and the USSR, caused by the installation of Soviet nuclear missiles in Cuba, brought the world the Cold World War, but of course the crisis management as a function, that is, crisis management activities are older than the term itself. In this line of thought, crisis management first arose as a practice in human history, and recently in the 19th century as a theory, and in the 20th century as a science being studied. Crisis management is a set of functions or processes whose purpose is to identify, investigate and predict possible crisis situations and to create special means that would allow the organization to prevent or deal with a crisis, to overcome it with minimal consequences and to return to its normal state or position as soon as possible. (For more details see: Milasinovic, Kesetovic, 2008)

*Acknowledgement:* This article is the result of the National Scientific Program – Security and Defence of the Ministry of Education and Science of the Republic of Bulgaria in implementation of the National Strategy for the Development of Scientific Research 2017-2030 with the aim of increasing the national scientific capacity in the field of security and defence.

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## MODELLING THE ECONOMIC INFLUENCE OF TRANSPORT SYSTEM ON TOURISM PERFORMANCE. THE EXPERIENCE FROM LAGOS STATE, NIGERIA

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**How to cite:** ODEWUMI, S.G., SALISU, U.O., & ABDUL-AZEEZ, F.I. (2023). "Modelling the Economic Influence of Transport System on Tourism Performance. The Experience from Lagos State, Nigeria". *Annals of Spiru Haret University. Economic Series*, 23(2), 179-195, doi: <https://doi.org/10.26458/23210>

### Abstract

*Globally, travel and tourism opportunities are highly sought-after by most nations, but very few developing nations, including Nigeria, play good supporting roles to benefit from the profitable and lucrative industry. The*

*reasons for this are not unconnected to the poor investment in tourism infrastructure, especially transport, to support tourism activities and sustain tourism performance. It is against this background that this study modeled the economic influence of the transport system on tourism performance using Nigeria's Lagos State experience. This study is anchored on an ex-post facto research design and relies on quantitative data from the relevant ministries of the Lagos State Government. Both descriptive (charts and graphs) and inferential (multiple linear regression analysis) statistics were methods of data analysis. Major findings revealed that only the annual revenue from transport system services out of the nine (9) evaluated performance indicators showed internal consistency and a positively increasing growth pattern. Furthermore, research found that the level of transport investment has a statistically significant relationship with the performance of the tourism industry ( $F_{\frac{7}{4}} 112.112, p = 0.000 < 0.05$ ). Meanwhile, findings also revealed that there is a statistically significant relationship between the transport system's revenue and tourism performance ( $F_{\frac{4}{7}} 31.696, p = 0.000 < 0.05$ ). Given these, this study affirmed that the tourism performance greatly depends on the transport system's investment and revenue and concluded that the fluctuating and poor tourism performance in Lagos State, Nigeria, is a function of the transport system's economic influence. Thus, this study recommends, among others, consistent investment and improvement in the transport system, most especially the infrastructure that will support tourism activities and increase tourism revenue.*

**Keywords:** *Lagos State, Nigeria, transport system, tourism, tourism performance*

**JEL Classification:** R40, R49, Z30, Z32

## **Introduction**

Transport systems will no doubt continue to play crucial and pivotal roles in the development, growth, performance, and sustainability of tourism activities across the globe. The importance of transport systems to the development and growth of tourism activities is crystal clear, as it directly facilitates the formation of tourism activities, the linking and movement of tourists to and from destination zones, as well as the movement of goods, services, and other materials that are necessary for

the successful accomplishment of tourism activities [Dogan, Ozkan-Demircan, & Altunoglu-Tokatli, 2017; United Nations World Tourism Organization [UNWTO], 2019]. According to Salisu, Odewumi, and Abdul-Azeez [2022], the attributed services offered by the transport systems, including road, rail, air, water, and telecommunications, bring economic returns in the form of revenue to the tourism industry and thus improve the industry's overall performance. Meanwhile, Page [2009] observed that the level of transport system advancement and adequate investment in transport infrastructure, specifically facilities, promote the sustainability of tourism activities. Hence, the role of transport systems in tourism development and performance cannot be overemphasized.

Ultimately, previous research has established the role of transportation in enhancing tourism development both in developed and developing nations. Some of these studies that have identified the economic impact of transport on tourism include those of Adeola and Evans [2020]; Kantawateera, Naipinit, Sakolnakorn, & Kroeksakul [2017]; Sorupia [2005]; Ndikom [2008]; Page [2009]; Pratiwi [2018]; Salisu [2019]; Salisu et al. [2022]; Virkar and Mallya [2018]. Those that have dealt with the role of transport modes such as air and water in tourism performance but not limited to Eichner and Greaves [2018]; LaMondia, Snell, ad Bhat [2009]. While the studies of Eichner and Greaves [2018], Malik and Awadallah [2013], and Oloruntobi, Safizahanin, and Zaly-Shah [2019] investigated the role of transport infrastructure, including the network and terminals, in enhancing tourism performance, Despite these, there are still a number of research gaps that need to be addressed in the area of transport and tourism in developing communities, including Lagos State, Nigeria. Of interest in this study is the empirical evidence of the economic effect of transport systems on the tourism industry in Lagos State, Nigeria. Understanding the economic influence of transportation on tourism performance is an important area of study, particularly in developing nations such as Nigeria where the tourism industry has significant potential for economic growth.

In other words, tourism performance is a key driver of economic growth and development in many countries, including Nigeria. Lagos State, which is the economic and commercial hub of Nigeria, has been witnessing a significant increase in tourism activities, as shown in the international tourist arrival data (over 1.4 million international visitors in 2021) and the increasing proliferation of various tourist attractions and support facilities across the state. Despite these, the tourism industry in Lagos State has been subjected to underdevelopment with low or discretionary revenue and poor economic benefits in the areas of employment

creation (contributed 3.36 million jobs in 2019 and fluctuated around 2.19 million, 2.43 million, and 3.21 million jobs in 2020, 2021, and 2022, respectively), market sales, infrastructural provision, and environmental preservation of the immediate host communities following the poor transport infrastructure investment and mobility issues [Salisu et al., 2022]. In the quest to address the poor performance of the tourism industry in Lagos State and evolve policy and investment strategies to enhance tourism performance in Lagos State, this study on the economic influence of the transport system on tourism performance in Lagos State, Nigeria, becomes important.

This study examined the economic performance of the transport and tourism industries based on nine (9) key performance indicators between 2000 and 2021 sourced from relevant ministries of the Lagos State Government, the statistically significant relationship between transport investments and the performance of the tourism industry, and the statistically significant relationship between the transport system's revenue and tourism performance in Lagos State, Nigeria. The findings would be valuable in shaping policies and investment strategies that support the development of a sustainable transport system for tourism in Lagos State, Nigeria. Additionally, the study provides insights that would help to improve tourism performance and ensure the long-term sustainability of the tourism industry through adequate transport system planning and investment. The paper is structured into five sections; following the introductory section, Section 2 provides a brief literature review, highlighting the existing knowledge on the relationship between transport and tourism in Lagos State, Nigeria, and identifying the research gap that needs to be addressed. Section 3 outlines the research methodology, including data collection procedures and data analysis techniques. Section 4 presents and analyzes the data, using both descriptive and inferential statistics. Finally, Section 5 gives the conclusions and recommendations on the need for targeted policies and investment strategies to enhance the transport system and support the growth of tourism development in Lagos State, Nigeria.

### **Literature Review**

Numerous studies have examined the relationship between transport and tourism and how transport infrastructure affects the performance of the tourism industry. The focus on this topic is especially relevant in developing nations, where tourism is seen as a promising sector with significant economic impacts [Adeola & Evans, 2020]. A study by Salisu et al. [2022] suggests that the poor quality of transport infrastructure can limit the growth of the tourism industry. The study

found that inadequate road transport infrastructure can discourage tourists, hinder the flow of goods and services, and ultimately reduce tourism performance. Furthermore, according to a study by Kantawateera et al. [2017], transport development is a critical factor for promoting tourism in low- and middle-income countries. Khadaroo and Seetanah [2007]; Kantawateera et al. [2017]; and Salisu et al. [2022] argued that transport infrastructure, such as airports, roads, and railways, plays a vital role in attracting tourists and creating employment opportunities in the tourism sector. Additionally, a study by Fang et al. [2015] shows that a country's transport network can significantly enhance the competitiveness of its tourism industry. The study found that a well-developed transport system can increase the number of tourist arrivals, the length of stay, and the amount of money spent by visitors. This, in turn, has positive effects on employment, economic growth, and the overall development of the local communities.

In the case of Lagos State, Nigeria, a study by Oloruntobi et al. [2019] found that inadequate transport infrastructure and poor service quality of public transport modes are a major challenge for tourism development in the Lagos region. The study indicates that poor road networks, insufficient public transport options, and limited accessibility to tourist sites have resulted in low tourism performance in Lagos State. Similarly, a study by Eichner and Greaves [2018] notes that the Lagos transport system requires significant improvement, especially in the areas of public transport and infrastructure, to support the tourism industry and promote economic growth. Overall, the literature shows a consensus that transport is an essential component of tourism development, even in developing nations. Improvements in the transport system can increase visitor arrivals, enhance the visitor experience, and ultimately boost the economic and social benefits of tourism. Addressing the challenges faced by Lagos State, Nigeria, and other developing nations in improving transport infrastructure will be critical to unlocking the potential of the tourism sector and realizing its economic benefits.

### **Methodology**

This section presents the information on study area and discusses the research design, sources of data, method of data collection, presentation and analysis under the methods sub-section.

### **Study area**

The study centered on Lagos State, which is the most populous state in Nigeria, estimated at a population figure of 15,388,000 [National Bureau of Statistics,

2022], is located in the southwestern part of Nigeria on the Atlantic Coast in the Gulf of Guinea and west of Niger & River Delta at longitude 3<sup>o</sup>45E and latitude 6<sup>o</sup>35N. This state is bounded in the east and north by Ogun State; in the west by the Republic of Benin; and in the south by the Atlantic Ocean, which gives several opportunities for tourism and water transport potential. Lagos State is classified into five (5) five regional divisions: Ikeja, Ikorodu, Lagos Island, Epe and Badagry with twenty (20) twenty local government areas (LGA) and 57 local council development areas (LCDA) in 2003. Specifically, Lagos State is characterized by six (6) transport modes, namely road, water (inland water and maritime), air, rail, pipeline and cable transport (still under construction), with several travel means including Bus Rapid Transit and noticeable transport infrastructure. Unfortunately, none of the functional modes of transport in Lagos State specifically runs tourism related services or could serves as mobility means for tourists as well as a tourist destination. In terms of tourism potential, Lagos state is home to several attractions classified as historical monuments, beaches, museums, cultural and annual festivals, with a total score of more than 150 attractions but with 90 notables ones [Lagos State Government, 2022].

### **Methods**

This study is anchored on an ex-post facto research design, which is a type of observational study in which the researchers do not have control over both independent and dependent variables. In this study, longitudinal data on nine (9) transport and tourism key performance indicators, namely expenditure on transport infrastructure, direct revenue on local tourism patronage, tourism investment cost, number of tourist arrivals, revenue on trade activities, revenue on accommodation and food services, revenue on art, entertainment, and recreation, revenue on telecommunication, and revenue on transport services, were sourced from the Lagos State Bureau of Statistics and the Ministry of Tourism, Arts, and Culture for a period of 22 years (2000–2021). Out of the nine (9) observed KPIs, two (2) are directly related to transport economic variables, namely expenditure on transport infrastructure and revenue on transport services, while seven (9) independent variables, which include direct revenue on local tourism patronage, tourism investment cost, number of tourist arrivals, revenue on trade activities, revenue on accommodation and food services, revenue on art, entertainment, and recreation, and revenue on telecommunication, aggregately measured tourism performance. In other words, this study relies only on the quantitative data collected using

secondary sources such as official economic reports and databases of the Lagos State Government.

Both descriptive (charts and graphs) and inferential (multiple linear regression analysis, MLR) statistics were methods of data analysis. The descriptive statistics were used to present the trend pattern and behavior of the information presented in the dataset, while the inferential statistics, specifically multiple regression analysis, were used to test the hypothetical statements, which are: there is no statistically significant relationship between transport investments and the performance of the tourism industry; and there is no statistically significant relationship between revenue from the transport system and tourism performance in the study area. Furthermore, the findings from the data analysis, presented in a clear and concise manner using tables, charts, and graphs, were based on the research questions. However, the study has two major limitations, which are limited data availability, the potential for confounding variables, and the difficulty experienced in obtaining the information from the secondary sources. In other words, the limitations were acknowledged in the study to provide context for the findings and recommendations.

### **Results and Discussion**

This section presents the results and discussion with inference to the literature and in line with the study objectives, which are the economic performance of the transport and tourism industries based on the nine (9) key performance indicators; the statistically significant influence of transport investment on the performance of the tourism industry; and the statistically significant influence of transport service revenue on tourism performance in Lagos State, Nigeria.

#### **Economic performance of transport and tourism industry**

Figure 1 presents the descriptive analysis through charts in order to comprehend the dataset's internal consistency and economic growth pattern. Findings from Figure 1 revealed that there is no internal consistency and a positive growth rate in the observed dataset for almost all the performance indicators, as there is total fluctuation in the observed dataset. Only the data on annual revenue from transport services showed internal consistency and a positive economic growth rate. The reason for these observed fluctuations might not be unconnected to so many factors that include but are not limited to poor record keeping and data banking on transport and tourism activities, corruption and related sharp practices, poor management information, and the sudden emergence of the COVID-19 global pandemic.

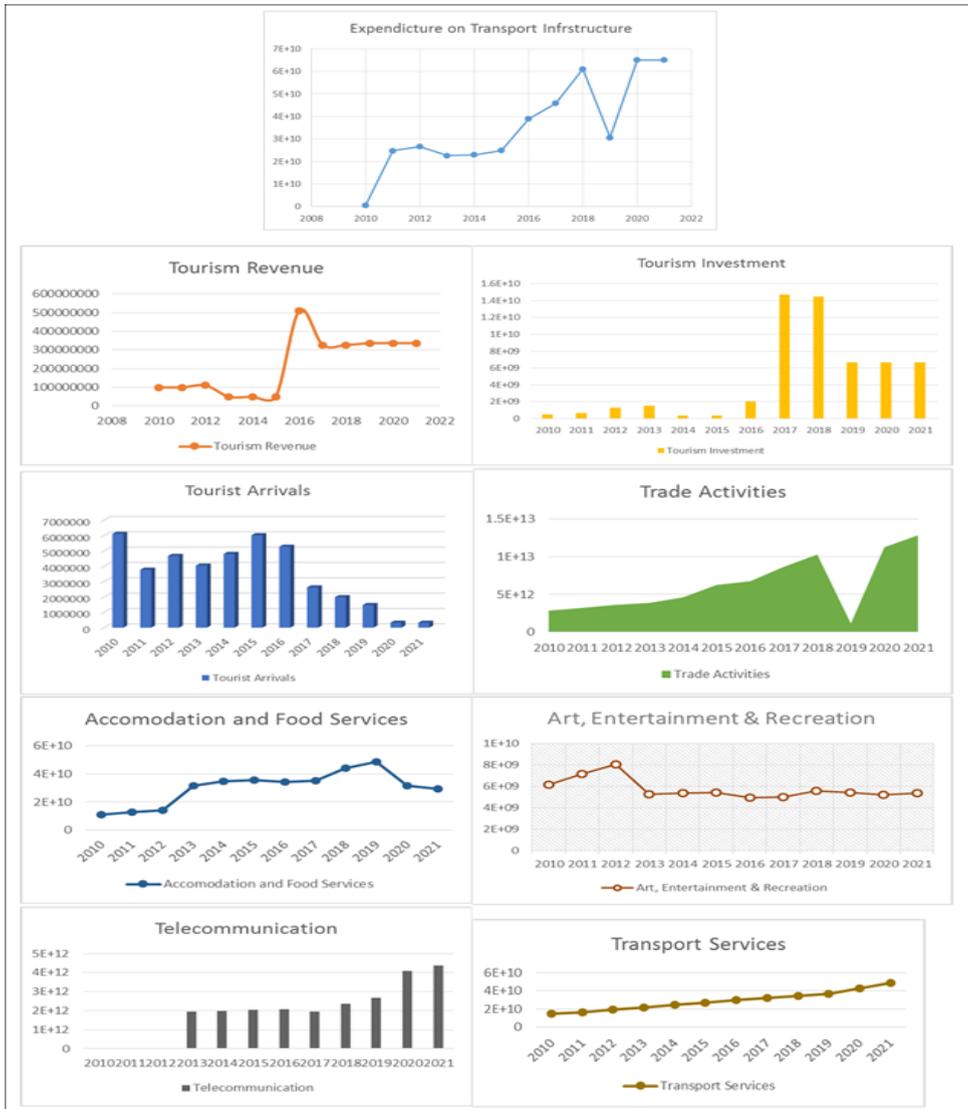


Figure 1: Transport infrastructure capital expenditure and tourism performance indicators in Lagos State  
Source: Field Survey, 2022

## Statistical significant relationship between transport investments and the performance of tourism industry

*H<sub>0</sub>: There is no statistically significant relationship between transport investments and the performance of tourism industry*

In a bid to understand and establish the statistically significant relationship between transport investments and the performance of the tourism industry, multiple regression analysis was used to explain and model the significance outcome of the relationship between the dependent and independent variables. The dependent variable, which is the transport investment [TRI], is measured by the total expenditure on transport infrastructure, while the independent variables, also known as predictor variables, are direct revenue on local tourism patronage [RTP], tourism investment cost [TIC], number of international tourist arrivals [NTA], revenue on trade activities [RTA], revenue on accommodation and food services [RAFS], revenue on art, entertainment, and recreation [RAER], and revenue on telecommunication [RoT]. Both the dependent and independent variables are continuous data, which is appropriate for MLR analysis.

### ***The results:***

The result presented in Table 1 shows the 'R' value representing the multiple regression correlation coefficient, which measured the quality of the prediction of the dependent variable "transport investments", revealed a value of 0.897, indicating a good level of prediction. The R square (R<sup>2</sup>) value representing the coefficient of determination, which measures the proportion of the variance in the dependent variable that can be explained by the independent variables, shows 0.895. This means that the independent variables were able to explain 89.5% of the variability of the dependent variable (transport investments). Meanwhile, the adjusted R square (Adj. R<sup>2</sup>), which revealed 0.886, or 89%, shows the model's accuracy of prediction.

### ***ANOVA test of significance***

The F-Ratio in the ANOVA Table 1, which tests for the overall significance of the regression model as a good fit for the regressed data revealed,  $F \frac{7}{4} 112.112$  and reaches significance with p-value of 0.000. While comparing the ANOVA results, the findings show that the observed and calculated p-values are less than

the table p-value of 0.05 ( $p = 0.000 < 0.05$ ).). Hence, the decision to accept the  $H_1$  (alternative hypothesis) and reject the  $H_0$  (null hypothesis). This implies that there is a statistically significant relationship between transport investments and the performance of the tourism industry in Lagos State, Nigeria.

### *Estimated model coefficient*

The results of the unstandardized coefficient ( $\beta$ ), which indicates how much the dependent variables vary with an independent variable when all other independent variables are held constant, and which are presented in Table 1 (the coefficient table), show that for each decrease or increase in the independent variables (key performance variables of the tourism industry), there is a decrease or an increase in the dependent variable (transport investments TRI). Hence, the general form of the equation to predict transport investment (a dependent variable) from independent variables (the performance of the tourism industry) is predicted as;

$$TRI = - 10601992007.561 + 8496.033 * RTP - 7741.856 * NTA + 0.005 * RTA - 0.048 * RAFS - 0.012 * RoT$$

### *Statistical significance of the independent variables*

The results of the statistical significance of each unstandardized or standardized coefficient for independent variables that measures the contribution to the model were also established, and the results are also presented in Table 1. Through the t-value and corresponding p-value, the study shows that 5 out of the 7 predictor variables are statistically significant and have a value different from 0 (zero). Thus, the 5 variables best contributed significantly to the model's prediction. As such, the five (5) predictor variables that contribute significantly to the model include revenue on local tourism patronage [RTP] ( $t = 6.542, p=0.003$ ), number of international tourist arrivals [NTA] ( $t=5.455, p=0.005$ ), revenue on trade activities [RTA] ( $t = 9.392, p=0.001$ ), revenue on accommodation and food services [RAFS] ( $t = 5.271, p=0.006$ ), revenue on telecommunication, [RoT] ( $t= -3.646, p=0.022$ ).

**Table 1. Relationship between transport investments and the performance of tourism industry**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.897 <sup>a</sup>	.895	.886	2360841700.878

a. Predictors: (Constant), Telecommunication , Tourism Investment, Tourism Revenue , Trade Activities, Art, Entertainment & Recreation, Accommodation and food services, Tourist Arrivals

**ANOVA<sup>a</sup>**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	43740349366120 56000000.000	7	624862133801722 300000.000	112.112	.000 <sup>b</sup>
Residual	22294294146426 806000.000	4	557357353660670 1600.000		
Total	43963292307584 83000000.000	11			

a. Dependent Variable: Transport Investment

b. Predictors: (Constant), Telecommunication , Tourism Investment, Tourism Revenue , Trade Activities, Art, Entertainment & Recreation, Accommodation and food services, Tourist Arrivals

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error			
(Constant)	-10601992007.561	16898265692.412		-.627	.564
Tourism Revenue	8496.033	1298.743	.671	6.542	.003
Tourism Investment	-1.117	.442	-.295	-2.524	.065
Tourist Arrivals	-7741.856	1419.322	-.801	-5.455	.005
1 Trade Activities	.005	.000	.876	9.392	.001
Art, Entertainment & Recreation	3.065	1.964	.146	1.561	.194
Accommodation and food services	.048	.009	.501	5.271	.006
Telecommunication	-.012	.003	-.875	-3.646	.022

a. Dependent Variable: Transport Investment

## Statistical significant relationship between transport system's revenue and tourism performance in the study area

*H<sub>0</sub>: There is no statistically significant relationship between revenue from the transport system's revenue and tourism performance in the study area*

In a bid to understand and establish the statistically significant relationship between transport system revenue and tourism performance, multiple regression analysis was used to explain and model the significance outcome of the relationship between the dependent and independent variables. The dependent variable, which is the transport system's revenue [TSR], is measured by the annual revenue from transport services, while the independent variables, also known as predictor variables, are direct revenue from local tourism patronage [RTP], revenue from trade activities [RTA], revenue from accommodation and food services [RAFS], and revenue from art, entertainment, and recreation [RAER], all of which measure tourism performance in Lagos State. Both the dependent and independent variables are continuous data, which is appropriate for MLR analysis.

### ***The results:***

The result presented in Table 2 shows the 'R' value representing the multiple regression correlation coefficient, which measured the quality of the prediction of the dependent variable 'transport system's revenue and revealed a value of 0.973, indicating a good level of prediction. The R square (R<sup>2</sup>) value representing the coefficient of determination, which measures the proportion of the variance in the dependent variable that can be explained by the independent variables, shows 0.948. This means that the independent variables were able to explain 94.8% of the variability of the dependent variable (transport system's revenue TSR). Meanwhile, the adjusted R square (Adj. R<sup>2</sup>), which revealed 0.918 and represents 92% accuracy, shows the model's accuracy in making predictions.

### ***ANOVA test of significance***

The F-Ratio in the ANOVA Table 2, which tests for the overall significance of the regression model as a good fit for the regressed data revealed,  $F \frac{7}{4} 31.696$  and reaches significance with p-value of 0.000. While comparing the ANOVA results, the findings show that the observed and calculated p-values are less than the table p-value of 0.05 ( $p = 0.000 < 0.05$ ). Hence, the decision to accept the H<sub>1</sub>

(alternative hypothesis) and reject the  $H_0$  (null hypothesis). This implies that there is a statistically significant relationship between transport system's revenue and tourism performance in Lagos State, Nigeria.

### ***Estimated model coefficient***

The results of the unstandardized coefficient ( $\beta$ ), which indicates how much the dependent variables vary with an independent variable when all other independent variables are held constant, which are presented in Table 2 (the coefficient table), show that for each decrease or increase in the independent variables (key performance variables of the tourism industry), there is a decrease or an increase in the dependent variable (the tourism system's revenue TSR). Hence, the general form of the equation to predict the transport system's revenue (a dependent variable) from independent variables (tourism performance indicators) is predicted as;

$$\text{TSR} = -963137100.796 - 958.294 \cdot \text{RTP} + 0.526 \cdot \text{RTA} + 0.269 \cdot \text{RAFS}$$

### ***a. Statistical significance of the independent variables***

The results of the statistical significance of each unstandardized or standardized coefficient for independent variables that measures the contribution to the model were also established, and the results are also presented in Table 2. Through the t-value and corresponding p-value, the study shows that 3 out of the 4 predictor variables are statistically significant and have a value different from 0 (zero). Thus, the 3 variables best contributed significantly to the model's prediction. As such, the three (3) predictor variables that contribute significantly to the model include direct revenue from local tourism patronage [RTP] ( $t = -3.381$ ,  $p=0.012$ ), revenue from trade activities [RTA] ( $t = 5.856$ ,  $p=0.001$ ), and revenue on accommodation and food services [RAFS] ( $t = 7.983$ ,  $p=0.000$ ).

**Table 2. Relationship between Transport System’s Revenue and Tourism Performance**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.973 <sup>a</sup>	.948	.918	859368504.52749

a. Predictors: (Constant), Telecommunication , Tourism Investment, Tourism Revenue , Trade Activities, Art, Entertainment & Recreation, Accommodation and food services, Tourist Arrivals

**ANOVA<sup>a</sup>**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	93632719057366 830000.000	4	23408179764341707000.000	31.696	.000 <sup>b</sup>
1 Residual	51695995860167 26000.000	7	738514226573817980.000		
Total	98802318643383 550000.000	11			

a. Dependent Variable: Transport System’s Revenue

b. Predictors: (Constant), Accommodation and Food Services, Trade Activities, Tourism Revenue , Art, Entertainment & Recreation

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-963137100.796	4119612688.461		-.234	.822
1 Tourism Revenue	-.958.294	283.425	-.505	-3.381	.012
1 Trade Activities	.000	.000	.566	5.856	.001
1 Art, Entertainment & Recreation	.526	.514	.167	1.024	.340
1 Accommodation and food services	.269	.034	1.064	7.983	.000

a. Dependent Variable: Transport System’s Revenue

### **Conclusion and Recommendations**

This study has modeled the economic influence of the transport system on tourism performance in Lagos State, Nigeria. Specifically, it examined the economic performance of the transport and tourism industries based on nine (9) key performance indicators between 2000 and 2021, sourced from relevant ministries of the Lagos State Government; the statistically significant relationship between transport investments and the performance of the tourism industry; and the statistically significant relationship between the transport system's revenue and tourism performance in Lagos State, Nigeria. Major findings revealed that only the annual revenue from transport system services out of the nine (9) evaluated performance indicators showed internal consistency and a positively increasing growth pattern. Furthermore, the research found that there is a statistically significant relationship between transport investments and the performance of the tourism industry in Lagos State. Meanwhile, findings also revealed that the revenue from transport system services had a statistically significant relationship with tourism performance in the study area. This implies that both transport investment and transport system's revenue have a significant influence on tourism performance in the study area.

In conclusion, this study highlights how transport plays an essential role in boosting tourism activities and overall industry performance. The findings demonstrate clear evidence linking higher levels of transport investment with improved outcomes in the tourism industry while emphasizing how generating more revenue through quality transport system services can lead to better results within the tourism sector too. As such, it is crucial for policymakers to prioritize investments in transport systems, especially transport infrastructure and travel modes service facilities, as they work towards promoting not only tourism development and sustainability, but also sustainable urban development across their respective regions of the state. It is believed that improved investment in transport system would enhance the accessibility and mobility to and around tourist destinations in the state. These include but not limited to construction of dedicated right of way for road modes for tourism activities, expansion of existing airports with more attracting facilities, development of new seaports and jetties that can accommodate cruise ships and development of new railway lines and expansion of train services for tourists patronage. The study also recommended the need for better record keeping, particularly in the areas of transport and tourism, towards understanding the trend pattern and behaviour of the sectors performance.

Improvement in record keeping would also give accurate record for better transport and tourism comprehensive plan which in the long run will promote the sectors productivity.

Furthermore, this study recommends the need for immediate integration of transport system projects into tourism project provisions for better development and sustainability of the transport and tourism industries in Lagos State, Nigeria. The full integration of the transport system projects financing and implementation would also give room for strategic planning for the tourists each of mobility and accessibility, safety and security, experience and satisfaction as well as enhancing the use of alternative energy sources and advance technology innovation for tourism activities in Lagos State. In other words, this study recommends the development of a full comprehensive transport plan that takes into account the needs, growth and sustainability of the tourism industry in the State. The plan is expected to prioritize the development of transport infrastructural facilities, such as airports, seaports, jetties, road terminals, roads, rail stations, telecommunications networks and first-and-last mile facilities leading to tourist attractions, the travel modes to destinations cities (such as buses, trains, cars, mini buses, trams, ferries, aircraft, tunnel etc.) and dedicated travel means for each of first and last mile mobility around and within the destinations zones (auto rickshaw, motor coach, share taxi, ride hailing, cable car, taxi, trolley buses, walking and cycling) for tourism patrons and increasing both transport tourism revenue for the Lagos State, Nigeria.

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## COMMUNITY PERCEPTIONS OF TOURISM DEVELOPMENT IN RURAL AREA OF TSATSANE LESOTHO

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**How to cite:** PHASUMANE, P.E., ONOJAEFE, D, STUMA, P. & UKPERE, I.W. (2023). "Community Perceptions Of Tourism Development In Rural Area Of Tsatsane Lesotho". *Annals of Spiru Haret University. Economic Series*, 23(2), 196-212, doi: <https://doi.org/10.26458/23211>

### **Abstract :**

*This paper investigated community perceptions of tourism development and identified their relationship between tourism development projects and business opportunities in Tsatsane community, Lesotho. This investigation was done using a qualitative research method to understand the relationship between respondents perceptions of tourism development projects and associated business opportunities. Using purposive random sampling techniques, 30 respondents—19 community members, 2 community leaders, and 9 stakeholders—were chosen and interrogated. After the choice, both*

*qualitative and quantitative data were gathered using a semi-structured questionnaire that was constructed. While collecting quantitative data by email, the qualitative data used a self-administered questionnaire conducted in-person. Thematic analysis was used to organize the themes that emerged from the replies after they were received. Using Atlas Ti.8, similar themes were gathered and transferred. The study finds a statistically significant relationship between tourism development projects and recurrent themes like new knowledge of tourism-related business opportunities like job creation, increased trade, and education. About 5% of respondents have different opinions.*

**Keywords** *Rural tourism development, business development, eco-tourism, event management, Tsatsane.*

**JEL Classification:** *Z32*

## **Introduction**

This paper investigated tourism development project and associated business opportunity through the examination of respondent's perception of projects in Tsatsane community, Lesotho. The understanding is necessary both for contribution to knowledge and tool for practitioners to ensure tourism development project and business opportunity become the pillar of future projects. Here attention is placed on the role of tourism in contribution to improve life and livelihood of community members. The term livelihood is used to conote mean by which community produce and render service in return for improved quality of life of rural communities. Only when the host community understands and supports tourism development projects and their effects on community members can tourism development in a destination be effective (Adong et al., 2017:1). A major factor in keeping rural towns in their original locations and preventing the migration of rural people to metropolitan areas is rural tourism, which serves as an alternative source of revenue for rural communities. The potential effects of tourism growth on host communities have been identified, and direct interactions between tourists and host communities have been shown to support tourism growth and the promotion of tourist destinations and historic sites.

Community leaders need to think about fostering a sustainable tourist environment that will benefit various tourism stakeholders, claims (Campo-Cerro, 2017:4). Additionally, Campo-Cerro suggests that the success and durability of the

initiative will depend on the degree of community support. The local community's quality of life must therefore be preserved if we want to increase their support for the growth of tourism. Additionally, it is crucial to comprehend how locals feel about the effects of tourist growth because this information is useful to both developers and the tourism sector. According to Sajad and Mahdi (2012:334), communities are the ones most impacted by the growth of the tourism industry; as a result, community involvement and perceptions are crucial to the industry's development since they help inform current knowledge and decision-making. This publication responds to the following objectives:

- To assess the community's perceptions of tourism impacts in Tsatsane area.
- To identify perceived tourism impacts and benefits for Tsatsane community.
- To determine ways to develop a tourism management plan that will regulate tourism in Tsatsane.

## Literature Review

### Community perception of tourism the impacts of tourism

Knowledge of residents' attitudes towards tourism development is important for tourism developers and governments because tourism development sustainability relies on community participation and involvement. According to Koot (2013:318), non-governmental organizations (NGOs), the government, funders, consultants, and the business sector do not consider host views because they frequently adopt an objectified, detached stance. According to Turker (2013:115) perpetually residents have positive perceptions towards tourism because they believe that tourism creates employment, bring business opportunities, promotes community development and socio-cultural activities such as entertainment. The people of Tsatsane could also develop positive perception towards tourism development if they gain benefits that accrue from tourism.

The level of understanding community perceptions of tourism has been reformed but still uncertain Sharpley (2014:37). However, Chandralal (2010:41) consider local community support as crucial for sustainable tourism development particularly in regional destinations. It is therefore important for Lesotho government, policy makers and other stakeholders to understand and consider community perceptions of tourism development for proper implementation, development, and sustainability. Further, Wang et al. (2017:1–15) assert that it is crucial to understand the attitudes of hosts toward the growth of tourism as well as the elements that affect those attitudes.

Kosic et al (2014:151) allude that it is important to identify the relationship between resident's socio-economic and demographic attributes and attitudes in the development stage. Furthermore, Kosic et al (2014:151) observe that people who participate in tourism, those who benefits economically, younger and educated population have positive perceptions towards tourism development while older people, those who do not communicate with tourists, people with lower education and those who do not benefit from tourism development have negative perceptions of tourism development and its prosperity of local community.

### **Rural tourism development**

Rural tourism development has been recognized for it's potential to be an engine of economic growth in communities and adaptive tourism strategy would become helpful in this regard Lesley et al, (2004:3) indicated that rural tourism has moved into its second face of development, it has grown rapidly in production, participation, progressed in business and partnership. In this context rural tourism is a viable business in some developing countries including Lesotho because most of tourism resources and activities are discovered in rural areas. Novelli (2016:1) examines some of the most debated current issues that hinders sustainable tourism development in SSA including lack of skills, political issues, and power relations. Novelli further agree that tourism has potential in economic development, employment opportunities and poverty alleviation and it creates opportunities in developing countries and Sub-Saharan Africa (SSA) in particular. Lesotho is one of the developing countries in SSA, therefore if Lesotho tourism could be revealed, it will contribute by improving the economy of the entire country and empower the livelihoods of the people particularly in rural areas and gain massive benefits from tourism development. Anita et al (2014:88) highlight that rural tourism enable tourists to interact and be involved in the daily life of the host community. It means that through rural tourism development tourists will interact with the community in Tsatsane and learn Basotho culture.

The Rural Tourism concept is also closely linked to "Sustainable Tourism" approaches, where tourism should take "full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities".

### **Tourism impacts**

The impact of tourism development initiatives on communities varies according to productive capacity and entrepreneurial commitments. Turker (2013:115) argues that though perception matters in understanding tourism impact, though perception

do not undermine actual impact of tourism development projects. Chandralal (2010:41-49) argue that community members are more interested in tourism development project that is aligned with community perception of tourism activities. .

Sharpley (2001:1) highlight the changes associated tourism activities and their association with destination image and understand the impact they have on developmental cost of tourism activities, development projects and general cost of living in rural community. Viljoen and Tlabela (2007:29) note that while the change in cost is relevant for adaptive tourism strategy, the impact it has on rural community varied widely: social, cultural, political, economic and environmental.

Furthermore, Viljoen and Tlabela (2007:1) agree that tourism project in rural community can lead to increased tourism activities and community participation in tourism business Irshad (2010:30) while rural tourism maybe perceived to have varied impact, the impact of improved emphasis on tourism development project in rural community would certainly lead to improved economy, and social cohesion and protection of historic values and artifact. Bogan (2014:122) argue that perception should be closely connected with interest and desire for community development through tourism projects, activities and strategies.

### **Research Methodology**

This section presents an overview of the method used to investigate, study population, data collection, the sample and data analysis. A qualitative method was adopted to investigate the perceptions of community leaders, members, and tourism stakeholders of impacts of tourism development in Tsatsane area. Furthermore, the suitability of this method resides in the basis that the opinions, experiences, and choices of participants were disclosed to satisfy the study objectives. Semi-structured interviews were conducted to gather primary data on community perceptions of tourism impacts.

### **Population of the study**

The targeted population consists of community members, community leaders and tourism stakeholders. Tourism stakeholders include service providers such as tour guides, homestay owners and handcrafters. The population was selected from Tsatsane community members.

### **Sample and sampling technique**

This study utilised a purposive sampling technique and participant were selected using appropriate selection criteria suitable for the nature, context and objective of the study. with relevant characteristics for this study. The objective of the study is

to understand community perception of tourism development in rural community and how those perception aligned with and/ or stimulate interest in tourism activities, development project and economic growth. As argued by Robison (2014), purposive sampling aims to select participants for the precise reason that they have knowledge of the subject matter, and that they are in the best position to answer the research questions. To this end, the following participant were selected: nineteen community members, two community leaders and nine tourism stakeholders.

### **Data collection**

Data collection employed the use of data collection instrument designed in the format of semi-structured questionnaire with open-ended question were used for the interview. This method was found to be relevant because it deals with words and meanings as opposed to quantitative research which deals with numbers and statistics. In addition, scholarly articles were collected as secondary data. The interviews were conducted following pre-arranged meeting with participant. Cohen (2006:1) asserts that the utilisation of both pre-arranged interview and semi-structured questionnaire is appropriate when dealing with perception and useful for comparability purpose. Gill et al. (2008:291-295) contend that the most important issues is to ask the right question to the right respondents to achieve the right result. Hyman (2016) indicates that researcher to ask follow-up questions where there are misunderstandings. Using the interview guide, the questions were administered to all nineteen study participants.

### **Data analysis**

This section presents a discussion of how qualitative data analysis was conducted to answer the research objectives. A thematic analysis of the findings was conducted, and similar themes were identified, grouped together into categories, and analysed. Word cloud was also used to export words from Atlas ti.8 to provide the reader with an overall sense of the text. Madelyn (2019:2) define coding as the method of give meaning to text and classifying qualitative data into categories of different categories and themes.

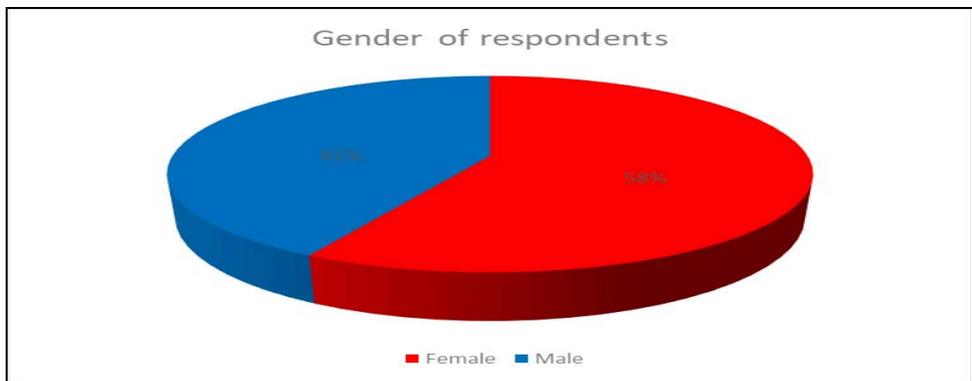
### **Demographics of participants**

Demographic information of participant are presented as gender, age, and historical racial classification, length of stay and status of residency in Tsatsane and level of education level. In Tsatsane, most of the community members who take part in tourism are females. The homestay project in Tsatsane is operated by

women. It is important to engage the right policy to empower women in the tourism sector.

The finding reveals that out of nineteen respondents who participated in the study, eleven (57.9%) of them were women and only eight (42.1%) of them were males. The ages of the respondents ranged between 27 and 65 years. Out of nineteen respondents, eight (42.1%) of them were aged between 27-40 years, followed by six (32%) who were aged between 41-50 years, and 26% aged 51 and 69 years. The results also shows that all 19 (100%) respondents were Africans, there were no Whites, Indians, or Coloureds. The findings show that most of the respondents thirteen (68%) stayed in Tsatsane for more than 10 years while six respondents (32%) have been in Tsatsane for less than ten years.

According to the results, twelve respondents (63%) were born and reside in Tsatsane and seven (37%) respondents do not reside in Tsatsane village. The results also reveal that seven (36.8 of the nineteen respondents had secondary level education, four (21.0%) respondents had a certificate after secondary level and only four (21.0%) had tertiary education, three (15.8%) of the nineteen respondents had primary education and only one (5.3%) respondent had no education. Figure 1 below illustrates demographics of participants.



**Figure 1: Gender of respondents**

***Age of Respondents***

The ages of the respondents ranged between 27 and 65 years. Out of 19 respondents, 8 (42.1%) of them were aged between 27-40 years, followed by 6 (32%) who were aged between 41-50 years, and 26% were aged between 51 and 69

years. Robinson et al. (2019:4) agree that sociodemographic variables also appear to influence residents’ perceptions of tourism development.

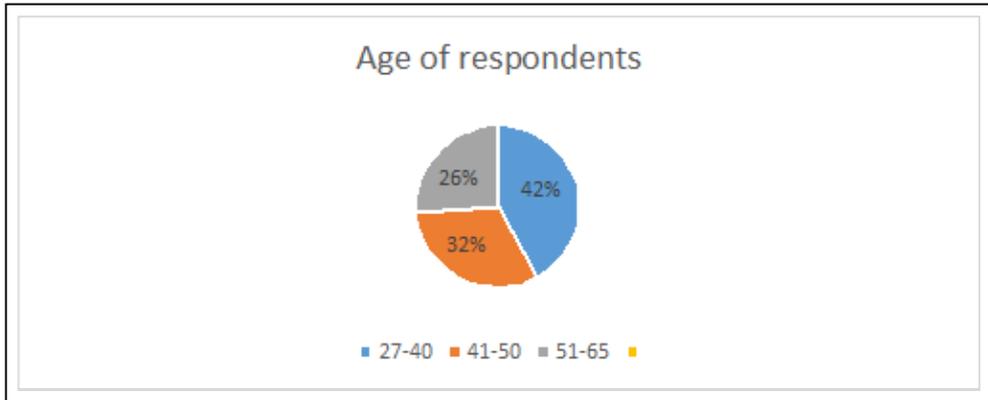


Figure 2: Age of respondents

***Historical racial classification***

The result shows that all 19 (100%) respondents were Africans, and there were no Whites, Indians or Coloureds. It is an area of outstanding natural beauty and is also unique because it accommodates three distinct ethnic groups—Xhosas, Basotho and Baphuthi.

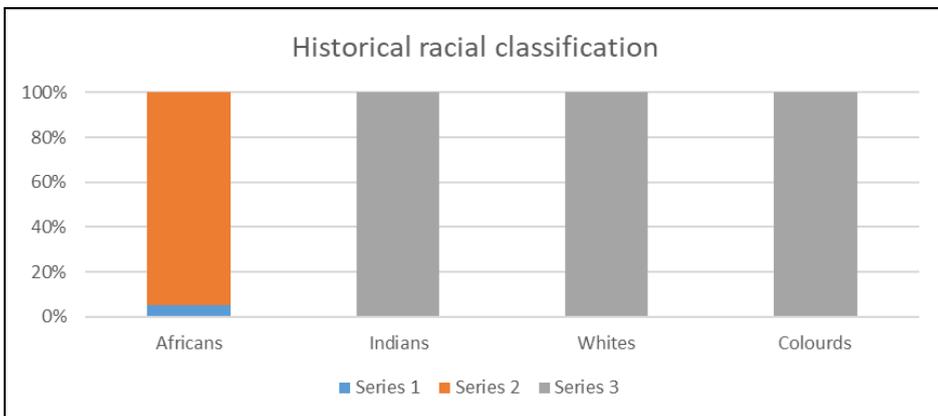
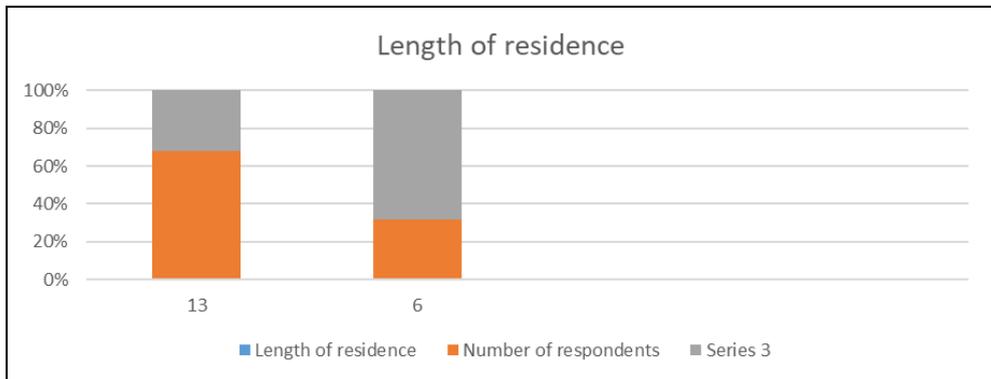


Figure 3: Historical racial classification

***Length of stay in Tsatsane***

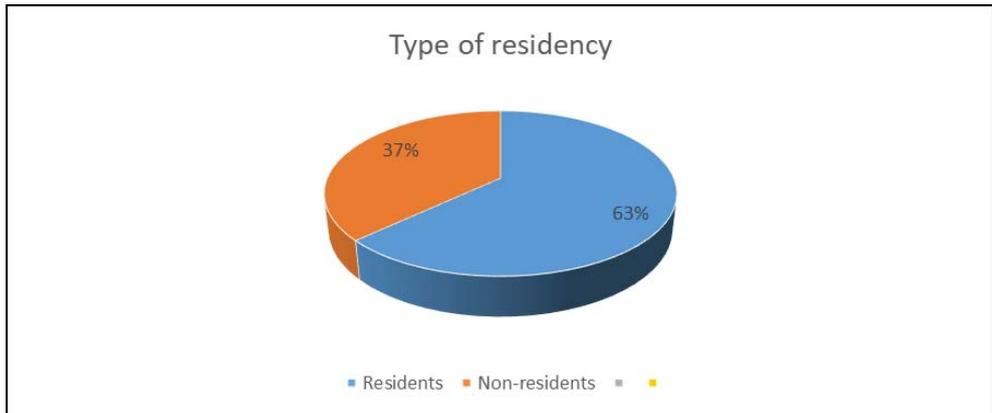
The findings show that most of the respondents (13; 68%) stayed in Tsatsane for more than 10 years while 6 respondents (32%) have been in Tsatsane for less than 10 years. Ganoon et al. (2020:151) state that community attachment to the area influences the length of stay.



**Figure 4: Length of residence**

***Type of residency in Tsatsane***

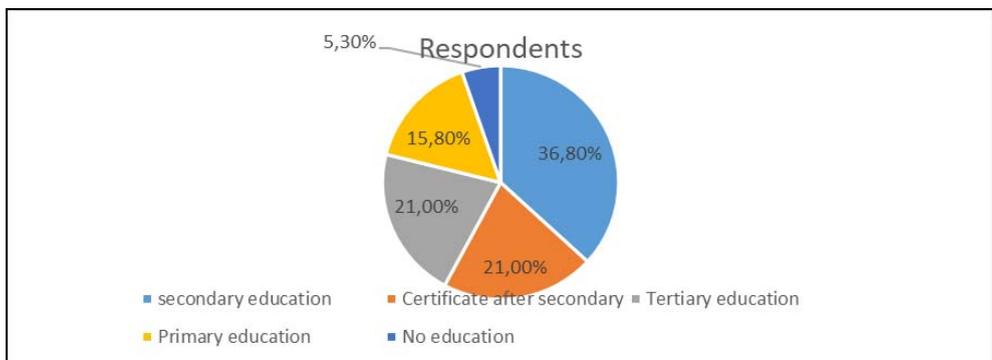
According to the results, 12 respondents (63%) were born in and reside in Tsatsane while 7 (37%) respondents were born but do not reside in Tsatsane village. However, the 7 respondents who do not reside in Tsatsane were still interviewed because the researcher believed that they are also affected by the impacts of tourism development in their area. Ganoon et al. (2020:151) assert that community attachment to the host destination can influence the type of residency.



**Figure 5: Type of residency**

***Education level of respondents***

The results reveal that 7 (36.8%) of the 19 respondents had secondary level education, 4 (21.0%) respondents had a certificate after secondary level and only 4 (21.0%) had tertiary education. Of the 19 respondents, 3 (15.8%) had primary education and only 1 (5.3%) respondent had no education. Programmes on tourism implementation depend on the community’s support for tourism which also depends on a certain level of education (Ejiofor et al., 2012:34).



**Figure 6: Education level of respondents**

The participants' profiles above show that younger people are more interested in tourism development projects than older people and people with education are also more involved in tourism development than those who are without education. This aligns with Robinson et al. (2019:4) who state that socio-demographic variables also appear to influence residents' perceptions of tourism development.

#### Section B: Perceptions of community development projects

##### **Community understanding of tourism development projects**

One of the objectives of this study was to assess the community's understanding of tourism development in Tsatsane. Toerien (2020:1) shares the same view that the understanding of tourism development relative to community perception is necessary for monitoring government programmes, implementation, and the extent to which development programmes, respond to the national strategic development plan of improved economic growth as a vehicle to improve rural the economy, create jobs, reduce poverty, and address the concern of social cohesion. The study finds that tourism is indeed an engine of economy and poverty reduction for the livelihoods of rural communities. This was also highlighted by Makochekwana (2013:1).

Most respondents indicated that they understand that tourism development is an answer to poverty reduction, and it brings economic empowerment to their community. According to one of the respondents, tourism development projects are initiatives that are designed to improve the livelihoods of communities: these could be done in many ways, through establishments of homestay facilities for tourists to stay during their visit, horse riding whereby tourists pay a certain fee, tour guiding and other services that can generate their income.

The respondents also mentioned that tourism development projects also play a vital role in the provision of employment. According to the findings of the study, tourism is one of the sectors that has a high employment rate. Tourism was identified as an important sector in the country that can meet the government objectives relating to poverty alleviation and generating substantial employment for low and semi-skilled labour (NSDP, 2019). Respondent 1 and respondent 4 affirm that

*Tourism is a business that empowers communities, reduces poverty, and creates employment. Tourism will reduce poverty and creates employment in our community.*

Respondents 1 and 14 added:

*Tourism development projects improve the economy of communities by providing employment”. Respondent 8 also agree that tourism development is a business that intends to answer the needs of the community by creation of employment.*

Respondents 19 and 5 agree that tourism development projects bring benefits in many ways, communities are exposed to new things that they didn’t even know they existed, and it creates job opportunities and through tourism development projects communities get exposed to new things that come with employment opportunities.

*We can benefit from tourism development in many ways, tourism exposes us to new things that we didn’t even know that they exist. Tourism also creates employment (Respondents 19 and 5)*

Moreover, respondent 7 who resides in a nearby village to Tsatsane, called Thupeng, stated that he lacks knowledge of tourism development because tourists only visit the nearest villages but with the little information he has, tourism projects benefit the community through employment generation.

*I don’t know much about tourism because every time when tourists visit Tsatsane they just lodge at Ha Liphaphang and not the other areas of Tsatsane. Little that I know about tourism development is that it is good and beneficial and can create employment for the community (Respondent 7)*

Respondent 1 emphasized that tourism is a business and communities need to take part in tourism development projects. It was also mentioned by respondent 10 that for tourism to flourish, there should be joint community efforts. Respondent 13 also stated that:

*Tourism development projects are for the communities where attractions are available, and they become consumable, and these initiatives will be driven by the community.*

Respondent 15 elaborated on this, “Tourism development projects are initiatives designed to improve the livelihoods of communities (economic and social) through tourism”. Respondent 17 affirmed that:

*Tourism development projects are initiatives intended to bring economic benefits to the local communities through tourism.*

*Community development projects empower communities in many ways, through establishment of tourism facilities such as homestays, vulture restaurants and activities such as horse riding, waterfalls, and visits to historical caves.*

Protection of natural resources which is also part of tourism products is one of the vital roles played by the tourism sector. According to Polukhina et al. (2021:7), tourism development has increased in rural areas because of the high demand for natural scenery and peaceful countryside to escape from industrialization and urbanization. Manwa (2015:6667-6668) also acknowledged that for tourism to sustain, local communities must benefit directly from tourism by enabling them to conserve and protect tourism resources. Since Tsatsane is one of the areas that are rich with natural resources such as rock/bushmen paintings and historical caves, some respondents pointed out the importance of the protection of natural resources. Respondent 16 mentioned that

*Tourism development can assist us in protecting the natural resources in our area: those natural resources are wetlands and our lives as the community of Tsatsane can change if we ensure protection of natural resources in Tsatsane for a better growth of tourism in Tsatsane.*

Respondent 11 added that:

*Through tourism development we can benefit from natural resources such as medicinal plants in our area if we as a community protect them.*

Respondent 3 expressed that:

*There is a need for training on tourism development to communities for a better understanding of tourism because I believe that we the communities of Tsatsane can benefit from tourism development project.*

This study guided by the following Research objective:

- To assess community perceptions of impacts of tourism development in Tsatsane.

### **Discussion of finding**

One of the objectives of this study was to assess community perceptions of impacts of tourism development in Tsatsane. (Toerien, 2020:1) allude that the understanding of tourism development relative to community perception is necessary for monitoring government programmes, implementation, and the extent to which development programmes, respond to the national strategic development plan of improved economic growth as a vehicle to improve rural the economy, create jobs, reduce poverty, and address the concern of social cohesion. The study finds that tourism is indeed an engine of economy and poverty reduction for the livelihoods of rural communities. This was also highlighted in the study of Makochekwana (2013:1).

Most respondents indicated that they understand that tourism development is an answer to poverty reduction, and it brings economic empowerment to their community. According to one of the respondents, tourism development projects are initiatives that are designed to improve the livelihoods of communities: these could be done in many ways, through establishments of home-stay facilities for tourists to stay during their visit, horse riding whereby tourists pay a certain fee, tour guiding and other services that can generate their income.

The respondents also mentioned that tourism development projects also play a vital role in the provision of employment. According to the findings of the study, tourism is one of the sectors that has a high employment rate. Tourism was identified as an important sector in the country that can meet the government objectives relating to poverty alleviation and generating substantial employment for low and semi-skilled labour (NSDP, 2019).

### **Conclusions and recommendations**

The aim of the study is to investigate community perceptions of tourism development impacts in rural areas in Tsatsane. This section provides the final and overall conclusion, based on the aim of the study.

#### **Conclusions on objective 1**

The objective to assess community perceptions of tourism impacts was achieved, the results show positive impacts because majority of respondents indicated that tourism development projects reduce poverty, bring economic empowerment, create employment opportunities, and promote the protection of tourism and natural resources as well as environmental conservation. This indicates that the Tsatsane community supports tourism development projects. To support the achievement of this objective, information under the following aspects was considered.

### **Community participation**

Community participation is one of the keys to community support for tourism development, the results show that the community of Tsatsane is participating in different tourism projects but mostly they participate in tour guiding and homestay establishments. The conclusion is that community of Tsatsane is more focused on operating homestay facilities and tour guiding than other projects.

### **Information dissemination**

The results indicate that the spread of information about tourism development has contributed positively to the community of Tsatsane, the findings of the study have shown that there are platforms that the chief, Ministry of Tourism and tourism associations use to gather and share information. This concludes that the community of Tsatsane is well-informed, understands, and is knowledgeable about tourism development projects. Information dissemination is vital for communities to get updates on what is happening in the industry so that they can identify opportunities.

### **Recommendations**

Tourism development project creates business opportunity with potential for negative environmental and social consequences. However, the trade-off for rural community is the business opportunity creates job and increase potential of livelihood for members of the community. This paper recommend that the need to identify and prioritise tourism development project that empower community members economically so that social cohesion of community is achieved. Other important aspects of tourism development project that requires immediate attention is the need for accommodation facilities that should be extended to include the homestay facilities, other types of accommodation establishments such as hotels, guesthouse, bed and breakfast are also in limited supply. While demand for all category of accommodation has grown, supply has not. The need develop and deploy development policy framework become imperative and it is recommended.

Other recommendation includes medical tourism facility like hospital to attract and accommodate medical tourism locally, from the region and beyond. Tsatsane is not well marketed which makes it difficult for people to know about it, therefore there is a need for marketing. Another recommendation is for the government, through relevant ministries, to take part in the development and growth of the tourism sector in Tsatsane.

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## CONSUMER DINING DURATION AND SPENDING: THE ROLE OF EMOTIONAL LABOUR PRACTICE IN THE RESTAURANT INDUSTRY

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**How to cite:** SIXPENCE, S., MUKUCHA, P., MUZANENHAMO, L., & UKPERE, I. W.(2023). “Consumer Dining Duration and Spending: The Role of Emotional Labour Practice in the Restaurant Industry.” *Annals of Spiru Haret University. Economic Series*, 23(2), 213-236, doi: <https://doi.org/10.26458/23212>

### Abstract:

*This paper centres on examining the link between emotional labour and dining duration within the restaurant industry. In this study emotional labour practice was modelled as one of the crucial predictors of dining duration. This is a multiple case study methodology using a cross sectional approach. The target population was 480 dyads encounters in 6 of the most popular fast food restaurant chains in Harare. Some 214 seat-in customers were the unit of analysis while wait staff were the unit of observation. In terms of responses, 200 responses were attained and were deemed sufficient for meaningful Structural Equation Modelling. The quantitative approach employed a self-*

*completed structured questionnaire in collecting data. A structural equation modelling was run to test the direct effects, a multi-group structural equation modelling was run to test the moderating effects of categorical variables, and a moderated multiple regression was run to test the moderation effects of the latent variables. The study revealed various factors that influence the connection between emotional labour and dining duration such as the gender factor of the people involved, the rate and strength of the interaction between restaurant employees and the clients. The outcome directed that emotional labour is positively associated with consumer dining duration. The consumer dining duration is in turn associated with consumer expenditures within the restaurant. However, all the hypothesised moderators had no statistically significant effect. The study recommended the use of emotional labour as one of the predictors for increased revenue in the restaurant industry through increased consumer spending as mediated by the dining duration under the scenario of excess capacity and limited demand.*

**Keywords:** *emotional labour, dining duration, consumer spending, restaurant*

**JEL Classification:** J12

## **Introduction**

Consumer spending in the restaurant industry contributed to the viability and lucrativeness of the fast food restaurant businesses (Mukucha et al., 2019). Consumers are likely to spend a lot of money on dining services if they spend a longer duration dining in the restaurant. They are also likely to spend a lot of dining in the service environment if the conditions are favourable to their expectations and requirements (Yoon, Scopelliti, & Morewedge, 2021). Usually restaurant businesses prefer patrons to have a considerably lengthy period of dining when the existing capacity is higher than the prevailing demand. The idea is that if the patrons spend a lot of time in the dining environment they may end up demanding more items than what they had initially planned for (Sharma, Trott, Sahadev, 2023).

Various factors influence the attitudes of dining within the restaurant environment (Mukucha et al., 2022), food quality (Zhong and Moon, 2020), service experience (Slack et al., 2021; Bichler et al., 2021; Mukucha et al., 2019), and consumer ethnocentrism (Mukucha and Jaravaza, 2021). Labour efforts from

employees are the other possible contributors to the dining experiences of the patrons (Chehab et al., 2012). However, modern trends are exponentially incorporating other set of capabilities such as aesthetic labour and emotional labour (Wu et al., 2020). There is also a possibility that emotional labour may also contribute to the customer outcomes (Hulsheger et al., 2015) such as dining duration of the patrons in the restaurant businesses. Previous studies in the service industry indicate a strong link between consumer behaviour and general employee characteristics such as mental, physical abilities and competencies (Lovelock and Wirtz, 2022; Rodríguez, Antonovica, & Martín, 2023), hence this study is novel as it focus on specific attributes namely, consumer behaviour (dinning duration) and emotional labour.

Emotional labour practice as manifested through its mechanical displays is located within the framework of social factors which are part of the dimensions of the services space. The social dimension of the services space comprises of the number, appearance, and behaviour of the employees in the service setting (Line and Hanks, 2019); Baker, 1986) and it facilitates employee-customer interactions (Tran, Dang & Tournois, 2020). The space in which interactions occur could influence avoidance behaviour (Halbusi et al., 2020). Emotional labour practice addresses concerns that arise from client expectations and discourtesy behaviours (Hwang et al., 2022). This leads to the suggestion that if emotional labour is practiced appropriately the dining duration of the patrons may be extended. This resonates with the thinking that emotional labour practice is associated with positive customer outcomes (Hulsheger et al., 2015; Humphrey, Ashforth & Diefendorff, 2015). The study looks at whether emotional labour practice by the frontline employees leads to an extended dining duration. It also sought to determine whether the dining duration leads to consumer spending. Furthermore, the study seeks to establish whether customers' gender, employees' gender, interaction frequency and interaction intensity moderate the relationship between employee emotional labour practice and customers' dining duration.

The presumption linking emotional labour practice and the dining duration is of cause not simple. It is highly influenced by variables such as the gender of both staff and the clients, rate of interaction. Further, consumer behaviour such as spending is closely linked to customer perceptions of the quality of service provided (Jain, Banerjee, Sharma, 2023).

The structure of the study outlines, literature review on the theoretical basis that links emotional labour practice to dining duration, and the moderators of that

relationship. Furthermore, the study seeks to determine whether the dining duration leads to consumer spending. The research and methodology is then introduced. This is then followed by data analysis and findings of the study, after which the authors dwell on discussions and implications. This paper winds down by making major recommendations, limitations and areas of future research.

### Literature Review

This section presents the applicable theoretical foundation discussions. Furthermore, the conceptual background illustrating the relationship among variables of interests (Emotional labor, dining duration; and consumer spending). An empirical literature review is also focused on.

### Theoretical and Conceptual Background

**Emotional labour:** Emotional labour is the extent of emotional interaction between the organisation's key stakeholders (employees and customers) (Ashforth and Humphrey, 1993). The emotions are expected to be managed in accordance with the prescription enshrined in the job specification (Needham et al., 2021). The prescribed emotions usually involve mechanically expressing emotions such as smiling and eye contact (Mauersberger et al., 2022). Emotional labour practice is a common feature in jobs that involve personal contact in the services industry (Hochschild, 1983). There is a dominance of the female gender in services industry, leading to the assumption that the emotional labour is a practice that is associated with females (Hochschild, 1983).

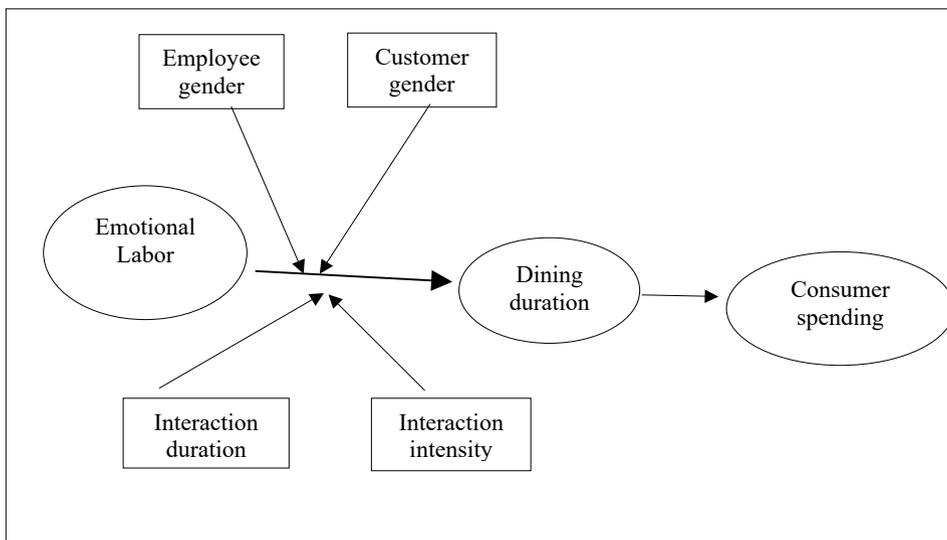
Usually the prescribed emotions are at variance with the felt emotions (Ngcobo et al., 2022). In such cases employees either surface act or deep act in order to project the prescribed emotions (Huang et al., 2019). The effect of deep acting is that, the inner feeling is modified to match the displayed emotions, while surface acting involves faking the felt emotions (Kwon et al., 2019). Deep acting is commonly preferred as it is less associated with employee fatigue and emotional dissonance, while surface acting is discouraged as it leads to emotional dissonance (Sciotto and Pace, 2022), emotional exhaustion (Amisshah et al., 2021; Chen et al., 2019; Li et al., 2017) and less favourable customer outcomes (Kim et al., 2019). However, the most recent perspective suggests that surface acting may not pose a lot of problems to the employees as has been previously envisaged (Dudau and Brunetto, 2020).

**Dining duration:** Dining duration refers to the period which the patrons spend in a restaurant (Jia, 2021). Where demand is higher than the restaurant capacity,

restaurants prefer customers to have a shorter dining duration in order to maximise table turnover (Bloom et al., 2012). There are several factors that contribute to the patrons’ desire to spend a lot of time in the restaurant premises. The services cape framework by Bitner (1992) and Baker (1987) provide some insights that shed light on how patrons develop some approach or avoidance behaviours as result on how they interact with the services cape. Some of the services cape elements that contribute to the customers spending more time in the service environment are ambient factors, physical factors, and more importantly social factors (Han and Ryu, 2009).

**Consumer spending:** Consumer spending in the restaurant industry refers to the personal consumption expenditures on various culinary items (Yang et al., 2009). Consumer spending is of paramount importance (Mateos et al., 2021) represents the revenue in the hospitality industry (None, 2016) and the restaurant in particular (Bloom et al., 2012). As the consumers spend more time in a restaurant they are likely to demand a variety of services and dishes in the restaurant. It is through such demand that the consumers will continue to spend more within the restaurant.

The above literature informs the conceptual model presented in the figure 1 below.



**Figure 1: Conceptual Model of the Study; Source: Authors**

Figure 1 above suggests that emotional labour practice is associated with the customers' dining duration. However, the gender of the staff moderates the connection of the staff and patrons as elucidated in the emotional contagion theory (Ozgen & Esiyok, 2019). The relationship is supported by the occurrence and concentration of the interface during the service encounter duration. Finally, as the patrons spend more time in the service outlet they are expected to increase their spending during the service encounter.

### **Empirical Review and Hypothesis Development**

**Emotional labour practice and dining duration:** Social factors involves the human elements in a service environment who are almost always employees and customers (Andres et al., 2016; Sheng et al., 2016). These human elements are evaluated on the basis of their numbers, appearance, and behaviour (Baker, 1986). Some of the employee behaviours are the manifestation of the emotional labour practice (Kim et al., 2019). Management assumes a strong connection between emotional labour and positive customer behaviours (Humphrey et al., 2015). These emotions involve physical manifestation through facial expressions, tone of voice, and body posture (Li et al., 2018). Behaviours such as a soft tone of voice, smile demonstrate emotional labour (Hietanen and Peltola, 2021; Hietanen, 2018), and form a key element of the services cape as viewed by Baker (1986). Approach behaviours can manifest in patrons through having an extended dining duration. Other similar studies have already acknowledged that customer behaviour can be stimulated by emotional labour efforts (.e.g. Mukucha et al., 2012). It can thus be presupposed that:

*H1: Emotional labour practice by the frontline employees leads to an extended dining duration*

**Dining duration and consumer spending:** Previous research has demonstrated that restaurant revenue increases as a result of high table turnover (Bloom et al., 2012; Kimes et al., 2002). However, this scenario is likely to be valid when there is higher volume of demand against limited supply capacity (Noone et al., 2007). In the event that the ability is high and the volume of customers is limited revenue is likely to be generated when customers increase their spending. The increase in spending is anticipated to be a function of the customers' extended dining duration. Therefore, it is anticipated that;

*H2: Dining duration is associated with consumer spending.*

**Employees' gender, employee emotional labour and customers' dining duration:** The link between staff emotional labour and customer dining duration

can be moderated by the gender of the employee. Usually women are good at expressing emotions (Hess et al., 2000; Ozen & Esiyok, 2019). They are therefore likely to express their emotions such as smiling and eye contact (Hietanen and Peltola, 2021; Hietanen, 2018; Sutton and Rafaeli, 1990) exceptionally well than their male counterparts. This could be explained by the fact that women are socialised to be emotionally expressive (Hertenstein and Keltner, 2011), while men are expected to inhibit their emotional expressions (Brescoll, 2016). Emotional labour practice is likely to produce better results when practiced by females than men because women are more expressive than men during their interpersonal transactions with clients. It is therefore anticipated that;

*H3a: The employees' gender moderates the relationship between employee emotional labour practice and customers' dining duration*

**Customers' gender, employee emotional labour and customers' dining duration:** The impact of emotional labour practice during interpersonal transactions depends of transference of emotions in what Hatfield et al, (1993) termed emotional contagion. The emotional contagion theory states that where two or more people have an encounter there is some transference of emotions through either conscious or unconscious mimicry (Hatfield et al., 1993). The fluidity of emotional contagion depends on the gender of the participants involved. A growing body of literature pointed to the fact that females accurately perceive emotional facial expressions than males (Montagne, Kessels et al., 2005; McClure, 2000; Ozgen & Esiyok, 2019). Previous research has also indicated that women are more prone to emotional influence than their male counterparts (Magen and Konasewich, 2011). Perhaps this can be accounted by females' ability to use additional neural networks for dealing with emotions (Schulte-Ru"ther et al., 2008). As a result females are better at decoding and judging emotional cues from the faces of the other people whom they are interacting with (Chen et al., 2018; Hoffmann et al., 2010; Hampson et al., 2006; Hatfield et al., 1993). It is therefore anticipated that;

*H3b: The customers' gender moderates the relationship between employee emotional labour practice and customers' dining duration*

**Interaction frequency, employee emotional labour and customers' dining duration:** The interaction frequency is likely to affect the relationship between emotional labour practice and dining duration. The increasing frequency of the employee-customer interactions reinforces the emotions displayed by the employee during their encounter (Kim and Baker, 2019). This has the effect of creating a

rapport between the employees and the customers (Hwang et al., 2021). Rapport is conceptualised as the quality interaction characterised by mutual understanding and satisfactory communication (Gremler and Gwinner, 2000). The rapport inculcates fertile grounds for the contagion of employees' displayed emotions (Lee and Hwang, 2022) leading to the approach behaviours of the customers in the form of extended dining duration and customer appreciation such as tipping in the restaurant business (Medler-Liraz, 2020). It is therefore anticipated that;

*H4a: The interaction frequency moderates the relationship between employee emotional labour practice and customers' dining duration*

**Interaction intensity, employee emotional labour and customers' dining duration:** The other possible moderator of the link between emotional labour practice and dining duration is interaction intensity. Where the intensity of the interaction is high the transference of emotional displays from the wait staff is likely contagious. When the patrons are overwhelmed with the pleasantries of the emotions from employees among other behaviours in the service package, they are likely to linger around the service outlet for a considerably longer duration exploring other services and products on offer. It is therefore plausible to anticipate that;

*H4b: The interaction intensity moderates the relationship between employee emotional labour practice and customers' dining duration.*

### Research and Methodology

**Population:** The study followed a multiple case study methodology anchored on a cross sectional approach. The population of interest for the study is comprised of dyads in fast food restaurants and the study target population was 480 dyads in six of the most popular fast food restaurant chains in Harare. There are so many factors that determine the sample size in generalizable studies (Saunders et al., 2018) such as cost, affordability and the appropriate statistical tool (Bryman, 2016).

**Sample and data acquisition:** Some 214 seat-in customers were considered the unit of analysis as they were the entity about which the data was reported while wait staff were the unit of observation who happen to be the source of data regarding the unit of analysis. Therefore, the sample size was 214 dyads encounters. In terms of responses, 200 dyads encounters responses were attained and were deemed sufficient in line with the rule of thumb of not less than 200 for meaningful Structural Equation Modeling. The study followed a quantitative approach by employing a self-completed structured questionnaire in collecting

data. The collected data was analysed using quantitative tools. Regarding Structural Equation Modeling, the study used a sample of 200 dyads encounters in line with Reisinger and Mavondo (2007) who notes that a sample of 200 is vital in offering appropriate power in conducting the modelling. Kline (2011) and Barrett (2007) also agree that 200 as sample size adequately addresses requirements of structural equation modelling and that any research that utilise a sample lower than 200 need to be rejected, except when it is drawn from a constrained population.

### Measures

Constructs were based on extant literature, In order to stay aligned to similar studies conducted in the past, the study adopted validated measures from the extant literature. Emotional labour was measured using the 15 item Hospitality Emotional labour Scale (HELSS) developed by Chu and Murrmann (2006).

Interaction frequency and interaction intensity were measured using scales adopted from Brotheridge and Lee (2003). The other variables were either categorical in the case of employee and customer gender, or concrete in the case of dining duration, and consumer spending.

### Findings and Discussions

In this section results regarding this study are presented including discussion of the findings.

### Findings

**Sample characteristics:** the study also collected data on age and gender as illustrated in table 1 below.

**Table 1 Sample characteristics**

Variable	Category	N	%
Employee's age	18-30	97	48.5
	31-40	91	45.5
	41-50	6	3.0
	51-60	6	3.0
Employees' gender	Males	79	39.5
	Females	121	60.5
Customers' gender	Males	92	46.0
	Females	108	54.0

Source: Authors

As illustrated in table 1 above most of the wait staff surveyed were young (18-30) and comprised 48.5%. This is the typical age for most employees in the

hospitality industry. This age group was followed by the 30-40 age group (45.5%). This suggested that almost 94% of the employees in the restaurant industry are below the age of 40. The age pattern suggested that restaurant industry employers are keen to retain young employees who still have a lot of energy as it is a job that requires exhibition of energy during service delivery.

Females dominated the restaurant industry, both as employees (60.5%) and as customers (54.0%). The presents of more females as employees in the restaurant industry is in line with what the extant literature has already revealed in saying that service work is gendered. This particularly true for the hospitality industry were a feminine touch provides a welcoming atmosphere. Interestingly the restaurant industry is patronized by females than males. This can be explained that with more women joining the formal employment sector they tend to have less time to cook at home, while at the same time they now have more disposable income.

#### **Measurement Model**

Unidimensionality tests were conducted on all the latent variables in this study using exploratory factor analysis.

A KMO and a Bartlett's test of sphericity indicated that the data was factorable as evidenced by the Kaiser-Meyer-Olkin sampling adequacy of **.947** and the  $p < .001$  for the 16 items measuring the three constructs. Two dimensions were extracted from the items for emotional labour, with the first dimension being represented by items 6 -15, while the second dimension was represented by items 1-5. The first dimension was deemed to represent the emotional labour construct and its items were used in subsequent analyses. The interaction frequency and interaction duration were found to be unidimensional as a single factor was extracted for each construct.

Model fit is one of the prerequisites for examining parameter estimates (Hair *et al.*, 2014). Model fit refers to the extent to which there is a resemblance between an empirical covariance matrix and the implied covariance matrix (Hair *et al.*, 2014). A confirmatory factor analysis was run to assess the model fit inferentially using the  $X^2$  test and descriptively using model comparisons measures and the results are shown a figure below.

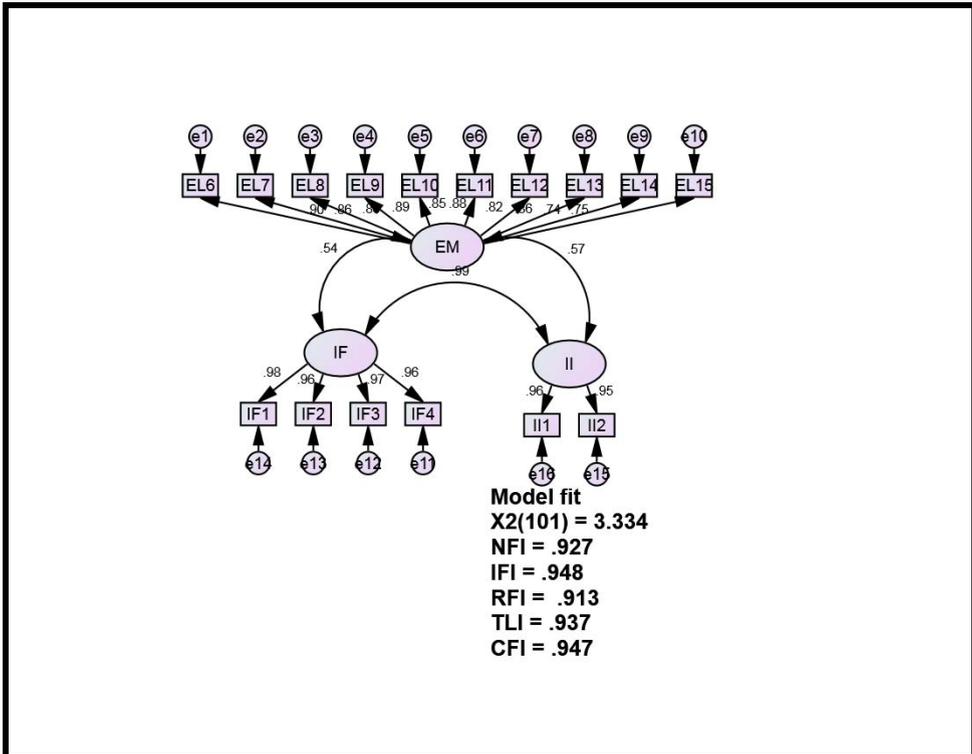


Figure 2: measurement model

Source: Authors

Table 3 model fit indices

Fit indices name	Acceptable threshold by Hair et al., (2014)	Fit indices	Comment
$X^2/DF$	Between 1 and 3	3.334	Acceptable
NFI	$\geq .900$	.927	Acceptable
IFI	$\geq .900$	.948	Acceptable
RFI	$\geq .900$	.913	Acceptable
TLI	$\geq .900$	.937	Acceptable
CFI	$\geq .900$	.947	Acceptable

Source: Authors

The results from model fit assessment in figure 2 and table 3 above indicate that the conceptual model fitted to the data,  $X^2/df = 3.3$ . This implies that there is a similar level of discrepancy between the implied covariance matrix and the data based covariance matrix. Normed Fit Index = .927, Incremental Fit Index = .948, Tucker-Lewis Index = .937, and Comparative Fit Index = .947. Given that the fit indices fell within the acceptable range they were then adopted for the structural model.

**Reliability and Construct validity of the model**

Composite reliability (CR) and construct validity (convergent validity and discriminant validity) were employed in assessing reliability and validity of the models respectively in line with Hair et al, (2014). Convergent validity was assessed using factor loadings (Anderson and Gerbing, 1988) and the Fornell and Larcker (1981) criterion of using the Average Variance Extracted (AVE). However, discriminant validity was valuated through comparison of measurement model correlation coefficients and the square root of the latent factors ( $\sqrt{AVE}$ ) values as advised by McDaniel and Gates, 2010). The results on reliability and construct validity of the model are shown in table 4 below.

**Table 4 Factor loadings, AVE,  $\sqrt{AVE}$ , CR, Mean and SD**

CODES	ESTIMATE	P	AVE	$\sqrt{AVE}$	CR	M	SD	1	2	3
EL6	.901	***								
EL7	.861	***								
EL8	.879	***								
EL9	.892	***								
EL10	.854	***	.715	.863	.961	4.45	1.35	1		
EL11	.884	***								
EL12	.824	***								
EL13	.857	***								
EL14	.738	***								
EL15	.746	***								
IF4	.961	***								
IF3	.969	***								
IF2	.963	***	.936	.967	.983	3.91	2.29	.29	1	
IF1	.976	***								
II2	.952	***								
III1	.963	***	.917	.958	.957	3.81	2.31	.33	.98	1

Source: Authors

In terms of reliability the composite reliability shown in table 4 above ranged from .957-.983 which was all above the minimum threshold of .7 and this indicates the reliability of constructs. The result table 4 indicated that all the constructs had adequate convergent validity as AVEs for all the constructs were above the threshold of .5 and also that all the factors loading were above the 0.50 level thus were significant to their respective factors. Furthermore, correlation coefficients and the square root of the latent factors values shown in table 4 above confirms discriminant validity in line with Hair et al (2010) given that the correlation coefficient were below the square root of the AVE value for all the latent variables except for one. Given that interaction frequency and interaction intensity measure different aspects of wait staff and customer interaction, there were an anticipated level of inter-correlation.

**Structural equation model and Hypotheses testing**

The first hypothesis stated that emotional labour practice leads to an extended dining duration, while the second hypothesis suggested dining duration to be positively associated with consumer spending. A structural equation modelling was run to test these hypotheses.

**Table 5 Hypotheses for main effects**

Hypotheses		B	T	P	Decision
H1	Emotional labour practice --> Dining duration	.183	2.630	.009	Accepted
H2	Dining duration --> Consumer spending	.124	1.757	.079	Accepted

Source: Authors

As shown in table 5 above the suggestion that emotional labour practice influences the duration of dining was supported, B= .183, T = 2.630, P=.009. This lead to the acceptance of H1. The anticipation that dining duration in turn influence consumer spending was also supported, B= .124, T= 1.757, P= .079. This lead to the acceptance of H2 as well.

**Genders of the employees and customers as moderators:** H2a and H2b suggested that both the genders of the employees and customers moderate the relationship between emotional labour practice and dining duration. A multi-group structural equation modelling (MG-SEM) was run to test these hypotheses since the hypothesised variables were dichotomous in nature. The results are shown in Table 6.

**Table 6 Categorical Moderators**

Hypotheses	Moderators	X <sup>2</sup>	Df	P
H2a	Employee gender	2.205	1	.138
H2b	Customer gender	1.477	1	.224

Source: Authors

The results in table 6 above revealed that both employee gender,  $X^2 = 2.205(1)$ ,  $P = .138$ , customer gender,  $X^2 = 1.477(1)$ ,  $P = .224$ , do not moderate the relationship between emotional labour practice and dining duration.

**Interaction frequency and interaction intensity as moderators:** Regarding the fourth hypothesis (sub-hypotheses H4a and H4b) a moderated multiple regression was run to assess the statistical significance of interaction frequency and interaction intensity as moderators of the relationship between emotional labour practice and dining duration since the hypothesised moderators were modelled as continuous variables. The findings are shown in Tables 7-9.

**Table 7 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
a.	.267	.071	.057	4.999
b.	.256	.066	.051	5.014

a. Predictors: Moderator intensity, Zscore (Emotional labour), Zscore (Interaction frequency)

b. Predictors: Moderator frequency, Zscore (Emotional labour), Zscore (Interaction intensity)

Source: Authors

**Table 8 ANOVA**

Model		Sum of Squares	Df	Mean Square	F	Sig.
a.	Regression	376.239	3	125.413	5.019	.002
	Residual	4897.281	196	24.986		
	Total	5273.520	199			
b.	Regression	345.836	3	115.279	4.585	.004
	Residual	4927.684	196	25.141		
	Total	5273.520	199			

a. Dependent Variable: Dining duration

b. Predictors: Moderator frequency, Zscore Emotional labour), Zscore (Interaction frequency)

c. Predictors: Moderator intensity, Zscore (Emotional labour), Zscore (Interaction intensity)

Source: Authors

**Table 9 Coefficients**

Model		Beta	T	Sig.
Model 1	Zscore (Emotional labour)	.078	.971	.333
	Zscore (Interaction frequency)	.206	2.570	.011
	Moderator frequency	.064	.929	.354
Model 2	Zscore (Emotional labour)	.077	.944	.346
	Zscore (Interaction intensity)	.194	2.359	.019
	Moderator intensity	.053	.762	.447

a. Dependent Variable: Dining duration

Source: Authors

Results in table 8 above suggest that the model with interaction frequency as a moderator predicts a significant amount of variability in dining duration,  $F(3, 196) = 5.019$ ,  $P = .002$ ,  $R^2 = .071$ , while the model with interaction intensity as a moderator also predicts a significant amount of variability in dining duration,  $F(3, 196) = 4.585$ ,  $P = .004$ ,  $R^2 = .066$ . The results in table 9 above for the first model indicated that emotional labour has no statistically significant effect on dining duration,  $B = .078$ ,  $T = .971$ ,  $P = .333$ , while interaction frequency has a statistically significant effect on dining duration,  $B = .206$ ,  $T = 2.570$ ,  $P = .011$ . However, the moderation effect assessed through the emotional labour practice interaction and the frequency was not statistically significant,  $B = .064$ ,  $T = .929$ ,  $B = .354$ . Therefore, the null hypothesis was accepted and the alternative hypothesis that interaction frequency moderates the relationship between emotional labour practice and dining duration was rejected.

The results for the second model indicated that emotional labour has no statistically significant effect on dining duration,  $B = .077$ ,  $T = .944$ ,  $P = .346$ , while interaction intensity has a statistically significant effect on dining duration,  $B = .194$ ,  $T = 2.359$ ,  $P = .019$ . However, the moderation effect assessed through the interaction between emotional labour practice and interaction frequency was not statistically significant,  $B = .053$ ,  $T = .762$ ,  $B = .447$ . Therefore, the null hypothesis was accepted and the alternative hypothesis that interaction intensity moderates the relationship between emotional labour practice and dining duration was rejected.

### Discussion

The study sought to determine the link between emotional labour practice and dining duration. Despite the existence of relevant large body of literature such a relationship has largely remained missing in the extant literature. The study

revealed that emotional labour moderately influences the dining duration of the restaurant patrons. This suggests that as employees display the organisationally prescribed emotions they lead to the patrons whom they have interacted with into extending their dining duration. These findings provide support to the social service scape framework which predicts that a pleasant social service environment characterised by appropriate employee behaviours leads to approach behaviours (Bichler et al, 2021; Slack et al, 2021; Tran et al, 2020). The relationship between dining duration and consumer spending was found to be statistically significant. These findings suggest that as patrons spend more time in the restaurant environment they are likely to increase their expenditure on the restaurant's services and food items. Therefore increasing dining duration is one of the strategies in maximising the revenue for restaurant businesses (Yoon et al, 2021). This strategy works well under the conditions of having excess capacity against limited traffic of patrons. Against the background of limited number of patrons finding ways to detain the present patrons potentially leads to increased consumer spending. This may be a departure from previously popularised practice of encouraging patron's accelerated meal pace in order to increase table turnover so as to accommodate many patrons.

The study had also suggested that the relationship between emotional labour practice and dining duration is moderated by the gender of the wait staff and the gender of the practice. However, the results indicated that the gender of the wait staff does not moderate the link between the employees' emotional labour efforts and the dining duration of customers. This result was not expected since previous research has already demonstrated that females are emotionally expressive than men hence they practice more emotional labour than their male counterparts (Hampson et al, 2006). This explains why emotional labour has hitherto been regarded as a gender dimension of labour (Hochschild, 1983). However, it seems the strict regulation of emotional labour in many service industry (Sharma et al, 2023), the restaurant industry included, may account for the less variation in the emotional displays between males and female employees. A study by Chehab et al (2021) hinted on the prevalence of the standardisation in employee behaviours in the hospitality industry.

The results from this study indicated that gender of the customer does not moderate the link between emotional labour and the dining duration. Hence, there are no gender differences in the prevalence of emotional contagion. This suggests that although previous research has demonstrated that males and females differed

in terms of how they are susceptible to emotional contagion, these differences do not cut across all the sectors of the economy and all the real life situations. This observation is strengthened by authors such as Wild et al, (2001), Krings and Gordon, (1998) who agreed that gender differences are not a key consideration in determining the extent of emotional contagion under different situations. The gender of the patrons did not moderate the relationship between emotional labour practice and dining duration as has been hypothesised. This may be accounted by the fact that in the dining platforms there might be no differential effect of emotional contagion. The patrons' receptiveness of emotions from the wait staff might not be different along gender basis as has been suggested in previous studies. It is most likely the prevalence of emotional labour varies between men and women when emotions are exchanged in other social set up other than the ones in the restaurant. The emotions exchanged in the restaurant set up are calibrated to uniform for all the patrons. This augurs with previous studies where gender was found to have no differential effects along various constructs in the dining environment. For instance a study by Mukucha et al (2022) has revealed different patterns of patrons' perceptions of food quality, service quality and atmospherics quality that are influenced by gender.

Interaction frequency was also found not to moderate the relationship emotional labour practice and dining duration (also see, Rodríguez et al, 2023). This could explain the key role that the employer plays in controlling emotional behavior at the workplace. Therefore increasing the frequency of the display of those emotions is not likely to add any novelty that may induce differential outcomes. The same applies to the intensity of the emotions displayed. The displayed emotions cannot vary a lot since they have to be within the parameters prescribed by the employer.

### **Conclusions**

The first hypothesis (H1) that presupposed that emotional labour moderately influences the dining duration of the restaurant patrons was proved. Regarding the second hypothesis that suggested dining duration to be positively associated with consumer spending, it was proved. However, the third hypothesis (sub-hypotheses H3a and H3b) that presupposed that the gender of the wait staff and that of customers moderate the relationship between the employees' emotional labour efforts and the dining duration of customers was not proved. In terms of the interaction frequency and interaction duration, it was also found not to moderate the relationship between emotional labour practice and dining duration.

Customers' dining duration and spending data was collected from the patrons themselves. There are always rare possibilities that some patrons may not remember the accurate duration they have taken dining and the actual amount they spent in the restaurant. Therefore, future studies must use observational method for estimating the patrons' dining duration, and collect the expenditure amount from the cashiers. Furthermore the external validity of the findings of this study is limited to the dining conditions where there is excess capacity and limited traffic of the patrons.

By modelling of factors that influence dining duration to consumer spending, the model turn out to be a vital tool in the prediction of consumer perception of wait staff and ultimately their ability to positively perceive the fast food outlet in the Zimbabwean set-up. In this vein the model could be generalised in the prediction of consumer perception of fast food outlet in other countries and it could be applied by fast food outlet marketers in crafting sound marketing strategies. Regarding future studies may be done using larger samples and in other provinces such as Bulawayo and Midlands in order to ascertain the results pan out especially on the gender dynamics. Taking note that there was lack of discriminant validity between interaction frequency and interaction intensity, there is therefore the need for replication of this study in order to improve the validity of these two scales. The is also need to assess the impact of global health issues and the ensuing national health policies especially those arising out of the covid-19 pandemic and their role on consumer dining duration.

### Acknowledgments

The authors gives special thanks the peer reviewers with regard to their incisive contributions through comments on this article.

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## PERCEIVED EMPLOYEE FINANCIAL WELL-BEING IN THE BANKING INDUSTRY IN THE 4IR PERIOD: ASSESSING PREDICTORS' IMPACTS

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**How to cite:** ADEKANMBI, F.F., & UKPERE, W.I. (2023). "Perceived Employee Financial Well-Being in the Banking Industry in the 4ir Period: Assessing Predictors' Impacts". *Annals of Spiru Haret University. Economic Series*, 23(2), 237-253, doi: <https://doi.org/10.26458/23213>

### Abstract

*This paper evaluates the influences of financial behavior, work engagement, and work engagement on financial well-being within Nigeria's Banking Industry. Its sample was taken from four (4) banks in the Nigerian states of Lagos and Oyo. They include First Bank of Nigeria, First City Monument Bank Plc, United Bank for Africa Plc, and Zenith Bank Plc. The present researcher dispersed the questionnaires at random for this cross-sectional survey. Nevertheless, 382 of the 400 questionnaires sent met the criteria for investigation and were examined using SPSS version 28. The present investigation conducted standard multiple regression and zero-order correlation analyses to test the stated hypotheses and conclude that positive financial behaviors and employee work engagement considerably increase financial well-being. In Nigeria's banking industry, financial stress, on the other hand, worsens financial well-being in the 4IR period. It further establishes a link between financial behavior and financial stress and a good correlation between financial behavior and work engagement. Furthermore,*

*the study discovered a negative association between financial stress and work involvement in Nigeria's banking industry during the 4IR period. It also confirms that work engagement, financial stress, and financial behaviors substantially determine financial well-being. Consequently, this paper advocates banks helping employees become more financially literate and responsible by offering financial education to their staff. Also, employers must take action to reduce financial stress among employees. Resources and assistance can help reduce financial stress and enhance employee well-being in the present 4IR period. Moreover, banks may use tactics including offering chances for employee growth, encouraging work-life balance, and cultivating a positive work environment to boost engagement in the banking industry.*

**Keywords:** *finance, health, stress, engagement, banks, Nigeria.*

**JEL Classification:** D83, G21, I31

## **Introduction**

The banking industry plays a critical role in a nation's socio-economic development by supporting the effective allocation and mobilization of financial resources, encouraging economic growth, and reducing poverty (International Finance Corporation, 2017). It promotes investment and mobilizes resources since banks accept deposits from savers and lend money to borrowers, which channels savings into profitable ventures (World Bank, 2013). Additionally, banks are essential in funding infrastructure construction, such as electricity, communication, and transportation systems (International Finance Corporation, 2017). Moreover, banks are crucial to managing financial risk, increasing financial stability and economic prosperity (International Monetary Fund, 2019). Similarly, the banking industry is essential to Nigeria's socio-economic development since it offers financial services to consumers and businesses, mobilizes savings, makes investments easier, and supports economic development activities. As an illustration, the total amount of bank deposits in Nigeria increased from N33.45 trillion in 2019 to N42.01 trillion in 2020, indicating a more significant mobilization of savings (CBN, 2021).

The banking industry has undergone a significant landscape change due to the fourth industrial revolution, characterized by the integration of cutting-edge technologies like artificial intelligence, robotics, and the Internet of Things (Bruegel, 2018). The banking industry, by offering services like letters of credit,

trade financing, and foreign exchange, plays a crucial part in fostering global trade with the advent of e-commerce, innovation, and entrepreneurship, as well as promoting financial inclusion owing to the 4IR. Furthermore, it encourages financial inclusion by giving individuals and small enterprises that might have been shut out of the conventional banking system access to financial services (Bruegel, 2018; World Bank, 2018).

Employees' financial well-being has been crucial throughout the past two decades. It has been described as the good things about someone's life, such as good financial contentment (CBN, 2021). Financial well-being, as used in the banking industry, refers to a person's or organization's capacity to successfully manage their financial resources, such as their income, expenses, debt, and investments, with the help of financial institutions like banks (Balash & Zaitseva, 2020). The fourth industrial revolution has had a tremendous impact on the banking industry in Nigeria, which has seen significant changes. As a result, digital services have made banking more convenient, economical, and accessible, enhancing financial inclusion and well-being for Nigerians (CBN, 2021).

Financial behavior describes the attitudes, convictions, and actions people and households display concerning their financial choices, such as spending, saving, investing, and borrowing (Lusardi & Mitchell, 2014). In the banking sector, employee financial behavior indicates how employees of a bank handle their money, including their spending tendencies, saving tendencies, and investment choices (Akgunduz et al., 2019). Due to its effect on banks' overall profitability, employee financial behavior within the Nigerian banking industry has recently attracted attention. According to a recent PricewaterhouseCoopers poll (PwC, 2020), many employees in the Nigerian banking industry make high-risk investments, including trading foreign exchange and cryptocurrencies. Hence, several employees in the Nigerian banking industry have a low degree of financial literacy, which affects their financial behavior (Olabisi & Sholarin, 2021). Also, financial stress among employees demonstrates the mental and emotional strain brought on by financial constraints and concerns. High debt levels, trouble making ends meet, a lack of ability to save, and financial instability are examples (Shin, Kim, & Lee, 2019). Financial stress among employees is one of the top three employee issues in the banking industry, demonstrating that the industry, like many others, is not immune to it (American Bankers Association, 2020). Nigeria's banking industry has struggled with several issues, such as regulatory changes, currency devaluations, and economic downturns. These difficulties have resulted in

employment losses, lower pay, and a challenging economic environment (Chartered Institute of Bankers of Nigeria, 2019). Both physical and mental involvement among employees is possible (Abdullah et al., 2021). Work engagement has been identified as a crucial component of achieving organizational performance and sustainability in Nigeria's banking industry (Oke & Munisi, 2018).

However, few studies have examined the interaction of employee financial behavior, stress, and work engagement as determinants of financial well-being within Nigeria's banking business in the current 4IR, despite an upsurge in research on financial well-being. This study investigates how the psychological (financial stress), organizational (work engagement), and behavioral predictors (financial behavior) affect financial well-being in Nigeria's banking sector in the current 4IR.

### **Literature Review**

This paper's literature review examines financial behavior, financial stress, work engagement, and financial well-being.

#### **1.1 Financial Competence Theory of Financial Behavior**

The According to the financial competence theory, which John W. Atkinson and David Birch put forth in the 1970s, a person's financial conduct is determined by their knowledge, abilities, and attitudes regarding money management. Therefore, people can properly manage their resources and make financially wise judgments (Collins & O'Rourke, 2017). Atkinson was a psychologist who examined motivation and success, while Birch was an economist who researched entrepreneurship and the growth of small businesses. Together, they claimed that an individual's level of financial capability – which encompasses knowledge, skills, attitudes, and access to resources related to financial management – influences their financial behavior. Since then, their theory has informed policies and actions to enhance people's financial well-being. So, according to this hypothesis, employees with more significant financial capabilities are more likely to make wise financial decisions, which raises their perception of their financial well-being (Collins & O'Rourke, 2017).

#### **1.2 Cognitive Load Theory of Financial Stress**

According to the Cognitive Load Theory of Financial Stress, financial stress can impair a person's cognitive functioning and lower their financial well-being. Hence, financial stress makes people more likely to concentrate on their financial issues, which might reduce their cognitive resources and impair their decision-

making ability. This may result in bad financial choices like taking on high-interest loans or not setting aside enough money for emergencies (Shah et al., 2015).

### 1.3 Social Exchange Theory of Work Engagement

This theory says that when staff members are deeply involved in their work, they are more likely to exhibit extra-role behaviors, such as aiding coworkers, going above and beyond the call of duty, and displaying devotion to the company. These actions may result in stronger connections with coworkers, managers, and customers, resulting in more social capital and financial benefits like job offers, promotions, and bonuses (Bakker & Leiter, 2010). Therefore, more engaged workers are also more likely to receive rewards and recognition from their employers, which can improve their financial well-being (Wu et al., 2020).

### 1.4 Financial Behavior and Financial Well-being

PwC (2019) discovered that employees' financial behaviors significantly impact their financial well-being. Oseni and Olumide (2019) found that employees who exhibited good financial behaviors, such as setting aside money regularly and investing in long-term assets, had greater financial well-being than those who showed bad habits, like overspending and taking on excessive debt. Moreover, according to Afolabi and Iyiola (2020), financial behavior among Nigerian bank employees impacts their financial well-being. One notable aspect of employee financial behavior in Nigeria's banking industry is the high debt levels among employees. According to a report by the Debt Management Office (DMO, 2021) in Nigeria, as of December 2020, the total debt owed by workers in the banking sector was approximately 221.94 billion (about USD 543.47 million). This indicates high indebtedness among banking industry employees, which can negatively impact their financial well-being and job performance. Furthermore, there is a growing trend among banking industry employees in Nigeria toward financial education and literacy. Many banks in Nigeria are now offering financial literacy programs and resources to their employees to help them make informed financial decisions and improve their financial well-being (Awe, Adeniyi, & Adeniji, 2020). This article outlines its first hypothesis to more clearly examine the effect of employee financial behavior on financial well-being in Nigeria's banking industry within the 4IR era:

H1. Financial behavior considerably predicts financial well-being in Nigeria's banking industry within the 4IR era.

### 1.5 Financial Stress and Financial Well-being

Financial well-being refers to the capacity of a person to meet their responsibilities, properly manage their money, and have confidence in their

financial future. Financial stress can have a negative impact on an employee's productivity and financial well-being (PwC, 2019). An employee's financial well-being may be significantly impacted by their financial stress level (PwC, 2017). Hence, employee financial stress has been demonstrated to harm their overall financial well-being substantially, and the banking industry is not exempted from this phenomenon. Adeyemo and Akinnusi (2021) stated that financial stress strongly predicted financial well-being among Nigerian bank employees. The same idea was advanced by Ogunbiyi et al. (2020), who claimed that employee financial stress has a detrimental effect on their financial well-being. Furthermore, Owoyemi et al. (2021) discovered that financial stress had a significant and adverse impact on financial well-being, which in turn had a detrimental effect on job performance. Based on the studies on employee financial stress and financial well-being mentioned above, the following was the hypothesis of the current study:

H2. Financial stress significantly predicts financial well-being in Nigeria's banking industry within the 4IR period.

#### 1.6 Employee work engagement and financial well-being

According to Schaufeli et al. (2002), work engagement is a positive, contented mental state characterized by vigor, commitment, and concentration in one's work. According to studies, an employee's financial well-being is positively impacted by their level of work engagement. For instance, Shimazu et al. (2015) discovered that Japanese employees' financial well-being was favorably influenced by their level of work engagement. Also, Saks and Gruman (2014) posited that work engagement positively impacts Canadian employees' financial well-being. Moreover, Karia and Ahmad (2018) found that Pakistani bank employees' financial well-being is positively affected by their level of work engagement. Adeyemo and Akinnusi (2021) conducted research in Nigeria on the effect of work engagement on employees' financial well-being among bank employees in Lagos. They discovered that employee financial well-being was significantly improved by work engagement. Notably, employees with high job engagement had better financial well-being than those with low engagement. Understanding the effect of work engagement on employee financial well-being can offer insights into the industry's overall health, particularly in the current 4IR period. The banking sector in Nigeria is a crucial component of the economy. The current study has predicted the following conclusions on Nigeria's banking industry to understand the impact of employee work engagement on their financial well-being:

H3. Employee work engagement significantly determines their financial well-being in Nigeria's banking industry within the 4IR era.

#### 1.7 Financial Behavior, Financial Stress, and Employee Work Engagement

According to a study, financial stress is common among banking industry employees, with close to half of those surveyed expressing moderate to high levels of financial stress (Ozbay, 2019). Moreover, Peng and Barth (2018) discovered a link between employees' financial behavior and their levels of financial stress. In particular, the study found that employees who practice good financial habits like saving and budgeting have lower levels of financial stress than those who don't. Bouteraa et al. (2020) discovered that their financial well-being positively influenced employees' work engagement. Furthermore, Prawitz et al. (2006) realized that financial education could positively affect an employee's financial behavior, including saving behaviors and debt management abilities. This implies that offering financial education to workers in the banking sector may enhance their financial well-being and subsequently boost their engagement at work. Kim and Garman (2019) examined how financial stress affected bank employees' commitment to their jobs. They discovered that work engagement suffered as a result of financial stress. Also, Ceballos et al. (2018) contended that work engagement was negatively correlated with turnover intentions and that financial stress had a negative effect on both. Salimi and Khorasani (2018) also suggested that work engagement was negatively associated with financial stress. Thus, the following claim is made following the provided literature:

H4. There is a significant relationship among the predictors of employee financial well-being (employee financial behavior, work engagement, and financial stress) in Nigeria's banking industry within the 4IR period.

H5. Employee financial behavior, stress, and work engagement have a considerable differential independent and combined impact on the financial well-being of Nigeria's banking business within the 4IR era.

The current study aims to significantly imply a practical model for successfully promoting financial well-being within Nigeria's banking sector in the 4IR by examining financial behavior, financial stress, and work engagement as predictors of employee financial well-being.

### Methodology

This research used a cross-sectional survey design. To evaluate the hypotheses of the current study and gather information on participants' perceptions of financial behavior, financial stress, work engagement, and financial well-being, the

researchers floated questionnaires among the participants. Participants in the study consented after being informed about the research and granted the go-ahead. Thus, surveys were given to 400 bank employees from four (4) banks in the Nigerian states of Lagos and Oyo. They are Zenith Bank Plc, First Bank of Nigeria, United Bank for Africa Plc, and First City Monument Bank Plc. As a result, the current researchers encouraged individuals to provide volunteer feedback and verified that ethical considerations were upheld. Three hundred and eighty-two (382) suitable questionnaires were obtained and analyzed using Statistical Packages for Social Sciences (SPSS) version 28. This study conducted linear multiple regression and correlation analyses to test the hypotheses. However, to create a perfect instrument and determine the survey's local consistency, this paper piloted a factor and reliability analysis.

Sections of this questionnaire are as follows:

### 3.1 Section A – Participants' demographics

Demographic information about the participants, including gender, age, marital status, educational background, employment history, and income level, is provided in this section.

### 3.2 Section B: Financial Behavior Scale (FBS)

A 15-item scale developed by Shim et al. (2010) measuring financial behavior is included in this section. The internal consistency of the scale was .82, which indicated its reliability. It is a five-point rating scale ranging from “strongly disagree = 1 to strongly agree = 4”. An example is, “I am confident in my ability to make sound financial decisions.” Nevertheless, the current investigation reaches a Cronbach's alpha coefficient of .89.

### 3.3 Section C: Financial Stress Scale (FSS)

The 12-item financial stress scale found in this questionnaire section was created by Neal et al. (2015). A sample of the scale item is “I am afraid that I will not be able to meet my financial obligations.” Internal consistency was calculated by the author to be .80. The current study also realized a Cronbach's alpha coefficient of .84. It is graded on a 4-point Likert scale, with “strongly disagree = 1 to strongly agree = 4”.

### 3.4 Section D: Work Engagement Scale (WES)

This paper promotes the study's work engagement instrument (Kuok & Taorminab, 2017). Its three subsections are cognitive, emotional, and physical engagements. The reliability value for the six items that make up the cognitive evaluation is .88; however, the current investigation discovered a coefficient of .82.

The emotional sub-section has six (6) components, with dependability of 82. In contrast, this work attained a reliability of 89. Six (6) of the items, in part on physical engagement, have a reliability of .90, while this study's dependability was .87. There are 18 items on the job engagement measure, each with a 5-point Likert scale.

3.5 Section E: Financial Well-being Scale (FWS)

The ten (10)-item scale developed by Consumer Financial Protection Bureau (CFPB) (2015) was adopted in the current study. A sample of the items is “I have the financial freedom to make the choices that allow me to enjoy life.” The dependability Cronbach's alpha for this scale is .79. Cronbach's alpha for the current study was reported to be .85. The Likert response type for this measure includes a 5-point range: "strongly disagree = 1 strongly agree = 5".

To identify potential issues earlier and confirm the measure’s efficacy, a pilot study was done for the current investigation.

**Results**

**Table 1: The multiple regression analysis indicates the combined impact of financial behavior, financial stress, and employee work engagement on financial well-being**

Model	R	R-squared	Adjusted R-squared	F	Sig
1	.889 <sup>a</sup>	.885	.885	28717.023	.000

a. Dependent Variable: Financial well-being

b. Predictors: (Constant), financial behavior, financial stress, work engagement

Source: Author’s results

**Table 2: Measurements of the predictors of employee financial well-being**

Influencers	B	β	t	Sig	95.0% Confidence Interval for B		R	R <sup>2</sup>	F (3, 382)	P
					Lower Bound	Upper Bound				
(Constant)	-14.865		307.715	000	-15.064	-14.767	.889 <sup>a</sup>	.885	28717.023	<0.01
Financial Behavior	.216	.581	372.308	000	.214	.217				
Financial Stress	-.611	-.375	-278.705	000	-.605	-.616				
Work Engagement	.240	.548	311.033	000	.237	.240				

a. Dependent Variable: Financial well-being

Source: Author’s results

**Table 3: Zero-Order correlations presenting the interrelationship between financial behavior, financial stress, and work engagement in Nigeria’s banking industry in the 4IR era**

Correlations				
		Financial Behavior	Financial Stress	Work Engagement
<i>Financial Behavior</i>	Pearson Correlation	1	-.681**	.840**
	Sig. (2-tailed)		.001	.001
	N	382	382	382
<i>Financial Stress</i>	Pearson Correlation	-.681**	1	-.680**
	Sig. (2-tailed)	.001		.001
	N	382	382	382
<i>Work Engagement</i>	Pearson Correlation	.840**	-.680**	1
	Sig. (2-tailed)	.001	.001	
	N	382	382	382
<p>**<i>. Correlation is significant at the 0.01 level (2-tailed).</i></p> <p><i>Source: Author’s results</i></p>				

This study demonstrated that employees' financial behavior in Nigeria’s banking industry considerably and positively influences their financial well-being. This observation supposes that bankers in Nigeria will significantly improve their financial well-being if they exhibit more proactive financial behaviors. The assertion is in line with earlier empirical research that showed that employees who demonstrated sound financial behaviors, such as regularly setting money aside and investing in long-term assets, had greater financial well-being than those who exhibited poor behaviors, such as excessive spending and debt-taking (Oseni & Olumide, 2019). It also backs up Afolabi and Iyiola’s (2020) assertion that how Nigerian bank staff handles money affects their ability to make ends meet. The current finding supports Awe, Adeniyi, and Adeniji’s (2020) assertion that there is a growing trend among Nigerian banking industry workers toward financial education and literacy and that many banks in Nigeria are now providing financial literacy programs and resources to their employees to help them make informed financial decisions and enhance their financial well-being. Additionally, it supports

the financial competence theory, which postulates that employees with more significant financial capabilities are more likely to make wise financial decisions, which raises their perception of their financial well-being (Collins & O'Rourke, 2017). Therefore, the stated proposition is established: Financial behavior significantly predicts financial well-being in Nigeria's banking industry within the 4IR period.

Similarly, this study has shown that financial stress has a considerable, detrimental effect on the financial well-being of bank employees in Nigeria. The recent findings suggest that bank employees' financial well-being is negatively correlated with their level of financial stress. These findings support the assertion made by certain scholars (e.g., PwC, 2017; PwC, 2019; Adeyemo & Akinnusi, 2021) that employees' financial stress negatively affects their overall financial well-being. Additionally, this finding supports the claims made by Ogunbiyi et al. (2020), who asserted that employee financial stress negatively impacts the employees' financial well-being. These results corroborate the cognitive load theory that financial stress can impair a person's cognitive functioning and lower their financial well-being. Hence, financial stress makes people more likely to concentrate on their financial issues, which might reduce their cognitive resources and impair their decision-making ability, eventually worsening their financial well-being (Shah et al., 2015). So, the stated postulation is accepted: financial stress significantly predicts financial well-being in Nigeria's banking industry within the 4IR era.

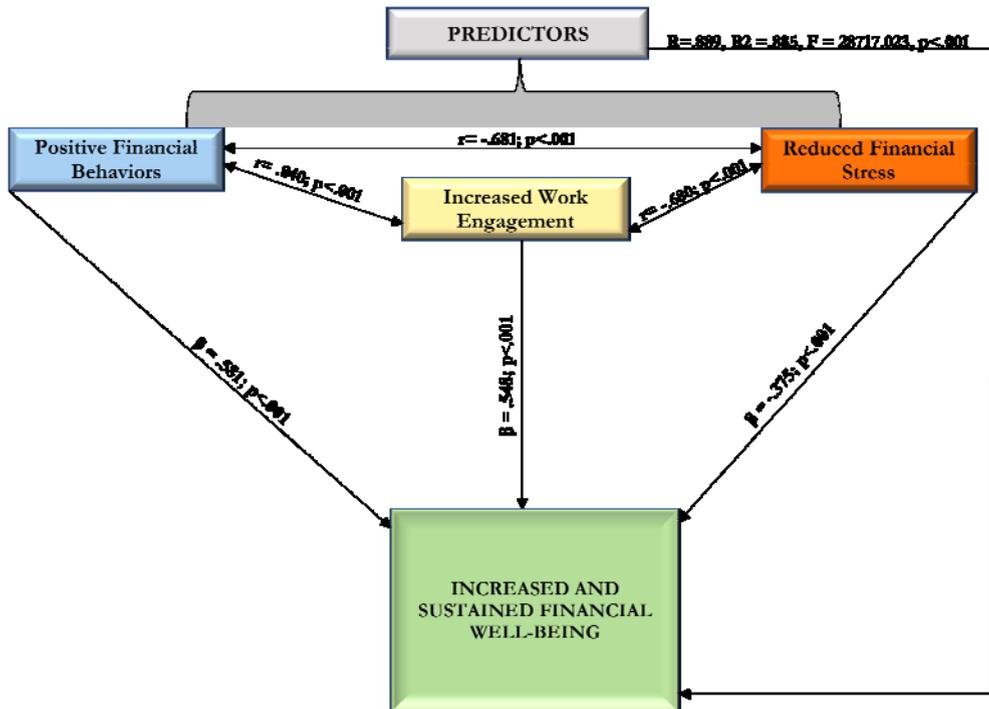
In addition, the current study demonstrated that bank employees' financial well-being in Nigeria is considerably and favorably impacted by their work engagement. It infers that the more involved bank staff in Nigeria are, the better off they will be financially. Therefore, the current finding is consistent with that made by Shimazu et al. (2015), who found that the level of work engagement of Japanese employees positively impacted their financial well-being. These results support Karia and Ahmad's (2018) finding that the amount of work engagement of Pakistani bank workers has a beneficial impact on their financial well-being. The current results support Adeyemo and Akinnusi's (2021) assertion, which established that work engagement considerably increased employees' financial well-being. It also supports the social exchange theory, which holds that when staff members are deeply involved in their work, they are more likely to exhibit extra-role behaviors, such as aiding coworkers, going above and beyond the call of duty, and displaying devotion to the company. Therefore, more engaged workers are also more likely to

receive rewards and recognition from their employers, which can improve their financial well-being (Wu et al., 2020). Thus, the postulation has established that employee work engagement significantly determines their financial well-being in Nigeria's banking industry within the 4IR period.

Furthermore, a strong association between the predictors has been identified by this investigation. It demonstrates how, in Nigeria, bank workers' financial behaviors and their levels of engagement at work are highly correlated. Employees at banks are more engaged and experience less financial stress when they practice good financial behaviors more frequently. These results support Peng and Barth's (2018) observation that employees with strong financial habits, such as saving and budgeting, experience less financial stress than those without. Recent research has revealed a negative relationship between employees' financial stress and their level of engagement at work. Thus, when their financial stress is minimal, bank staff will be more involved in the banking industry. This result backs with Kim and Garman's (2019) findings that financial stress has a negative impact on work engagement. Moreover, it supported Salimi and Khorasani's (2018) premise that a negative relationship exists between financial stress and work engagement.

According to the current findings, each of the three independent predictors had a distinct and significant influence on financial well-being, with financial behavior recording the highest beta value. According to the procedures used to identify the distinct independent and combined effects of financial behavior, financial stress, and work engagement in the variation of financial well-being within the Nigerian banking industry, financial behavior significantly influences financial well-being more than work engagement and financial stress. The recent findings also demonstrate that combining the three variables considerably impacted financial health by causing an 88.9% variation across Nigeria's banking sector in the 4IR era. Measures not considered in the current analysis forecast an 11.1% variation in financial well-being across Nigeria's banking industry.

In line with the existing findings, this paper aimed to considerably imply an applied model for successfully promoting financial well-being in Nigeria's banking industry within the 4IR era by examining financial behavior, financial stress, and work engagement as predictors of employee financial well-being. In light of this, the empirical model in Figure 1:



**Figure 1: Model for achieving and increasing Financial Well-being in Nigeria's Banking Industry.**

*Source: Author's results*

### Conclusions

According to the current study, positive financial behaviors and employee work engagement considerably increase financial well-being. In Nigeria's banking industry, financial stress, on the other hand, worsens financial well-being in the 4IR period. Additionally, the current analysis found a link between financial behavior and financial stress and a good correlation between financial behavior and work engagement. The study also discovered a negative correlation between work involvement and financial stress in Nigeria's banking sector during the 4IR era. It also confirms that work engagement, financial stress, and financial behaviors substantially determine financial well-being. However, financial behavior significantly impacts bank employees' financial well-being more than financial

stress and work engagement. So, the variables mentioned above can predict Nigeria's banking industry's financial well-being. However, the following recommendations are useful.:

- This paper recommends that to help employees become more financially literate and responsible, banks should offer financial education to their staff. In addition, authorities must keep implementing measures that encourage ethical financial conduct in the sector. This is because better financial well-being results from financial education and changes in employee financial behavior in the 4IR era.

- Employers must take action to reduce financial stress among employees. Resources and assistance can help reduce financial stress and enhance employee well-being in the present 4IR period. Examples include employee assistance programs, financial education programs, and flexible work schedules.

- Similarly, banks may use tactics including offering chances for employee growth, encouraging work-life balance, and cultivating a positive work environment to boost engagement in the banking industry. Additionally, increased financial well-being is correlated with improved financial education, which raises employee work engagement in the 4IR era.

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**A STUDY OF HUMAN RESOURCE MANAGEMENT  
POLICIES AND PRACTICES AND EMPLOYEE  
COMMITMENT: EVIDENCE FROM NIGERIAN SMALL  
AND MEDIUM ENTERPRISES (SMES)**

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**How to cite:** OGinni, B.O., AYANTUNJI, I.O., AWOLAJA, A., ADESANYA, A.S.& OJODU, H.O. (2023). "A Study of Human Resource Management Policies, Practices and Employee Commitment: Evidence From Nigerian Small And Medium Enterprises (SMES)". *Annals of Spiru Haret University. Economic Series*, 23(2), 254-277, doi: <https://doi.org/10.26458/23214>

**Abstract**

*The study investigated HRM policies and practices on employee commitment to determine their relationship and effects on employee commitment using the SMEs in the South-West, Nigeria as the unit of analysis. The study identified recruitment and selection, training and development, compensation and reward systems, performance appraisal, working conditions, and employee participation as the prevailing HRM policies and practices in the SMEs and singled out compensation and reward systems, working conditions, and employee participation. A multi-sampling technique and survey research method was adopted while copies of questionnaires were administered to 369 respondents. It was found that there exists a positive*

*relationship between HRM policies and practices and employee commitment while compensation and reward systems, working conditions, and employee participation in decision-making have more effects than other variables and  $R^2$  of 76% can also explain the variation on employee commitment. It was concluded that among all the activities embarked upon by the SMEs, in South-West, Nigeria towards the attainment of business objectives, HRM policies, and practices have a more significant effect on employee commitment most especially compensation and reward systems, working conditions, and employee participation. Thus, recommended that reward systems should be made competitive through environmental surveys and objectivity should prevail in the practice of the HRM policies.*

**Keywords:** *employee commitment; small and medium enterprises; Nigeria; working conditions, HRM policies, and practices*

**JEL Classification:** *J81; M52; 015*

## 1. Introduction

Nigeria as one of the developing countries in the present world economy has relied heavily on the activities of Small and Medium Enterprises (SMEs) to foster her national economic development plans geared towards ensuring economic growth, employment opportunities, innovations, and creativity. The work of Savlowski and Robu (2011) buttressed the significance of SMEs to the nation's economy based on the available statistics across the globe while Adesanya (2019) also buttressed the importance of SMEs in Nigeria by positing that the activities in the SMEs in the last three decades have propelled the sector to be the mainstay and backbone of the Nigerian economy in terms of economic growth, employment opportunities, innovations, and creativity. Cardon and Stevens (2004) and Berry (2002) were among the early scholars to have identified the significance of SMEs in the modern economy to include but not limited to income job creation, innovations and creativity, utilization of indigenous materials, and large business organization developed from the SMEs. David (2017) asserted that SMEs represented about 90% of businesses in Nigeria and thus, remain the largest employer of labour. It was argued further that since the SMEs represented a larger proportion of businesses in Nigeria, the national income is therefore contingent upon the performance of SMEs which is a function of many variables among these variables were human resource management (HRM) policies and practices in the

SMEs with implications on the commitment of the employees in the sector. It is therefore expedient to deduce that the quality of the workforce has a bearing on the overall performance of SMEs.

The quality of the workforce is a function of human resources management functions as evident in the training and development, compensation and reward systems, recruitment and selection, human resource planning and performance appraisal of such SMEs. However, the direction and outlook of these functions are deeply rooted in the operational policies and practices prevailing at every point in the development of the SMEs i.e. the performance of these functions is based on the guidance provided by policies manifesting in practices and thus, influences employee attitudes and behaviours in many dimensions such as commitment to the organization, job satisfaction, labour turnover, and organisational citizenship behaviour, etc. Therefore, to maintain and sustain a competent workforce, there is a need for sound human resource (HR) policies and practices aimed at attracting, developing, motivating, and retaining employees with both core and residual skills, all in an attempt to ensure employee commitment to the organisation which will invariably lead to an effective and efficient organisation (Isada & Adisa, 2022). To this end, it is expedient to develop robust and competitive HR policies and practices that will promote the level of employee engagement to usher in committed employees with high performance. However, these policies and practices should not be implemented in isolation otherwise, the policies will be counterproductive, for example, job security (when an organisation fails to hire people who fit into its culture) rather be aligned and consistent with the philosophy and beliefs of the organisation as enshrined in the vision and mission statements which should reflect the dictate of the environment and prevailing extant labour laws thus, ensuring that the desired ultimate impact of HR policies and practices on the organisation would be achieved.

It is valid to deduce that for SMEs to consolidate their strategic importance in the nation's economy, it relies on the performances of the business organisations that constitute the SMEs, and this also depends on the functionality of its employees in terms of quality and competence which indicates that there is a shift from the organisational belief on a product to people as the basis for organisational competitive advantage and success. It then shows that for organisations to have competitive advantage and success, there should be concern for their employees although there were other forces in the external environment that organisations would have to contend with which often shapes the internal structure of

organisations (Knezović, 2018). Organisations would have to respond to the dictate of these external forces such as unfair competition, globalization, economic, and different legal laws as well as government policies through appropriate internal decision-making guided by the organisational policies and practices which will have an effect on the internal structure of the organisation without exception especially, the one that concerns people at work which is HR (Knezović, 2018). Meanwhile, the change in the internal structure necessitated by the dictate of the external forces comes with ineluctable risk of non-acceptance by employees and it is their support that can ensure the desired impact of such change. However, where employees do not accept the changes, organisations will experience satisfaction and commitment challenges which would be evident in high labour turnover, absenteeism, grievances, and deviant behaviours. The manifestation of these challenges in the workplace would invariably lead to the extinction of such an organisation. Therefore, while reacting to the changes brought by the dictates of external forces, organisations should place a high premium on how to make the human resource policies and practices robust and efficient to accommodate employees' acceptance and at the same time overcome the threats posed by the external forces of SMEs environment. This corroborated the earlier position of Fadiora (2012) who posited that for any organisation to survive, expand and grow, the commitment on the part of an individual that works in an organisation should not be toyed with but be given paramount attention with a high premium.

From the review of extant literature, it was evident that HR policies and practices are among the important variables affecting the level of employee commitment, which is considered the main source of competitive advantage for all organisations irrespective of nature, size, and sector (Hauff, Alewell & Hassen, 2014; Baiquni & Aprilianti, 2020). It was also evident that efficient HR policies and practices increase the level of employee commitment through HR functions such as training and development, compensation and reward systems, recruitment and selection, working conditions, performance appraisal and employee participation. For example, improvement in employee working conditions, fairness in performance appraisal and reward systems contribute to increased employee commitment while employee participation in decision-making enhances their loyalty to the organisation (Ertemsir, Bal & Bozkurt, 2017; Uraon, 2018) while some scholars opined that there had not been enough pieces of evidence to show ways by which HR policies and practices affect organisational outcomes; whether some policies and practices have stronger effects than others; whether

complementary or synergy of such policies and practices could enhance employee commitment towards performance (Delaney & Huselid, 1996; Delić & Smajlović, 2014; Jena, 2015; Knezović, 2018). However, most of the studies carried out in this area had been outside SMEs, hence, this study seeks to investigate how human resource policies and practices through HR functions (training and development, compensation and reward systems, recruitment and selection, working conditions, performance appraisal and employee participation) affects employee commitment using SMEs in Nigeria as the unit of analysis.

## **2. Literature Review**

The review was anchored on the variables of the study i.e. human resource management policies and practices and employee commitment. However, from the human resource management, the focus was on the policies and practices of training and development, compensation and reward systems, recruitment and selection, working conditions, performance appraisal and employee participation vis-à-vis employee commitment.

### **2.1 Human Resource Management Policies and Practices**

The goals of the organisation are translated into objectives achievable through policy (Drucker, 1989). Policy is a general guide to action that will help in the attainment of objectives (Tan & Nasurdin, 2011). In the views of Armstrong (2009) policy is a guideline for organisational action and the implementation action of goals and objectives i.e. policy is translated into rules, plans, and procedures as it is related to all the activities of an organisation at all levels. Similar to this, was the view of Tan and Nasurdin (2011) that policy can be basis to reinforce organisational functioning, avenue for consistency and minimise dependency on the actions of individual managers. Oginni and Faseyiku (2016) asserted that policy provides explanation for action and decision of managers concerning their roles and responsibilities towards human and non-material resources.

Therefore, human resource policy (HRP) can be described as a principle guiding decision-making in the functional areas relating to the management of people in the workplace i.e. the policy assists in specific decisions on employee's treatment either as individual or group of individuals while the cardinal focus of human resource policy is effective utilisation of human resources to achieve the predetermined objectives of the organisation. Armstrong (2009) argued that the essence of HRP is ensuring smooth performance of operational activities by

employees through exhibition of appropriate behaviour that would facilitate the accomplishment of assigned tasks within the specified period using available physical resources. The formulation of human resource policy should be done in consultation with internal and external forces/factors. Internal factors refer to the factors that are found to be prevailing characteristics within the work organisation that somewhat distinguishes one from another such as the philosophy and beliefs of the founder(s), nature of the business, mode of operations, objectives (core values), etc. External factors refer to those factors that are found outside the work organisation that often dictate the direction of the business from time to time such as government legislation, location of business operation, competitors, etc. Irrespective of these forces or factors, the HRM policies in overall terms should embrace the followings;

- a) effective design of organisation structure;
- b) staffing the structure with suitable people;
- c) work roles and relationships well defined;
- d) optimum working arrangements secured; and
- e) Getting the loyalty and commitment of the people.

It must be noted that no matter how genuine and well-intended the HRM policies may be, they must be practicable and easy to implement otherwise developing and maintaining a sound human relationship and high level of morale that will evoke cooperation and willingness of all persons in the organisation to attain optimum operational performance would be a mirage (Oginni & Faseyiku, 2016). Torlak, Kuzey, and Ragon (2018) referring to the work of Guest (1987) indicated that HRM policies are designed to maximise organisational integration, employee commitment, flexibility and quality of work. The views of Isada and Adisa (2022) summarised the place of a policy when they opined that policy is a standard operating procedure i.e. policy standardises most of the routine decisions and at the same time clarifies the discretion superiors and subordinates can exercise in implementing functional tactics.

Evolving from the human resource policy concerning philosophies and perspectives is the transformation of the policies into action and this is known as “practice”. Therefore, the transformation or implementation of Human Resource Management policies into concrete action is known as ‘Human Resource Management Practices’ (HRMP) i.e. the ways and manners by which all the activities in human resources management are being carried out. In the views expressed by Fadiora, (2012) HRM practices as those activities contained in the

functioning of human resource management as it relates to the organisational workforce with effect on their morale and performance of an organisation. According to Oginni and Faseyiku (2016) HRMP is “the process of developing, applying, and evaluating policies, procedures, systems, and methods as well as programs relating to the employment relationship in the workplace”. The implication is that human resource policy determines the nature of human resource management practices in the workplace at any time.

Fadiora (2012) posited that HRM practice emanating from policy focused on perception and image among the stakeholders i.e. how the employee perceives their organisation is derived from the practice of HRM found operational at any time and evolving from this perception, is the image within the work community and labour market. The image formed thereafter becomes the mental picture of what the organisation stands for in the minds of the employees thus, heralding commensurate decisional and behavioural patterns from employees. The earlier works of Snape and Redman (2010) on HRM objectives and policies, pointed out that the perception of employees about the organisation would determine the commitment levels of employees which could be high or moderate as well as low. This explains why Tan and Nasurdin (2011) posited that human resource policies and practices represent specific policies designed and practices implemented to attract, develop, motivate, and retain competent employees with core skills to enshrine employee commitment and loyalty.

## 2.2 Employee commitment

In the views of Kreitner and Kinicki (2000) employee commitment is also known as organisational commitment which was also supported by Irabor and Okolie (2019). To Kreitner and Kinicki, employee commitment reflects the extent to which an individual identifies with an organisation and is dedicated to its goal while Irabor and Okolie sees it as another aspect of job attitude manifesting in the workplace which can be positive or negative upon which the decision to identify with a particular organisation and its goals as well as wishing to maintain membership in the organisation depends on. According to Stroh, Northcraft, and Neale (1996) described commitment as “an attitude reflecting an employee's loyalty to the organization, and an ongoing process through which organization members express their concern for the organization and its continued success and well-being”. This implies that commitment is about loyalty and attachment on account of goals and values identification with the organisation evident in the

willingness to display effort on behalf of the organization and desire to belong to the organization. Meyer and Allen (1991) described employee commitment as emotional state that characterises relationship of employee with an organisation, and this has effect on their decision to continue or discontinue membership of an organisation. What is obvious here is that commitment revolves around two facets in the workplace i.e. relationship between the organisation and employee which could be at individual or group level upon which various beliefs were anchored. It is therefore evident that employee commitment to an organisation is the outcome of the beliefs which could serve as bond or dedication to the organisation and willingness to get involved in the work activities over an identifiable period i.e. attachment and loyalty to the organisation without prejudice.

According to Nortcraft and Neale, (1996) employee commitment is determined by many factors such as personal factors (e.g. age, tenure in the organization, disposition, external or internal control attributions); organisational factors (leadership styles, superior-subordinate relationship, supervisor's authority, prevailing practices and job design); non-organisational factors (availability of alternatives) while Armstrong (2009) identified eight variables as determinants of employee commitment to include interesting work, age, education, co-worker's attitudes towards the organization, organizational dependency, employment alternatives, attitudes of family and friends as well as training and development. It was posited that these variables were significant in explaining the degree of employee commitment to their organisations. Whitener (2001) identified background variables such as gender, level of education, team size, and group acceptability as well as working conditions, training, and development as strong determinants of employee commitment to the course of the organisation. However, sees training to impact more than others because training was seen as an integral part of the socialisation process which from time to time gives employees the feeling that their contribution is valued and a sense of recognition by the organisation. Irabor and Okolie (2019) singled out job satisfaction as a factor that makes employees to be committed to the course of their organisation. Shirley and Colin (2001) postulated a mathematical model identifying variables determining employees' commitment and the model captures all the factors that can be used to explain various levels of employee commitment in any organisation which is denoted as;

$$C_i = f(X_i, + W_i, + O_i)$$

Where;

$C_i$  = the level of commitment of the employee

$X_i$  = set of personal characteristics of employee

$W_i$  = set of job-related characteristics of employee

$O_i$  = set of characteristics of the workplace where an individual is employed.

### 2.3 Employee Commitment Model

The multidimensional nature of employee commitment has brought about different dimensions to explain employee commitment in the workplace. There had been three prominent but different works of scholars that had been identified over the years i.e. O'Reilly et al (psychological bond), Mowday et al (emotional attachment and loyalty), and Meyer & Allen (three components model) but for the study at hand, the ACN model of has been adopted.

#### 2.3.1 ACN Model

The ACN model was postulated by Meyer and Allen in 1991. The model also has three components acronym as ACN where A is affective, C is continuance and N is normative. According to Tella, Ayeni, and Popoola (2007), the work of Meyer & Allen (1991) as depicted in their model has more influence on the understanding of employee commitment to the organisation than any other models which has three components namely; affective commitment, continuance commitment and normative commitment which had become the mainstream for other researchers in the field of organisational commitment.

**1. Affective Commitment:** This is described as the employee's emotional attachment to, identification with, and involvement in the organisation and its goal accomplishment. It results from and is induced by organisational and individual value congruency. As a result, it becomes almost natural for the individual to become emotionally attached to and enjoy continuing membership in the organisation (Dunham, Gruba & Castaneda, 1994). Dunham et al (1994) identified major variables that can create intrinsically rewarding situations for employee's affective commitment such as job characteristics (skills variety, task significance, identity, feedback on job performance, autonomy, perceived organisational support or dependence), the degree of employee involvement in the goal – setting, and decision-making process. Affective commitment is the most desirable form of commitment on account of its focus between employee and the organisation (Meyer & Allen, 1997).

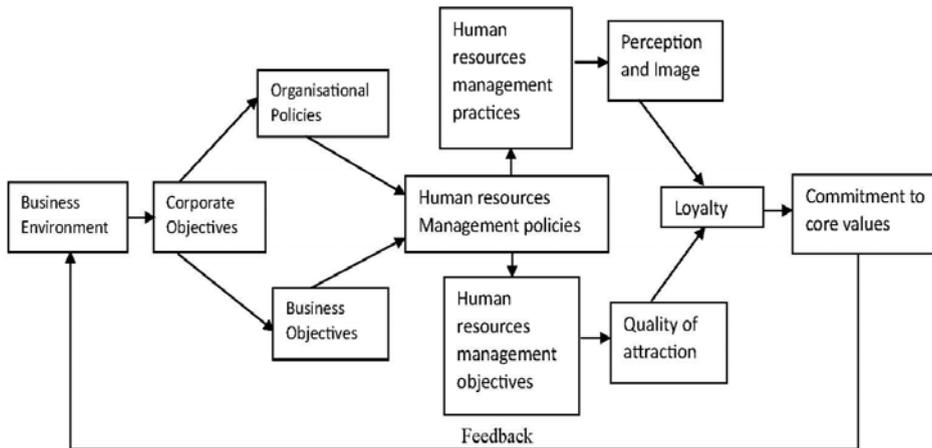
**2. Continuance Commitment:** This is found when employees feel certain needs to link to and stay with the organisation i.e. willingness to remain with an organisation due to non-transferable personal investment such as retirement

investment plans, close working relationships with co-workers, and career investment, job skills acquired which are unique to the organisation, involvement in the community in which the employer is located, years of employment (length of service) in a particular organisation, and other benefits that make it costly to seek employment elsewhere or leave the current employment (Meyer, Allen & Smith, 1993) i.e. it is about the cost associated with leaving an organisation (Tella, *et al* 2007).

**3. Normative Commitment:** This always reflects the feeling of obligation on the part of employees to continue employment with the organisation. Such a feeling of obligation often results from what Whitener (2001) characterized as the generalised value of loyalty and duty. This is a natural predisposition to be loyal and committed to institutions such as family, marriage, country, religion, race, and employment organisation on account of socialisation in a culture that places a premium on loyalty and devotion to institutions. This view of commitment holds that an individual demonstrates commitment behaviour solely because he or she believes it is the moral and right thing to do.

The model shows that commitment is more of emotional state which is characterised by an employee's relationship with the organisation and effect on the decision to continue or discontinue membership in the organisation i.e. employees with a strong affective commitment remain with an organisation because they want to, those with a strong continuance commitment remain because they have to and those with a strong normative commitment remain because they feel they ought to (Meyer, Allen, and Smith, 1993). Aside from the works of Meyer, *et al* (1993) which provide an explanation summarising what employee commitment is in the workplace, Oginni, Ojo, and Adesanya (2019) also used a diagram as a model to explain the link between human resource management practices and employee commitment to the core values of any business organisation indicated in Fig 1.

**Fig 1: A link between human resource management practices and employee commitment to the core values**



Source: Oginni, B. O., Afolabi, OJO. A, & Adesanya, O. A. (2019). A Model Linking Human Resources Management Practices with Employee Commitment to Core Values of an Organisation. *Archives of Business Research*, 7(8), 114-118.

It was evident from Fig 1 that employee commitment stems from the understanding of the business environment where everything in the organisation began because it is the junction box i.e. to understand the levels of employee commitment in the workplace, recourse should be made to the business environment being the chief determinant of all the activities in the workplace. Corporate objectives would reflect the prevailing circumstance in the business environment which defines the essence and focus of the business organization (organisational policies and business objectives) from where human resource policies emerged that usher in human resource objectives and practices. The HR objective will lead to quality attraction while HR practices come with perception and image which invariably leads to loyalty and the result is the commitment to the core values of the organization. It was further pointed out that the assessment of the input (business environment) to output (employee commitment) at each stage should be based on objectivity otherwise the output would be counterproductive.

## **2.4 Relationship between human resource management policies and practices and employee commitment**

### **2.4.1. Recruitment and Selection Practices and Employee Commitment**

Recruitment and selection are among the common human resource management practices found in the business organisation whose focus is on the attraction of qualified candidates with a view to considering the suitability of such candidates to fill existing positions in any organisation. What informs the direction of recruitment and recruitment exercise is somewhat contingent on the policies and procedures put in place which determine the practice in operation in terms of how to go about attracting qualified and competent candidates to fill the existing positions. There are many ways by which an organisation can bring people into the organisation which could not be isolated from many factors that constantly influence the practice such as economic, demographic, godfatherism, gender, ethnicity, and religious constraints. All these have impacted the objective implementation of recruitment and selection policies and practices with each influencing the disposition of employees on their commitment to the main course of the organisation at any time. Therefore, hypothesis one is formulated to show that.

H<sub>1</sub>: there is a positive relationship between recruitment and selection practices and employee commitment in SMEs.

### **2.4.2. Training and Development Practices and Employee Commitment**

This is about acquiring new job skills that will enhance job performances in the immediate and future work environment and thus prevent skills obsolete. It has always been centred around educational activities typically designed to enhance, improve, and advance employees' knowledge and skills which has also become a source of motivation to employees on account of diversity and versatility. Baiquni and Aprilianti (2020) asserted that employees often perceive their relevance to the core existence of their organisation by the amount of investment the organisation has incurred on their behalf through training and development and concluded that training and development remain determinant factors in employee motivation and retention while the works of Isada and Adisa (2022) corroborated this position and argued further that investing in employees to boost employee's morale and retention is never enough as there is need for enabling environment which is a function of many variables otherwise becomes costly for the organisation i.e. investing in employee comes with potential risk if after investing in employee and

enabling environment is not guaranteed, the employee may decide to leave and join its competitors. Thus, the formulation of hypothesis two that

H<sub>2</sub>: there is a positive relationship between training and development practices and employee commitment in SMEs.

#### **2.4.3 Compensation and Reward Systems Practices and Employee Commitment**

This is a mutually exclusive exchange relationship that takes place between employee and employer which involves the total rewards given to the employees for the labour and services rendered to their organization. It is transactional by nature and can be monetary (wages and salaries, bonuses, and commissions) and non-monetary (paid absences and other leave benefits, retirement plans, employee insurance schemes, health plans, education benefits, and other such benefits). this explains why employees are constantly mindful of what comes to them from the relationship and the outcome of their evaluation will determine a lot of things in their behavioural patterns. The hierarchy of needs postulated by Maslow buttressed this and could be used to conclude that man goes to work because of reward systems on account that the basic concern of every employee is survival after which every other thing becomes important while Knezović (2018) posited that when employees are adequately compensated, they feel motivated to come to work, their morale remains high, and their job satisfaction level increases. The question raised by Fadiora (2012) on what constitutes fair compensation to employees in developing countries i.e. can employees ever see what is paid by employers to be fair to their input vis-à-vis their output in the wake of economic hardship caused by inflation that calls for living wage, minimum wage as well as standard of living and when considering the unit of analysis of the study that is plagued with inflation, paucity of finance, and low attraction of quality personnel (David, 2017), then, there is need to investigate the relationship between compensation and reward system and employee commitment thus leading to the formation of hypothesis three as

H<sub>3</sub>: there is a positive relationship between compensation and reward practices and employee commitment in SMEs.

#### **2.4.4. Performance Appraisal Practice and Employee Commitment**

Performance appraisal is one of the many tools postulated to determine levels of employee motivation and performance in the workplace (Kuvaas, 2006). It is central to the evaluation of employees' contribution to the organisation over a

specified period, a platform to discover talent in the organisation, and an avenue to identify training needs, and promotion opportunities without leading to Peter's principle. Kotzê, Vander, and Nel (2014) supported the position of Kuvaas (2006) on employee motivation and performance in the workplace as well as the focus on performance appraisal. It was argued that these can only be achieved with employees whose goals fit into the overall strategic plans of the organisation, who work in an environment that is characterised by trust, belief, and support from managers, and who constantly receive feedback on work done which is not limited to recognition. Isada and Adisa (2022) corroborated this position and believed that employees whose goals fit into the overall strategic plans of an organisation will manifest higher levels of energy and mental resilience at work, stronger involvement in their work, and feelings of significance and pride. It is this category of employees that are likely to be dedicated to work and be willing to remain with an organisation over a specific period. Since performance appraisal is a predictor of employee motivation, performance, dedication, and willingness to remain with an organisation, it is then obvious that what should be put into consideration is the significance of the policy and practice of performance appraisal on employee commitment although Daivd (2017) asserted that few business organisations in the frame of sole proprietorship and partnership use performance appraisal while measuring of employee performance. Hence, hypothesis four is formulated as

H<sub>4</sub>: there is a positive relationship between performance appraisal practice and employee commitment in SMEs.

#### **2.4.5 Working Conditions Practice and Employee Commitment**

This is the atmospheric conditions and environment under which employees perform their duties daily. It covers health, safety, and welfare regulations as well as terms and conditions guiding employee-employer employment relationships. To Oginni, Ajibola, and Olaniyan (2022) it is made of intrinsic and extrinsic components (equipment and devices, temperature, ventilation, lighting, cleanliness, workstations, space, floors, windows, doors, slippery areas, traffic, toilets, water, etc.) that has a positive or negative impact on organisational outcomes and visible in many of these outcomes such as job security, occupational stress, disciplinary procedures, organisational culture, progression and development opportunities, training, communication, employee assistance programmes, managerial support, inclusivity and diversity, interpersonal relationships, employee benefits, holiday entitlement, wages and salary, physical environment, working hours and patterns.

This was supported by the earlier work of Priarso, Diatmomo, and Mariam (2018) where it was posited that the overall positive or negative effects of these organisational outcomes are felt on organisational productivity, job satisfaction, and motivation while Oginni et al (2022) concluded that the prevailing working conditions practices played a significant role in understanding and gauging the mood of employees in the organisation and their decisions in terms of job happiness, job satisfaction, loyalty to the organisation, and deviant behaviour. hence, the proposition of hypothesis five that

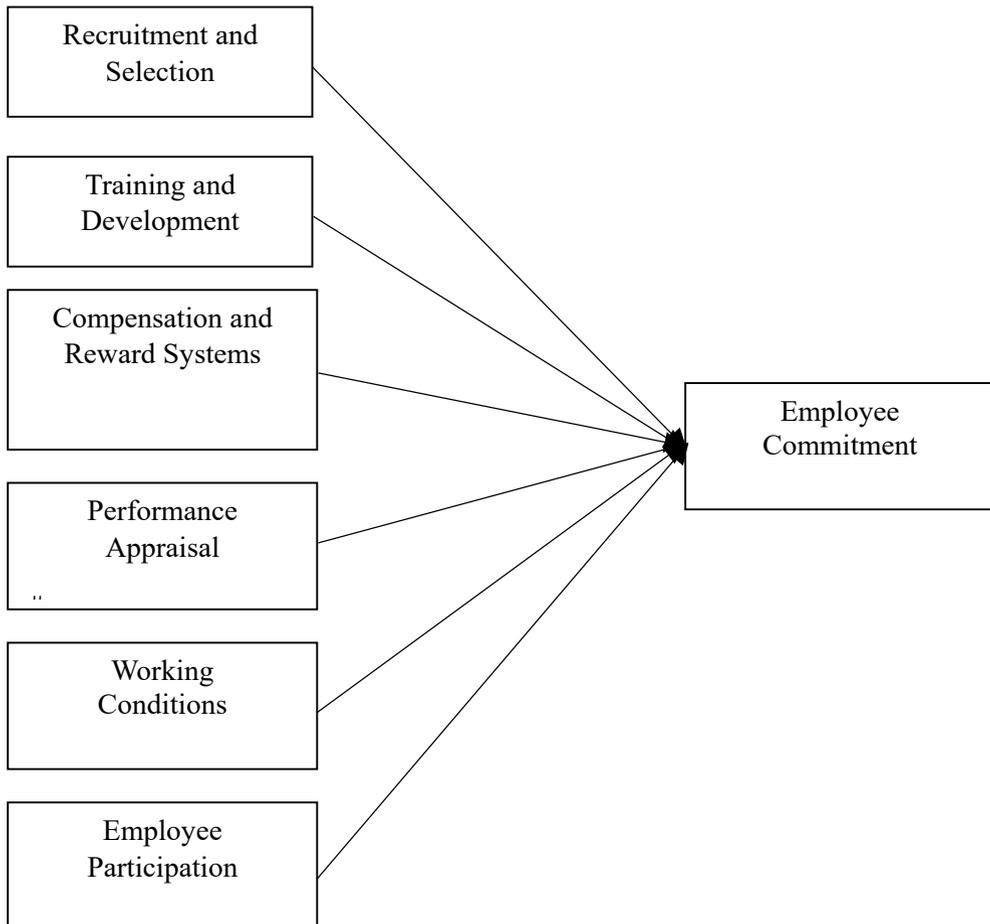
H<sub>5</sub>: there is a positive relationship between working conditions practice and employee commitment in SMEs.

#### **2.4.6. Employee Participation Practice and Employee Commitment**

This practice gives employees a sense of belonging and recognition because it provides a platform to contribute to problem-solving, address change management, and empowerment. To White and Bryson (2013) employee participation deepens employee self-esteem, interest in their work, and sense of loyalty thus, reducing the attrition ratio. Isada and Adisa (2022) posited employee participation in decision-making enables them to share in management prerogative power and such decisions become joint authorship in rulemaking which makes implementation easier while Jones, Kalmi, and Kauhanen (2010) asserted that it is about sharing their ideas, expertise, and efforts towards problem-solving to take advantage of employee productivity, empowerment, job satisfaction, creativity, commitment, and motivation, as well as the intention to stay. Freeman and Kleiner (2000) opined that participation can be in two different ways i.e. representative and direct participation and the choice of a particular way is influenced by leadership, culture, and environment. However, Oginni, Ojo, and Adesanya (2019) held a contrary view of what employee participation brings to the organisation although agreed with the summation of Jones, Kalmi, and Kauhanen (2010) the area of contention was the quality of their participation. It was concluded that organisation can take full advantage of employee participation only when participation is on substantive issues. therefore, hypothesis six is formulated as

H<sub>6</sub>: there is a positive relationship between employee participation practice and employee commitment in SMEs.

**Human Resource Policies and Practices variables**



**Fig 2: Conceptual Framework for the Study**

### 3. Methodology

The study was carried out in the South-West of Nigeria using the SMEs in these regions as the unit of analysis. The South-West of Nigeria has six States i.e. Lagos, Oyo, Osun, Ogun, Ekiti, and Ondo, fifteen (15) SMEs were selected from each of the States totalling ninety (90) SMEs cutting across manufacturing and services industries. The choice of these SMEs was based on their popularity in their locality and registration with the Corporation Affairs Commission (CAC) which is a commission set up by the Federal government of Nigeria to oversee the activities of all the organisations in the country. The study made use of a survey method and a questionnaire was adopted as the research instrument wherein the study adopted an organisational commitment questionnaire developed by Natalie, Allen, and Meyer (1990) for commitment while that of human resource management policies and practices adopted the questionnaire developed by Dyer and Reeves (1995) on human resource management practices. The questionnaire was tailored towards Likert 5-point rating scale while the results of the validity and reliability tests for the research instrument were found to be adequate for use.

From the ninety (90) SMEs selected, the study has a population of 4,808 respondents, and Yamane's formula for sample size was used to obtain the sample size which was 369. The study went through a multi-stage sampling technique to select the respondents wherein convenience sampling was used to select the 90 SMEs based on the condition attached to the choice of the unit of analysis i.e. popularity in their locality and registration with the CAC. A proportional technique was used to ensure fair distribution in the choice of the number selected in each of the SMEs in the six selected States in the South-West while a random sampling technique was used to give equal opportunity to the participants chosen among the studied group. Four hundred copies of the questionnaire (400) were administered with the help of two (2) research assistants in each of the selected States in the South-West out of which 305 copies of the questionnaire were retrieved representing 76% that was considered acceptable for generalization. Data obtained were analysed with the aid of SPSS software version 25 and the focus was on descriptive statistics (Mean and Standard Deviation) and inferential statistics (Correlation and Regression).

#### 4. Results

The result of the study was presented in Table 1 to Table 3. Table 1 has information on the elements of the human resource management policies and practices as evident in the SMEs of the respondents, Table 2 contained information on the relationship between the independent and dependent variables and Table 3 has information on the major predictors of employee commitment.

**Table 1: Descriptive Statistics on Independent Variables of human resource management policies and practices**

S/N	N	Independent variables	Descriptive Statistics		Rank
			Mean	Std. D	
1	305	Recruitment and Selection	2.786	1.173	6
2	305	Training and Development	3.231	0.558	3
3	305	Compensation and Reward Systems	4.687	0.607	1
4	305	Performance Appraisal	3.118	2.088	4
5	305	Working Conditions	3.366	0.771	2
6	305	Employee Participation	2.892	0.889	5

Source: Field Survey, 2013

Table 1 showed that a total of 305 respondents participated in the survey, and it was on this basis that the Mean and Standard Deviation were calculated. The result showed the average responses of independent variables towards the dependent variable and their dispersion from the stated Mean. It was evident that the major elements predicting employee commitment based on human resource management policies and practices were recruitment and selection, training and development, compensation and reward systems, performance appraisal, working conditions, and employee participation (2.786, 3.231, 4.687, 3.118, 3.366 and 2.892) although recruitment and selection, and performance appraisal deviated the most in comparison with other elements of human resource management policies and practices. The outcome confirmed the earlier position of Knezović (2018) on the significance of compensation and reward systems towards employee commitment and David (2017) also buttressed the seldom use of performance appraisal in the SMEs.

**Table 2: Correctional Matrix between Independent and dependent variables**

Variables	RS	TD	CR	PA	WC	EP	EC
<i>Recruitment and Selection (RS)</i>	1.000						
<i>Training and Development (TD)</i>	0.431*	1.000					
<i>Compensation and Reward Systems (CR)</i>	0.639**	0.732*	1.000				
<i>Performance Appraisal (PA)</i>	0.557**	0.621**	0.655**	1.000			
<i>Working Conditions (WC)</i>	0.615*	0.661**	0.733**	0.511*	1.000		
<i>Employee Participation (EP)</i>	0.651*	0.571*	0.630*	0.652**	0.641*	1.000	
<i>Employee Commitment (EC)</i>	0.512*	0.664**	0.788**	0.578*	0.765**	0.672**	1.000

\*\*Correlation is significant at 0.01 level (2-tailed), \*Correlation is significant at 0.05 level (2-tailed)

Table 2 showed the correlation between the dependent variable (employee commitment) and independent variable (recruitment and selection, training and development, compensation and reward systems, performance appraisal, working conditions, and employee participation). The correlation coefficients for each of the variables indicated that there exist statistically significant relationships between the independent and dependent variables such that recruitment and selection ( $r = 0.512$ ,  $p < 0.01$ ); training and development ( $r = 0.664$ ,  $p < 0.05$ ); compensation and reward systems ( $r = 0.788$ ,  $p < 0.05$ ), performance appraisal ( $r = 0.578$ ,  $p < 0.05$ ); working conditions ( $r = 0.765$ ,  $p < 0.05$ ); and employee participation ( $r = 0.672$ ,  $p < 0.05$ ) although that of recruitment and selection, and performance appraisal were relatively moderate, unlike others that were relatively strong. The result is in tandem with the works of Jones, Kalmi, and Kauhanen (2010), Priarso, Diatmomo, and Mariam (2018), Baiquni and Aprilianti (2020), Oginni, Ajibola and Olaniyan (2022).

**Table 3: Significant Coefficients of Employee Commitment**

Variables	<i>B</i>	<i>Beta</i>	<i>T</i>	<i>Sig</i>	<i>R</i> <sup>2</sup>	<i>F</i>	<i>Sig</i>	<i>Remark</i>
<i>Recruitment and Selection (RS)</i>	0.212	0.129	4.451	0.001	0.758	76.78	0.049	S
<i>Training and Development (TD)</i>	0.493	0.186	3.017	0.000				S
<i>Compensation and Reward Systems (CR)</i>	0.571	0.334	2.184	0.000				S
<i>Performance Appraisal (PA)</i>	0.465	0.132	3.242	0.003				S
<i>Working Conditions (WC)</i>	0.470	0.267	2.256	0.011				S
<i>Employee Participation (EP)</i>	0.310	0.252	4.650	0.003				S

Source: Data analysis, 2023; S=Significant, NS= Not Significant

The result presented in Table 3 showed that the model is valid with the value of  $F = 76.78$  and the level of significance was 0.049. All the variables have a statistically significant effect on employee commitment without any exceptions to imply that  $H_1$  to  $H_6$  were valid i.e. there is a positive relationship between all the independent variables and employee commitment in SMEs. Similarly, the beta values showed that compensation and reward systems, working conditions, and employee participation in decision-making have more effect on employee commitment than other variables and the explanatory coefficient value was 76% to imply that human resource management policies and practices were responsible for employee commitment in the SMEs of the Nigerian economy in the South-West. The result also confirmed what some scholars had earlier posited on human resource management contents as a potent force in explaining employee commitment such as Hauff, Alewell, and Hassen, (2014); Delić and Smajlović, (2014); Jena, 2015; Ertemsir, Bal, and Bozkurt (2017); Knezović (2018); Uraon, (2018); Baiquni and Aprilianti 2020); Isada and Adisa (2022);

### 5. Conclusion

The study sets out to investigate the degree of relationship between HRM policies and practices and employee commitment as well as the effect of the

variables of HRM policies and practices on employee commitment using SMEs as the unit of analysis. The study identified recruitment and selection, training and development, compensation and reward systems, performance appraisal, working conditions, and employee participation as the prevailing HRM policies and practices in the SMEs of the study area out of which compensation and reward systems, working conditions and training and development were mostly in use in the SMEs of the South-West, Nigeria to drive employee commitment. The result of the correlation shows a high degree of positive correlation between HRM policies and practices and employee commitment at 0.05 and 0.01 levels of significance to imply favourable and good policies on compensation and reward systems, working conditions, and training and development will be commensurate with practice and result in high employee commitment. Similarly, the result of the multiple linear regression showed that HRM policies and practices can be used to explain the variation in employee commitment to the tune of 76% which is very high in quantum while the beta values also confirmed that compensation and reward systems, working conditions, and employee participation in decision making have more effect on employee commitment than other variables. It was concluded that among all the activities embarked upon in the SMEs of the South-West, Nigeria towards the attainment of business objectives, HRM policies and practices have a significant effect on employee commitment most especially compensation and reward systems, working conditions, and employee participation in decision making.

## 6. Recommendations

Based on the conclusion of the study, it was recommended that management of the SMEs of the South-West, Nigeria should ensure compensation and reward systems are competitive by conducting an environmental survey on it to know what the prevailing living wage and other benefits are. Genuine efforts are to be made towards ensuring a good work atmosphere that will make the workplace a family-like atmosphere and at the same a safe environment. The management stands to benefit from employee participation if improved upon and enshrined in the decision process while objectivity should prevail in the practice of the HRM policies especially, the administration of performance appraisal, selection of the individual who is chosen for training and development programmes, and recruitment and selection exercise.

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## RESETTING THE HUMAN RESOURCE STRATEGY FOR ORGANIZATIONAL PERFORMANCE IN ZIMBABWE URBAN COUNCILS

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**How to cite:** SIXPENCE, S., TAPERA, J. & UKPERE, W.I. (2023). "Resetting the Human Resource Strategy for Organizational Performance in Zimbabwe Urban Councils". *Annals of Spiru Haret University. Economic Series*, 23(2), 278-302, doi: <https://doi.org/10.26458/23215>

### Abstract:

*While literature is awash with evidence that links strategic human resource management to organizational performance, little is known on sustaining the relationship dynamics within a public sector context that is operating under polarized conditions. This study explores the challenges faced in implementing the human resource strategy within urban councils in Zimbabwe to unearth solutions that are sensitive to a polarized work environment. A case study approach was used to collect data from the 32 urban councils in Zimbabwe which are classified into four categories namely, cities, municipalities, towns and local boards. Stratified sampling was used to identify nine urban local authorities for data collection and purposive sampling identified the participants for interviews. The point of saturation was reached after interviewing 18 participants and the data was analyzed using the atlas.ti. This study revealed, a misalignment of the human resource function and the organizational goals, a serious financial resource crisis and a lack of trust between key stakeholders. The study contributes to the development of human resource competencies that respond to the organizational needs in a polarized environment. Further, incorporate*

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*the adoption of technology in the human resource strategy and foster a culture of supporting soft skills such as team work and collaboration from the level of elected officials down to the entire workforce.*

**Keywords:** *strategic human resource management, urban councils, workforce, polarized environment*

**JEL Classification:** I13, J2

### **Introduction**

The nexus between Strategic Human Resource Management (SHRM) and organizational performance has been gaining emphasis since the 1980s to date (Castro, Lopes de Araujo, Ribeiro, Demo & Meneses, 2020). Its relevance remains central to the achievement of strategic goals for both private and public sector organizations. The description of SHRM is two thronged, firstly, it is the vertical connection that exist between the organizational strategy and HRM practices (Lopez-Cabrales, 2020). Secondly, it is the horizontal congruence of several human resources activities that are linked to support the achievement of the organizational goals (Iqbal, 2019). It can also be understood as the integration of the HRM policies and practices used to support the achievement of organizational goals. This view is embraced by Schuler and Jackson (1987), who argue that SHRM seeks to establish a concrete integration of several HRM functions and align them to the organizational goals. Haque (2021) further argues that the goal of pursuing SHRM is to improve organization performance.

The introduction of organizational performance in SHRM studies is a recent development that emerged as a product of various studies that sought to position SHRM as a scientific innovation in the broad field of organizational development (Castro et al, 2020). In support of this effort, Lengnick-Hall, Lengnick-Hall, Andrade & Drake (2009) chronicles a list of SHRM themes developed from various seminal works. Their study demonstrated the impact of strategic human resource management on organisational performance. They recommended that future studies could further explore the link between SHRM and organisational performance especially in under developed and unstable contexts.

The contribution of SHRM towards organizational performance can be explained by the levels of productivity, profitability, employee turnover, customer complaints and other human factors that impact on value addition in the

organization (Van De Voorde, Paauwe, & Van Veldhoven, 2010). While there are various factors within the external and internal environment that can impact on organisational performance, the human resource remains to be the ‘key lever’ that determines the contribution of other resources on organisational performance (Llorca, 2016). Human resources can create organisational competencies that provide a fertile ground for organisational performance (Green, 2006; Iqbal, 2019; Lopez-Cabrales, 2020). To this end, there is a positive correlation between human resource outputs and organisational performance (Catrol et al, 2020). However, this finding was from a stable work environment with minimum exigencies. In order to fill the gap, this study focused on relationship dynamics within a polarised work environment. Additionally, more studies have been conducted within the private sector context than in the public sector to refine SHRM practices lest the HRM philosophy risks being relegated into an administrative routine rather than a strategic asset. Hence the current study explores the SHRM dynamics within the public sector to uplift the strategic role of the HR function in organisational performance.

Although lessons from the private sector assist to provide insights that could influence public sector practice on the link between SHRM and organisational performance, evidence available still show glaring deficiencies within the public sector. The link between SHRM to organisational performance within the public sector suffers a lot of constraints. Central to this description are features at the heart of the debate surrounding SHRM and organisational performance within the public sector namely, the factors influencing HRM, the nature of performance outputs and the way they are linked to organisational performance (Guest, 1997). The features as alluded to by Guest (1997) thus forms the central focus of the objectives of this study, in particular to: i) To outline the factors that influence the human resource strategy in determining organisational performance (ii) To identify the strategic human resource outputs that are affecting organisational performance (iii) To determine the consequences of poor human resource outputs on organisational performance. In broad terms, the study seeks to strategically reposition the human resource function to enhance organisational performance within a polarised work context.

While challenging times can increase anxiety, the authors have the view that uplifting strategic human resource management could present opportunities that influence improved organizational performance. The novelty of the study is in the potential to unearth the strategic human resource competencies that could stimulate

opportunities for organizational performance at a public sector organization that has a polarized work environment. The next sections will be arranged in the following order of chronology: a description of the research setting, the literature review, the methodology, findings, discussion and conclusion.

### **Research setting**

Zimbabwean urban Councils are grappling to offer quality services and value for money to the ratepayers (Murimoga, 2014) The Zimbabwean economy is going through one of the highest inflation rates in the world (Rodgers, 2019). However urban dwellers have attributed the poor service delivery to the poor skills repertoire within councils while employees feel that the blame is unfair as they are working within a highly polarized environment (Chhipi-Shrestha, 2019; Heinelt, 2018). The working conditions of employees are poor, there are protracted labor disputes and the relationship between employee unions and management is untenable ( (Joseph, 2019; Voorn, 2019). The quality of service delivery has been gradually plummeting over the years (Marumahoko, Olugbemiga, Sadie,& Nhede, 2020). The deteriorating economy has been sighted as the major contributor of the poor services. Traditional sources of revenue have collapsed due to the economic meltdown. The government is failing to fund major capital projects that could match service delivery standards such as the expansion of the water treatment plants, new sewer treatment plants and expansion of the road networks. The growing population has placed intense competition on the social services in the face of a great mismatch between revenue collection and service delivery costs. The crisis was compounded by the convergence of various human resource challenges brought about by the COVID-19 pandemic which fueled polarization at the work place. The challenges include, ability to attract and retain key skills, ability to reward and motivate employees, digital skills gaps, ability to upskill employees in line with current service delivery demands As human resource professionals we are challenged to explore opportunities that could reposition the human resource strategy within urban councils in Zimbabwe to stimulate organizational performance.

### **Literature review**

While the SHRM concept has been well explored within the private sector, there is limited research within public sector (Ongaro & Van Thiel, 2017). This study intends to close the gap by focusing on the urban council's context. This

view is supported by Knies, Boslie, Gould-Williams and Vandenabeele (2018) who contend that the human resources strategies within municipalities should be constantly reviewed to align service delivery to contemporary social needs. Urban councils in Zimbabwe cover many aspects of urban life that includes, health, education, refuse collection, housing, transportation as well the management of burial space (Zimbabwe Constitution, 2013). In fact, the majority of activities that determine the quality of human welfare are under the ambit of municipalities. However, Rodgers (2019) noted that urban councils in under developed economies suffer from challenges such as cutbacks in resources, political interference while at the same time there is pressure from stakeholders to demonstrate accountability and provide quality service to the citizens. Political interference in the running of municipalities is also cited as a hinderance to the smooth operations and performance by various other authors (Heinelt, 2018; Joseph, 2019; İkizer, 2022). The list of challenges is dominated by people issues hence inspiring the need to explore the link between SHRM and organisation performance within urban councils. On a positive note, results from prior studies that focused on SHRM in the public sector indicated that SHRM supports employee motivation and improved organisational performance (Messersmith, Patel, Lepak, & Gould-Williams, 2011; Bouaziz, 2018). We therefore intend to supplement the prior findings by exploring the SHRM dynamics that impact on organisation performance within the public sector. The following section examines the dynamics of SHRM within the public sector context.

### **SHRM in the public sector context**

Before we delve into the distinctiveness of the SHRM concept and performance within the urban councils' context, it is important to identify the characteristics that distinguish the public from the private sector. Since urban councils are an appendage of the public sector, the distinction could assist to understand the larger context and culture that inform practice. In line with the views by Knies and Leisink's (2017), the public sector is characterised by a formal structure that is defined by ownership, authority and funding. This implies that a urban councils are owned, controlled and funded by government. The Constitution of Zimbabwe (2013) views an urban council as a local authority that is run based on delegated authority from the central government wherein local people are empowered to create value through self- governance. We therefore follow the two set criteria that

describe an urban council namely, formal structure and creation of value through a localised self-governance system (Heinelt, 2018; İkizer, 2022).

While private organisations seek to increase shareholder value (profit maximisation), public organisations are not profit oriented (Boxall & Purcell, 2011), instead public organisations seek to provide services in line with their mission. To this end, they are guided by the mission and value system that is defined by the multiple stakeholders that they serve. Given that the multiple stakeholders have varying interests which sometimes conflict, the conflicting interests manifest themselves at both formulation and implementation of the mission (Chhipi-Shrestha, 2019; Voorn, 2019). This unique feature in public organisations bears crucial implications in studying the influence of SHRM on organisation performance.

### **The implementation of SHRM**

Critical success factors that support the implementation of SHRM include leadership commitment, planning and management of the implementation process. Guest, (1987) argues that the implementation of SHRM should be supported by programmed organisation change effort that recognises the existing organisational culture at all levels of the organisation. Lengnick-Hallet et al. (2009) emphasised the importance of maintaining both vertical and horizontal alignment of the human resource function with the strategic goals to achieve high performance. Further, the alignment should be measured to determine the extent to which HR systems contribute towards organisational performance. This write-up therefore examines the SHRM systems in the municipal context. The focus will be on human resource activities, relations, and how they are managed to influence organisational performance.

### **The theoretical support of SHRM on organisational performance**

The influence of SHRM on organisational performance can be explained from three theoretical perspectives (Delery & Doty, 1996). Firstly, the universalist adopts the belief that there is a set of best practices that can be applied in any situation to produce results (Schuler & Jackson, 1987). It thus implies that, if the organisation correctly identifies and implements the known best practices, organisational performance improves. However, the universalist weaknesses are that it can easily be imitated by competitors and reduce the organisation's capacity to fight competition. Secondly, the approach is rigid hence limiting creativity

(Porter, 1996). Thirdly, it does not recognise the environmental instability and changing variables (Colbert, 2004). Additionally, research has failed to prove the applicability of the universalist approach in other contexts outside the developed countries (Boselie & Dietz 2003). The universalist critics motivated the development of the contingency perspective as an alternative approach (Iqbal, 2019). It is argued that the success of HR in influencing organisational performance is a function of organisational factors that include the extent of horizontal integration of HR practices and their vertical integration with the organisational goals (April, 2005; Green, 2006; Iqbal, 2019). The contingency approach thus argues that the success of HR practice is determined by the ability to adjust to situational circumstances such as the organisational strategy hence the application of SHRM is different from one organisation to the other (Fombrun, Tichy & Devanna, 1984). Further the use of HR bundles as opposed to isolated HR practices strengthens the HR link with organisational performance. Evidence to support the contingency approach has linked internal HR practices that are consistent to organisational performance (Delery & Doty 1996).

Thirdly, the configurational approach claims that there is a set of practices that produces superior HR outcomes if followed well. The correct identification of each of the perspectives could contribute to the development of the SHRM theoretical framework (Delery & Doty, 1996). In line with the configurational view, Barney (2001) proposed the Resource Based View (RBV) as the main theory that underpins the SHRM philosophy. He argues that the HR function is responsible for developing specific competencies that drive organisational performance. Further, HR is responsible for ensuring that the organisation is capacitated with value and inimitable competitive advantage. Hence the HR policies should be designed to achieve the cutting edge advantage that is not found in any other organisation. For instance, if an organisation has a way of attracting high performers and retaining them better than competitors then the HR is matchless. The HR strength thus lies in the ability to provide competencies that are not easily copied by other organisations because their fit is specific to the organisation (Barney 2001). The RBV argues that HR can achieve competitive advantage when its activities, are integrated to organisational strategy, add value, are difficult to copy, cannot be substituted and unique (Wright, Dunford, & Snell, 2001).

Additionally, the HRM philosophy has four main objectives namely, quality, employee commitment, integration and flexibility (Guest, 1987). In line with Guest (1987) the last three objectives support the successful implementation of HRM.

Employee commitment is achieved through policies that elevate behavioural values that strengthen the desired organisational culture. Integration is achieved by maintaining vertical alignment of HR activities with the strategic goals and coherence amongst the HR policies. Flexibility is facilitated by creating organic structures that enable change agents to drive innovation with limited bureaucracy (Asfahani, 2021; Misbah, 2020; Njoku, 2019). Therefore, jobs can be designed in a way that support decentralisation and autonomy.

Organisational performance is strengthened by the effective deployment of HR tools and manifest through improved productivity, low employee turnover, high sales and profitability (Haque, 2021; Kramar, 2022; Sharma, 2021). Elsewhere, evidence indicate that high organisational outcomes were produced in companies that deploy strategic HR practices such as employee empowerment, involvement and managerial development (Aktar, 2018; Huselid, Jackson & Schuler, 1997; Saks, 2022). Parallels can be drawn from the model by Appelbaum, Bailey, Berg & Kalleberg (2000), who insist that high results are an outcome of the confluence between three human factors that are interdependent namely, ability, motivation and opportunity. In spite of all the effort by the scholars in developing models that improve the strategic effectiveness of HRM through the harmonisation of HR intentions with implementation, studies have shown that even successful organisations still present disagreements between what is intended and what is finally implemented (Truss, 2001). However, effort to identify intended HR outputs could assist to align the activities of the implementation process towards the intended objectives hence reducing the gap between intentions and results. Piening, Baluch, & Ridder (2014) noted that studies on the theme of aligning human resource intended outputs with organisational goals are scarce in public entities. Hence this study seeks to close the gap by readjusting the human resource strategy to support organisational performance within urban councils in Zimbabwe.

Elsewhere, Gratton and Truss (2003) propose a tridimensional model that supports the effectiveness of an HR strategy namely, strict alignment of HRM practice with organisational goals, coherence between individual HR policies, and implementation of HR policies by both line managers and employees. Further, the social context model of HR systems argues that other factors such as beliefs, politics, values and attitudes can influence the implementation of strategy (Ferris, Arthur, Berkson, Kaplan, Harrell-Cook & Frink, 1998). Other factors such as capacity of line managers, organisational culture, social interactions and political environment could influence key outcomes that have an impact on organisational

performance such as turnover, productivity and job satisfaction (See, Sikora & Ferris, 2014). To this end, examining these themes with due consideration of the urban councils reality could assist to assess the SHRM contextual characteristics of the institution and their influence on organisational performance.

### Methodology

There are 32 urban local authorities in Zimbabwe and are classified into four levels namely, cities, municipalities, towns and local boards. Their numbers are distributed as follows: : cities 21%, municipalities 28%, towns 34%, local boards 16%. (Murimoga & Murimoga, 2022). A sample number of local authorities was identified through stratified sampling. In line with the strata percentage representation the sample comprised the following proportions that were selected at random: 1 city,3 municipality, 4 towns,1 local board. The researcher targeted 2 participants per local authority namely one worker and one manager. In the data collection, the following symbols and terms were used to identify participants: P for participant; numerical digit to identify a participant from a particular urban council; manager for a managerial participant; city for a participant from a city; municipality for a participant from a municipality; town for a participant from a town; local board for a participant from a local board. For example number one managerial participant from a city is described as: P1, managerial, city. The choice of a worker and a manager assisted to balance presented views from both managers and workers. The participants were selected purposively through the identification of potential rich sources of human resource related data such as workers committee members and human resource or line managers. After interviewing the targeted 18 participants, researchers felt that the collected data had reached a point of saturation.

In line with views by Denzin and Lincoln, (2000) the study adopted the ontological view that a qualitative study is a sense making endeavour where phenomena is studied in its natural setting and the researchers seek to make sense of what is revealed in line with the meanings ascribed by the people involved. This influenced the decision to include both workers and managers from the same company to allow participants to express views in the best way they understood the context in their capacities as both managers and workers. Hence the plurality of responses was embraced with a view to understanding the truth in line with individual participants' lived experiences (Yin, 2018). In line with the interpretive theory, the epistemological stance adopted sought to engage both the workers and

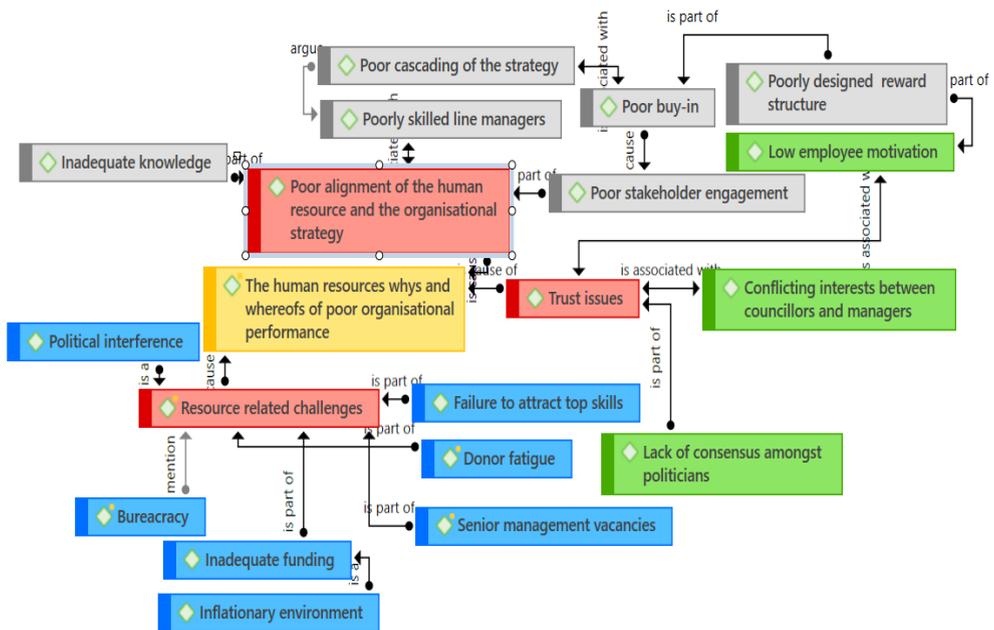
managers to interpret reality in the best way that suit them. The researchers were not detached from the process but played a key role in determining the degree of interaction by probing the participants' responses (Guba, 1990). Given that the study sought to produce novel findings from the empirical setting, the interview process did not follow any strict protocols (Birkinshaw, Brannen, & Tung, 2011) but was flexible to accommodate emerging opportunities. However careful consideration was given to the possibility of researcher bias due to the heavy involvement of the researchers as attached participants (Van Maanen, 1979). Jones and Bartunek, (2021) strengthened the approach by arguing that personal involvement is a diversified theory development opportunity as long as there is transparency and reflexivity. Further, transparency should take priority over rules, thereby supporting variation of practices and discovering novel pathways (Jarzabkowski et al., 2021). Therefore high reflexivity was maintained during the engagement process. The collected data was shared with the participants before and after interpretation to validate the correctness of the information (Kaplan & Whittinton, 2020). The data analysis was iterative, thereby allowing the back and forth movement between data collection, analysis and literature review to accommodate emergent opportunities for new knowledge (Yin, 2018).

### Findings

The study sought to strategically reposition the human resource function to enhance organisational performance in line with the municipal goals. In particular i) To outline the factors that influence the human resource strategy in determining organisational performance (ii) To identify the strategic human resource outputs that are affecting organisational performance (iii) To determine the consequences of poor human resource outputs on organisational performance.

Data was coded and recoded using the atlas.ti and revealed the following themes which were grouped in the order of similarities of meanings as shown in figure1 below:

**Figure 1. Revealed themes**



**Objective 1: To outline the factors that influence the human resource strategy in determining organisational performance.**

**Environmental factors**

The participants indicated that there are many factors in the environment that disturb the effective implementation of the human resource strategy.

*“There is excessive interference of the politicians in Council processes such as recruitment and selection, budget approvals, allocation of resources where politicians push for more resources in areas that advance their political positions at the expense of employee welfare.....Councillors over step their mandate and interfere with management duties thereby disempowering professionals from effectively conducting their duties”* P1, managerial, town.

*“ The economic situation is unstable, .....inflation is high as a result it is difficult to reward employees competitively”* P2, managerial, municipality

*“Our technological infrastructure is still backward and we also lack the relevant technological skills to assist in improving efficiencies.....there are high billing errors and poor housing file management....this infuriates the rate payers”*  
 P1, worker, town

*“The turnover of general skills is low in spite of the poor conditions of service.....The organisation is full of old people who are difficult to change and cannot adapt to the changes happening in the environment”* P1, manager, local board

### **Bureaucracy**

Participants indicated that the organisational culture is bureaucratic thereby delaying the decision making process.

*“Whenever we have to make changes in our strategic plans, the process is bureaucratic as it involves wide consultations, and everything requires approval from the central government as a result it becomes difficult to respond to the situation on the ground because the decision making process is very long”* P2, manager, town

*“It takes very long to give feedback to clients .....when there is a complaint, it is referred to managers for investigation and then further referred to the policy makers to make a resolution before communicating back to the client...this procedure is long and frustrating.....the managers are not empowered to make professional decisions without the involvement of politicians”* P1, manager, city.

The communication process is long and decision making takes long to be concluded due to a high number of stakeholders that are consulted before taking a position.

### **Structural issues**

90% of the participants indicated that the human resources manager is not a member of the executive as a result human resources issues are treated as peripheral issues.

*“There is no-one to represent us because the human resources manager reports to the chamber secretary who is a legal person so human resource issues are not prioritised when setting performance goals”* P3, worker, municipality

*“Our human resource executive has been on suspension for the past 5 years..... This is why there is no professionalism in the manner in which human resources issues are handled”* P1, city, worker

*“The chairperson of the HR committee has no experience or qualifications in HR.....Further the HR manager is not an executive member...so HR issues are*

*presented by a the chamber secretary who is a legal person” P1, manager, municipality.*

*“There is a lot of redundant staff occupying offices but with no value addition.....there is need to streamline the labour force to be aligned to current needs....we have the performance management system on paper but it is not implemented” P2, manager, town.*

The human resource strategy was failing to work because the human resource is not represented at the top in the majority of the local authorities. There was only one local authority that has a human resource executive but the official has been on suspension for more than 5 years hence disempowering the human resource function. Further, there is over employment of redundant staff and there is no working performance management system in all the local authorities.

#### **Strategic planning knowledge**

The participants revealed that the leaders lack sufficient knowledge on how to effectively develop the human resource strategy as well as the organisational strategy.

*“The human resource activities do not support each other, for example the organisation recruits highly skilled employees but does not provide any incentives to retain them hence resources that are used to attract skills are wasted as the same employees end up leaving the organisation within a short space of time” P1, worker, Municipality*

*“The budget is always prepared before the strategic plan as a result some of the key human resource priorities in the strategic plan will not be funded in the budget and nothing is done to correct that.....People waste time on routine activities without focusing on the strategic priorities” P4,worker, town*

*“The rewards management system does not encourage employees to support the key strategic goals.....there is no performance based reward system” P9, non-managerial staff.*

*“The strategic plan is not effectively cascaded to lower level line managers, it remains to be a top management document as a result there is poor buy-in of some of the performance improvement initiatives.” P2, worker, municipality*

The narratives indicate a discord between human resource activities and the strategic goals. There is no coherence of human resource activities, the budget is not aligned to the strategic plan, the rewards are not performance based and the strategic plan is not cascaded down to lower levels.

### **Shortage of resources**

Poor resources were sighted as one of the major cause of the failure to implement strategic human resource initiatives that could improve organisational performance.

*“The organisation is failing to finance critical HR interventions such as employee training and development, competitive employee rewards.....Rate payers are not paying their obligations as expected”*

*There is donor fatigue as most development partners have just lost interest in helping us..... the hyperinflationary environment quickly erodes the little revenue available”* P1, managerial, city

The low revenue collection is affecting the organisation’s ability to support other critical human resources interventions that drive organisational performance.

The identified factors that influence the human resource strategy in achieving organisational performance within municipalities in Zimbabwe are, environmental factors, bureaucracy, structural issue, strategic planning knowledge, shortage of resources.

### **Objective number 2: To identify the strategic human resource outputs that are affecting organisational performance.**

#### **Skills repertoire**

The interviews revealed that the organisation is staffed with poorly skilled employees who are difficult to train.

*“The organisation is failing to attract and retain high performers....we have poorly qualified civil engineers, and information technology specialists because the employer brand is poor”* P1, worker, local board

*“This organisation has been operating for more than 4 years without 80% vacancies at head of department level.....This means 80% of senior positions are occupied by acting staff.....We are finding it difficult to attract qualified staff”* P1, manager, municipality.

*“We have a high number of customer complaints that are associated with poor workmanship, high mistakes in the billing system. This is all because we do not have the skilled personnel. As a result we struggle to get cooperation from the service consumers and revenue collection has drastically gone down”. P3, worker, town*

There is high turnover of skilled, high performers and a low turnover of general staff. The sector is thus burdened with old employees who are not adding value in line with the prevailing client needs.

### **Employee training and development**

*“It is difficult to upskill under qualified personnel in key areas like information technology and civil engineering as a result our current staff is not trainable”* P2, Manager, town.

*“I think our current training routine is losing steam, the programs offered are not in line with current trends....I think local authorities could combine resources and knowledge to collectively design training programs that address service delivery needs at national level”* P1, manager, municipality

### **Change management**

The participants indicated that the HR function did not make any consented efforts to prepare people for change.

*“Employees are not prepared for change when introducing a new policy rather the ministry impose changes without consulting us”* P2, worker, municipality.

*“There is mistrust between employees and management because employees do not have information .....,there is poor information asymmetry across the organisation”* P3, manager, town

### **Employee retention**

The organisation is filing to retain critical staff that are important in the service delivery value matrix.

*“Critical staff are treated the same as everybody in areas such as rewards, retirement age.....I think there should be a policy that should be specific for critical staff”* P2, manager municipality.

*“We do not have any clear succession plan, management maintains a reactive approach whenever an employee resigns”* P4, worker, town.

*“The organisation is failing to pay monetary rewards competitively.....it is also failing to provide alternative rewards that are non-monetary such as continuous skills development programs.....in the past other incentives such as land were given to employees in place of money but the central government has since given a directive to stop the practice”* P1, worker, city.

*“There is over interference from the central government on issues to do with employee rewards.....I think local authorities should have autonomy to determine reward practices that can enhance employee retention”* P3, manager, municipality.

*“Whenever we advertise vacancies, competent skills do not apply because people hate the local authority sector has it is labelled a political minefield”* P2, manager, town.

Employee retention is poor due to the failure to pay competitive financial rewards, absence of non-monetary rewards, tarnished image of the local authority sector.

The identified strategic human resource outputs that are affecting organisational performance are the quality of, the skills repertoire, training and development, change management and employee retention.

**Objective 3: To determine the consequences of poor human resource outputs on organisational performance**

**Poor engagement**

The participants that there is a relationship discord between the key stakeholders within local authorities namely, management, workers, rate payers, central government and elected councillors. As a result the human resource policies lack buy in thus negatively affecting organisational performance.

*“There are continuous conflicts between our Council and the central government, as a result some senior positions have remained vacant for a long time because they cannot agree on way forward”* P1, worker, municipality

*“The resident consultation meetings are minimum or non-existent so there is an information gap, which creates several conflicts between the rate payers and the local authority”* P3, manager, municipality

*“There is no feedback mechanism on employee performance as a result employees are not aware of the exact performance standards expected from them”* P1, worker, municipality.

**Loss of public trust**

*“Development partners have lost confidence in quality of skills that are in the local authorities, hence the support that is coming from them is now very minimum”* P2, manager, town.

*“Rate payers have lost the sense of belonging and they no longer support our institution with resources as they used to do before”* P3, worker, municipality.

*“When we called for budget consultations, the turnout from residents was very low...it looks like they have lost confidence in us”* P1, manager, city.

**Discussion**

During the past two decades, the performance of public institutions in Zimbabwe has deteriorated (Mironga & Mironga, 2022). Further, funding from the central government to urban local authorities diminished and there has been growing fatigue by development partners to provide financial support on capacity

development. Local authorities have been forced to operate under constrained budgets (Marumahoko et al, 2020). This study showed that, local authorities are failing to retain key skills, rewards are poor, strategic human resource activities are under funded. The situation calls for the need to dump the business as usual approach to managing the human resources. The study revealed various dynamics in the urban councils context that makes it impossible to simply copy and paste human resource strategies from the private sector to the public sector. The observation was earlier supported by Ferris et al,(1998) in his social context model where he emphasised on the need to recognise the implications of the differences in social dynamics when adopting human resource strategies to address organisational performance gaps. Therefore special attention was paid to the uncommon macro-economic conditions, political environment and social values that were impacting on the link between strategic human resource practices and organisational performance.

The study noted that organisational performance is negatively affected by poor alignment of the human resource and organisational strategy. The manifestation of this misalignment is reflected through poorly skilled line managers, poor cascading of the strategy to lower levels for effective implementation, poor buy-in from those that are supposed to implement strategy and poorly designed reward structures. These findings corroborate evidence from earlier studies that established the challenge of human resource-strategy incongruence (Anwar, 2021; Boudlaie, 2020; Volk, 2018). Therefore superior organisational performance could be attained by deploying strategic HR practices such as employee empowerment, involvement and managerial development (Aktar, 2018; Huselid, Jackson & Schuler, 1997; Saks, 2022).

Evidence from the urban local authorities showed that some line managers were poorly skilled and as such they struggled to cascade the strategy to lower-level employees, inadvertently resulting in poor buy-in. Sikora & Ferris (2014) in their study confirmed that factors such as capacity of line managers, organisational structure social interactions and political environment have an impact on turnover, productivity and job satisfaction, all of which have an impact on organisational performance

The study also revealed that the employees had limited knowledge of implementing strategy and they were failing to understand the performance management tool that the municipality was using. Further there is no link between talent attraction and retention as evidenced by a high turnover of new employees.

In fact further probing revealed that turnover is high on critical skills like engineers and low on general staff. The findings support the earlier contention that the success of human resource interventions in influencing organisational performance is dependent on the extent of horizontal integration of HR practices and their vertical integration with the organisational goals (Green, 2006; Iqbal, 2019; Lengnick-Hallet et al., 2009). The failure to retain new employees is a sign of a weak coherence between human resource activities thereby rendering the effort of attracting high skills futile.

Another major finding was that, trust issues were negatively impacting on organisational performance. This was reflected in the lack of confidence within employees, unending conflicts between: managers and councillors, councillors from different political parties, managers and employees. Previous empirical studies have concluded that lack of trust destroys engagement which negatively impacts on organisational performance (Aktar, 2018; Huselid, Jackson & Schuler, 1997; Saks, 2022). As a result there is limited buy-in of human resource initiatives by the key stakeholders such as the employees and policy makers.

The study further revealed a serious crisis of financial resources which is negatively affecting the implementation of human resource strategies thereby impinging on organisational performance. Earlier Murimoga and Murimoga (2020) noted that activities in urban local authorities are disturbed by excessive interference from politicians. This study revealed that some politicians have other interests that are not congruent with the organisational goals as a result they influence partisan distribution of resources to the detriment of effective strategy implementation, and ultimately performance. These findings corroborate evidence from earlier studies that asserted that political interference is a key factor in implementing strategies within local authorities (Heinelt, 2018; Joseph, 2019; İkizer, 2022; Rodgers, 2019).

The study also established that bureaucracy was very prevalent within the municipality, the impact thereof being protracted decision-making processes, leading to delays in strategy implementation. Earlier studies have however, recommended contemporary job designs that create organic structures, which supports decentralisation, autonomy and flexibility, enabling change agents to drive innovation and minimise bureaucracy (Asfahani, 2021; Misbah, 2020; Njoku, 2019).

The inflationary environment is negatively impacted on the municipality's capacity to meet operational costs and fund capital projects, leading to poor

organisational performance. The limited resource base incapacitated the municipality from attracting and retaining human capital with the requisite high-end skills for effective strategy implementation and superior organisational performance. It was also established through this study that there was growing donor fatigue as most donors either completely stopped or significantly reduced funding for training programs and other developmental projects within the local authorities due to the unfavorable political environment in the country. This, coupled with the hyper-inflation cited earlier, also had a negative bearing on organizational performance as it limited capacity to improve infrastructure, and acquire state of the art technology which has a bearing on the quality of service delivery. The findings support earlier views that linked the availability of resources to an improvement in organizational performance within organizations (Bryson, 2018; Lemarleni, 2017).

Knies, Boslie, Gould-Williams and Vandenabeele (2018) contend that the human resources capacities within local authorities should be strengthened by attracting the right people otherwise efforts such as learning and development, succession planning will not yield meaningful results. Resourcing the organization with the correct skills is a critical factor in the skills development process because poorly skilled employees are difficult to develop (Catrol et al, 2020; Llorca, 2016). This partly explains why other efforts such as employee training are not yielding results because under qualified staff are being seconded for training and they return without any significant improvement in performance. The failure to provide competitive rewards was a glaring weakness. Madhani (2020) advises that where the employer has limited capacity to pay the risk could be mitigated by relational rewards to enhance employee commitment. Further, skills turnover crisis can be stabilised by focusing on internal human resource development.

The results revealed glaring deficiencies caused by the absence of a working performance management system. As a result there is low manpower utilisation, and urban councils are keeping a lot of redundant staff that are not adding value to the organisation. Iqbal (2019) noted that a robust performance management system is necessary to ensure that all employees account for the time spent at work and justify their earnings. Similarly, introducing an effective performance management system would ensure improved utilisation of the workforce thereby improving organisational performance.

### **Study implications**

An unusual phenomenon emerged from the above discussions staff turnover is low on general staff within local authorities despite the number of dissatisfaction factors, that would ordinarily lead to high staff turnover in normal environments. The possible explanation could be that this development is characteristic of an inflationary environment where there is high unemployment and majority of potential employers have similar capacity challenges, forcing employees to remain with the same employer. The situation could result in poor human resource outputs due to the effects of presentism, lack of innovation and resistance to change. Hence it justifies the case for inward focus on human resource strategies such as employee engagement, internal capacity development and upskilling to improve the quality of HR outputs. The unusual finding, strengthens the importance of case studies as they focus on discovering solutions that are unique to a particular context. Rather than blindly adopting inter-economy or inter-industry HR practices without assessing their applicability in the prevailing context. More human resource dynamics could therefore be revealed by conducting similar comparative inter-economy studies. The argument further debunks the universalist view whose major shortcoming is the failure to embrace differences in context when applying HR practices (Colbet, 2004).

Further the study revealed a close link between HR strategic failures (poor skills repertoire, poor rewards, disengaged workforce) and poor organisational performance as evidenced by indicators such as high number complaints on poor service delivery. This can be easily be supported by the organisational behaviour perspective as proffered by Pfeffer (1994) where he argues that HR systems should be coherent to influence behaviour that supports the business strategy. However, in our interviews with managers it was revealed that maintaining coherence is difficult because the organisation faces various macro-level factors (hyperinflation, a hostile political environment) making it difficult to link the HR practices as planned. The macro-level factors form the social context within which the urban councils are operating. As an alternative, the RBV would disregard 'coherence' and place emphasis on the need to provide HR solutions that are unique, inimitable and difficult to copy (Wright et al. 1994), in order to address peculiar challenges faced in urban councils. Further, it was found that the bureaucratic nature of the urban council context delays decision making and disturbs the normal functioning of the organic structure. This negatively impact on the link between the human resource strategy and organisational performance. This finding further exalts the

RBV as it argues that the HR system should develop competencies that are flexible and relevant to suit the situation. Given the challenges found in this context (instability, inflation, low revenues) we believe that the human resource solution to improved organisational performance lies in the ability to develop unique and inimitable strategies rather than coherence. However the distinction between coherence and inimitability of HR systems in influencing organisation performance should be further explored.

### **Limitations and endorsements for future studies**

The interpretation of this study should be done with caution due to the noted limitations. The first limitation is the absence of statistical power that is strong in performing pair-wise interactions between human resource strategy and organisational performance. There is no clear evidence that explain a direct causality between HR strategy and organisational performance, as presupposed in the presentation of the study. Literature provided did not clarify whether it is the case that all formally established organisations are inclined towards implementing strategic HR systems (reverse causality). Or whether there is any existing link between organisational performance and HR strategies (genuine causality). Or whether some hidden organisation-specific factors have a ‘spurious correlation’ that is influencing the adoption of strategic HR systems and organisational performance. Therefore a similar study that is based on longitudinal data is required to confirm or disconfirm the presuppositions of direct and genuine causality underlying the findings from this study.

Additionally, the inquiry was confined to urban councils in Zimbabwe which limited the applicability of the findings to the single context. An inter-industry study could reveal other human resource dynamics that impact on organisational performance within organisations that are outside the urban council context.

Further, there is a possibility of high subjectivity as the data was obtained from participants who are demoralised due to polarised relations. There is therefore a high possibility that the participants could be keen to express their frustration by selling a narrative that is biased against their employer with hope that exposing their employer weaknesses could lead to their emancipation. This was clearly expressed by one participant when he said the following statement during interviews:

*“Thank you my brother for coming here, we want to say the story as it is, so that the whole world knows that there is labour slavery in Zimbabwe”.*

Therefore, quantitative studies that captures views from a big number of respondents with data collection that is administered independent of the researcher involvement could minimise bias.

### Conclusion

The study aimed to analyse the impact of human resource strategy on organisational performance in an empirical setting where the human resource is critical for the achievement of quality service delivery goals. The study was specific to a public sector context (Zimbabwean urban councils) which is characterised by polarised industrial relations. The study revealed important contributions that could assist to reshape the HR strategies for public sector organisations that are operating in troubled contexts. The major finding was that, it is difficult to predict human behaviour and maintain strict coherence of HR bundles when the environment is unstable and controlled by the macro-economic factors. The study thus exalted the importance of developing HR strategies that elevate specific human resource competencies that address the existing strategic gaps. Further, relying on relational rewards and maintaining an inclusive stakeholder consultation approach to increase HR policy acceptance and support. Thereby stimulating an improvement in organisational performance.

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## THE IMPACT OF EMPLOYER BRANDING ON ORGANIZATIONAL PERFORMANCE: A COMPREHENSIVE ANALYSIS

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**How to cite:** KULETO, V., & GURGU, E. (2023). "The Impact of Employer Branding on Organizational Performance: A Comprehensive Analysis". *Annals of Spiru Haret University. Economic Series*, 23(2), 303-310, doi: <https://doi.org/10.26458/23216>

### **Abstract:**

*This article investigates the relationship between employer branding and organisational performance, identifying the underlying mechanisms contributing to enhanced performance. Next, we analyse various aspects of employer branding, including its influence on talent attraction, employee engagement, retention, and overall productivity. Finally, we provide insights on how organisations can strengthen their employer brand to optimise performance.*

*In the competitive labour market, employer branding plays a crucial role in an organisation's ability to attract and retain top talent, directly influencing organisational performance. This article examines the relationship between employer branding and organisational performance by exploring its effects on talent attraction, employee engagement, retention, and overall productivity. It also offers insights on strengthening an organisation's employer brand to optimise performance.*

*Employer branding, an organisation's reputation as an employer, can provide a competitive advantage by creating a motivated, engaged, and productive workforce. A strong employer brand attracts high-quality candidates, reducing recruitment time and cost and ensuring a diverse and talented candidate pool. Organisational culture, work environment, compensation and benefits, growth opportunities, and corporate social responsibility contribute to developing a strong employer brand. Effective employer brand communication across multiple channels, such as corporate websites, social media, and job advertisements, is essential to attract top talent. Employer branding events and employee advocacy can further strengthen the brand. Assessing the employer brand's strength can help organisations identify areas of improvement and gauge their attractiveness in the job market.*

*Employee engagement and satisfaction are closely linked to an organisation's employer brand. Factors such as leadership, job design, recognition and rewards, work environment, and opportunities for growth and development contribute to employee engagement and satisfaction. Assessing employee engagement and satisfaction can provide valuable insights into their perceptions of the organisation and commitment to its goals. Engaged and satisfied employees exhibit higher performance, productivity, and innovation levels, leading to improved organisational outcomes.*

**Keywords:** *employer branding, organizational performance, talent attraction, employee engagement, employee retention*

**JEL Classification:** M31, J28

## **Introduction**

In today's highly competitive labour market, employer branding has gained significant attention among business leaders and human resource practitioners (Backhaus & Tikoo, 2004)[1]. Employer branding refers to an organisation's reputation as an employer, which influences its ability to attract and retain the best talent in the market (Ambler & Barrow, 1996)[2]. In addition, a strong employer brand can significantly impact organisational performance, as it helps companies secure a competitive advantage by creating a more motivated, engaged, and productive workforce (Srivastava & Bhatnagar, 2010)[3].

This article explores the relationship between employer branding and organisational performance by examining how a strong employer brand affects

critical aspects of an organisation's operations. Furthermore, we discuss how organisations can strategically leverage their employer brand to enhance performance and maintain a competitive edge in the market.

### **Talent Attraction and Acquisition**

A robust employer brand plays a crucial role in attracting the best talent in the market (Cable & Turban, 2001)[4]. Companies with strong employer brands are perceived as desirable workplaces, leading to increased applications from highly skilled candidates (Sullivan, 2004)[5]. This reduces the time and cost of recruitment and ensures that organisations have access to a diverse and talented pool of candidates, enabling them to select the best fit for their needs (Collins & Stevens, 2002)[6].

Several factors contribute to the development of a strong employer brand. These include organisational culture, work environment, compensation and benefits, growth opportunities, and corporate social responsibility (Backhaus & Tikoo, 2004)[7]. A positive organisational culture fosters employees' sense of belonging and loyalty (Schein, 2010)[8]. A supportive work environment, which encourages work-life balance and offers flexible working arrangements, can significantly impact employee satisfaction and the company's overall employer brand (Kossek et al., 2006)[9].

Moreover, competitive compensation and benefits packages can help organisations attract and retain top talent (Gerhart & Rynes, 2003)[10]. Similarly, providing ample opportunities for growth and development, such as training programs and clear career progression paths, can strengthen an organisation's employer brand by demonstrating its commitment to employee success (Noe et al., 2017)[11]. Finally, companies that actively engage in corporate social responsibility initiatives can enhance their employer brand by showcasing their commitment to ethical business practices and social causes (Bhattacharya et al., 2008)[12].

Effective communication of an employer brand is essential to attract top talent (Mosley, 2007)[13]. This can be achieved through multiple channels, such as corporate websites, social media, job advertisements, and employee testimonials (Sivertzen et al., 2013)[14]. In addition, ensuring that the organisation's values and culture are consistently communicated across all platforms is vital for building a strong and cohesive employer brand (Ambler & Barrow, 1996)[15].

Employer branding events, such as career fairs, networking events, and open days, can also provide organisations with a platform to interact with potential

candidates and showcase their unique selling points as an employer (Sullivan, 2004)[5]. Additionally, leveraging employee advocacy, wherein existing employees share their positive experiences with the organisation, can be a powerful tool for attracting talent through word-of-mouth and social media referrals (Edwards, 2010)[16].

Assessing the strength of an employer brand can help organisations identify areas of improvement and gauge their attractiveness in the job market (Barrow & Mosley, 2005)[17]. Quantitative metrics, such as time-to-fill open positions, cost-per-hire, and employee turnover rates, can provide valuable insights into the effectiveness of an organisation's employer branding efforts (Phillips & Gully, 2015)[18]. In addition, qualitative measures, such as employee satisfaction surveys and candidate feedback, can help organisations understand their employer brand's impact on employee engagement and candidate perceptions (Mandhanya & Shah, 2010)[19].

### **Employee Engagement and Satisfaction**

A positive employer brand fosters a sense of pride, loyalty, and belonging among employees, leading to higher engagement and satisfaction levels (Macey & Schneider, 2008)[7]. When employees feel valued and appreciated, they are more likely to be committed to the organisation's goals and contribute their best efforts to achieve them (Harter, Schmidt, & Hayes, 2002)[8]. This, in turn, results in enhanced productivity and overall organisational performance.

### **Key Drivers of Employee Engagement and Satisfaction**

Several factors contribute to employee engagement and satisfaction, which are closely linked to an organisation's employer brand. These include:

a. **Leadership:** Effective leadership is vital in fostering employee engagement and satisfaction. Leaders who communicate a clear vision, provide support and guidance and demonstrate trust and respect can significantly impact employee motivation and commitment (Bass & Riggio, 2006)[9].

b. **Job Design:** The design of an employee's role within the organisation, including the tasks they perform, the level of autonomy they possess, and the opportunities for skill utilisation, can affect their level of engagement and satisfaction (Hackman & Oldham, 1976)[10].

c. **Recognition and Rewards:** Employees receiving timely recognition and rewards for their efforts and achievements are more likely to feel valued and appreciated, increasing engagement and satisfaction (Gupta & Sharma, 2018)[11].

d. **Work Environment:** A positive and inclusive work environment, characterised by supportive colleagues, open communication, and a culture of collaboration, can boost employee engagement and satisfaction (Kristof-Brown et al., 2005)[12].

e. **Opportunities for Growth and Development:** Providing employees with opportunities for professional growth and development, such as training programs, mentorship, and career advancement, can enhance their engagement and satisfaction by demonstrating the organisation's commitment to their success (Noe et al., 2017)[13].

Organisations can assess employee engagement and satisfaction through various measurement tools like surveys, interviews, and focus groups. Employee satisfaction surveys, for instance, can provide valuable insights into employees' perceptions of their work experience, job satisfaction, and commitment to the organisation (Church et al., 2014)[14]. Additionally, regular performance evaluations and feedback sessions can help organisations identify areas of improvement and monitor employee engagement levels (Aguinis, 2009)[15].

Employee engagement and satisfaction have a significant impact on various organisational outcomes. For example, highly engaged and satisfied employees tend to exhibit higher levels of performance, productivity, and innovation (Gallup, 2021)[16]. Moreover, organisations with high levels of employee engagement and satisfaction typically experience lower employee turnover, reduced absenteeism, and fewer workplace accidents (Harter et al., 2002)[8].

Furthermore, a strong employer brand, leading to enhanced employee engagement and satisfaction, can also positively influence customer satisfaction, brand loyalty, and overall business performance (Heskett et al., 1997)[17].

### **Employee Retention**

A strong employer brand can significantly reduce turnover rates by creating a work environment where employees feel supported, respected, and motivated to stay with the company (Allen, Bryant, & Vardaman, 2010)[9]. This is especially important in industries with high levels of talent competition, as retaining top performers ensures continuity and consistency in the workforce, leading to long-term success and stability (Boushey & Glynn, 2012)[10].

Employee retention is crucial to maintain a company's success and competitiveness. In today's fast-paced business world, attracting and retaining top talent is more critical than ever. However, high turnover can lead to decreased productivity, increased recruitment costs, and the loss of valuable knowledge and

expertise. To address these challenges, organisations must create a strong employer brand providing opportunities for growth and development, fostering a positive work culture that encourages employees to stay.

Employee retention is essential for any organisation seeking long-term success and stability. By creating a strong employer brand, offering opportunities for growth and development, fostering a positive work culture, and promoting effective leadership, companies can significantly reduce turnover rates and retain top talent. This not only leads to improved productivity and performance but also helps organisations remain competitive and agile in an increasingly challenging business landscape.

### **Organizational Productivity and Performance**

The combined effect of improved talent attraction, employee engagement, and retention can increase organisational productivity and performance (Saks, 2006)[11]. When employees are engaged, committed, and aligned with the company's goals, they are likelier to work efficiently and effectively, driving the organisation towards success (Harter et al., 2002)[8].

Employee engagement is a crucial component of organisational productivity. Engaged employees exhibit higher enthusiasm, commitment, and motivation, increasing job satisfaction and performance. In addition, they are more likely to go the extra mile, contribute innovative ideas, and collaborate effectively with their peers. This increased engagement directly translates into improved productivity, as engaged employees work more efficiently and effectively to achieve the organisation's goals.

### **Building and Maintaining a Strong Employer Brand**

To optimise organisational performance through employer branding, companies must adopt a strategic approach that involves the following steps (Barrow & Mosley, 2005)[12]:

1. Define and communicate a clear employer value proposition (EVP) that highlights the unique benefits and opportunities provided by the organisation (Minchington, 2005)[13].
2. Align the employer brand with the company's overall mission, vision, and values, ensuring consistency across all internal and external communication channels (Moroko & Uncles, 2008)[14].
3. Foster a positive and inclusive work culture that supports employee growth, development, and well-being (Martin, 2005)[15].

Regularly gather feedback from employees and job seekers to understand their perceptions of the employer brand and make necessary improvements (Dabirian, Kietzmann, & Diba, 2017)[16].

Monitor and track employer branding metrics to evaluate the strategy's effectiveness and its impact on organisational performance (Wilden, Gudergan, & Lings, 2010)[17].

### Conclusion

Employer branding is an essential strategic tool that can significantly impact an organisation's ability to attract, engage, and retain the best talent in the market. By leveraging a solid employer brand, companies can enhance their overall performance and maintain a competitive edge in today's dynamic business environment. Therefore, organisations must invest in building and maintaining a strong employer brand that resonates with their target talent pool and aligns with their overarching business objectives.

In conclusion, employer branding is crucial in today's competitive business landscape. By understanding its impact on organisational performance, companies can strategically position themselves to attract and retain the best talent in the market. By adopting a comprehensive approach to employer branding, organisations can create a more motivated, engaged, and productive workforce, ultimately enhancing their overall performance and maintaining a competitive edge in the market. Building and maintaining a robust employer brand that resonates with the target talent pool and aligns with overarching business objectives is essential for organisations seeking long-term success.

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## THE EFFECTIVENESS OF HEALTH AND SAFETY PROGRAMMES IN ADDRESSING OCCUPATIONAL DISEASES AND INJURIES AT MANUFACTURING FACILITIES IN IBADAN SOUTHWEST LOCAL GOVERNMENT OF OYO STATE, NIGERIA

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**How to cite:** ADAGBOR, P.U., ADEBOLA, A.M., OJEABURU, B.L. & UKPERE, W.I. (2023). "The Effectiveness of Health and Safety Programmes in Addressing Occupational Diseases and Injuries at Manufacturing Facilities in Ibadan Southwest Local Government of Oyo State, Nigeria". *Annals of Spiru Haret University. Economic Series*, 23(2), 311-326, doi: <https://doi.org/10.26458/23217>

### **Abstract**

*People now spend many years of their adult lives at jobs where they are exposed to various hazardous chemicals, unsafe acts, and other diseases because of population growth and rapid technological advancements. Occupational diseases and injuries may arise because of risk factors in the workplace. This study examined health education as panacea to occupational diseases & injuries in Ibadan Southwest Local government of Oyo state, Nigeria. Descriptive survey research design was adopted, and the population comprises of all workers in Ibadan South-West Local government of Oyo state. The sample size was 250 respondents selected using simple and multi-stage sampling techniques to cover the forty-eight manufacturing companies in the*

*area. A self-structured questionnaire was employed for data, which were analyzed using frequencies, percentages, and chi-square at 0.05 alpha level. It was found that the prevalence rate of occupational diseases in the facility had ( $x^2=81.94$ ,  $p<0.05$ ), the extent to which occupational health and safety programs was promoted had ( $x^2=71.51$ ,  $p<0.05$ ), the effectiveness of occupational health and safety programs had ( $x^2=64.94$ ,  $p<0.05$ ). Based on the findings, health education is a panacea to occupational diseases and injuries in Ibadan South-West Local government of Oyo state, Nigeria. It was therefore recommended that Government should provide regular health training programs to review, promote, and maintain occupational health strategies. Manufacturing companies/facilities should employ adequate qualified health educators to enlighten the workers on the risks associated with occupational diseases and injuries.*

**Keywords:** *Health education, occupational diseases, workers, prevention*

**JEL Classification:** *113, 114, 118*

## **Introduction**

Diseases and certain health conditions cause by work in the workplaces are occupational in nature and these could include musculoskeletal disorders, cancer, post-traumatic stress, and exposure to certain industrial chemicals that could lead to either immediate or long-term effects. By and large, health debilitations arise because of some work exposure in the work environment. This can be referred to as occupational disease. Boschman (2017) asserted that Occupational debilitations arise because of certain activities in the work environment. Over 160 million workers are afflicted by workplace diseases according to International Labour Organization (ILO, 2019). The International Labour Organization (ILO 2019) reported that Workplace accidents and diseases are the leading causes of death in the work environment. The World Health Organization (2019) added that 6% of every case of illnesses and fatalities aid economic losses across the globe today.

Health Education has been regarded as a way of transferring information pertaining to health thereby leading to the needed solution as stated by Oshodin (2000). This was corroborated by Nwana (2000), who regarded Health Education as a way of convincing workers towards accepting good practices that could enhance their health conditions. Igbudu, (2007) asserted that Health Education is aimed at ameliorating health challenges, thereby leading to a better life through

information. Action plan of workers is geared towards advancing work environment disease management (WHO, 2007). It is of high necessity for countries to make sure that the well-being of workers is guaranteed (Zhang, 2013). Consequently, the treatment and prevention of disease cases play very key role in the plan. Looking at the stake of the employer, occupational health institutions, professionals in the field are considered reasonable when they can help with this (Zhang, 2013).

Improper diagnosis has been regarded as one of the reasons why hearing-loss in the work environment has not been properly controlled (Spreeuero, 2008). The effect of noise pollution, therefore, has been regarded as a serious health challenge with economic repercussion. In Norway for instance, it has been recorded that hearing challenges is one of the major workplace diseases that are mostly reported.

In the 18th century Industrial Revolution, technological upgrade contributed to some unhygienic work environment and living conditions. This of course has led to a considerable rise in workplace reported cases of accidents due to the exposure of new equipment and hazardous substances or materials. Certain diseases have emerged due these technological strides and example of these diseases can be seen as lung disease due to asbestos inhalation and hemangiosarcoma, which is caused by vinyl chloride monomer (Baxter, Aw, Cockcroft, Durrington, & Harrington, 2010; Kazantzis, 2014). Furthermore, MSDS disorders, psychosocial problems, and other mental health disorders (European Agency for Safety and Wellbeing at Work, (EU-OSHA) 2019) are among the new worries that have been known.

### **Most Recorded Occupational Diseases**

Environmental exposures that are considered as toxic have been associated with diseases of the organs. Rutstein, Berenberg, Chalmers, Child, Fishman, Perrin (1983) generated the idea of the patient safety cases that led to death, enduring harm, or astringent transitory harm to aid physicians in recognizing these connections. Work related conditions that are detected because of certain occupational exposures could be found in this catalog of workplace diseases and these could include, Occupational Lung Diseases, Neurological and Psychological Diseases etc. Musculoskeletal illnesses are a group of diseases that affect the joints and muscles. These disorders are common in the work environment than any other in environment (Leroyer 2006 & MOEL, 2014). When using a mouse or keyboard, the visual devices should be in such a way that the user's convenience is attained, especially the use of static pose can affect a musculoskeletal disorder, which is

common among office employees. It has been noticed that the most affected area of the body is the shoulder (Seo, 2007; Lee Han, Ahn, Hwang, & Kim, 2007). With the work done by Feyersteins (1997), a computerized workplace, excess workload, psychosocial tension, and behavioral responses covariates to a higher rate of musculoskeletal symptoms in the upper body. Khan et al. (2012), asserted that abysmally planned computer workstation is another factor that could cause both visual problem or musculoskeletal challenges. Furthermore, it was recorded from all the data that certain medical cases like headaches, back pain, weak muscles, and overall exhaustion have been shown to be on the increase considering the amount of time spent using machines (Nakazawa, Okubo, Suwazono, Kobayashi, Komine, Kato, & Nogawa, 2002). Among the people who used machines for longer period, it was noticed that wrist disorders were common (Jensen, 2003; Lassen, 2004; Kryger Andersen, Mikkelsen et al, 2003).

With the WHO report, a significant rise in the cases of work-related cancer could likely be expected in developing countries as work activities requiring materials of cancer origin have shifted to workplaces with little or no occupational safety and health regulations. The chemicals in the production of tires and dyes, chrysotile and antibiotics are examples of these processes. The use of these known carcinogens in the workplace is now severely restricted in some countries (Pandey, 2007). Due to the occupational exposure to these cancer-causing agents, the following cancer types are more frequent in the workplace: lung cancer, mesothelioma, bladder cancer, and leukemia (Siemiatycki, et al, 2004). Chronic respiratory diseases account for nearly 10% of all workplace diseases that have been registered in developed countries especially, the United Kingdom, and they tend to be much higher in rapidly industrializing developing countries like Nigeria (Cherry et al in Jeebhay, 2007). Death from lung cancer is closely linked to occupational complications, and employees that are laid bare to secondhand cigarette smoke at work are twofold to be expected to experience lung cancer (Pandey, 2007).

Many pharmaceutical employees and their allied industries are victims to certain diseases because of benzene contamination. These chemicals are used as solvent in productions. The World Health Organization recommends total avoidance to any cancer-causing agents in workplaces. Any cancer control program should be aimed at eradicating cancer causing agents within the work environment. To drastically reduce the rate of occupational cancer incident cases and deaths, WHO recommended the introduction of benzene-free organic solvent in place of

asbestos and the use of certain technologies that could transform harmful cancer agents to a harmless one. Following these recommendations, a statement discouraging the use of asbestos was passed (WHO, 2017). According to Szram (2012), the proportion derived from meta-analysis of epidemiological studies on asthma revealed one in ten in workplace exposures.

Employee who may not have had previous history of asthma could be stricken by it through exposure to occupational asthmatic causing agent and this is known as 'work-related asthma'. This work-related type of asthma can build up as a reaction to fluttering occupational activator. The essence of this high intolerance reaction occurs in a way that there is a dormant duration from the first subjection progression. Sensitivity to these agents of occupational asthma is a function of the exposure rate and underlining factors (Cullinan, Harris, Newman, 2000). Some of these work-related asthmas are induced by airborne proteins. The insusceptibility is distinguished by the release of certain antibodies that bind to the unwanted substances to eliminate them from the system. This work-related asthma can also arise from the inhalation of substances that can aggravate it, which can be better called substance-induced asthma (Brooks, et al., 2005).

Although, it is yet to be ascertained if less acute reactions to certain work-related irritants have leading effect, but it has been proven that exposure to household cleaning chemicals have been associated with asthmatic cases (Zock, Plana & Jarvis, 2007).

The right thing to do in a workplace is for the employer to create a conducive work environment for the employee, which will play a role in incident or illness reduction rate as stated in OSHA NO 85 of 1993 act. This was corroborated by Burton (2010) who maintains that a safe work frame is achievable and the way forward.

Health education is indispensable in accomplishing a healthy work environment (Bankole & Lawal, 2012). The review by Abiola, Nwogu, Ibrahim, Hassan (2012) on Health education intervention, was imperative to know that intervention programs significantly ameliorate the challenges posed to the non-positive practices of personal and workplace hygiene amongst respondents.

### **Problem Statement**

According to Markowitz (2002), death certificate records are important document to consult when developing a more current measures or approaches to managing workplace illnesses. Here, the number of deaths that could be attributed to occupation in each of the six major categories are calculated. The common

workplace health problems according to Omokhodion (2009) are inflammation of the conjunctiva of the eye, MSD (musculoskeletal disorders), chronic bronchitis, eczema, scabies, scales, and injuries due to accident. These proximal factors do not assure that an occupational disease will occur, but they do indicate that a worker may be at risk of developing one at some point in the future.

Noise-induced hearing and occupational hearing disability have been regarded as under diagnosed and under-controlled occupational conditions (Squireuro, 2008). Occupational diseases report in Nigeria are incomplete, owing to factories failure to register cases to the appropriate government department. To plan and take important instructional measures to prevent and mitigate the occurrence of workplace diseases, it is therefore essential to clarify the causal factors, investigate the problems in entirety, reason why cases should be reported and the need to look at how creating health educational awareness programs could aid the prevention of occupational diseases in manufacturing industries in Ibadan Southwest Local Government of Oyo State.

### **Objective of the Study**

The objectives of the study are to:

1. To determine the prevalent rate of occupational diseases in the facility.
2. To assess the impact of occupational safety and health programs on workers' health condition.
3. To evaluate the effectiveness of occupational safety and health programs in the facility.

### **Research questions**

This research will be answering the following questions.

1. What is the prevalent rate of occupational diseases in the facility?
2. To what extent can occupational safety and health programs promote workers health condition?
3. How effective is occupational safety and health programs in the facility?

### **Methodology**

A descriptive survey research design was employed because it involved an investigation where self-reported data was used, collected from the sample in explaining the population on the required variables. A multistage representation technique was employed to obtain sample from various manufacturing companies of interest. The simple random sampling techniques was used to select ten (10) manufacturing companies out of forty-eight (48) registered manufacturing companies in Ibadan Southwest local government of Oyo state, Nigeria. Twenty-

five (25) respondents were selected from each manufacturing companies giving rise to 250 respondents that were selected through stratified random sampling techniques.

The tool for gathering information for this study was a structured and self-developed questionnaire. The questionnaires were grouped to sections, namely A and B. section A dealt with demographic data of the respondents, while section B dealt with the variables for the study. Likert scale techniques was used to obtain responses. The four rating responses of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) was used. For section B, four points to one, will be allotted to positively worded items and the reverse for negatively worded items respectively. The questionnaires were administered using two research assistants who helped to cover the fifteen manufacturing companies in Ibadan Southwest local government of Oyo state, Nigeria. The administered questionnaires were collected on the spot to ensure high return rate and usability.

### Data Analysis

Descriptive statistics of frequency counts and percentages were employed to analyze the demographic data while chi-square at 0.05 level of significance were used to test the research questions.

### Results

#### SECTION A

**TABLE 1: THE RESPONDENTS Gender**

Gender	FREQUENCY	PERCENTAGE
Male	159	63.6
Female	91	36.4
Total	250	100

The table above shows that 159 respondents 63.6% were male, while 91 respondents 36.4% were female.

**TABLE 2: THE RESPONDENTS MARITAL INFORMATION**

MARITAL STATUS	FREQUENCY	PERCENTAGE
Single	102	40.8
Married	137	54.8
Divorced	11	4.4
Total	250	100

The table above shows that 102 respondents 40.8% were single, 137 respondents 54.8% were married, 11 respondents 4.4% were divorced.

**TABLE 3: THE RESPONDENTS AGE**

AGE	FREQUENCY	PERCENTAGE
20-30	96	38.4
31-40	52	20.8
41-50	84	33.6
51-60	18	7.2
<b>TOTAL</b>	<b>250</b>	<b>100</b>

The table above shows that 96 respondents 38.4% were between the ages of 20-30; 52 respondents 20.8% were between the ages of 31-40; 84 respondents 33.6% were between the ages of 41-50; 18 respondents 7.2% were between the ages of 51-60.

**TABLE 4: THE QUALIFICATION OF RESPONDENTS**

QUALIFICATION	FREQUENCY	PERCENTAGE
O' Level	50	20.0
ND	96	38.4
Bsc/HND	99	39.6
Msc/PhD	05	2.0
<b>Total</b>	<b>250</b>	<b>100</b>

The table above shows that 50 respondents 20% were O level holder; 96 respondents 38.4% were ND holders; 99 respondents 39.6% were BSC/HND holders; 5 respondents 2% were MSC/PHD holders.

**TABLE 5: THE RESPONDENTS WORK EXPERIENCE**

WORK EXPERIENCE	FREQUENCY	PERCENTAGE
10 Years	62	24.8
10-19 Years	118	47.2
20-29 Years	46	18.4
30 +Years	24	9.6
<b>Total</b>	<b>250</b>	<b>100</b>

The table above shows that 62 respondents 24.8% had 0-10 years working experience; 118 respondents 47.2% had 10-19 years working experience; 46 respondents 18.4% had 20-29 years working experience; and 24 respondents 9.6% had 30 years working experience.

**TABLE 6: LEVEL OF STAFF OF THE RESPONDENTS**

LEVEL OF STAFF	FREQUENCY	PERCENTAGE
Top Management	56	22.4
Middle Management	71	28.4
Lower Management	123	49.2
Total	250	100

The table above shows that 56 respondents 22.4% were top management; 71 respondents 28.8% were middle management, while 123 respondents 49.2% were lower management.

## RESEARCH QUESTIONS TESTING

**TABLE 7: What is the prevalent rate of occupational diseases in the facility?**

Responses	Frequency	Percentage	Expected	Degree of freedom	Cal. Value ( $\chi^2$ )	Table value
Very High	92	36.8%	62.5			
High	104	41.6%	62.5	3	81.94	7.82
Low	25	10%	62.5			
Very Low	29	11.6%	62.5			
Total	250	100%	250			

Table 7 reveals that out of 250 respondents, 41.6% of them confirmed that prevalent rate of occupational diseases in the facility is high, 36.8% of them also reported very high, 11.6% reported very low, while 10% of them confirmed low. This implies that majority of the respondents confirmed that prevalent rate of occupational diseases in the facility is high. The table further reveals that chi-square calculated value of 81.94 is greater than the table value of 7.82 with the degree of freedom (df) of 3 at 0.05 alpha level of significance shows that the prevalence of occupational diseases in the facility is significant.

**Table 8:** To what extent can occupational health and safety programs promote workers health conditions?

Responses	Frequency	Percentages	Expected	Degree of freedom	Cal. Value ( $x^2$ )	Table value
Very much	<b>84</b>	<b>33.6%</b>	<b>62.5</b>			
Moderately	<b>106</b>	<b>42.4%</b>	<b>62.5</b>	<b>3</b>	<b>71.51</b>	<b>7.82</b>
Slightly	<b>31</b>	<b>12.4%</b>	<b>62.5</b>			
Not at all	<b>29</b>	<b>11.6%</b>	<b>62.5</b>			
<b>Total</b>	<b>250</b>	<b>100%</b>	<b>250</b>			

Table 8 reveals that out of 250 respondents, 42.4% of them agreed that occupational health and safety programs promote workers health conditions moderately, 33.6% of them confirmed that to a very much extent, 12.4% of them reported slightly, while 11.6% of them reported not at all. This indicates that occupational health and safety programs promote workers health conditions moderately. The table further reveals that calculated chi-square value of 71.51 is greater than the table value of 7.82 with the degree of freedom (df) 3 at 0.05 alpha level of significance, which indicates that there is a significant association between occupational health and safety programs promoting workers health conditions.

**Table 9:** How effective is occupational health and safety programs in the facility?

Responses	Frequency	Percentages	Expected	Degree of freedom	Cal. value ( $x^2$ )	Table value
Highly effective	<b>81</b>	<b>32.4%</b>	<b>62.5</b>			
Moderately effective	<b>105</b>	<b>42%</b>	<b>62.5</b>	<b>3</b>	<b>64.94</b>	<b>7.82</b>
Rarely Effective	<b>37</b>	<b>14.8%</b>	<b>62.5</b>			
Never effective	<b>27</b>	<b>10.8%</b>	<b>62.5</b>			
<b>Total</b>	<b>250</b>	<b>100%</b>	<b>250</b>			

Table 9 shows that out of 250 respondents, 42% of them confirmed that occupational health and safety programs in the facility is moderately effective, 32.4% of them reported that its highly effective, 14.8% of them reported its rarely effective while 10.8% of them reported that its never effective. By implication majority of the respondents confirmed that occupational health and safety programs in the facility is moderately effective .The table further reveals that calculated chi-square value is 64.94 is greater than the table value 7.82 with the degree of freedom (df) 3 at 0.05 alpha level of significance indicates that there is a significant association between occupational health and safety programs in the facility.

### **Discussion of Findings**

Based on the results presented in Table 7, it appears that a substantial proportion of respondents believe that the prevalent rate of occupational diseases in the facility is high or very high. These findings are consistent with previous research that has identified occupational diseases as a significant and widespread problem in many workplaces. A study by Bener et al. (2015) found that the prevalence of occupational diseases in the United Arab Emirates was high, with musculoskeletal disorders and respiratory disorders being the most commonly reported conditions. Similarly, a study by Akanbi et al. (2019) found that occupational injuries and diseases were prevalent among workers in the Nigerian construction industry, with inadequate safety measures and poor working conditions identified as contributing factors. The high prevalence of occupational diseases in the facility reported by the respondents in the present study is a cause for concern, as it suggests that workers in this facility may be at risk of developing serious health problems as a result of their work. This highlights the importance of implementing effective occupational health and safety programs that can help to prevent and manage occupational diseases.

The results presented in Table 8 suggest that a majority of the respondents believe that occupational health and safety programs promote workers' health conditions to a moderate or very much extent. These findings are in line with previous research that has identified occupational health and safety programs as important mechanisms for promoting and protecting worker health. Several studies have investigated the impact of occupational health and safety programs on worker health outcomes. For example, a systematic review by Al-Dubai et al. (2016) found that occupational health and safety interventions can improve workers' health and well-being, reduce work-related injuries and illnesses, and enhance productivity.

Similarly, a study by Kim et al. (2019) found that participation in occupational health and safety programs was associated with a lower risk of work-related musculoskeletal disorders among Korean workers.

The moderate level of agreement among respondents in the present study regarding the extent to which occupational health and safety programs promote workers' health conditions may reflect the fact that these programs are not always effective in achieving their intended goals. Factors such as inadequate funding, insufficient training, and poor program design and implementation can all contribute to the ineffectiveness of occupational health and safety programs (Lamontagne et al., 2017).

The findings from Table 9 reveal that the majority of respondents perceived occupational health and safety programs in the facility to be moderately effective. This is consistent with previous research that has shown that effective occupational health and safety programs can improve worker health and well-being (Loh, 2015). Occupational health and safety programs are designed to prevent work-related injuries and illnesses, reduce absenteeism, and improve worker productivity (Azizi et al., 2017). Thus, a moderately effective program may still yield positive benefits for the workers and the organization.

Similarly, the high percentage of respondents who reported that the program is highly effective is encouraging and suggests that the facility has implemented effective measures to promote worker health and safety. This is consistent with previous research that has shown that effective occupational health and safety programs can lead to a reduction in work-related injuries and illnesses (Kim et al., 2019). However, the percentage of respondents who reported that the program is rarely or never effective is concerning. This may indicate a lack of awareness or understanding of the program among workers, or a failure on the part of the organization to implement effective measures. Further investigation is needed to determine the reasons for this perception and to identify areas for improvement. The significant association between occupational health and safety programs in the facility, as indicated by the chi-square analysis, underscores the importance of effective occupational health and safety programs in promoting worker health and safety. This finding is consistent with previous research that has shown a positive relationship between effective occupational health and safety programs and worker health and safety outcomes (Kiani et al., 2021).

### **Conclusion and Recommendations**

This study was geared towards examining the effectiveness of health and safety programmes in addressing occupational diseases and injuries at manufacturing facilities in Ibadan Southwest local government of Oyo state, Nigeria. Based on the findings obtained from this study, it is evident that occupational health and safety programs have a significant impact on worker health conditions and safety in the facility. Most respondents perceived the prevalence rate of occupational diseases to be high, indicating the need for effective occupational health and safety programs. Additionally, a majority of respondents reported that the occupational health and safety programs at the facilities are moderately effective, and there is a significant association between the programs and worker health and safety outcomes.

Given these findings, it is recommended that the facility should prioritize the implementation of measures aimed at reducing the prevalence of occupational diseases and promoting worker health and safety. Regular training and education on health and safety practices can help to ensure that workers are equipped with the necessary knowledge and skills to identify and address potential hazards in the workplace. Risk assessments can also help to identify areas of potential risk and enable the development of strategies to mitigate or eliminate those risks.

In addition to these measures, it is important for the facility to promote a culture of safety that emphasizes the importance of health and safety for all workers. This can involve creating an environment where workers feel comfortable reporting safety concerns and taking an active role in promoting a safe and healthy work environment.

Regular evaluations of occupational health and safety programs can help to ensure that they remain effective and relevant. Gathering feedback from workers and stakeholders can provide valuable insight into the strengths and weaknesses of the program, while regular audits can help to identify areas for improvement. Monitoring key performance indicators related to worker health and safety outcomes can also help to identify areas where improvements are needed and ensure that the program is achieving its intended objectives.

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## CONDITIONS AND FACTORS AFFECTING POSITIVE INVESTMENT CLIMATE IN THE KYRGYZ REPUBLIC

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**How to cite:** KAPAKOV, B. (2023). “Conditions and Factors Affecting Positive Investment Climate in the Kyrgyz Republic”. *Annals of Spiru Haret University. Economic Series*, 23(2), 327-339, doi: <https://doi.org/10.26458/23218>

**Abstract:** *In the context of globalization, the investment attractiveness of a country is essential for the economy of the country. The purpose of this paper is to explore the factors affecting the inflow of foreign direct investment in the example of the Kyrgyz Republic as a member of the Eurasian Economic Union (EAEU). The paper introduces the ways and changes in the country's investment activities and explains how the country attempts to attract investors and improve state legislation, ideology, and economic policy to create a favorable investment climate. The investment climate discussed in this paper as a set of factors plays a decisive role in attracting investment to the country's economy. In addition, this paper identifies the factors determining investment climate that depend on political stability, the transparent legal framework, the tax coefficient, and the attractive benefits, and concludes by emphasizing that all of these factors create a favorable climate for investors and help the Kyrgyz Republic to form a positive investment image.*

**Keywords:** *the Kyrgyz Republic, investment attractiveness, investment climate, state investment policy.*

**JEL Classification:** *F21, F43, C23, O47, P45*

## Introduction

One of the distinguishing features of the modern world economy is the intensive development of international economic relations. The latter manifests itself in the globalization of economic life, in deepening financial and economic ties, the international division of labor, increasing openness of national economies, and exchange between different countries' types of resources, including investment. Implementation of economic transformations in the Kyrgyz Republic is closely associated with the attraction and use of foreign investment, which is especially important in conditions of acute underfunding of the national economy. In addition to financial resources, which makes it possible to overcome the contradiction to some extent between the continuous growth of demand for investment resources and limited in the national economy, the foreign investment provides the Kyrgyz Republic with intangible values, such as managerial experience, innovations, and scientific and technical developments. Foreign capital also contributes to the process of modernization of national production, as well as increased competition between companies, which determines the increase in investment activities.

In the context of globalization, the investment attractiveness of a country is an essential part of its economy. That is why countries around the world are trying to improve their legislation, ideology, and economic policy to create a favorable investment climate and attract investors. Investment attractiveness consists of many factors and is quite subjective. Often, each investor makes decisions based on their preferences for various indicators of the country's economic activity. One of the main factors in making decisions by investors is the country's investment climate. Some countries have already formed a positive investment image. The development of any country's economy is closely connected with investment resources. Studies show investment activity refers to the investment and implementation of practical actions for profit and (or) achieving another beneficial effect [Bogatyrev, 1999].

It should be noted that the investment activity includes two main stages. The content of the first stage - "investment of resources - investment" - is an investment activity. The second stage is "investment of funds - the result of investment" which involves the payback of the costs incurred and the receipt of income as a result of the use of investments. It characterizes the relationship and interdependence of the two necessary elements of any type of economic activity: costs and returns [Kiseleva, *et al.*, 2005].

In an attempt to create a country's positive investment image, we attempted to classify the following main factors that include the ways and changes in the country's investment activities. We consider that these factors identify the ways to attract investors and improve state legislation, ideology, and economic policy to create a favorable investment climate:

- the development and implementation of investment activities by the current liberal legislation laws;
- the visa-free regime;
- the accession of Kyrgyzstan to the Eurasian Economic Union (EAEU);
- liberal legal framework for protecting the rights of foreign investors.

### Literature review

According to the Law of the Kyrgyz Republic “On Investments in the Kyrgyz Republic” investment is defined as: "Investments are tangible and intangible investments of all types of assets owned or controlled directly or indirectly by an investor in objects of economic activity to generate profit and (or ) achieving another beneficial effect" [The Law of the Kyrgyz Republic, 2012]. Investment attractiveness is defined by Aliev A. and Nagdiev S. who proposed seven ways of rating the investment climate assessment, [Aliev & Nagdiev, 2004, p.122–123], which shows how to build an investment attractiveness rating, which took into account indicators in the following seven areas:

- macroeconomic stability and development;
- ease of doing business in the country;
- inflow investment in the country;
- innovative development;
- management quality,
- the level of compliance with the law, protection of property rights;
- risk interaction with the country;
- the quality of the banking system, accessibility of loans [Aliev & Nagdiev, 2004];

The final indicator of investment attractiveness (rating) is the sum of weighted, taking into account the degree of importance of commensurate factors-indicators.

The following analysis is given from the practical point of view of [Kiseleva, *et al.*, 2005], using an econometric approach to assessing investment attractiveness countries. The use of the econometric models allows, based on available statistical data, to obtain a quantitative assessment and determine the factors that contribute

to an increase in investment country attractiveness. It identifies 22 factors influencing the investment attractiveness of a country. Indicators for calculating the rating of investment attractiveness of countries:

- Gross domestic product (GDP)
- GDP per capita PPP
- inflation rate
- Population growth rate
- Unemployment rate
- The average number of days to open a business
- The average number of days to pay taxes
- Share of taxes in government revenue
- Foreign direct investment (FDI)
- Share of FDI in GDP
- Portfolio investment
- Global Innovation Index
- Science intensity of GDP
- Percentage of the population with Internet access
- economic freedom
- Corruption index
- Quality of public administration
- Shareholder protection
- Share of public debt in GDP
- Refinancing rate
- Percentage of adults using credit
- Credit availability [Kiseleva, *et al.*, 2005].

The paper uses both qualitative and quantitative methods of research of data from studies by scholars and other authors, law regulations, reports of international organizations, and the database of the World Bank to assess the investment climate in the country. They are based on various economic, political, and financial indicators, according to the totality of which a country is assigned an investment rating. In addition, for assessing the attractiveness of the country, econometric and factorial approaches are used. The use of econometric models allows, based on available statistical data, to obtain a quantitative assessment and determine the factors that contribute to an increase in investment country attractiveness [Kiseleva, *et al.*, 2005]. In addition, this paper summarizes the results of the analysis of the main approaches to examining the investment attractiveness of the

country and concludes that the most productive and meaningful is the factorial approach, in which the four main factors are identified, determining the investment attraction.

Preliminary studies show that one of the priority areas of economic policy of the Government of the Kyrgyz Republic (KR) and mutually beneficial economic cooperation with other states is the attraction of investments in the country's economy. It should be noted that the scope of legal regulation is a key non-economic resource of investment activity, having a significant impact on the degree of risk for investors. This relationship allows us to talk about the legal risks of this activity. According to the scientist A.G. Bogatyrev, legal regulation of investment relations is divided into two parts: national legal and international legal [Bogatyrev, 1992]. The essence of legal regulation consists in stimulating investment activities, which is to provide favorable conditions and guarantees to participants in the investment process, in creating conditions for civilized competition in the markets of labor, capital, and goods. Among the legal acts directly or indirectly regulating investment activity in the Kyrgyz Republic, including the Civil Code of the Kyrgyz Republic, the Tax Code of the Kyrgyz Republic, the Laws of the Kyrgyz Republic "On investments in the Kyrgyz Republic", "On Investment Funds", "On Joint Stock Companies", "On public-private partnership in the Kyrgyz Republic", "On Free Economic Zones in the Kyrgyz Republic", "On the securities market", as well as several resolutions and orders of the Government of the Kyrgyz Republic, in particular, the legal regulation laws of the Kyrgyz Republic, such as, "On Investment Promotion and Protection Agency of the Kyrgyz Republic", "On the activities of the State Service for Regulation and Supervision of financial market under the Government of the Kyrgyz Republic", etc.

### **Legal Framework for Implementation of Foreign Investments in The Kyrgyz Republic**

The first factor in attracting investors is the development and implementation of investment projects by the current liberal legislation laws. This type of investment activity has a rationale, and economic feasibility, in which the volume and timing of capital investments, including the necessary design and estimate documentation are discussed and developed by the legislation law of the Kyrgyz Republic [The Law of the Kyrgyz Republic, 2012]. Investors investing in priority sectors of the economy and social sphere, conducting work in certain territories of the republic, may be granted benefits by state development programs (projects).

The Kyrgyz Republic is now in the process of creating its image, and every year we have new, progressive changes made to improve investment attractiveness. Changes are given to the important document for investment climate is the Law of the Kyrgyz Republic "On Investments in the Kyrgyz Republic" which is the most liberal legislation, and in which improvements are also being made in terms of innovation [The Law of the Kyrgyz Republic, 2012].

According to the news of the Ministry of Economy and Commerce of the Kyrgyz Republic, the Kyrgyz Republic has concluded 33 bilateral agreements on the promotion and protection of investments with such countries as Austria, Great Britain, Germany, India, Kazakhstan, Qatar, Turkey, China, Kuwait, Russia, USA, Switzerland, South Korea, etc. [World Bank in the Kyrgyz Republic]. The Kyrgyz Republic, like other Central Asian countries of the post-Soviet space, is an example of an economy that is still in the transition period; however, in some of the post-soviet countries, for instance, Kazakhstan has already formed a positive investment image.

The second factor is the visa-free regime. It is necessary to note that the Kyrgyz Republic has introduced a visa-free regime for up to 60 days for citizens of 61 states to attract tourists and increase investment opportunities.

The third factor is the accession of Kyrgyzstan to the Eurasian Economic Union (EAEU) [4] in which, EAEU opened up wide opportunities for economic development and attraction investments to the republic. With the accession to the EAEU, barriers to the movement of goods, services, and capital to the markets of EAEU's five member countries with a population of more than 180 million people create a favorable climate for Kyrgyzstan and its partners. At present, the EAEU is 3.2% of the world GDP, one of the largest world markets or 2.5% of the world's population, and the largest territory in the world (more than 20 million sq. km) [4].

The fourth factor is the legal framework. The Kyrgyz Republic has a relatively liberal legal framework for protecting the rights of foreign investors. The main principles of the state investment policy aimed at improving the investment climate in the republic and stimulating the attraction of domestic and foreign investments are established by the Law "On Investments in the Kyrgyz Republic", which also regulates relations between the state and the investor [The Law of the Kyrgyz Republic, 2012]. The legislation provides for the non-interference of the state in the economic activities of investors, and the recognition of their interests, except for cases provided for by legal acts. At the same time, officials of the Kyrgyz Republic

who do not comply with the requirements are liable by the law [The Law of the Kyrgyz Republic, 2012].

Thus, we may note that the Kyrgyz Republic provides foreign citizens making investments in its territory with the national regime of economic activity applicable to legal entities and individuals of the Kyrgyz Republic. At the same time, foreign investors have the right to free movement throughout the country, except for territories, the conditions, and the procedure for staying on which are determined by the relevant legislative acts of the Kyrgyz Republic [2]. In recent years, according to the Law of the Kyrgyz Republic “On Investments in the Kyrgyz Republic” [The Law of the Kyrgyz Republic, 2012]., the Government of the Kyrgyz Republic has carried out the following reforms to attract investment to the country:

- to guarantee and protect investments, a stabilization regime was introduced for foreign investors, which allows the investor to choose the most favorable regulatory regime in the event of amendments and additions to the regulatory legal acts of the Kyrgyz Republic governing tax and non-tax payments. According to the Law of the Kyrgyz Republic "On Investments in the Kyrgyz Republic", the investor, as well as the invested enterprise, within ten years from the date of signing the stabilization agreement, have the right to choose the most favorable conditions for them to pay taxes, including value-added tax, but excluding other indirect taxes, and non-tax payments (except for payments for services rendered by state bodies) in the manner established by the legislation of the Kyrgyz Republic;

- the Government has established the Business Ombudsman Institute, whose activities are aimed at ensuring the protection of the legitimate interests of entrepreneurs and investors before state and local bodies and officials;

- the Agency for the Protection and Promotion of Investments of the Kyrgyz Republic was also established, which is the body responsible for supporting and protecting investments;

- to stimulate foreign investment in preferential industrial enterprises and determine preferential settlements, the Law of the Kyrgyz Republic “On Amendments to the Tax Code of the Kyrgyz Republic” and the Decree of the Government of the Kyrgyz Republic dated April 24, 2019 [6], which provide conditions for newly created enterprises (from January 1, 2019) based on concluded investment agreements for exemption from property tax, land tax, income tax and sales tax in within 5 years [Sultanov, 2019];

Here we give a brief review of the changes “On Investments in the Kyrgyz Republic” [The Law of the Kyrgyz Republic, 2012]. By the Law of the Kyrgyz Republic "On Investments in the Kyrgyz Republic", the following conditions and guarantees are provided by investment legislation of the Kyrgyz Republic:

- for foreign investors making investments in the territory of the Kyrgyz Republic, the national regime of economic activity applied to legal entities and individuals of the Kyrgyz Republic;

Foreign investors, their representatives, and foreign employees who are in the Kyrgyz Republic in connection with investment activities have the right to free movement throughout the territory of the Kyrgyz Republic, except for territories, the conditions, and procedure for staying in which are determined by the relevant legislation of the Kyrgyz Republic;

- equal investment rights for local and foreign investors regardless of citizenship, nationality, language, gender, race, religion, place of their economic activity, as well as the country of origin of investors or investments, except as otherwise provided by the legislation of the Kyrgyz Republic;

- the Kyrgyz Republic, represented by authorized state bodies, officials, and local self-government bodies, refrains from interfering in economic activity, the rights and legally recognized interests of investors, except as otherwise provided by the legislation of the Kyrgyz Republic;

- investors making investments in priority sectors of the economy and the social sphere, as well as in certain territories of the republic, by state development programs (projects) may be provided with investment benefits by the legislation of the Kyrgyz Republic;

- investments can be made in any form in objects and types of activities not prohibited by the legislation of the Kyrgyz Republic, including in licensed types of activities by the Law of the Kyrgyz Republic "On the licensing system in the Kyrgyz Republic";

- guarantees for the export or repatriation of investments, property, and information outside the Kyrgyz Republic;

- guarantees of protection against expropriation of investments and compensation for losses to investors. By paragraph 5 of Article 6 of the above Law of the Kyrgyz Republic, investors whose investments in the Kyrgyz Republic were damaged as a result of war or another armed conflict, revolution, state of emergency, civil strife, or other similar circumstances are provided with legal

status and conditions no less favorable, than applied to legal entities and individuals of the Kyrgyz Republic;

-guarantees for the use of income; freedom of monetary transactions; free access to open information; economic independence of investors and recognition of the rights of investors;

In the Kyrgyz Republic, the state executive body for the implementation of state policy in the field of investments is the Agency for the Promotion and Protection of Investments of the Kyrgyz Republic [Investment portal of the Kyrgyz Republic].

According to the Law of the Kyrgyz Republic, the Agency provides communication between state bodies and investors, so, the following activities are done for promoting investment: - prepares and distributes information about investment opportunities and conditions; - advises potential investors on legal, economic and other issues regarding specific activities; - provides investors with the necessary information related to the licensing procedure for carrying out activities, and provides appropriate assistance; - actively helps in solving the problems of existing and potential investors, including assistance and protection if they encounter illegal or obstructive actions of state and other bodies; - develops proposals for government agencies to improve the investment climate in the Kyrgyz Republic; - carries out an authorized representation of the Kyrgyz Republic and, within its competence, has the right to participate in international negotiations or consultations on investments; - takes measures aimed at fulfilling the obligations of the Kyrgyz Republic arising from international treaties, conducts activities for international cooperation, organizes the study and use of foreign experience; - advises state bodies and officials on existing or planned investment policies; organizes and conducts, together with interested ministries and departments, a competition of investment projects and programs; - performs other functions aimed at promoting investments, supporting and protecting investors in the Kyrgyz Republic [Investment portal of the Kyrgyz Republic].

According to the National Statistical Committee of the Kyrgyz Republic the following Table no. 1, the structure of foreign investments entrance (thousand dollars USA) shows the increasing percentage of foreign investment in 2021 and 2022:

**Table no. 1. The structure of foreign investments entrance (thousand dollars USA)**

<i>Items</i>	<i>2021</i>	<i>2022</i>
Direct foreign investments	537,553.8	1,006,091.2
Portfolio investments	27.1	930.3
Other	6,363,670.7	5,289,015.8
Grants, technical assistance	25,530.2	35,318.7

*Source:* National Statistical Committee of The Kyrgyz Republic  
<http://www.stat.kg/en/statistics/investicii/>

In addition, by regulations of the Law, investors on an equal basis have the right to use the services for the development and protection of their interests, which are provided by the Investment Promotion Agency [Investment portal of the Kyrgyz Republic].

Investment-attractive countries are countries in which the private sector, carries out reforms in the field of innovation development. Kyrgyzstan should take examples from countries that are adjusting their social and economic policies. All this is inherent in Kyrgyzstan's development strategy. The country is on the path to improving its investment and innovative potential. However, due to low-quality management and the lack of a sufficient competitive level innovative development country is intensively fighting poverty and pursuing a policy of attraction of resources, which may attract investors in the future. When the country lacks stability, the investment climate is deteriorating sharply. In order to achieve the desired result in the development of the investment attractiveness of the country, all organizations should follow the principles that were mentioned in the article by Negulescu, O. H. (2016): "a company based on knowledge is characterized by the following features that bring success: strategic resources: highly qualified employees, know-how, knowledge, information, intellectual ownership; strategic competencies: high level of technology, innovation, market opportunities for customers, investment in knowledge and people, dissemination of knowledge and use of competitive advantages of capitalization" [Negulescu, 2016].

The results obtained in the work revealed the main "weak points" of Kyrgyzstan. Researching relationships between indicators led to a conclusion about what should be emphasized in determining the direction of country policy. As a rule, an experienced, conscientious institutional investor receives information about how strictly the laws work in the country, and how convenient it is to do business

in this country, based on international reports and ratings. One of the most credible ratings is the World Bank's Doing Business rating. Currently, Kyrgyzstan ranks 80th in this rating [World Bank in the Kyrgyz Republic]. This rating consists of the following 10 evaluation criteria:

- Starting a business (42)
- Possibility of obtaining a building permit (90)
- Electrical connection (143)
- Property registration (7)
- Getting a loan (15)
- Protection of minority investors (128)
- Paying taxes (117)
- Cross-border trade (89)
- Enforcement of contracts (134)
- Conflict resolution (78)

[Source: World Bank in the Kyrgyz Republic, 2021].

As can be seen above, the criteria require activities in different directions, in addition, different public services are responsible for each direction.

The Kyrgyz Republic, like most other countries, has fully experienced the consequences of the global economic crisis. Nevertheless, the state's economy is in the process of recovering after the crisis and showed relatively stable growth. Estimated analysts, according to the results of 2022 and 2021, its GDP indicators will grow by 7.74 and 8.54 respectively [Source: World Bank in the Kyrgyz Republic].

**Table no. 2. The macroeconomic indicators of the Kyrgyz Republic in January and October 2022**

Population <i>million people (based on the data of the 2022 census.)</i>	<b>7.0</b>
Gross domestic product <i>by January-October 2021, in %</i>	<b>107.0%</b>
Agriculture <i>by January-October 2021, in %</i>	<b>106.7%</b>
Fixed asset formation	<b>101.0%</b>
Manufacturing <i>by January-October 2021, in %</i>	<b>114.3%</b>
Inflation <i>by December 2021</i>	<b>12.1%</b>
Export <i>by January-September 2021, in %</i>	<b>61.2%</b>
Import <i>by January-September 2021, in %</i>	<b>178.8%</b>

Source: National Statistical Committee of The Kyrgyz Republic.

Undoubtedly, the country's economy was not without losses, but in general, the country is managing to position itself as a country of good opportunities, attractive to investors. Above we used data from the macroeconomic indicators of the Kyrgyz Republic in January and October 2022#National Statistical Committee of The Kyrgyz Republic.

### **Conclusion**

Overall, we conclude that the Kyrgyz Republic is in an attempt to create a positive investment image and works out reforms for building an attractive country for foreign investors. If the state can effectively use all the resources, that the country has to offer and continue to diversify investments, the future of the Kyrgyz Republic remains to be promising. Thus, summarizing the results of the main approaches to examining the investment attractiveness of the country, we believe that the most productive and meaningful is the factorial approach, in which the main factors are identified, determining the investment attraction.

Despite existing investments from the US, Canada, Europe, Turkey, Russia, and China, the overall level of investment in the republic is still insufficient. In this regard, the stimulation of foreign direct investment has become a priority of economic policy, and therefore we recommend the public and private sectors have joined forces to attract additional investors.

Thus, the issue of attracting foreign investment in our economy and creating favorable conditions for investors in the Kyrgyz Republic remains one of the main priority tasks set before our state. Existing measures to improve the institutional environment of the national economy during the implementation of economic reforms in the Kyrgyz Republic will overcome the currently existing "barrier of dependence" on donor countries so that the problem of attracting foreign investment forever has been exhausted with the best outcome for the Kyrgyz Republic.

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## ECONOMIC INVESTIGATION OF LAGRANGE MULTIPLIER IF COST OF INPUTS AND BUDGET SIZE OF A FIRM INCREASE: A PROFIT MAXIMIZATION ENDEAVOR

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**How to cite:** Mohajan, D., & Mohajan, H. K. (2023). Economic Investigation of Lagrange Multiplier if Cost of Inputs and Budget Size of a Firm Increase: A Profit Maximization Endeavor. *Annals of Spiru Haret University. Economic Series*, 23(2), 340-364, doi: <https://doi.org/10.26458/23219>

**Abstract:** *In this study method of Lagrange multiplier is considered to investigate profit maximization policy. In the twenty first century global economy faces serious complexities. Sensitivity analysis of economic firms becomes essential part of sustainable economic environment. The method of Lagrange multiplier is a very useful and powerful technique in multivariable calculus that is applied in economic models to obtain higher dimensional unconstrained problem from the lower dimensional constrained problems. This paper proceeds with Cobb-Douglas production function, where  $6 \times 6$  bordered Hessian and  $6 \times 6$  Jacobian are used to examine sensitivity analysis efficiently and elaborately.*

**Keywords:** *budget, inputs, Lagrange multiplier, profit maximization*

**JEL Classification:** C51, C52, , C53, C61, C67, D21, D24, H32, I31

## 1. Introduction

Mathematical modeling is a highly abstract discipline that covers many fields of social sciences, such as economics, sociology, psychology, political science, etc. [Carter, 2001]. It is widely used to solve optimization problems and many other problems of welfare economics [Samuelson, 1947]. In economics it makes relationships among prices, production, employment, saving, investment, etc. [Zheng & Liu, 2022].

Every firm wants to earn the maximum profit with minimum cost [Eaton & Lipsey, 1975; Dixit, 1990]. To obtain maximum profit, an organization must be very sincere in every step of its operation, such as in production, financial balance, transportation, total management system, etc. [Mohajan & Mohajan, 2022a]. In this study we have used Cobb-Douglas production function as our profit function [Cobb & Douglas, 1928]. Lagrange multipliers method is a very useful and powerful practice in multivariable calculus. We have used this method as a device for transforming a constrained problem to a higher dimensional unconstrained problem [Baxley & Moorhouse, 1984]. In this study, we have worked with the  $6 \times 6$  bordered Hessian matrix and  $6 \times 6$  Jacobian matrix [Mohajan & Mohajan, 2022e,f].

## 2. Literature Review

The literature review is an introductory section of a scholarly research that tries to designate the contributions of other scholars in the same research field [Polit & Hungler, 2013]. Two US distinguish professors; mathematician John V. Baxley and economist John C. Moorhouse have discussed the profit maximization method subject to a budget constraint [Baxley & Moorhouse, 1984]. Mathematician Jamal Nazrul Islam and his coworkers have discussed profit maximization problem by providing reasonable interpretation of the Lagrange multiplier [Islam et al., 2010a, 2011]. Lia Roy and her coauthors have studied with cost minimization problem of an industry [Roy et al., 2021].

Jannatul Ferdous and Haradhan Kumar Mohajan have worked on a profit maximization problem [Ferdous & Mohajan, 2022]. Pahlaj Moolio and his coworkers have used Cobb-Douglas production function to analyze output maximization [Moolio et al., 2009]. Devajit Mohajan and Haradhan Kumar Mohajan have run the profit maximization problem with the sensitivity analysis among commodities, coupons, and prices [Mohajan & Mohajan, 2022a,c,f].

### 3. Research Methodology of the Study

Research is an essential and influential tool to the professors to lead the academic atmosphere [Pandey & Pandey, 2015]. Methodology is an organized and meaningful procedural works that tries to describe the types of research and the types of data [Ojo, 2003; Somekh & Lewin, 2005]. Therefore, research methodology is the science and philosophy behind all researches for organizing, planning, designing and conducting a good research [Remenyi et al., 1998; Legesse, 2014]. To prepare this paper we have depended on the mathematical secondary data sources of profit maximization that are collected from published research papers, and books of famous authors; and also essential materials are managed using internet, websites, etc. [Islam et al., 2009a,b; Mohajan, 2017a, 2018b, 2020].

### 4. Objective of the Study

The leading objective of this paper is to discuss the economic procedures of Lagrange multiplier when cost of various inputs and budget size of a firm increase. Some other related trivial objectives are as follows:

- to offer the economic forecasts precisely,
- to show the mathematical calculations elaborately, and
- to enhance the global economic research area.

### 5. Economic Model of the Firm

Let us consider that an emerging economic firm uses  $\chi_1$  quantity of capital,  $\chi_2$  quantity of labor,  $\chi_3$  quantity of principal raw materials, and  $\chi_4$  quantity of irregular inputs to run its industrial sector successfully. Now we can introduce Cobb-Douglas production function as a four-dimensional profit function for this study in the form [Islam et al., 2011; Mohajan, 2018a],

$$P = f(\chi_1, \chi_2, \chi_3, \chi_4) = A\chi_1^i \chi_2^j \chi_3^k \chi_4^l \quad (1)$$

where  $A$  is the technical process of economic system that indicates total factor productivity. Here  $i, j, k,$  and  $l$  are parameters;  $i$  indicates the output of elasticity of capital measures the percentage change in  $P$  for 1% change in  $\chi_1$ , while  $\chi_2, \chi_3,$  and  $\chi_4$  are held constants. Similar properties bear parameters  $j, k,$  and  $l$ . The firm wants to maximize the profit function (1) for the sustainability in the global

economic environment. The values of  $i, j, k$ , and  $l$  are determined by the available technologies, and must satisfy the following four inequalities [Roy et al., 2021; Mohajan, 2021a]:

$$0 < i < 1, 0 < j < 1, 0 < k < 1, \text{ and } 0 < l < 1. \quad (2)$$

A strict Cobb-Douglas production function, in which  $\Phi = i + j + k + l = 1$  indicates constant returns to scale,  $\Phi < 1$  indicates decreasing returns to scale, and  $\Phi > 1$  indicates increasing returns to scale [Moolio et al., 2009; Mohajan, 2022].

Now we consider that the four-dimensional budget constraint,

$$B(\chi_1, \chi_2, \chi_3, \chi_4) = b_1\chi_1 + b_2\chi_2 + b_3\chi_3 + b_4\chi_4, \quad (3)$$

where  $b_1$  is rate of interest or services of capital per unit of capital  $\chi_1$ ;  $b_2$  is the wage rate per unit of labor  $\chi_2$ ;  $b_3$  is the cost per unit of principal raw material  $\chi_3$ ; and  $b_4$  is the cost per unit of other inputs  $\chi_4$ .

Now we introduce a single Lagrange multiplier  $\eta$ , as a device; and by using equations (1) and (3) we can represent the Lagrangian function  $Z(\chi_1, \chi_2, \chi_3, \chi_4, \eta)$ , in a five-dimensional unconstrained problem as follows [Mohajan & Mohajan, 2022d; Mohajan, 2021c]:

$$Z(\chi_1, \chi_2, \chi_3, \chi_4, \eta) = A\chi_1^i\chi_2^j\chi_3^k\chi_4^l + \eta(B - b_1\chi_1 - b_2\chi_2 - b_3\chi_3 - b_4\chi_4), \quad (4)$$

where  $\frac{\partial B}{\partial \chi_1} = B_1$ ,  $\frac{\partial B}{\partial \chi_2} = B_2$ ,  $\frac{\partial Z}{\partial \chi_1} = Z_1$ ,  $\frac{\partial^2 Z}{\partial \chi_1 \partial \chi_3} = Z_{31}$ ,  $\frac{\partial^2 Z}{\partial \chi_2^2} = Z_{22}$ , etc. are partial derivatives. Let us consider the determinant of the  $5 \times 5$  bordered Hessian matrix as [Ferdous & Mohajan, 2022];

$$H = \begin{vmatrix} 0 & -B_1 & -B_2 & -B_3 & -B_4 \\ -B_1 & Z_{11} & Z_{12} & Z_{13} & Z_{14} \\ -B_2 & Z_{21} & Z_{22} & Z_{23} & Z_{24} \\ -B_3 & Z_{31} & Z_{32} & Z_{33} & Z_{34} \\ -B_4 & Z_{41} & Z_{42} & Z_{43} & Z_{44} \end{vmatrix}. \quad (5)$$

Taking first-order partial differentiations of (3) we get,

$$B_1 = b_1, B_2 = b_2, B_3 = b_3, \text{ and } B_4 = b_4. \quad (6)$$

Taking second-order and cross partial derivatives of (4) we get,



$$\begin{aligned}
 Z_{11} &= i(i-1)A\chi_1^{i-2}\chi_2^j\chi_3^k\chi_4^l, \\
 Z_{22} &= j(j-1)A\chi_1^i\chi_2^{j-2}\chi_3^k\chi_4^l, \\
 Z_{33} &= k(k-1)A\chi_1^i\chi_2^j\chi_3^{k-2}\chi_4^l, \\
 Z_{44} &= l(l-1)A\chi_1^i\chi_2^j\chi_3^k\chi_4^{l-2}, \\
 Z_{12} &= Z_{21} = ijA\chi_1^{i-1}\chi_2^{j-1}\chi_3^k\chi_4^l, \\
 Z_{13} &= Z_{31} = ikA\chi_1^{i-1}\chi_2^j\chi_3^{k-1}\chi_4^l, \\
 Z_{14} &= Z_{41} = ilA\chi_1^{i-1}\chi_2^j\chi_3^k\chi_4^{l-1}, \\
 Z_{23} &= Z_{32} = jkA\chi_1^i\chi_2^{j-1}\chi_3^{k-1}\chi_4^l, \\
 Z_{24} &= Z_{42} = jlA\chi_1^i\chi_2^{j-1}\chi_3^k\chi_4^{l-1}, \\
 Z_{34} &= Z_{43} = klA\chi_1^i\chi_2^j\chi_3^{k-1}\chi_4^{l-1}.
 \end{aligned} \tag{7}$$

Now we expand the bordered Hessian (5) as,

$$|H| = \frac{A^3 B^2 i j k l \chi_1^{3i} \chi_2^{3j} \chi_3^{3k} \chi_4^{3l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2 \Phi} > 0 \tag{8}$$

where  $A > 0$ ,  $i, j, k, l > 0$ , and budget,  $B > 0$ , therefore,  $|H| > 0$ . Hence, the profit is maximized [Mohajan et al., 2013; Mohajan & Mohajan, 2022b].

## 6. Briefs on Matrix Operations

We have observed that the second order condition is satisfied, so that the determinant of (5) survives at the optimum, i.e.,  $|J| = |H|$ ; hence, we can apply the implicit function theorem. Let  $\mathbf{G}$  be the vector-valued function of ten variables  $\eta^*, \chi_1^*, \chi_2^*, \chi_3^*, \chi_4^*, b_1, b_2, b_3, b_4$ , and  $B$ , and we define the function  $\mathbf{G}$  for the point  $(\eta^*, \chi_1^*, \chi_2^*, \chi_3^*, \chi_4^*, b_1, b_2, b_3, b_4, B) \in R^{10}$ , and take the values in  $R^5$ . By the Implicit Function Theorem of multivariable calculus the equation,

$$F(\eta^*, \chi_1^*, \chi_2^*, \chi_3^*, \chi_4^*, b_1, b_2, b_3, b_4, B) = 0, \tag{9}$$

may be solved in the form of



$$\begin{bmatrix} \eta \\ \chi_1 \\ \chi_2 \\ \chi_3 \\ \chi_4 \end{bmatrix} = \mathbf{G}(b_1, b_2, b_3, b_4, B). \quad (10)$$

Now the  $5 \times 5$  Jacobian matrix for  $\mathbf{G}$ ; regarded as  $J_G = \frac{\partial(\eta, \chi_1, \chi_2, \chi_3, \chi_4)}{\partial(b_1, b_2, b_3, b_4, B)}$ , and is presented by;

$$J_G = \begin{bmatrix} \frac{\partial \eta}{\partial b_1} & \frac{\partial \eta}{\partial b_2} & \frac{\partial \eta}{\partial b_3} & \frac{\partial \eta}{\partial b_4} & \frac{\partial \eta}{\partial B} \\ \frac{\partial \chi_1}{\partial b_1} & \frac{\partial \chi_1}{\partial b_2} & \frac{\partial \chi_1}{\partial b_3} & \frac{\partial \chi_1}{\partial b_4} & \frac{\partial \chi_1}{\partial B} \\ \frac{\partial \chi_2}{\partial b_1} & \frac{\partial \chi_2}{\partial b_2} & \frac{\partial \chi_2}{\partial b_3} & \frac{\partial \chi_2}{\partial b_4} & \frac{\partial \chi_2}{\partial B} \\ \frac{\partial \chi_3}{\partial b_1} & \frac{\partial \chi_3}{\partial b_2} & \frac{\partial \chi_3}{\partial b_3} & \frac{\partial \chi_3}{\partial b_4} & \frac{\partial \chi_3}{\partial B} \\ \frac{\partial \chi_4}{\partial b_1} & \frac{\partial \chi_4}{\partial b_2} & \frac{\partial \chi_4}{\partial b_3} & \frac{\partial \chi_4}{\partial b_4} & \frac{\partial \chi_4}{\partial B} \end{bmatrix}. \quad (11)$$

$$= -J^{-1} \begin{bmatrix} -\chi_1 & -\chi_2 & -\chi_3 & -\chi_4 & 1 \\ -\eta & 0 & 0 & 0 & 0 \\ 0 & -\eta & 0 & 0 & 0 \\ 0 & 0 & -\eta & 0 & 0 \\ 0 & 0 & 0 & -\eta & 0 \end{bmatrix}.$$

The inverse of Jacobian matrix is,  $J^{-1} = \frac{1}{|J|} C^T$ , where  $C = (C_{ij})$ , the matrix of cofactors of  $J$ , where  $T$  indicates transpose, then (11) becomes [Mohajan, 2017a; Mohajan & Mohajan, 2022f],

$$= -\frac{1}{|J|} \begin{bmatrix} C_{11} & C_{21} & C_{31} & C_{41} & C_{51} \\ C_{12} & C_{22} & C_{32} & C_{42} & C_{52} \\ C_{13} & C_{23} & C_{33} & C_{43} & C_{53} \\ C_{14} & C_{24} & C_{34} & C_{44} & C_{54} \\ C_{15} & C_{25} & C_{35} & C_{45} & C_{55} \end{bmatrix} \begin{bmatrix} -x_1 & -x_2 & -x_3 & -x_4 & 1 \\ -\eta & 0 & 0 & 0 & 0 \\ 0 & -\eta & 0 & 0 & 0 \\ 0 & 0 & -\eta & 0 & 0 \\ 0 & 0 & 0 & -\eta & 0 \end{bmatrix}$$

$$J_G = -\frac{1}{|J|} \begin{bmatrix} -\chi_1 C_{11} - \eta C_{21} & -\chi_2 C_{11} - \eta C_{31} & -\chi_3 C_{11} - \eta C_{41} & -\chi_4 C_{11} - \eta C_{51} & C_{11} \\ -\chi_1 C_{12} - \eta C_{22} & -\chi_2 C_{12} - \eta C_{32} & -\chi_3 C_{12} - \eta C_{42} & -\chi_4 C_{12} - \eta C_{52} & C_{12} \\ -\chi_1 C_{13} - \eta C_{23} & -\chi_2 C_{13} - \eta C_{33} & -\chi_3 C_{13} - \eta C_{43} & -\chi_4 C_{13} - \eta C_{53} & C_{13} \\ -\chi_1 C_{14} - \eta C_{24} & -\chi_2 C_{14} - \eta C_{34} & -\chi_3 C_{14} - \eta C_{44} & -\chi_4 C_{14} - \eta C_{54} & C_{14} \\ -\chi_1 C_{15} - \eta C_{25} & -\chi_2 C_{15} - \eta C_{35} & -\chi_3 C_{15} - \eta C_{45} & -\chi_4 C_{15} - \eta C_{55} & C_{15} \end{bmatrix} \quad (12)$$

In (11) there are total 25 comparative statics, and for sensitivity analysis we will try only four of these to predict the economic analysis for the profit maximization [Baxley & Moorhouse, 1984; Mohajan & Mohajan, 2022a].

### 7. Sensitivity Analysis of the Model

Now we analyze the economic effects of the firm on Lagrange multiplier  $\eta$  when per unit cost, interest or services of capital increases. Taking  $T_{11}$  (i.e., term of 1<sup>st</sup> row and 1<sup>st</sup> column) from both sides of (12) we get [Islam et al., 2011; Roy et al., 2021],

$$\frac{\partial \eta}{\partial b_1} = \frac{\chi_1}{|J|} [C_{11}] + \frac{\eta}{|J|} [C_{21}]$$

$$= \frac{\chi_1}{|J|} \text{Cofactor of } C_{11} + \frac{\eta}{|J|} \text{Cofactor of } C_{21}$$



$$\begin{aligned}
 &= \frac{\chi_1}{|J|} \begin{vmatrix} Z_{11} & Z_{12} & Z_{13} & Z_{14} \\ Z_{21} & Z_{22} & Z_{23} & Z_{24} \\ Z_{31} & Z_{32} & Z_{33} & Z_{34} \\ Z_{41} & Z_{42} & Z_{43} & Z_{44} \end{vmatrix} - \frac{\eta}{|J|} \begin{vmatrix} -B_1 & -B_2 & -B_3 & -B_4 \\ Z_{21} & Z_{22} & Z_{23} & Z_{24} \\ Z_{31} & Z_{32} & Z_{33} & Z_{34} \\ Z_{41} & Z_{42} & Z_{43} & Z_{44} \end{vmatrix} \\
 &= \frac{\chi_1}{|J|} \left\{ \begin{vmatrix} Z_{22} & Z_{23} & Z_{24} \\ Z_{32} & Z_{33} & Z_{34} \\ Z_{42} & Z_{43} & Z_{44} \end{vmatrix} - Z_{12} \begin{vmatrix} Z_{21} & Z_{23} & Z_{24} \\ Z_{31} & Z_{33} & Z_{34} \\ Z_{41} & Z_{43} & Z_{44} \end{vmatrix} + Z_{13} \begin{vmatrix} Z_{21} & Z_{22} & Z_{24} \\ Z_{31} & Z_{32} & Z_{34} \\ Z_{41} & Z_{42} & Z_{44} \end{vmatrix} \right. \\
 &\quad \left. - Z_{14} \begin{vmatrix} Z_{21} & Z_{22} & Z_{23} \\ Z_{31} & Z_{32} & Z_{33} \\ Z_{41} & Z_{42} & Z_{43} \end{vmatrix} \right\} \\
 &- \frac{\eta}{|J|} \left\{ -B_1 \begin{vmatrix} Z_{22} & Z_{23} & Z_{24} \\ Z_{32} & Z_{33} & Z_{34} \\ Z_{42} & Z_{43} & Z_{44} \end{vmatrix} + B_2 \begin{vmatrix} Z_{21} & Z_{23} & Z_{24} \\ Z_{31} & Z_{33} & Z_{34} \\ Z_{41} & Z_{43} & Z_{44} \end{vmatrix} - B_3 \begin{vmatrix} Z_{21} & Z_{22} & Z_{24} \\ Z_{31} & Z_{32} & Z_{34} \\ Z_{41} & Z_{42} & Z_{44} \end{vmatrix} \right. \\
 &\quad \left. + B_4 \begin{vmatrix} Z_{21} & Z_{22} & Z_{23} \\ Z_{31} & Z_{32} & Z_{33} \\ Z_{41} & Z_{42} & Z_{43} \end{vmatrix} \right\} \\
 &= \frac{\chi_1}{|J|} \left[ Z_{11} \{ Z_{22} (Z_{33} Z_{44} - Z_{43} Z_{34}) + Z_{23} (Z_{42} Z_{34} - Z_{32} Z_{44}) + Z_{24} (Z_{32} Z_{43} - Z_{42} Z_{33}) \} \right. \\
 &\quad - Z_{12} \{ Z_{21} (Z_{33} Z_{44} - Z_{43} Z_{34}) + Z_{23} (Z_{41} Z_{34} - Z_{31} Z_{44}) + Z_{24} (Z_{31} Z_{43} - Z_{41} Z_{33}) \} \\
 &\quad + Z_{13} \{ Z_{21} (Z_{32} Z_{44} - Z_{42} Z_{34}) + Z_{22} (Z_{41} Z_{34} - Z_{31} Z_{44}) + Z_{24} (Z_{31} Z_{42} - Z_{41} Z_{32}) \} \\
 &\quad - Z_{14} \{ Z_{21} (Z_{32} Z_{43} - Z_{42} Z_{33}) + Z_{22} (Z_{41} Z_{33} - Z_{31} Z_{43}) + Z_{23} (Z_{31} Z_{42} - Z_{41} Z_{32}) \} \\
 &\quad \left. - \frac{\eta}{|J|} \left[ -B_1 \{ Z_{22} (Z_{33} Z_{44} - Z_{43} Z_{34}) + Z_{23} (Z_{42} Z_{34} - Z_{32} Z_{44}) + Z_{24} (Z_{32} Z_{43} - Z_{42} Z_{33}) \} \right. \right. \\
 &\quad \left. \left. + B_2 \{ Z_{21} (Z_{33} Z_{44} - Z_{43} Z_{34}) + Z_{23} (Z_{41} Z_{34} - Z_{31} Z_{44}) + Z_{24} (Z_{31} Z_{43} - Z_{41} Z_{33}) \} \right] \right]
 \end{aligned}$$



$$\begin{aligned}
 & -B_3 \{Z_{21}(Z_{32}Z_{44} - Z_{42}Z_{34}) + Z_{22}(Z_{41}Z_{34} - Z_{31}Z_{44}) + Z_{24}(Z_{31}Z_{42} - Z_{41}Z_{32})\} \\
 & + B_4 \{Z_{21}(Z_{32}Z_{43} - Z_{42}Z_{33}) + Z_{22}(Z_{41}Z_{33} - Z_{31}Z_{43}) + Z_{23}(Z_{31}Z_{42} - Z_{41}Z_{32})\} \\
 & = \frac{\chi_1}{|J|} \{Z_{11}Z_{22}Z_{33}Z_{44} - Z_{11}Z_{22}Z_{43}Z_{34} + Z_{11}Z_{23}Z_{42}Z_{34} - Z_{11}Z_{23}Z_{32}Z_{44} \\
 & + Z_{11}Z_{24}Z_{32}Z_{43} - Z_{11}Z_{24}Z_{42}Z_{33} - Z_{12}Z_{21}Z_{33}Z_{44} + Z_{12}Z_{21}Z_{43}Z_{34} - Z_{12}Z_{23}Z_{41}Z_{34} \\
 & + Z_{12}Z_{23}Z_{31}Z_{44} - Z_{12}Z_{24}Z_{31}Z_{43} + Z_{12}Z_{24}Z_{41}Z_{33} + Z_{13}Z_{21}Z_{32}Z_{44} - Z_{13}Z_{21}Z_{42}Z_{34} \\
 & + Z_{13}Z_{22}Z_{41}Z_{34} - Z_{13}Z_{22}Z_{31}Z_{44} + Z_{13}Z_{24}Z_{31}Z_{42} - Z_{13}Z_{24}Z_{41}Z_{32} - Z_{14}Z_{21}Z_{32}Z_{43} \\
 & + Z_{14}Z_{21}Z_{42}Z_{33} - Z_{14}Z_{22}Z_{41}Z_{33} + Z_{14}Z_{22}Z_{31}Z_{43} - Z_{14}Z_{23}Z_{31}Z_{42} + Z_{14}Z_{23}Z_{41}Z_{32}\} \\
 & - \frac{\eta}{|J|} \{-B_1Z_{22}Z_{33}Z_{44} + B_1Z_{22}Z_{43}Z_{34} - B_1Z_{23}Z_{42}Z_{34} + B_1Z_{23}Z_{32}Z_{44} - B_1Z_{24}Z_{32}Z_{43} \\
 & + B_1Z_{24}Z_{42}Z_{33} + B_2Z_{21}Z_{33}Z_{44} - B_2Z_{21}Z_{43}Z_{34} + B_2Z_{23}Z_{41}Z_{34} - B_2Z_{23}Z_{31}Z_{44} \\
 & + B_2Z_{24}Z_{31}Z_{43} - B_2Z_{24}Z_{41}Z_{33} - B_3Z_{21}Z_{32}Z_{44} + B_3Z_{21}Z_{42}Z_{34} - B_3Z_{22}Z_{41}Z_{34} \\
 & + B_3Z_{22}Z_{31}Z_{44} - B_3Z_{24}Z_{31}Z_{42} + B_3Z_{24}Z_{41}Z_{32} + B_4Z_{21}Z_{32}Z_{43} - B_4Z_{21}Z_{42}Z_{33} \\
 & + B_4Z_{22}Z_{41}Z_{33} - B_4Z_{22}Z_{31}Z_{43} + B_4Z_{23}Z_{31}Z_{42} - B_4Z_{23}Z_{41}Z_{32}\} \\
 & = \frac{\chi_1}{|J|} \frac{A^4 \chi_1^{4i} \chi_2^{4j} \chi_3^{4k} \chi_4^{4l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \{i(i-1)j(j-1)k(k-1)l(l-1) - i(i-1)j(j-1)k^2l^2 \\
 & + i(i-1)j^2k^2l^2 - i(i-1)j^2k^2l(l-1) + i(i-1)j^2k^2l^2 - i(i-1)j^2k(k-1)l^2 \\
 & - i^2j^2k(k-1)l(l-1) + i^2j^2k^2l^2 - i^2j^2k^2l^2 + i^2j^2k^2l(l-1) - i^2j^2k^2l^2 \\
 & + i^2j^2k(k-1)l^2 + i^2j^2k^2l(l-1) - i^2j^2k^2l^2 + i^2j(j-1)k^2l^2 - i^2j(j-1)k^2l(l-1) \\
 & + i^2j^2k^2l^2 - i^2j^2k^2l^2 - i^2j^2k^2l^2 + i^2j^2k(k-1)l^2 - i^2j(j-1)k(k-1)l^2 \\
 & + i^2j(j-1)k^2l^2 - i^2j^2k^2l^2 + i^2j^2k^2l^2\} - \frac{1}{|J|} \frac{A^3 \chi_1^{3i} \chi_2^{3j} \chi_3^{3k} \chi_4^{3l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \frac{A \chi_1^i \chi_2^j \chi_3^k \chi_4^l \Phi}{B} \\
 & \{-b_1 \chi_1^2 j^2 k^2 l^2 - b_1 \chi_1^2 j(j-1)k(k-1)l(l-1) + b_1 \chi_1^2 j(j-1)k^2 l^2 - b_1 \chi_1^2 j^2 k^2 l^2 \\
 & + b_1 \chi_1^2 j^2 k^2 l(l-1) + b_1 \chi_1^2 j^2 k^2 (k-1)l^2 + b_2 \chi_1 \chi_2 i j k (k-1)l(l-1) \\
 & - b_2 \chi_1 \chi_2 i j k^2 l(l-1) - b_2 \chi_1 \chi_2 i j k^2 l^2 + b_2 \chi_1 \chi_2 i j k^2 l^2 + b_2 \chi_1 \chi_2 i j k^2 l^2\}
 \end{aligned}$$



$$\begin{aligned}
 & -b_2\chi_1\chi_2ijk(k-1)l^2 - b_3\chi_1\chi_3ij^2kl(l-1) + b_3\chi_1\chi_3ij^2kl^2 - b_3\chi_1\chi_3ij(j-1)kl^2 \\
 & + b_3\chi_1\chi_3ij(j-1)kl(l-1) - b_3\chi_1\chi_3ij^2kl^2 + b_3\chi_1\chi_3ij^2kl^2 + b_4\chi_1\chi_4ij^2k^2l \\
 & - b_4\chi_1\chi_4ij^2k(k-1)l + b_4\chi_1\chi_4ij(j-1)k(k-1)l - b_4\chi_1\chi_4ij(j-1)k^2l \\
 & + b_4\chi_1\chi_4ij^2k^2l - b_4\chi_1\chi_4ij^2k^2l \} \\
 & = \frac{\chi_1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4^2} \{ (i-1)(j-1)(k-1)(l-1) - (i-1)(j-1)kl + 2(i-1)jkl \\
 & - (i-1)jk(l-1) - (i-1)j(k-1)l - ij(k-1)(l-1) - 3ijkl + 2ij(k-1)l \\
 & + 2ijk(l-1) - i(j-1)k(l-1) - i(j-1)(k-1)l + 2i(j-1)kl \} \\
 & - \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4^2} \{ -(j-1)(k-1)(l-1) + (j-1)(k-1)l - (j-1)kl \\
 & + (j-1)k(l-1) + j(k-1)(l-1) - j(k-1)l + jkl - jk(l-1) \} \\
 & = \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1\chi_2^2\chi_3^2\chi_4^2} (1-\Phi) - \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1\chi_2^2\chi_3^2\chi_4^2} \\
 & \frac{\partial \eta}{\partial b_1} = - \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}\Phi}{\chi_1\chi_2^2\chi_3^2\chi_4^2} < 0. \tag{13}
 \end{aligned}$$

From the relation (13) we have realized that when rate of interest or services of capital  $\chi_1$  increases, the value of the Lagrange multiplier is decreased. In this situation the firm should take attempts to decrease the production level if it has no sufficient demand of its products.

Now we study the economic effects on Lagrange multiplier  $\eta$  when wage rate of the workers of the firm increases. Taking  $T_{12}$  (i.e., term of 1<sup>st</sup> row and 2<sup>nd</sup> column) from both sides of (12) we get [Islam et al., 2010a,b; Moolio et al., 2009],

$$\begin{aligned}
 \frac{\partial \eta}{\partial b_2} &= \frac{\chi_2}{|J|} [C_{11}] + \frac{\eta}{|J|} [C_{31}] \\
 &= \frac{\chi_2}{|J|} \text{Cofactor of } C_{11} + \frac{\eta}{|J|} \text{Cofactor of } C_{31}
 \end{aligned}$$



$$\begin{aligned}
 &= \frac{\chi_2}{|J|} \begin{vmatrix} Z_{11} & Z_{12} & Z_{13} & Z_{14} \\ Z_{21} & Z_{22} & Z_{23} & Z_{24} \\ Z_{31} & Z_{32} & Z_{33} & Z_{34} \\ Z_{41} & Z_{42} & Z_{43} & Z_{44} \end{vmatrix} + \frac{\eta}{|J|} \begin{vmatrix} -B_1 & -B_2 & -B_3 & -B_4 \\ Z_{11} & Z_{12} & Z_{13} & Z_{14} \\ Z_{31} & Z_{32} & Z_{33} & Z_{34} \\ Z_{41} & Z_{42} & Z_{43} & Z_{44} \end{vmatrix} \\
 &= \frac{\chi_2}{|J|} \left\{ Z_{11} \begin{vmatrix} Z_{22} & Z_{23} & Z_{24} \\ Z_{32} & Z_{33} & Z_{34} \\ Z_{42} & Z_{43} & Z_{44} \end{vmatrix} - Z_{12} \begin{vmatrix} Z_{21} & Z_{23} & Z_{24} \\ Z_{31} & Z_{33} & Z_{34} \\ Z_{41} & Z_{43} & Z_{44} \end{vmatrix} + Z_{13} \begin{vmatrix} Z_{21} & Z_{22} & Z_{24} \\ Z_{31} & Z_{32} & Z_{34} \\ Z_{41} & Z_{42} & Z_{44} \end{vmatrix} \right. \\
 &\quad \left. - Z_{14} \begin{vmatrix} Z_{21} & Z_{22} & Z_{23} \\ Z_{31} & Z_{32} & Z_{33} \\ Z_{41} & Z_{42} & Z_{43} \end{vmatrix} \right\} \\
 &\quad + \frac{\eta}{|J|} \left\{ -B_1 \begin{vmatrix} Z_{12} & Z_{13} & Z_{14} \\ Z_{32} & Z_{33} & Z_{34} \\ Z_{42} & Z_{43} & Z_{44} \end{vmatrix} + B_2 \begin{vmatrix} Z_{11} & Z_{13} & Z_{14} \\ Z_{31} & Z_{33} & Z_{34} \\ Z_{41} & Z_{43} & Z_{44} \end{vmatrix} - B_3 \begin{vmatrix} Z_{11} & Z_{12} & Z_{14} \\ Z_{31} & Z_{32} & Z_{34} \\ Z_{41} & Z_{42} & Z_{44} \end{vmatrix} \right. \\
 &\quad \left. + B_4 \begin{vmatrix} Z_{11} & Z_{12} & Z_{13} \\ Z_{31} & Z_{32} & Z_{33} \\ Z_{41} & Z_{42} & Z_{43} \end{vmatrix} \right\} \\
 &= \frac{\chi_2}{|J|} \left[ Z_{11} \{ Z_{22}(Z_{33}Z_{44} - Z_{43}Z_{34}) + Z_{23}(Z_{42}Z_{34} - Z_{32}Z_{44}) + Z_{24}(Z_{32}Z_{43} - Z_{42}Z_{33}) \} \right. \\
 &\quad - Z_{12} \{ Z_{21}(Z_{33}Z_{44} - Z_{43}Z_{34}) + Z_{23}(Z_{41}Z_{34} - Z_{31}Z_{44}) + Z_{24}(Z_{31}Z_{43} - Z_{41}Z_{33}) \} \\
 &\quad + Z_{13} \{ Z_{21}(Z_{32}Z_{44} - Z_{42}Z_{34}) + Z_{22}(Z_{41}Z_{34} - Z_{31}Z_{44}) + Z_{24}(Z_{31}Z_{42} - Z_{41}Z_{32}) \} \\
 &\quad - Z_{14} \{ Z_{21}(Z_{32}Z_{43} - Z_{42}Z_{33}) + Z_{22}(Z_{41}Z_{33} - Z_{31}Z_{43}) + Z_{23}(Z_{31}Z_{42} - Z_{41}Z_{32}) \} \\
 &\quad \left. + \frac{\eta}{|J|} \left[ -B_1 \{ Z_{12}(Z_{33}Z_{44} - Z_{43}Z_{34}) + Z_{13}(Z_{42}Z_{34} - Z_{32}Z_{44}) + Z_{14}(Z_{32}Z_{43} - Z_{42}Z_{33}) \} \right. \right. \\
 &\quad \left. \left. + B_2 \{ Z_{11}(Z_{33}Z_{44} - Z_{43}Z_{34}) + Z_{13}(Z_{41}Z_{34} - Z_{31}Z_{44}) + Z_{14}(Z_{31}Z_{43} - Z_{41}Z_{33}) \} \right] \right]
 \end{aligned}$$



$$\begin{aligned}
 & -B_3 \{Z_{11}(Z_{32}Z_{44} - Z_{42}Z_{34}) + Z_{12}(Z_{41}Z_{34} - Z_{31}Z_{44}) + Z_{14}(Z_{31}Z_{42} - Z_{41}Z_{32})\} \\
 & + B_4 \{Z_{11}(Z_{32}Z_{43} - Z_{42}Z_{33}) + Z_{12}(Z_{41}Z_{33} - Z_{31}Z_{43}) + Z_{13}(Z_{31}Z_{42} - Z_{41}Z_{32})\} \\
 & = \frac{\chi_2}{|J|} \{Z_{11}Z_{22}Z_{33}Z_{44} - Z_{11}Z_{22}Z_{43}Z_{34} + Z_{11}Z_{23}Z_{42}Z_{34} - Z_{11}Z_{23}Z_{32}Z_{44} \\
 & + Z_{11}Z_{24}Z_{32}Z_{43} - Z_{11}Z_{24}Z_{42}Z_{33} - Z_{12}Z_{21}Z_{33}Z_{44} + Z_{12}Z_{21}Z_{43}Z_{34} - Z_{12}Z_{23}Z_{41}Z_{34} \\
 & + Z_{12}Z_{23}Z_{31}Z_{44} - Z_{12}Z_{24}Z_{31}Z_{43} + Z_{12}Z_{24}Z_{41}Z_{33} + Z_{13}Z_{21}Z_{32}Z_{44} - Z_{13}Z_{21}Z_{42}Z_{34} \\
 & + Z_{13}Z_{22}Z_{41}Z_{34} - Z_{13}Z_{22}Z_{31}Z_{44} + Z_{13}Z_{24}Z_{31}Z_{42} - Z_{13}Z_{24}Z_{41}Z_{32} - Z_{14}Z_{21}Z_{32}Z_{43} \\
 & + Z_{14}Z_{21}Z_{42}Z_{33} - Z_{14}Z_{22}Z_{41}Z_{33} + Z_{14}Z_{22}Z_{31}Z_{43} - Z_{14}Z_{23}Z_{31}Z_{42} + Z_{14}Z_{23}Z_{41}Z_{32}\} \\
 & + \frac{\eta}{|J|} \{-B_1Z_{12}Z_{33}Z_{44} + B_1Z_{12}Z_{43}Z_{34} - B_1Z_{13}Z_{42}Z_{34} + B_1Z_{13}Z_{32}Z_{44} - B_1Z_{14}Z_{32}Z_{43} \\
 & + B_1Z_{14}Z_{42}Z_{33} + B_2Z_{11}Z_{33}Z_{44} - B_2Z_{11}Z_{43}Z_{34} + B_2Z_{13}Z_{41}Z_{34} - B_2Z_{13}Z_{31}Z_{44} \\
 & + B_2Z_{14}Z_{31}Z_{43} - B_2Z_{14}Z_{41}Z_{33} - B_3Z_{11}Z_{32}Z_{44} + B_3Z_{11}Z_{42}Z_{34} - B_3Z_{12}Z_{41}Z_{34} \\
 & + B_3Z_{12}Z_{31}Z_{44} - B_3Z_{14}Z_{31}Z_{42} + B_3Z_{14}Z_{41}Z_{32} + B_4Z_{11}Z_{32}Z_{43} - B_4Z_{11}Z_{42}Z_{33} \\
 & + B_4Z_{12}Z_{41}Z_{33} - B_4Z_{12}Z_{31}Z_{43} + B_4Z_{13}Z_{31}Z_{42} - B_4Z_{13}Z_{41}Z_{32}\} \\
 & = \frac{\chi_2}{|J|} \frac{A^4 \chi_1^{4i} \chi_2^{4j} \chi_3^{4k} \chi_4^{4l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \{i(i-1)j(j-1)k(k-1)l(l-1) - i(i-1)j(j-1)k^2l^2 \\
 & + i(i-1)j^2k^2l^2 - i(i-1)j^2k^2l(l-1) + i(i-1)j^2k^2l^2 - i(i-1)j^2k(k-1)l^2 \\
 & - i^2j^2k(k-1)l(l-1) + i^2j^2k^2l^2 - i^2j^2k^2l^2 + i^2j^2k^2l(l-1) - i^2j^2k^2l^2 \\
 & + i^2j^2k(k-1)l^2 + i^2j^2k^2l(l-1) - i^2j^2k^2l^2 + i^2j(j-1)k^2l^2 - i^2j(j-1)k^2l(l-1) \\
 & + i^2j^2k^2l^2 - i^2j^2k^2l^2 - i^2j^2k^2l^2 + i^2j^2k(k-1)l^2 - i^2j(j-1)k(k-1)l^2 \\
 & + i^2j(j-1)k^2l^2 - i^2j^2k^2l^2 + i^2j^2k^2l^2\} \\
 & + \frac{1}{|J|} \frac{A^3 \chi_1^{3i} \chi_2^{3j} \chi_3^{3k} \chi_4^{3l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \frac{A \chi_1^i \chi_2^j \chi_3^k \chi_4^l \Phi}{B} \{-b_1 \chi_1 \chi_2 i j k (k-1) l (l-1) + b_1 \chi_1 \chi_2 i j k^2 l^2 \\
 & - b_1 \chi_1 \chi_2 i j k^2 l^2 + b_1 \chi_1 \chi_2 i j k^2 l (l-1) - b_1 \chi_1 \chi_2 i j k^2 l^2 + b_1 \chi_1 \chi_2 i j k (k-1) l^2 \\
 & + b_2 \chi_2^2 i (i-1) k (k-1) l (l-1) - b_2 \chi_2^2 i (i-1) k^2 l^2 + b_2 \chi_2^2 i^2 k^2 l^2 - b_2 \chi_2^2 i^2 k^2 l (l-1)
 \end{aligned}$$

$$\begin{aligned}
 & + b_2 \chi_2^2 i^2 k^2 l^2 - b_2 \chi_2^2 i^2 k(k-1)l^2 - b_3 \chi_2 \chi_3 i(i-1)jkl(l-1) + b_3 \chi_2 \chi_3 i(i-1)jkl^2 \\
 & - b_3 \chi_2 \chi_3 i^2 jkl^2 + b_3 \chi_2 \chi_3 i^2 jkl(l-1) - b_3 \chi_2 \chi_3 i^2 jkl^2 + b_3 \chi_2 \chi_3 i^2 jkl^2 \\
 & + b_4 \chi_2 \chi_4 i(i-1)jk^2 l - b_4 \chi_2 \chi_4 i(i-1)jk(k-1)l + b_4 \chi_2 \chi_4 i^2 jk(k-1)l \\
 & - b_4 \chi_2 \chi_4 i^2 jk^2 l + b_4 \chi_2 \chi_4 i^2 jk^2 l - b_4 \chi_2 \chi_4 i^2 jk^2 l \} \\
 & = \frac{1}{|J|} \frac{A^4 i j k l \chi_1^{4i} \chi_2^{4j} \chi_3^{4k} \chi_4^{4l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \{ (i-1)(j-1)(k-1)(l-1) - (i-1)(j-1)kl + 2(i-1)jkl \\
 & - (i-1)jk(l-1) - (i-1)j(k-1)l - ij(k-1)(l-1) - 3ijkl + 2ij(k-1)l \\
 & + 2ijk(l-1) - i(j-1)k(l-1) - i(j-1)(k-1)l + 2i(j-1)kl \} \\
 & + \frac{1}{|J|} \frac{A^4 i j k l \chi_1^{4i} \chi_2^{4j} \chi_3^{4k} \chi_4^{4l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \{ -i(k-1)(l-1) + ik(l-1) + i(k-1)l - ikl \\
 & + (i-1)(k-1)(l-1) - (i-1)k(l-1) + (i-1)kl - (i-1)(k-1)l \} \\
 & = \frac{1}{|J|} \frac{A^4 i j k l \chi_1^{4i} \chi_2^{4j} \chi_3^{4k} \chi_4^{4l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} (1 - \Phi) - \frac{1}{|J|} \frac{A^4 i j k l \chi_1^{4i} \chi_2^{4j} \chi_3^{4k} \chi_4^{4l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \\
 & \frac{\partial \eta}{\partial b_2} = - \frac{1}{|J|} \frac{A^4 i j k l \chi_1^{4i} \chi_2^{4j} \chi_3^{4k} \chi_4^{4l} \Phi}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} < 0. \tag{14}
 \end{aligned}$$

From (14) we have realized that when the wage rate of the workers increases, the level of marginal product decreases. This seems that due to income effect workers use fewer working hours; consequently, production rate of the firm decreases.

Now we analyze the economic effect on Lagrange multiplier  $\eta$  when per unit cost of principal raw material increases. Taking  $T_{13}$  (i.e., term of 1<sup>st</sup> row and 3<sup>rd</sup> column) from both sides of (12) we get [Islam et al., 2011; Mohajan, 2017a],

$$\begin{aligned}
 \frac{\partial \eta}{\partial b_3} &= \frac{\chi_3}{|J|} [C_{11}] + \frac{\eta}{|J|} [C_{41}] \\
 &= \frac{\chi_3}{|J|} \text{Cofactor of } C_{11} + \frac{\eta}{|J|} \text{Cofactor of } C_{41}
 \end{aligned}$$



$$\begin{aligned}
 &= \frac{\chi_3}{|J|} \begin{vmatrix} Z_{11} & Z_{12} & Z_{13} & Z_{14} \\ Z_{21} & Z_{22} & Z_{23} & Z_{24} \\ Z_{31} & Z_{32} & Z_{33} & Z_{34} \\ Z_{41} & Z_{42} & Z_{43} & Z_{44} \end{vmatrix} - \frac{\eta}{|J|} \begin{vmatrix} -B_1 & -B_2 & -B_3 & -B_4 \\ Z_{11} & Z_{12} & Z_{13} & Z_{14} \\ Z_{21} & Z_{22} & Z_{23} & Z_{24} \\ Z_{41} & Z_{42} & Z_{43} & Z_{44} \end{vmatrix} \\
 &= \frac{\chi_3}{|J|} \left\{ \begin{vmatrix} Z_{22} & Z_{23} & Z_{24} \\ Z_{32} & Z_{33} & Z_{34} \\ Z_{42} & Z_{43} & Z_{44} \end{vmatrix} - Z_{12} \begin{vmatrix} Z_{21} & Z_{23} & Z_{24} \\ Z_{31} & Z_{33} & Z_{34} \\ Z_{41} & Z_{43} & Z_{44} \end{vmatrix} + Z_{13} \begin{vmatrix} Z_{21} & Z_{22} & Z_{24} \\ Z_{31} & Z_{32} & Z_{34} \\ Z_{41} & Z_{42} & Z_{44} \end{vmatrix} \right. \\
 &\quad \left. - Z_{14} \begin{vmatrix} Z_{21} & Z_{22} & Z_{23} \\ Z_{31} & Z_{32} & Z_{33} \\ Z_{41} & Z_{42} & Z_{43} \end{vmatrix} \right\} \\
 &\quad - \frac{\eta}{|J|} \left\{ -B_1 \begin{vmatrix} Z_{12} & Z_{13} & Z_{14} \\ Z_{22} & Z_{23} & Z_{24} \\ Z_{42} & Z_{43} & Z_{44} \end{vmatrix} + B_2 \begin{vmatrix} Z_{11} & Z_{13} & Z_{14} \\ Z_{21} & Z_{23} & Z_{24} \\ Z_{41} & Z_{43} & Z_{44} \end{vmatrix} - B_3 \begin{vmatrix} Z_{11} & Z_{12} & Z_{14} \\ Z_{21} & Z_{22} & Z_{24} \\ Z_{41} & Z_{42} & Z_{44} \end{vmatrix} \right. \\
 &\quad \left. + B_4 \begin{vmatrix} Z_{11} & Z_{12} & Z_{13} \\ Z_{21} & Z_{22} & Z_{23} \\ Z_{41} & Z_{42} & Z_{43} \end{vmatrix} \right\} \\
 &= \frac{\chi_3}{|J|} [Z_{11} \{Z_{22}(Z_{33}Z_{44} - Z_{43}Z_{34}) + Z_{23}(Z_{42}Z_{34} - Z_{32}Z_{44}) + Z_{24}(Z_{32}Z_{43} - Z_{42}Z_{33})\} \\
 &\quad - Z_{12} \{Z_{21}(Z_{33}Z_{44} - Z_{43}Z_{34}) + Z_{23}(Z_{41}Z_{34} - Z_{31}Z_{44}) + Z_{24}(Z_{31}Z_{43} - Z_{41}Z_{33})\} \\
 &\quad + Z_{13} \{Z_{21}(Z_{32}Z_{44} - Z_{42}Z_{34}) + Z_{22}(Z_{41}Z_{34} - Z_{31}Z_{44}) + Z_{24}(Z_{31}Z_{42} - Z_{41}Z_{32})\} \\
 &\quad - Z_{14} \{Z_{21}(Z_{32}Z_{43} - Z_{42}Z_{33}) + Z_{22}(Z_{41}Z_{33} - Z_{31}Z_{43}) + Z_{23}(Z_{31}Z_{42} - Z_{41}Z_{32})\}] \\
 &\quad - \frac{\eta}{|J|} [-B_1 \{Z_{12}(Z_{23}Z_{44} - Z_{43}Z_{24}) + Z_{13}(Z_{42}Z_{24} - Z_{22}Z_{44}) + Z_{14}(Z_{22}Z_{43} - Z_{42}Z_{23})\} \\
 &\quad + B_2 \{Z_{11}(Z_{23}Z_{44} - Z_{43}Z_{24}) + Z_{13}(Z_{41}Z_{24} - Z_{21}Z_{44}) + Z_{14}(Z_{21}Z_{43} - Z_{41}Z_{23})\}]
 \end{aligned}$$



$$\begin{aligned}
 & -B_3 \{Z_{11}(Z_{22}Z_{44} - Z_{42}Z_{24}) + Z_{12}(Z_{41}Z_{24} - Z_{21}Z_{44}) + Z_{14}(Z_{21}Z_{42} - Z_{41}Z_{22})\} \\
 & + B_4 \{Z_{11}(Z_{22}Z_{43} - Z_{42}Z_{23}) + Z_{12}(Z_{41}Z_{23} - Z_{21}Z_{43}) + Z_{13}(Z_{21}Z_{42} - Z_{41}Z_{22})\} \\
 & = \frac{\chi_3}{|J|} \{Z_{11}Z_{22}Z_{33}Z_{44} - Z_{11}Z_{22}Z_{43}Z_{34} + Z_{11}Z_{23}Z_{42}Z_{34} - Z_{11}Z_{23}Z_{32}Z_{44} \\
 & + Z_{11}Z_{24}Z_{32}Z_{43} - Z_{11}Z_{24}Z_{42}Z_{33} - Z_{12}Z_{21}Z_{33}Z_{44} + Z_{12}Z_{21}Z_{43}Z_{34} - Z_{12}Z_{23}Z_{41}Z_{34} \\
 & + Z_{12}Z_{23}Z_{31}Z_{44} - Z_{12}Z_{24}Z_{31}Z_{43} + Z_{12}Z_{24}Z_{41}Z_{33} + Z_{13}Z_{21}Z_{32}Z_{44} - Z_{13}Z_{21}Z_{42}Z_{34} \\
 & + Z_{13}Z_{22}Z_{41}Z_{34} - Z_{13}Z_{22}Z_{31}Z_{44} + Z_{13}Z_{24}Z_{31}Z_{42} - Z_{13}Z_{24}Z_{41}Z_{32} - Z_{14}Z_{21}Z_{32}Z_{43} \\
 & + Z_{14}Z_{21}Z_{42}Z_{33} - Z_{14}Z_{22}Z_{41}Z_{33} + Z_{14}Z_{22}Z_{31}Z_{43} - Z_{14}Z_{23}Z_{31}Z_{42} + Z_{14}Z_{23}Z_{41}Z_{32}\} \\
 & - \frac{\eta}{|J|} \{-B_1Z_{12}Z_{23}Z_{44} + B_1Z_{12}Z_{43}Z_{24} - B_1Z_{13}Z_{42}Z_{24} + B_1Z_{13}Z_{22}Z_{44} - B_1Z_{14}Z_{22}Z_{43} \\
 & + B_1Z_{14}Z_{42}Z_{23} + B_2Z_{11}Z_{23}Z_{44} - B_2Z_{11}Z_{43}Z_{24} + B_2Z_{13}Z_{41}Z_{24} - B_2Z_{13}Z_{21}Z_{44} \\
 & + B_2Z_{14}Z_{21}Z_{43} - B_2Z_{14}Z_{41}Z_{23} - B_3Z_{11}Z_{22}Z_{44} + B_3Z_{11}Z_{42}Z_{24} - B_3Z_{12}Z_{41}Z_{24} \\
 & + B_3Z_{12}Z_{21}Z_{44} - B_3Z_{14}Z_{21}Z_{42} + B_3Z_{14}Z_{41}Z_{22} + B_4Z_{11}Z_{22}Z_{43} - B_4Z_{11}Z_{42}Z_{23} \\
 & + B_4Z_{12}Z_{41}Z_{23} - B_4Z_{12}Z_{21}Z_{43} + B_4Z_{13}Z_{21}Z_{42} - B_4Z_{13}Z_{41}Z_{22}\} \\
 & = \frac{\chi_3}{|J|} \frac{A^4 \chi_1^{4i} \chi_2^{4j} \chi_3^{4k} \chi_4^{4l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \{i(i-1)j(j-1)k(k-1)l(l-1) - i(i-1)j(j-1)k^2l^2 \\
 & + i(i-1)j^2k^2l^2 - i(i-1)j^2k^2l(l-1) + i(i-1)j^2k^2l^2 - i(i-1)j^2k(k-1)l^2 \\
 & - i^2j^2k(k-1)l(l-1) + i^2j^2k^2l^2 - i^2j^2k^2l^2 + i^2j^2k^2l(l-1) - i^2j^2k^2l^2 \\
 & + i^2j^2k(k-1)l^2 + i^2j^2k^2l(l-1) - i^2j^2k^2l^2 + i^2j(j-1)k^2l^2 - i^2j(j-1)k^2l(l-1) \\
 & + i^2j^2k^2l^2 - i^2j^2k^2l^2 - i^2j^2k^2l^2 + i^2j^2k(k-1)l^2 - i^2j(j-1)k(k-1)l^2 \\
 & + i^2j(j-1)k^2l^2 - i^2j^2k^2l^2 + i^2j^2k^2l^2\} - \frac{1}{|J|} \frac{A^3 \chi_1^{3i} \chi_2^{3j} \chi_3^{3k} \chi_4^{3l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \frac{A \chi_1^i \chi_2^j \chi_3^k \chi_4^l \Phi}{B} \\
 & \{-b_1 \chi_1 \chi_3 i j^2 k l(l-1) + b_1 \chi_1 \chi_3 i j^2 k l^2 - b_1 \chi_1 \chi_3 i j^2 k l^2 + b_1 \chi_1 \chi_3 i j(j-1) k l(l-1) \\
 & - b_1 \chi_1 \chi_3 i j(j-1) k l^2 + b_1 \chi_1 \chi_3 i j^2 k l^2 + b_2 \chi_2 \chi_3 i(i-1) j k l(l-1) - b_2 \chi_2 \chi_3 i(i-1) j k l^2 \\
 & + b_2 \chi_2 \chi_3 i^2 j k l^2 - b_2 \chi_2 \chi_3 i^2 j k l(l-1) + b_2 \chi_2 \chi_3 i^2 j k l^2 - b_2 \chi_2 \chi_3 i^2 j k l^2\}
 \end{aligned}$$

$$\begin{aligned}
 & -b_3\chi_3^2i(i-1)j(j-1)l(l-1) + b_3\chi_3^2i(i-1)j^2l^2 - b_3\chi_3^2i^2j^2l^2 + b_3\chi_3^2i^2j^2l(l-1) \\
 & - b_3\chi_3^2i^2j^2l^2 + b_3\chi_3^2i^2j(j-1)l^2 + b_4\chi_3\chi_4i(i-1)j(j-1)kl - b_4\chi_3\chi_4i(i-1)j^2kl \\
 & + b_4\chi_3\chi_4i^2j^2kl - b_4\chi_3\chi_4i^2j^2kl + b_4\chi_3\chi_4i^2j^2kl - b_4\chi_3\chi_4i^2j(j-1)kl\} \\
 & = \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4^2} \{(i-1)(j-1)(k-1)(l-1) - (i-1)(j-1)kl + 2(i-1)jkl \\
 & - (i-1)jk(l-1) - (i-1)j(k-1)l - ij(k-1)(l-1) - 3ijkl + 2ij(k-1)l \\
 & + 2ijk(l-1) - i(j-1)k(l-1) - i(j-1)(k-1)l + 2i(j-1)kl\} \\
 & - \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4^2} \{i(j-1)(l-1) - i(j-1)l + (i-1)j(l-1) - (i-1)jl \\
 & + ijl - ij(l-1) - (i-1)(j-1)(l-1) + (i-1)(j-1)l\} \\
 & = \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1\chi_2^2\chi_3^2\chi_4^2} (1-\Phi) - \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4^2} \\
 & \frac{\partial \eta}{\partial b_3} = - \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}\Phi}{\chi_1\chi_2^2\chi_3^2\chi_4^2} < 0. \tag{15}
 \end{aligned}$$

From the relation (15) we have seen that when per unit cost of principal raw material increases, the level of marginal product decreases, which is reasonable. This seems that due to increase of the cost of principal raw material, the firm will purchase less of it; consequently, production of the firm will decrease. Moreover, it seems that the principal raw material may have no substitutes.

Now we analyze the economic effect on Lagrange multiplier  $\eta$  when per unit cost of irregular inputs increases. Taking  $T_{14}$  (i.e., term of 1<sup>st</sup> row and 4<sup>th</sup> column) from both sides of (12) we get [Mohajan et al., 2013; Mohajan, 2021a, 2022],

$$\begin{aligned}
 \frac{\partial \eta}{\partial b_4} &= \frac{\chi_4}{|J|} [C_{11}] + \frac{\eta}{|J|} [C_{51}] \\
 &= \frac{\chi_4}{|J|} \text{Cofactor of } C_{11} + \frac{\eta}{|J|} \text{Cofactor of } C_{51}
 \end{aligned}$$



$$\begin{aligned}
 &= \frac{\chi_4}{|J|} \begin{vmatrix} Z_{11} & Z_{12} & Z_{13} & Z_{14} \\ Z_{21} & Z_{22} & Z_{23} & Z_{24} \\ Z_{31} & Z_{32} & Z_{33} & Z_{34} \\ Z_{41} & Z_{42} & Z_{43} & Z_{44} \end{vmatrix} + \frac{\eta}{|J|} \begin{vmatrix} -B_1 & -B_2 & -B_3 & -B_4 \\ Z_{11} & Z_{12} & Z_{13} & Z_{14} \\ Z_{21} & Z_{22} & Z_{23} & Z_{24} \\ Z_{31} & Z_{32} & Z_{33} & Z_{34} \end{vmatrix} \\
 &= \frac{\chi_4}{|J|} \left\{ Z_{11} \begin{vmatrix} Z_{22} & Z_{23} & Z_{24} \\ Z_{32} & Z_{33} & Z_{34} \\ Z_{42} & Z_{43} & Z_{44} \end{vmatrix} - Z_{12} \begin{vmatrix} Z_{21} & Z_{23} & Z_{24} \\ Z_{31} & Z_{33} & Z_{34} \\ Z_{41} & Z_{43} & Z_{44} \end{vmatrix} + Z_{13} \begin{vmatrix} Z_{21} & Z_{22} & Z_{24} \\ Z_{31} & Z_{32} & Z_{34} \\ Z_{41} & Z_{42} & Z_{44} \end{vmatrix} \right. \\
 &\quad \left. - Z_{14} \begin{vmatrix} Z_{21} & Z_{22} & Z_{23} \\ Z_{31} & Z_{32} & Z_{33} \\ Z_{41} & Z_{42} & Z_{43} \end{vmatrix} \right\} \\
 &\quad + \frac{\eta}{|J|} \left\{ -B_1 \begin{vmatrix} Z_{12} & Z_{13} & Z_{14} \\ Z_{22} & Z_{23} & Z_{24} \\ Z_{32} & Z_{33} & Z_{34} \end{vmatrix} + B_2 \begin{vmatrix} Z_{11} & Z_{13} & Z_{14} \\ Z_{21} & Z_{23} & Z_{24} \\ Z_{31} & Z_{33} & Z_{34} \end{vmatrix} - B_3 \begin{vmatrix} Z_{11} & Z_{12} & Z_{14} \\ Z_{21} & Z_{22} & Z_{24} \\ Z_{31} & Z_{32} & Z_{34} \end{vmatrix} \right. \\
 &\quad \left. + B_4 \begin{vmatrix} Z_{11} & Z_{12} & Z_{13} \\ Z_{21} & Z_{22} & Z_{23} \\ Z_{31} & Z_{32} & Z_{33} \end{vmatrix} \right\} \\
 &= \frac{\chi_4}{|J|} \left[ Z_{11} \{ Z_{22}(Z_{33}Z_{44} - Z_{43}Z_{34}) + Z_{23}(Z_{42}Z_{34} - Z_{32}Z_{44}) + Z_{24}(Z_{32}Z_{43} - Z_{42}Z_{33}) \} \right. \\
 &\quad - Z_{12} \{ Z_{21}(Z_{33}Z_{44} - Z_{43}Z_{34}) + Z_{23}(Z_{41}Z_{34} - Z_{31}Z_{44}) + Z_{24}(Z_{31}Z_{43} - Z_{41}Z_{33}) \} \\
 &\quad + Z_{13} \{ Z_{21}(Z_{32}Z_{44} - Z_{42}Z_{34}) + Z_{22}(Z_{41}Z_{34} - Z_{31}Z_{44}) + Z_{24}(Z_{31}Z_{42} - Z_{41}Z_{32}) \} \\
 &\quad - Z_{14} \{ Z_{21}(Z_{32}Z_{43} - Z_{42}Z_{33}) + Z_{22}(Z_{41}Z_{33} - Z_{31}Z_{43}) + Z_{23}(Z_{31}Z_{42} - Z_{41}Z_{32}) \} \\
 &\quad \left. + \frac{\eta}{|J|} [-B_1 \{ Z_{12}(Z_{23}Z_{34} - Z_{33}Z_{24}) + Z_{13}(Z_{32}Z_{24} - Z_{22}Z_{34}) + Z_{14}(Z_{22}Z_{33} - Z_{32}Z_{23}) \} \right. \\
 &\quad \left. + B_2 \{ Z_{11}(Z_{23}Z_{34} - Z_{33}Z_{24}) + Z_{13}(Z_{31}Z_{24} - Z_{21}Z_{34}) + Z_{14}(Z_{21}Z_{33} - Z_{31}Z_{23}) \} \right]
 \end{aligned}$$



$$\begin{aligned}
 & -B_3 \{Z_{11}(Z_{22}Z_{34} - Z_{32}Z_{24}) + Z_{12}(Z_{31}Z_{24} - Z_{21}Z_{34}) + Z_{14}(Z_{21}Z_{32} - Z_{31}Z_{22})\} \\
 & + B_4 \{Z_{11}(Z_{22}Z_{33} - Z_{32}Z_{23}) + Z_{12}(Z_{31}Z_{23} - Z_{21}Z_{33}) + Z_{13}(Z_{21}Z_{32} - Z_{31}Z_{22})\} \\
 & = \frac{\chi_4}{|J|} \{Z_{11}Z_{22}Z_{33}Z_{44} - Z_{11}Z_{22}Z_{43}Z_{34} + Z_{11}Z_{23}Z_{42}Z_{34} - Z_{11}Z_{23}Z_{32}Z_{44} \\
 & + Z_{11}Z_{24}Z_{32}Z_{43} - Z_{11}Z_{24}Z_{42}Z_{33} - Z_{12}Z_{21}Z_{33}Z_{44} + Z_{12}Z_{21}Z_{43}Z_{34} - Z_{12}Z_{23}Z_{41}Z_{34} \\
 & + Z_{12}Z_{23}Z_{31}Z_{44} - Z_{12}Z_{24}Z_{31}Z_{43} + Z_{12}Z_{24}Z_{41}Z_{33} + Z_{13}Z_{21}Z_{32}Z_{44} - Z_{13}Z_{21}Z_{42}Z_{34} \\
 & + Z_{13}Z_{22}Z_{41}Z_{34} - Z_{13}Z_{22}Z_{31}Z_{44} + Z_{13}Z_{24}Z_{31}Z_{42} - Z_{13}Z_{24}Z_{41}Z_{32} - Z_{14}Z_{21}Z_{32}Z_{43} \\
 & + Z_{14}Z_{21}Z_{42}Z_{33} - Z_{14}Z_{22}Z_{41}Z_{33} + Z_{14}Z_{22}Z_{31}Z_{43} - Z_{14}Z_{23}Z_{31}Z_{42} + Z_{14}Z_{23}Z_{41}Z_{32}\} \\
 & + \frac{\eta}{|J|} \{-B_1Z_{12}Z_{23}Z_{34} + B_1Z_{12}Z_{33}Z_{24} - B_1Z_{13}Z_{32}Z_{24} + B_1Z_{13}Z_{22}Z_{34} - B_1Z_{14}Z_{22}Z_{33} \\
 & + B_1Z_{14}Z_{32}Z_{23} + B_2Z_{11}Z_{23}Z_{34} - B_2Z_{11}Z_{33}Z_{24} + B_2Z_{13}Z_{31}Z_{24} - B_2Z_{13}Z_{21}Z_{34} \\
 & + B_2Z_{14}Z_{21}Z_{33} - B_2Z_{14}Z_{31}Z_{23} - B_3Z_{11}Z_{22}Z_{34} + B_3Z_{11}Z_{32}Z_{24} - B_3Z_{12}Z_{31}Z_{24} \\
 & + B_3Z_{12}Z_{21}Z_{34} - B_3Z_{14}Z_{21}Z_{32} + B_3Z_{14}Z_{31}Z_{22} + B_4Z_{11}Z_{22}Z_{33} - B_4Z_{11}Z_{32}Z_{23} \\
 & + B_4Z_{12}Z_{31}Z_{23} - B_4Z_{12}Z_{21}Z_{33} + B_4Z_{13}Z_{21}Z_{32} - B_4Z_{13}Z_{31}Z_{22}\} \\
 & = \frac{\chi_4}{|J|} \frac{A^4 \chi_1^{4i} \chi_2^{4j} \chi_3^{4k} \chi_4^{4l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \{i(i-1)j(j-1)k(k-1)l(l-1) - i(i-1)j(j-1)k^2l^2 \\
 & + i(i-1)j^2k^2l^2 - i(i-1)j^2k^2l(l-1) + i(i-1)j^2k^2l^2 - i(i-1)j^2k(k-1)l^2 \\
 & - i^2j^2k(k-1)l(l-1) + i^2j^2k^2l^2 - i^2j^2k^2l^2 + i^2j^2k^2l(l-1) - i^2j^2k^2l^2 \\
 & + i^2j^2k(k-1)l^2 + i^2j^2k^2l(l-1) - i^2j^2k^2l^2 + i^2j(j-1)k^2l^2 - i^2j(j-1)k^2l(l-1) \\
 & + i^2j^2k^2l^2 - i^2j^2k^2l^2 - i^2j^2k^2l^2 + i^2j^2k(k-1)l^2 - i^2j(j-1)k(k-1)l^2 \\
 & + i^2j(j-1)k^2l^2 - i^2j^2k^2l^2 + i^2j^2k^2l^2\} \\
 & + \frac{1}{|J|} \frac{A^3 \chi_1^{3i} \chi_2^{3j} \chi_3^{3k} \chi_4^{3l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \frac{A \chi_1^i \chi_2^j \chi_3^k \chi_4^l \Phi}{B} \{-b_1 \chi_1 \chi_4 i j^2 k^2 l + b_1 \chi_1 \chi_4 i j^2 k(k-1)l \\
 & - b_1 \chi_1 \chi_4 i j^2 k^2 l + b_1 \chi_1 \chi_4 i j(j-1)k^2 l - b_1 \chi_1 \chi_4 i j(j-1)k(k-1)l + b_1 \chi_1 \chi_4 i j^2 k^2 l \\
 & + b_2 \chi_2 \chi_4 i(i-1)j k^2 l - b_2 \chi_2 \chi_4 i(i-1)j k(k-1)l + b_2 \chi_2 \chi_4 i^2 j k(k-1)l
 \end{aligned}$$



$$\begin{aligned}
 & -b_2\chi_2\chi_4i^2jk^2l + b_2\chi_2\chi_4i^2jk(k-1)l - b_2\chi_2\chi_4i^2jk^2l - b_3\chi_3\chi_4i(i-1)j(j-1)kl \\
 & + b_3\chi_3\chi_4i(i-1)j^2kl - b_3\chi_3\chi_4i^2j^2kl + b_3\chi_3\chi_4i^2j^2kl - b_3\chi_3\chi_4i^2j^2kl \\
 & + b_3\chi_3\chi_4i^2j(j-1)kl + b_4\chi_4^2i(i-1)j(j-1)k(k-1) - b_4\chi_4^2i(i-1)j^2k^2 \\
 & + b_4\chi_4^2i^2j^2k^2 - b_4\chi_4^2i^2j^2k(k-1) + b_4\chi_4^2i^2j^2k^2 - b_4\chi_4^2i^2j(j-1)k^2 \} \\
 & = \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4} \{ (i-1)(j-1)(k-1)(l-1) - (i-1)(j-1)kl + 2(i-1)jkl \\
 & - (i-1)jk(l-1) - (i-1)j(k-1)l - ij(k-1)(l-1) - 3ijkl + 2ij(k-1)l \\
 & + 2ijk(l-1) - i(j-1)k(l-1) - i(j-1)(k-1)l + 2i(j-1)kl \} \\
 & + \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4} \{ -2ijk + 2ij(k-1) + i(j-1)k - i(j-1)(k-1) \\
 & + (i-1)jk - (i-1)j(k-1) - (i-1)(j-1)k + (i-1)(j-1)(k-1) \} \\
 & = \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4} (1-\Phi) - \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4} \\
 & \frac{\partial \eta}{\partial b_4} = - \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}\Phi}{\chi_1^2\chi_2^2\chi_3^2\chi_4} < 0. \tag{16}
 \end{aligned}$$

From (16) we have realized that when per unit cost of irregular inputs increases, the level of marginal production of the firm decreases. The firm purchase less irregular inputs for the industrial production. This seems that irregular inputs have no substitutes.

Now we analyze the economic effects on Lagrange multiplier  $\eta$  when the budget size of the firm increases. Taking  $T_{15}$  (i.e., term of 1<sup>st</sup> row and 5<sup>th</sup> column) from both sides of (12) we get [Islam et al., 2010b; Mohajan, 2021b,c; Mohajan & Mohajan, 2023],

$$\begin{aligned}
 \frac{\partial \eta}{\partial B} &= - \frac{1}{|J|} [C_{11}] \\
 &= - \frac{1}{|J|} \text{Cofactor of } C_{11}
 \end{aligned}$$



$$\begin{aligned}
 &= -\frac{1}{|J|} \begin{vmatrix} Z_{11} & Z_{12} & Z_{13} & Z_{14} \\ Z_{21} & Z_{22} & Z_{23} & Z_{24} \\ Z_{31} & Z_{32} & Z_{33} & Z_{34} \\ Z_{41} & Z_{42} & Z_{43} & Z_{44} \end{vmatrix} \\
 &= -\frac{1}{|J|} \left\{ \begin{vmatrix} Z_{22} & Z_{23} & Z_{24} \\ Z_{32} & Z_{33} & Z_{34} \\ Z_{42} & Z_{43} & Z_{44} \end{vmatrix} - Z_{12} \begin{vmatrix} Z_{21} & Z_{23} & Z_{24} \\ Z_{31} & Z_{33} & Z_{34} \\ Z_{41} & Z_{43} & Z_{44} \end{vmatrix} + Z_{13} \begin{vmatrix} Z_{21} & Z_{22} & Z_{24} \\ Z_{31} & Z_{32} & Z_{34} \\ Z_{41} & Z_{42} & Z_{44} \end{vmatrix} \right. \\
 &\quad \left. - Z_{14} \begin{vmatrix} Z_{21} & Z_{22} & Z_{23} \\ Z_{31} & Z_{32} & Z_{33} \\ Z_{41} & Z_{42} & Z_{43} \end{vmatrix} \right\} \\
 &= -\frac{1}{|J|} [Z_{11} \{Z_{22}(Z_{33}Z_{44} - Z_{43}Z_{34}) + Z_{23}(Z_{42}Z_{34} - Z_{32}Z_{44}) + Z_{24}(Z_{32}Z_{43} - Z_{42}Z_{33})\} \\
 &\quad - Z_{12} \{Z_{21}(Z_{33}Z_{44} - Z_{43}Z_{34}) + Z_{23}(Z_{41}Z_{34} - Z_{31}Z_{44}) + Z_{24}(Z_{31}Z_{43} - Z_{41}Z_{33})\} \\
 &\quad + Z_{13} \{Z_{21}(Z_{32}Z_{44} - Z_{42}Z_{34}) + Z_{22}(Z_{41}Z_{34} - Z_{31}Z_{44}) + Z_{24}(Z_{31}Z_{42} - Z_{41}Z_{32})\} \\
 &\quad - Z_{14} \{Z_{21}(Z_{32}Z_{43} - Z_{42}Z_{33}) + Z_{22}(Z_{41}Z_{33} - Z_{31}Z_{43}) + Z_{23}(Z_{31}Z_{42} - Z_{41}Z_{32})\}] \\
 &= -\frac{1}{|J|} \frac{A^4 \chi_1^{4i} \chi_2^{4j} \chi_3^{4k} \chi_4^{4l}}{\chi_1^2 \chi_2^2 \chi_3^2 \chi_4^2} \{i(i-1)j(j-1)k(k-1)l(l-1) - i(i-1)j(j-1)k^2l^2 \\
 &\quad + i(i-1)j^2k^2l^2 - i(i-1)j^2k^2l(l-1) + i(i-1)j^2k^2l^2 - i(i-1)j^2k(k-1)l^2 \\
 &\quad - i^2j^2k(k-1)l(l-1) + i^2j^2k^2l^2 - i^2j^2k^2l^2 + i^2j^2k^2l(l-1) - i^2j^2k^2l^2 \\
 &\quad + i^2j^2k(k-1)l^2 + i^2j^2k^2l(l-1) - i^2j^2k^2l^2 + i^2j(j-1)k^2l^2 - i^2j(j-1)k^2l(l-1) \\
 &\quad + i^2j^2k^2l^2 - i^2j^2k^2l^2 - i^2j^2k^2l^2 + i^2j^2k(k-1)l^2 - i^2j(j-1)k(k-1)l^2 \\
 &\quad + i^2j(j-1)k^2l^2 - i^2j^2k^2l^2 + i^2j^2k^2l^2\}
 \end{aligned}$$

$$\begin{aligned}
 &= -\frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4^2} \left\{ (i-1)(j-1)(k-1)(l-1) - (i-1)(j-1)kl \right. \\
 &+ 2(i-1)jkl - (i-1)jk(l-1) - (i-1)j(k-1)l - ij(k-1)(l-1) - 3ijkl \\
 &+ 2ij(k-1)l + 2ijk(l-1) - i(j-1)k(l-1) - i(j-1)(k-1)l + 2i(j-1)kl \left. \right\} \\
 \frac{\partial \eta}{\partial B} &= \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4^2} (\Phi - 1). \tag{17}
 \end{aligned}$$

If  $\Phi > 1$ , i.e., for increasing returns to scale, from (17) we get,

$$\frac{\partial \eta}{\partial B} = \frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4^2} (\Phi - 1) > 0. \tag{18}$$

From (18) we can say that when budget of the firm increases, the level of marginal product also increases. This seems that budget is essential for this firm, and it will increase its budget for profit maximization.

If  $\Phi < 1$ , i.e., for decreasing returns to scale, from (17) we get,

$$\frac{\partial \eta}{\partial B} = -\frac{1}{|J|} \frac{A^4ijkl\chi_1^{4i}\chi_2^{4j}\chi_3^{4k}\chi_4^{4l}}{\chi_1^2\chi_2^2\chi_3^2\chi_4^2} (1 - \Phi) < 0. \tag{19}$$

From (19) we can say that when budget of the firm increases, the level of marginal product decreases. This seems that the production of this firm will decrease for decreasing returns to scale [Mohajan & Mohajan, 2022f; 2023].

If  $\Phi = 1$ , i.e., for constant returns to scale, from (17) we get,

$$\frac{\partial \eta}{\partial B} = 0. \tag{20}$$

From (20) we can say that when budget of the firm increases, there is no change in the level of marginal product. In this situation the firm suffers critical condition in its future production, and it cannot take major attempts for sustainability; and consequently, the increasing budget will not be benefited for this firm.

## 8. Conclusions

In this study we have worked on mathematical economic activities to see the economic effects when the costs of various inputs increase, and also the budget of the firm increases. In the global economic arena, every firm expects to move

through the profit maximization policy. Sensitivity analysis is always helpful for the sustainable atmosphere of the firms to take attempts for the future production. The method of Lagrange multiplier is an important device in mathematical economic models. In this study we have used this tool to make the 4-dimensional constrained problem to a higher dimensional unconstrained problem, where Cobb-Douglas productions function is considered as our profit function.

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