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**FOCUS
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EDITORIAL

The Editor-in-Chief and the Editorial Board are proud to present the first issue of the fourth volume of Focus on Research in Contemporary Economics (FORCE). We are driven to establish FORCE which is dedicated to create a well-established venue for high quality research in contemporary Economics. Its content mirrors widespread scholarly approaches and interests within the dimensions of Economics, Finance, Accounting, Banking, Business Administration, Marketing, Management, and other related areas in Social Sciences. Therefore, FORCE's contributions are not limited to a specific disciplinary philosophy or a particular approach.

This issue features five research articles that report essential findings and implications in Contemporary Economics. In the first article, Chakabva, Bganya & Obokoh (2023) investigates the implication of stock management on the financial performance of SMEs in the mobile industry in Cape Town, South Africa.

In the second article, Oseki , Agbogidi, Okondu, & Aronu (2023) uses various tests such as ADF, Jarque-Bera, and co-integration test to determine the order of integration of variables and examine the short-run and long-run effect of the variables on growth output.

In the third article, Musa (2023) examines the impact of household income on child labour in the Bauchi Local Government Area of Bauchi State.

In the fourth article, Akarsu (2023) analyses the relationship between economic growth and income distributions in line with the latest data announced in Türkiye.

In the fifth article, Kwatra (2023) examines at the long-term relationship between GDP and the GFC and GNS to answer the question whether gross national saving and gross capital formation contribute to Oman's economic growth.

I would like to thank our authors, reviewers, and readers for their continuous support.

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REFERENCES

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FORCE

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STOCK MANAGEMENT AND SUSTAINABLE FINANCIAL PERFORMANCE OF SMES IN THE MOBILE INDUSTRY IN CAPE TOWN, SOUTH AFRICA

Oscar Chakabva^{*}, Martha Bganya, Lawrence Ogechukwu Obokoh |

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STOCK MANAGEMENT AND SUSTAINABLE FINANCIAL PERFORMANCE OF SMES IN THE MOBILE INDUSTRY IN CAPE TOWN, SOUTH AFRICA

Oscar Chakabva*, Martha Bganya, Lawrence O. Obokoh

ABSTRACT

SMEs in the mobile industry have high telecommunication costs such as high stock costs and deactivation of SIM cards, perceived to be the major problem contributing to their stagnant financial performance. The objective of the paper was to investigate the implication of stock management on the financial performance of SMEs in the mobile industry in Cape Town, South Africa. A questionnaire survey was undertaken with a sample of 50 SMEs in the mobile industry to obtain quantitative data. The data was analysed using descriptive and inferential statistics through SPSS and Microsoft Excel power pivot. The results of the analysis revealed that most sampled SMEs prepared stock budgets and that the most commonly used stock management technique was the economic order quantity. It also revealed inexperienced personnel, lack of expertise in stock handling, poor store records and inadequate funds as the main factors hindering effective stock management. The correlation analysis results showed positive correlation of 0.65 between stock turnover and liquidity, and 0.71 between stock turnover and profitability. As a result, the study revealed that stock management impacts positively on the financial performance of a business. The study suggests that to tackle the root causes of poor financial performance among South African SMEs in the mobile industry, effective stock management is crucial.

KEY WORDS:

Stock, stock management, financial performance, mobile industry and SMEs

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1. INTRODUCTION

The South Africa (SA) mobile industry is considered as one of the most progressive and advanced industries in the African continent (Businesstech, 2017; Gaille, 2019). South Africa has the most extensive mobile phone presence in Africa, with productive development of internet connectivity and infrastructure growth since 2008 (Mpwanya & Van Heerden, 2015; Businesstech, 2017; Gaille, 2019). The Covid-19 pandemic accelerated the widespread adoption of mobile data and digital technologies in SA and globally, as remote working and remote learning have become the new norm (Faku, 2020; Hern, 2020; Ndlazi, 2020). Mobile industry penetration and development have created jobs in South Africa as well as new business opportunities for small and medium enterprises (SMEs), thereby improving infrastructure, productivity and financial performance (Samakosky, 2016; Elliott, 2019).

Despite the importance of the mobile industry to the South African economy, firms operating in this industry are struggling to survive, especially those classified as SMEs and have high failure rate in SA, ranging from 70 to 80% (Fatoki, 2014; Leboea, 2017). This high failure rate undermines the potential of the mobile industry to make a significant contribution towards economic growth, creation of jobs and the reduction of poverty.

Though the causes of the high failure rate of SMEs operating in the mobile industry are varied, one that is often discussed is inefficiency in respect of stock management. A study by Mpwanya and Van Heerden (2017) found that SME mobile providers neglect the management of stock (i.e., mobile phones, starter packs, routers and network equipment) and often take a long time to sell their stock, leading to a decline in profit and eventual insolvency. Anecdotal evidence have it that a particular SME in the mobile phone industry in Cape Town had been growing rapidly with an average of 1500 contract cellphone activations each month but kept on battling with liquidity and profitability problems. It was assumed that, due to the high number of activations of cell phones per month, the SME was acquiring lots of stocks which at the end became too excessive stock due to returns. Studies by Kanguru (2016) and Radasanu (2016) revealed that excess volumes of stock negatively affect the financial performance of a business.

In the quest for a sustainable solution to the poor financial performance and the high failure rate of SMEs operating in the mobile industry in South Africa, a focus on stock management could therefore be key. Despite this, little research has been conducted on the management of stock within SMEs operating in the mobile industry of South Africa. Most studies that have investigated stock management have focused on SMEs in the manufacturing sector (Shin et al., 2015; Otuya & Eginwin, 2017; Orobias et al., 2020). In order to address this knowledge gap, it is vitally important to investigate the implications of stock management on the financial performance of SMEs operating in the mobile industry in Cape Town, South Africa. The remainder of the article will commence with a detailed review of the literature in section 2 on the subject matter. The research methodology will in section 3, followed by the analysis and discussion of the results in section 4. The concluding remarks and areas for future research will be highlighted in section 5.

2. LITERATURE REVIEW

This section of the paper provides an overview of the mobile industry, a review of existing literature on stock management and financial performance. It also offers a theoretical framework for the investigation based on the contingency theory.

2.1. “An overview of the Mobile Industry.”

“The mobile industry is a subset of the telecommunications industry concentrating on cell phones, but encompassing electronics, producers of computer hardware, software, wireless and remote technologies that are utilised in a diversity of portable gadgets” (Akers, 2020; McMahon, 2020). The mobile industry is also an important element in the fourth industrial revolution (4IR), since 3G/4G networks in conjunction with increasing smartphone adoption are creating demand for 4IR digital media, digital content, facilities and services (McGinnis, 2018; Eiser et al., 2019).

The rise in consumer demand for mobile devices has led to growth in the mobile industry, created employment and improved living standards for populations in SA and around the globe (Akers 2020; McMahon, 2020). In SA 20 to 22 million people make use of cell phones, which is about 33% of the nation’s population (Statista.com, 2020). During this era of the Covid-19 pandemic, mobile internet, fixed wireless connections, and mobile applications have become essential instruments for staying operational and in touch with medical professionals, co-

workers, and loved ones (GSMA, 2021).

Recent SME landscape studies conducted by Anon. (2019) and Thulo (2019) have shown that most SMEs in South Africa do not survive more than five years because of the many obstacles they face in respect of financial resources. For SMEs in the mobile industry, the high cost of stock such as cell phones, starter packs, data and routers, as well as their ever-growing operational expenditure (Opex), including stock-related costs, can lead to stagnation in financial performance (Mpwanya & Van Heerden, 2015; Lang, 2018). The paper tries to focus on the perception that SMEs operating in the mobile industry in SA are underperforming partly due to lack of sound stock management.

2.2. The concept of stock management

According to Bhandari (2018:79), stock management is a “management tool that consists of planning, organising, monitoring and controlling the process of stocks from their initial procurement to ultimate destination.” A low level of stock unfavourably affects everyday operation of the business. On the other hand, a high level of stock can result in losses, stock damage, bad stock, opportunity costs and various holding costs. Figure 1, below, illustrates the stock management process.

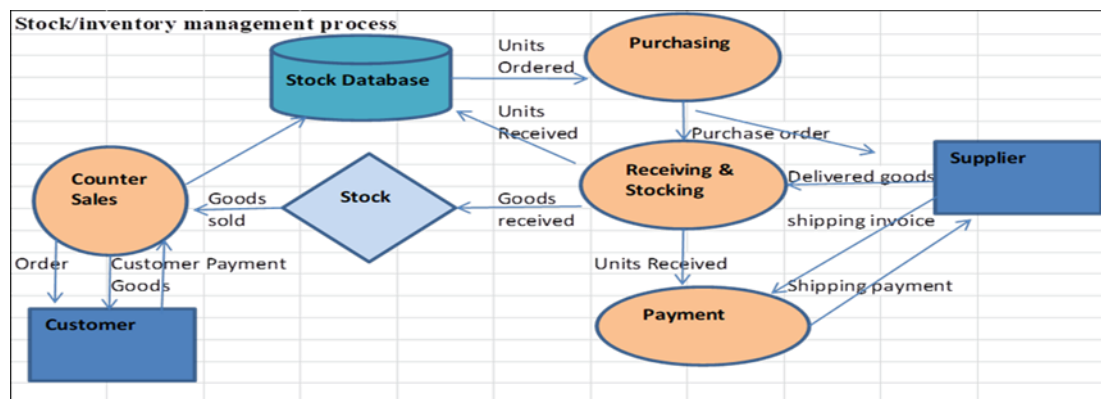


Figure 1: Stock management process (Tandem Technologies, 2014)

Moreover, Alla (2018) further elaborates that stock management is a “collection of techniques, tools, methodologies, and strategies for stowing, tracking, delivering, and ordering stock”. It is essential to control the movement of stock effectively to maximise liquidity, reduce losses and enhance profits, and this is where stock management techniques come into play. Experts have identified the following stock management tools and techniques: “economic order quantity, minimum order quantity, just in time, safety stock inventory, reorder point formula, batch tracking, consignment stock, perpetual stock management, drop-

shipping, six sigma and demand forecasting” (Shah & Mittal, 2019; Walts, 2020). CX Works (2018) notes that there is no universal prescription for stock management since it will depend on the processes, environment and technology characteristic of the organisation. SMEs should make sure that the strategy they choose can improve efficiency and sustain growth.

2.3. Factors affecting the effectiveness of stock management of SMEs

Factors that influence the effectiveness of stock management in SMEs include the following (Chan et al., 2017; Olowolaju & Mogaji, 2020);

- Inadequate funds,
- inexperienced staff,
- lack of skills and knowledge by the employees,
- poor communication,
- suppliers, poor store records
- Uneven document management.
- Lack of technology

Is there no brief explanation given by the quoted authors on the listed items?

2.4. Organisational Profitability and Stock management

The main goal of stock management is to attain safety stock by preventing the holding of too much or too little stock. Safety stock helps the business to achieve manageable holding costs (Orobia et al., 2020). If an organisation’s working capital is not properly managed, the funds could end up being tied up in stock (Kakeeto et al., 2017). This will result in a higher stock conversion period, which affects sales turnover and decreases profitability. It is therefore essential for SMEs operating in the mobile industry to avoid over-stocking, as it will not only incurs higher costs (for insurance and storage, etc.) but can also lead to obsolete stock, which will negatively affect profitability. On the other hand, if stocks are decreased the conversion period and the volumes of stock to safety stock through sound stock management, will improve profitability (Kakeeto et al., 2017). Otuya and Eginwin (2017) notes that SMEs with higher stock turnover produce better results than those with lower stock turnover. But circumstances in the industries investigated – Ghana’s food industry and Nigeria’s manufacturing industry – may be distinct from those faced by SMEs operating in the mobile industry in South African. They have high telecommunication costs i.e., high stock costs and excessive related stock costs, perceived to be the

major problem contributing to stagnant financial performance.

2.5. Organisational Liquidity and Stock management

Evans (2016) has noted that the major dangers of holding excessive stock are “loss of profit, excessive carrying costs and liquidity problems”. Stock management is therefore critical to the maintenance of an SME’s liquidity position (Rodeck, 2011). Bulk purchase of goods by a firm may lead to a discount from the supplier and/or better credit terms for the purchaser, but may result in the firm holding excessive stock and reduced liquidity. Bibi and Amjad (2017) assert that stock management is crucial to enterprises since it affects the firm’s profitability and liquidity. A firm should closely monitor both profitability and liquidity since sacrificing one for the other may cause serious problems down the line.

2.6. Management of stock in the mobile industry

While studies on stock management by SMEs in the mobile industry are scarce, the ones included in this section are relevant to the present study. Epusi (2013) investigated mobile phone dealers in Nairobi, Kenya. The study examined approximately 100 respondents selected through random sampling, about 65% of the target population of 155 listed mobile phone dealers in Nairobi. The study noted that a considerable number of the SMEs surveyed neglected the management of their stock in relation to the threat posed to the environment by the mobile devices. Although they were aware of this, they did not heed the guidelines supplied by environmental bodies for mobile stock management. According to Epusi (2013), the management of stock impacts on the environment both in the forward logistics that deliver mobile stock and services to end-users, and in reverse logistics, which recycle mobile stock to refurbished phones. Moreover, many respondents were knowledgeable about green products and suppliers and were prepared to consider the purchase of refurbished mobile phones.

The study further revealed that refurbished phones accommodated the needs of customers who appreciate the lower cost, although refurbished phones may manifest technical problems that have a major influence on stock returns, leading to more costs to the supplier. The study however did not assess the implications of stock management on the financial performance of refurbished phone retailers. The study was conducted in Kenya, and although Kenya has a high mobile phone penetration comparable to South Africa’s, the generalisability

of the study's findings is questionable in the SA context and in addressing the objectives of this paper.

In a recent study, Mpwanya and Van Heerden (2017) explored supply chain costs that encompassed stock and related matters in the "South African mobile phone industry". The study investigated one mobile retailing group and three mobile network operators, using semi-structured interviews to collect data for a qualitative, case-study approach. The study showed that operating expenses incurred by stock purchases and related costs in mobile phone businesses are colossal, and that information on the management of stock and stock supply in the mobile phone industry in SA is highly limited. The study suggested that companies should, continuously embark on cost reductions such as holding lower stock levels to improve business performance. It found that better liquidity can be achieved by stock management through the maintenance of balanced stock levels, higher stock returns and the greater use of resources. Other avenues for reducing expenses and increasing efficiency and profitability in the mobile phone industry included the outsourcing of certain support activities and the direct purchasing of stocks by device manufacturers.

Mpwanya and Van Heerden (2017) argue that regulators should reassess the South African mobile telecoms policies by allowing SME mobile retailers to purchase handsets directly from device manufacturers to boost efficiency, from the perspective of both retailers and end-users. This would reduce stock costs and enable a better deal for consumers, to improve financial performance. Mpwanya and Van Heerden's (2017) research took the form of a qualitative case study, however, quantitative research would have been able to summarise large tracts of information, with greater accuracy and no bias. The results of the study, which included both large and small mobile phone companies in the industry and used a small sample size, did not reveal the implications of stock management on the financial performance of the SMEs involved.

Furthermore, the theory underpinning the study will also help in the interpretation of the research's findings, which will further aid in gaining a better understanding of the subject. A deeper comprehension of the implications of stock management on the financial performance of SMEs in the mobile industry in Cape Town, SA, will be made possible by the contingency theory in management accounting.

2.7. Contingency Theory of Management Accounting

Contingency theory is a method for studying organisational behaviour that elucidates “how contingent variables such as culture, technology and the exterior environment influence the design and function of organisations”. (Islam & Hu, 2012; Maziriri & Mapuranga, 2017). This theory is based on the notion that not every entity will derive the same benefits from a particular organisational structure. Contingency theory, as applied to this study, asserts that no management accounting techniques – for instance, for stock management –are universally appropriate for all businesses. Their suitability for a given enterprise depends on the situational factors that it faces (Islam & Hu, 2012).

Otley (2016) and Nguyen and Le (2020) identify the contingency factors affecting management accounting technique adoption as “organisation size, market competitive intensity, technology and the qualification levels of accounting personnel”. Thus, the size of an organisation has an impact on how stock management is administered as a management accounting practice; large organisations, for example, have the resources to employ sound stock management. As a result, there is a “positive correlation between the size of the entity and the use of advanced management accounting techniques” for stock management. Management accounting techniques also evolve in response to market competition, with a positive correlation between market competition intensity and management accounting approach adoption. Finally, there is a favourable correlation between the qualification levels of a company's employees and its use of management accounting techniques. (Otley, 2016; Nguyen & Le, 2020). Thus, the lower the skills or qualification level of the employees, the less the appropriate management accounting techniques will be adopted. A corollary is that the more advanced the level of technology employed by an entity, the more informed their decision making will be and the greater certainty it is that they will implement suitable management accounting techniques such as sound stock management.

Furthermore, Lopez and Hiebl (2015) emphasise the critical necessity for research into accounting processes in SMEs. Kemerer (1991) applied contingency principles in an earlier study in management accounting research. The study investigated the effects of “structural factors” and discovered that companies that employed just-in-time programmes are prone to provide worker's performance information. A study by Kibangou (2019) also applied contingency theory and found that strategic management techniques such as

drawing up a balance scorecard and budgets could help small businesses enhance their performance. On the other hand, a recent study by Orobias et al. (2020) asserts that sustainable performance in a business is “contingent on its unique offerings and the development of this uniqueness over time by fostering the core competencies of the business”. Orobias et al. (2020) maintain that when an SME’s managers have the skills required, they can use them to improve stock management, which will lead to healthier financial performance.

3. METHODOLOGY

Drawing upon studies such as Antwi and Hamza (2015), and Pratap (2019), the study adopted a quantitative research approach by the use questionnaire survey a tool of positivist paradigm.

3.1. Research Paradigm, Approach, and Design

The positivist paradigm was adopted to investigate the implications of stock management on the “financial performance of SMEs” in the mobile industry in Cape Town. The positivist paradigm perspective clarifies how variables correlate, shape occasions and cause results in quantitative terms (Antwi & Hamza, 2015). The positivist paradigm was adopted instead of the interpretative paradigm as it is more relevant to the quantitative research study, and it helps to obtain the closest approximation. Impelling from the positivist paradigm used the quantitative research method was adopted in the research to mitigate the research problem at hand. A casual research design was used to measure the implication of stock management on the financial performance of SMEs in the mobile industry since the study’s goal is to assess the relationship between stock management (an independent variable) and the financial performance (a dependent variable) of SMEs in Cape Town, SA. Casual research is a research design that is effective when ascertaining the correlation between variables. As a descriptive research design, it is suitable for knowing the cause-and-effect relationships between the independent variable and the dependent variable. (Pratap, 2019). Quantitative research, according to Etikan, Musa, and Alkassim (2016), is dependable, simple, and efficient.

3.2. Research Population, Sampling Technique, and Sample Size

A research population refers to the whole pool of relevant subjects from which a statistical sample can be drawn (Kenton, 2020). The intended research population in this study included all SMEs in the mobile industry in Cape Town,

South Africa. Through the Bizcommunity online directory, 68 SMEs in the mobile telecoms industry were identified, forming the research population (Bizcommunity South Africa, 2020). To increase the number of participants, the SMEs who were approached were prompted to recommend an additional 30 SMEs operating in the mobile industry who were not on the Bizcommunity database. A sample of 20 SMEs was identified, that is, 30% of the 68 mobile industry SMEs listed on the nationwide Bizcommunity database. The size of the SMEs was limited to the official South African definition of firms employing 6 to 250 employees (South Africa, 2019). Purposive sampling was used. Purposive sampling involves selecting participants or events deemed capable of providing significant data that serves the purposes, of the study helping with feedback on research questions and attain the research goals (Taherdoost, 2016; Dudovskiy, 2018). The selected participants therefore comprised owners, managerial personnel, accountants and stock controllers.

The snowball sampling method was thereafter employed because only 20 of the 68 SMEs originally identified from Bizcommunity were located in Cape Town and it was decided that 20 respondents were fewer than the minimum of 30 required for a thorough or authoritative quantitative study (Eichler et al., 2018). Snowball sampling was therefore employed to recruit an additional 30 SMEs operating in the mobile industry. Snowball sampling is a form of chain-referral sampling whereby one individual from a target population refers the researcher to another individual, who then refers him or her to yet another person, as many times as the researcher desires (Beins & McCarthy, 2018:124). These 30 referrals were all located in the city of Cape Town and their company sizes ranged from 6 to 250 employees in accordance with the South African criteria for SMEs (South Africa, 2019). Besides, since the sample size exceeded the minimal requirement of 30 for a quantitative study, it is reasonable to assume that it was representative of the target population. (Ahmad, 2012; Eichler et al., 2018). As a proportion, it was higher than that used in other comparable research studies (Ocran et al., 2017).

3.3. Data collection and Analysis of Data

The data collection instrument used was a self-administered, closed-ended questionnaire survey. The researchers collected data through questionnaires handed out or mailed to representatives of SMEs – owners, managers, accountants and stock managers – that is, those involved in making decisions or processing management accounting reports and therefore likely to be well-

versed in stock management in their respective enterprises. The data collected from the questionnaires was recorded and analysed using the “Statistical Package for Social Science (SPSS)” version 27.0 and Microsoft Excel power pivot were utilised for data analysis purposes.

3.4. Measures to ensure reliability and validity

This section of the paper explores the reliability and validity of the research instrument that was used to collect data from participants.

3.4.1. Reliability of the research instrument

Reliability reflects how accurate a measurement or calculation can be; it refers to the degree to which the results remain constant over time and accurately reflect the overall population under study (Wagemaker, 2020:12). The questionnaire's reliability was tested to guarantee that similar results could be obtained if the questionnaire was directed at a similar group using a similar approach at a different time. This occurred during the pilot testing. The questionnaire was evaluated by 5 intellectuals with knowledge in questionnaire design, who confirmed that it was unambiguous, simple, understandable, and clear. Additionally, it was discovered that the questionnaire could produce the same results when given to the same respondents at various times (Wagemaker, 2020:12). To further test the questionnaire's reliability, a “Cronbach's Alpha Coefficient” reliability test was performed (Saunders et al., 2012:369; Arai et al., 2021:246). This is shown below for the questionnaire's “Likert scale” questions.

Table 1: Cronbach Alpha Testing

| Reliability Statistics | | |
|------------------------|--|------------|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
| .949 | .952 | 22 |

“3.4.2 Validity of the research instrument”

Validity refers to the extent to which one can draw realistic conclusions about

people or populations based on test results that reflect the field of study (Loewenthal & Lewis, 2019; Wagemaker, 2020:12). Internal validity can be of various types, but for present purposes, only construct and content validity were regarded significant. Another way of ensuring a questionnaire's construct validity is to link the sub-questions to the main one (Jaccard & Jacoby, 2020:393). In this paper, the questions in the questionnaire were formulated essentially as elaborations of the four research sub-questions. To establish content validity, we also asked experienced educators to confirm that the research instrument covered all of the components of the study's research objectives. In addition, care was taken to include in the sample businesses located in various suburbs in Cape Town, to ensure that the findings were representative of the SMEs in the mobile industry as a whole and enhance their generalisability. As a result, external validity is determined to have been achieved in this survey.

3.5. Ethical Considerations

Because the study included human subjects, ethical procedures established by the "Cape Peninsula University of Technology's Research Ethics Committee" were followed. For instance, confidentiality, voluntary participation and informed consent ethical standards were upheld in this research study.

4. RESULTS AND DISCUSSION

This section analyses and discusses the responses to questions on the techniques used in forecasting stock purchases by SMEs in the mobile industry, the stock management measures they employ, the factors that hinder the effectiveness of stock management, as well as the correlation between stock turnover and financial performance among the SMEs concerned.

4.1. Demographic information

The results of the study "the implications of stock management on the financial performance of SMEs in the mobile industry in Cape Town, South Africa" were analysed and discussed using data from 40 of the 50 questionnaires that were distributed. The 40 completed questionnaires represented an 80% response rate. Furthermore, a 50% response rate for a research study is considered adequate, 60% good and 70%, excellent (Mugenda & Mugenda, 2003; Musando, 2013). In this context, an 80% response rate was ideal. Table 2 below shows how many people worked for the SMEs that took part in the research.

Table 2: Number of employees

| | | Frequency | | | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|--|--|---------|---------------|--------------------|
| Valid | 1 to 5 | 2 | | | 5.0 | 5.0 | 5.0 |
| | 6 to 20 | 10 | | | 25.0 | 25.0 | 30.0 |
| | 21 to 50 | 4 | | | 10.0 | 10.0 | 40.0 |
| | 51 to 250 | 24 | | | 60.0 | 60.0 | 100.0 |
| | Total | 40 | | | 100.0 | 100.0 | |

The demographic information of the respondents was ideal for this study because of 80% of the firms had been in operation for more than 5 years, giving them adequate time to adopt stock management processes, making them ideal for this study. Furthermore, 95% of the sampled companies employed between 5 and 250 people, which qualified them as SMEs and made them a good fit for this study. Although only 40% of respondents were accountants, the remaining 60% were all involved in the organisation's decision-making, which necessitates management accounting information. They should thus have been familiar with the stock management practices in their business. The 55% had held their positions for more than 6 years and therefore could be anticipated to be well-informed about the business's operations. Most respondents (90%) had at least a diploma, indicating that they were educated and hence should have been able to complete the questionnaire survey competently.

The following analyses and discusses the results of the techniques used in forecasting stock purchases by "SMEs in the mobile industry in Cape Town, South Africa", the stock management measures they employ, the factors that hinder the effectiveness of stock management on these SMEs as well as the correlation between stock turnover and the financial performance of these SMEs operating in the mobile industry.

4. 2. Techniques used on forecasting stock purchases by SMEs in the mobile industry

The participants were asked to rate the usage of the techniques used to forecast stock purchases manage the stated risks using a "five-point Likert scale" with the following weightings: "Strongly disagree = 1, Disagree= 2, Neutral= 3, Agree= 4, Strongly Agree = 5". To facilitate presentation, the percentages of those who "strongly agreed or agreed" with the assertions were combined for presentation in Table 3. Those who could not agree or disagree with the statements – being unable to commit to a distinct stance – were grouped together as disagreeing with them. This technique is justified since it guaranteed

that only those who “strongly agreed or agreed” with the claims were recorded as such. It has been utilised effectively in other management accounting research (Mjongwana & Kamala, 2018; Ntshonga, 2019).

Table 3: The techniques used by SMEs to forecast stock purchases

| | Usage% | Respondents | Standard Deviation |
|--|--------|-------------|--------------------|
| | | N=40 | |
| | | Mean | |
| Prepares stock budgets | 90.0% | 3.90 | 0.545 |
| Relies on common sense | 35.0% | 3.20 | 0.758 |
| Just-in-time (rather than carrying large quantities of stock at once, the firms receive items from suppliers as required) | 40.0% | 3.45 | 0.597 |
| Consignment stock (the firm obtains stock from suppliers prior to payment; the suppliers retain ownership of the stock, and payments are made after the merchandise is sold) | 10.0% | 3.00 | 1.468 |
| Economic order quantity (“the business calculates the order quantity that minimises the total holding cost and ordering stock”) | 50.0% | 1.65 | 1.027 |

As depicted by Table 3 the majority of SMEs (90%) prepare stock budgets before purchasing stock, while a minority use common sense to decide the quantities of stock to be purchased. It was also found that the most commonly used stock management technique was the economic order quantity (50%), followed by just-in-time (40%) and the consignment stock method (10%). Furthermore, mean and standard deviation were used in further statistical analysis using SPSS to demonstrate the data's spread and highlight the respondents' diversity. The derived means were identical to the percentages given. More than half the statements have standard deviations of less than one, indicating that the respondents were in agreement with one another.

The findings above also corroborate the “contingency hypothesis, which holds that the applicability of accounting practices to a particular institution is contingent on situational elements” such as technology, organisational size, market competitive strength, and the level of accounting staff qualification (Islam & Hu, 2012; Maziriri & Mapuranga, 2017). For instance, the size of an organisation has an impact on its employment of stock management as a management accounting procedure or tool, since larger companies tend to have the resources to employ sound stock management. There is therefore a positive correlation between the size of the entity and the adoption of sound and

advanced stock management accounting techniques.

4.3. Stock management measures used by SMEs in the mobile industry

Table 4: Measures for controlling and monitoring stock

| | Usage% | Respondents | Standard Deviation |
|---|--------|-------------|--------------------|
| | | N=40 | |
| | | Mean | |
| Performed manually. | 80% | 3.45 | 1.260 |
| Performed using a computer system. | 55% | 3.30 | 1.506 |
| There are dedicated staff to manage the warehouse. | 35% | 2.60 | 1.374 |
| There are clear procedures for picking and dropping off stock from the warehouse. | 50% | 3.25 | 0.954 |
| The movement of stock is verified and authorised by the management. | 45% | 3.20 | 1.043 |
| Every movement of stock is recorded on the stock-cards. | 30% | 2.25 | 1.463 |
| Stock records are maintained based on periodic physical records. | 60% | 3.50 | 0.751 |
| Stock records are maintained based on a perpetual system. | 30% | 2.80 | 1.522 |

Concerning the use of stock management measures, 80% agreed that their firms' stock control was performed manually, while 55% said it was performed using computer systems. Only 50% confirmed that defined procedures for receiving and issuing merchandise from the warehouse were followed, while 45% confirmed that the movement of stock had to be verified and authorised by management. A mere 30% reported that every movement of stock was recorded on stock cards. Most respondents (60%) stated that stock records were maintained on a periodic physical basis, while 30% reported that stock records were maintained according to the perpetual system. Moreover, 35% of respondents said their companies had dedicated staff to manage the warehouse. This indicates that a large percentage of the SMEs are either computerised or have excellent manual record-keeping and stock-taking processes.

These results corroborate the "contingency theory, which asserts that there is no universally applicable accounting system that applies equally to all organisations in all circumstances" (Otley, 2016:46). The effectiveness of various components of an accounting system is contingent upon the unique conditions in which an enterprise found itself. In the context of this study, different stock management practices are perceived differently according to the unique scenarios in which SMEs find themselves.

4.4. Factors that hinder the effectiveness of stock management on SMEs in the mobile industry

Table 5: Factors that hinder the effectiveness of stock management

| Factors | Percentage agreed | Respondents | Standard Deviation (SD) |
|---|-------------------|-------------|-------------------------|
| | | N=40 | |
| | Agree | Mean | |
| Inadequate funds | 35% | 2.80 | 1.137 |
| Inexperienced staff | 60% | 3.45 | 0.815 |
| Lack of skills and knowledge by the employees | 10% | 3.00 | 0.453 |
| Poor communication | 15% | 3.20 | 0.823 |
| Poor store records | 40% | 3.60 | 1.033 |
| Lack of technology | 45% | 3.25 | 1.104 |

As depicted in Table 5, above, the factor that hindered the effectiveness of stock management the most was perceived to be inexperienced staff (60%). This was followed by a lack of technology (45%), poor store records (40%), and inadequate funds (35%). Other factors agreed upon by only a minority of respondents included poor communication (15%) and lack of skills and knowledge on the part of employees (10%). These findings contrast with those of prior studies that identified the factors that hinder stock management in SMEs as lack of innovation, top management not understanding the utility of management accounting, suppliers with poor store records, and a lack of technology and the learning and sharing of knowledge and skills (Chan et al., 2017; Olowolaju & Mogaji, 2020).

Moreover, the scores for inexperienced staff were (Mean = 3.45, SD = 0.815), lack of skills and knowledge among the employees “Mean = 3.0, SD = 0.453” and poor communication “Mean = 3.20, SD = 0.823”. These findings showed a standard deviation of less than one, indicating agreement among the respondents on the above-mentioned statements about factors that hinder the effectiveness of stock management for SMEs in the mobile industry. However, fewer statements had results that were just above one, indicating a mixed reaction in that the proportions of people who agreed with the statement and those who disagreed were nearly equal.

These findings are consonant with “contingency theory, which states that certain contingency factors have to be present for an organisation” to implement sound

stock management. These include technology, knowledge and expertise, qualified accounting staff and sufficient numbers of staff. According to the theory, the sampled SMEs in the mobile industry face challenges when attempting to implement sound stock management because of these factors. In addition, the smallness of these entities may render their adoption of sound stock management practices cost-ineffective.

4.5. Correlation between stock turnover and financial performance

Table 6: Correlation between stock turnover and financial performance

| Stock turnover and liquidity | | | | Stock turnover and profitability | | | |
|------------------------------|---------------------|--------|--------|----------------------------------|---------------------|--------|--------|
| | | Q11 | Q12 | | | Q11 | Q13 |
| Q11 | Pearson Correlation | 1 | .655** | Q11 | Pearson Correlation | 1 | .710** |
| | Sig. (2-tailed) | | .000 | | Sig. (2-tailed) | | .000 |
| | N | 40 | 40 | | N | 40 | 40 |
| Q12 | Pearson Correlation | .655** | 1 | Q13 | Pearson Correlation | .710** | 1 |
| | Sig. (2-tailed) | .000 | | | Sig. (2-tailed) | .000 | |
| | N | 40 | 40 | | N | 40 | 40 |

Pearson correlation analysis was performed using SPSS on the responses to questions 11-13 to establish the degree of correlation between stock turnover and the financial performance of SMEs in the mobile industry in Cape Town, SA. As depicted in Table 6, it was found that there was a 0.655 positive correlation between stock turnover and liquidity as well as a 0.710 fairly strong positive correlation between stock turnover and profitability. The results therefore reveal that stock management has a positive effect on the financial performance of a business. These findings are consistent with those of Danlami (2016) and Orobia et al. (2020), who found that there is a positive and significant correlation between stock management and financial performance.

The preceding findings further corroborate the “contingency theory”, which asserts that an accounting practice's suitability for a given business is dependent on the entity's contingent circumstances, such as market competition, technology and the qualification levels of accounting personnel (Islam & Hu, 2012; Maziriri & Mapuranga, 2017). It appears that certain contingent factors that make management accounting techniques such as stock management suitable for organisations already exist among SMEs. For instance, the more advanced the level of technology employed by a business, the better informed

their decision-making will be and the more likely it will be that they adopt appropriate management accounting techniques such as sound stock management. The prevalence of low-cost technology has made it accessible to entities of all sizes, which nevertheless face the challenge of hiring properly qualified accountants.

5. CONCLUSION

The main objective of this paper was to investigate the “implications of stock management on the financial performance of SMEs in the mobile industry in Cape Town, South Africa”. To address the objectives of the study, a questionnaire survey was conducted to collect quantitative data, which was then analysed using “descriptive and inferential statistics” through SPSS and Microsoft Excel power pivot. According to the findings, the Correlation analysis results showed a 0.655 positive correlation between stock turnover and liquidity, as well as a 0.710 (fairly strong) positive correlation between stock turnover and profitability. In a nutshell, the findings of this study revealed that the majority of SMEs in the mobile industry decision-makers agreed that sound stock management has a positive effect on the financial performance of SMEs in the mobile industry of Cape Town, South Africa. The implication is that careful, efficient and effective stock management could be one of the keys to reducing high costs for better financial performance and sustainability.

This paper not only fills a gap in the literature about the implications of stock management on the financial performance of SMEs but also adds invaluable insights into stock management in SMEs. The latter could serve to inform future government initiatives aimed at improving their performance. The study recommends that SMEs operating in the mobile industry and other sectors should be educated on the benefits of fully committing to sound stock management practices in their operations through frequent training and workshops, regardless of the obstacles they encounter or the deterrents they face. Furthermore, the researchers recommend that mobile service providers, if possible, purchase stock from device manufacturers, use the just-in-time method as much as possible, as well as try to negotiate with suppliers to adopt the consignment stock approach. This could result in considerable stock and related cost reduction as well as better service offerings at lower prices for the customers. Consequently, these results open possibilities for future research. Since this study employed a quantitative method, it might be complemented by qualitative research to enable a more thorough-going analysis of the topic under

study. Further research could use factor analysis, Chi-Square tests, and time-series analyses to investigate the implications of stock management on the financial performance of SMEs, to obtain a more detailed statistical analysis of the contributions made by independent variables to dependent variables in cause-and-effect relationships. Furthermore, the study's findings were drawn from a sample of 50 SMEs. In order to enhance the generalisability of the findings, future research might choose to employ a larger sample size..

DISCLOSURE OF CONFLICT

The authors declare that they have no conflicts of interest.

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REFERENCES

Akers, H. 2020. What Is a Quantitative Hypothesis? Available from: <https://www.wisegEEK.com/what-is-a-quantitative-hypothesis.htm> [Accessed 29 June 2020].

Alla, D. 2018. 15 Inventory management techniques you need to use today. Available from: <https://dearsystems.com/inventory-management-techniques/> [Accessed 20 March 2020].

Anon. 2019. An assessment of South Africa's SME landscape. Available from: https://smesouthafrica.co.za/wp-content/uploads/2019/07/SME_Landscape_Challenges.pdf [Accessed 28 June 2020].

Antwi, S.K & Hamza, K. 2015. Qualitative and quantitative research paradigms in business. *European Journal of Business and Management*. School of Business, Tamale Polytechnic, 7(3):217-225.

Bhandari, H.B. 2017. Factors affecting the efficiency of inventory management. Dissertation, Faculty of Management, Janapriya Multiple Campus, Pokhara Nepal.

Bibi, N & Amjad S, A. 2017. The Relationship between Liquidity and Firms' Profitability: A Case Study of Karachi Stock Exchange. *Asian Journal of Finance & Accounting Management Sciences*, 9 (1):54-66.

Bizcommunity South Africa. 2020. Telecoms companies South Africa. Available from: <https://www.bizcommunity.com/Companies/196/663/pi-516.html> [Accessed 13 September 2020]

Businesstech. 2017. The state of South Africa's mobile market vs the rest of Africa. Available from: <https://businesstech.co.za/news/mobile/184693/the-state-of-south-africas-mobile-market-vs-the-rest-of-africa/> Staff Writer [Accessed 9 March 2020].

Chan, S.W. Tasmin, R. Nor-Aziati, A. H. Rasi, R.Z. Ismail, F.B. Yaw, L. 2017. Factors influencing the effectiveness of inventory management in manufacturing SMEs. *International Research and Innovation Summit*. Faculty of Technology Management and Business, University Tun Hussein Onn Malaysia, IOP Conf. Series: Materials Science and Engineering, 226(1):1-8.

Danlami, A.A. 2016. Effects of inventory management on financial performance: evidence from Nigerian conglomerate companies. *International Journal of Economics and Management Engineering*, 10(9):2950-2954

Eichler, C. M., YaoxingWu, S. Cox, S.K, and Gregory D. B. 2018. Evaluation of sampling techniques for gas-phase siloxanes in biogas. *Biomass and Bioenergy* 108(1): 1–6.

Eiser, K. Mayet, I & Johnson, S. 2019. 4IR and the South African workplace. *ITweb Business Technology Media*. Available from: <https://www.itweb.co.za/content/DZQ58vVJRnXvzXy2> [Accessed 20 June 2020].

Elliott, R. 2019. In Market Research, Tech & Innovation. Available from: <https://www.geopoll.com/blog/mobile-phone-penetration-africa/> [Accessed 8 July 2019].

Epusi. J.S.E. 2013. Green supply chain management practices by mobile phone dealers in Nairobi. Degree of master of business School of Business University of Nairobi.

Evans, E.O. 2016. The Impact of Inventory Management and Control of Cash Flow on the Liquidity of Organisations: A Study of Selected Small and Medium Scale Enterprises Business Administration, Faculty of Business Administration, University of Lagos.

Etikan, I., Musa, S.A. & Alkassim, R.S., 2016. Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1):1-4.

Faku, D. 2020. MTN shapes up from rapid switch to work and study from home. *IOL Newstech*. Available from: www.iol.co.za [Accessed 26 June 2020].

Fatoki, O. 2014. The Causes of the Failure of New Small and Medium Enterprises in South Africa. *Mediterranean Journal of Social Sciences*. Department of Business Management, Turfloop campus, University of Limpopo, Limpopo Province, South Africa, 5(20): 922-927.

GSM Association. 2021. COVID-19 Industry updates and guidance. Available from: <https://www.gsma.com/newsroom/covid-19-industry-updates-and-guidance/> [Accessed 07 October 2021].

Hern, A. 2020. Covid-19 could cause permanent shift towards home working. *Coronavirus World UK Environment Science Global development*. Available from: <https://www.theguardian.com/technology/> [Accessed 13 March 2020].

Islam, J. and Hu, H. 2012. A review of literature on contingency theory in managerial accounting. *African Journal of Business Management*. Faculty of Business and Government, University of Canberra, ACT 2601, Australia. *Economics and Management School, Wuhan University, Hubei 430072, China*, 6(15):5159-5164.

Jaccard, J. & Jacoby, J. 2020. *Theory Construction and Model-Building Skills, Second Edition: A Practical for social scientists*. The Guilford Press New York, London.

Kanguru, R.M. 2016. Inventory management practices of small, medium and micro enterprises in the Cape metropole, South Africa, Thesis dissertation. Cost and Management Accounting in the Faculty of Business and Management Sciences at the Cape Peninsula University of Technology, Cape Town.

Takeeto, F. Timbirimu, M. Kiizah P. & Olutayo, K. O. 2017. Inventory Management and Organizational Profitability at Gumutindo Coffee Cooperative Enterprise Limited, Uganda. *International Journal of Business and Management Invention*, 6(11):01-08.

Kemerer, R. W. 1991. Understanding the application of learning. In T. J. Sork (Ed.), *Mistakes made and lessons learned: Overcoming obstacles to successful program planning New Directions for Adult and Continuing Education*, 49(1): 67-80.

Kenton, W. 2020. Tools for Fundamental Analysis. Principle, HipGnosis Productions LLC. Director of Editorial, Fluent Inc. Available from: <https://www.investopedia.com/terms/p/population.asp> [Accessed 19 March 2020]

Kibangou, S.R. 2019. The use of management accounting tools to improve the business performance of SMEs in manufacturing enterprises in Cape Town. Masters dissertation. Faculty of Business and Management Sciences, Cape Peninsula University of Technology.

Leboea, S.T. 2017. The Factors Influencing SME Failure in South Africa, A Thesis Presented to The Graduate School of Business University of Cape Town, Master of Commerce in Development Finance.

Liedtke, S. 2019. SME sector 'critical' to growing South Africa's economy. *Engineering News* Available from: https://www.engineeringnews.co.za/article/sme-sector-critical-to-growing-south-africas-economy-pityana-2019-04-11/rep_id:4136 [Accessed 25 June 2020].

Loewenthal, K.M & Lewis, C.A. 2019. *An Introduction to Psychological Tests and Scales*. 3rd edition published by Routledge Newyork.UK.

Lopez, O. L., & Hiebl, M. R. W. 2015. Management accounting in small and medium-sized enterprises: Current knowledge and avenues for further research. *Journal of Management Accounting Research*, 27(1), 81-119.

Maziriri, E.T. and Mapuranga, M. 2017. The Impact of Management Accounting Practices (MAPs) on the Business Performance of Small and Medium Enterprises within the Gauteng Province of South Africa. *Journal of Accounting and Management. Danubius University of Galati. JAM*, 7(2):12-25.

McGinnis, D. 2018. What is the fourth industrial revolution? Available from: <https://www.salesforce.com/blog/2018/12/what-is-the-fourth-industrial-revolution-4IR.html>. [Accessed 20 November 2020]

McMahon, M. 2020. What is the mobile industry? Available from: <https://www.wise-geek.com/what-is-the-mobile-industry.htm> [Accessed May 16, 2020]

Mjongwana, A. and Kamala, P.N., 2018. Non-financial performance measurement by small and medium sized enterprises operating in the hotel industry in the city of Cape Town. *African Journal of Hospitality, Tourism and Leisure*, 7(1):1-26.

Mpwanya, M.F. & Van Heerden, C.H. 2015. Perceptions of managers regarding supply chain cost reduction in the South African mobile phone industry', *Journal of Transport and Supply Chain Management*, 9(1):176-187.

Mpwanya, M.F. & Van Heerden, C.H., 2017, 'A supply chain cost reduction framework for the South African mobile phone industry', *South African Journal of Economic and Management Sciences*, 20(1):01-13.

Mugenda, O. & Mugenda, A. 2003. Research methods: quantitative and qualitative approaches. Nairobi, Acts Press, 1(1):71-83.

Musando, A.J. 2013. The relationship between financial planning and the financial performance of small and medium enterprises in Nairobi City Centre Kenya. Unpublished thesis, University of Nairobi, Nairobi.

Ndlazi, S. 2020. Covid-19: Surviving working from home. IOL newstech. Available from: <https://www.iol.co.za/pretoria-news/covid-19-surviving-working-from-home-45259072> [20 Accessed March 2020].

Nguyen, H.Q and Le, O.T. 2020. Factors Affecting the Intention to Apply Management Accounting in Enterprises in Vietnam. *Journal of Asian Finance, Economics and Business*. Accounting Department, University of Labour and Social Affairs, Vietnam, 7(6) 095-107.

Ntshonga, O. 2019. Adoption of conventional management accounting practices by SMEs operating in the hotel sector of the cape metropole. Master of Management Accounting. In the Faculty of Business and Management Sciences. Cape Peninsula University of Technology.

Ocran, M., Gyabaah, F.A. & Asar, S. 2017. Assessing the usage of management accounting tools by small and medium enterprises in Agona West Municipality, Ghana. *The International Journal of Business & Management*, 5(9):314-325.

Olowolaju, P.S. & Mogaji, B.J. 2020. Effects of inventory management practices on the performance of small and medium scale enterprises SMES in Akure Metropolis. *Journal of Business and Management. Department of Project Management, Federal University of*

Technology, Akure, Nigeria, 22 (1): 01-07.

Orobia, L. A. Nakibuuka, J. Bananuka, J and Akisimire, R. 2020. Inventory management, managerial competence and financial performance of small businesses. Journal of Accounting in Emerging Economies Department of Accounting and Finance, Mbarara Regional Campus, Makerere University Business School, Uganda.© Emerald Publishing Limited, 10(3).

Otley, D. 2016. The contingency theory of management accounting and control: 1980–2014. Management accounting research, Distinguished Professor of Accounting & Management (Emeritus) Lancaster University Management School Lancaster, 3(1):45-62.

Otuya, S.and Eginwin E. J. 2017. Inventory management and SMEs profitability. A Study of furniture manufacturing, wholesale and eatery industry in Delta State, Nigeria. Journal of Finance and Accounting. Department of Accounting & Finance, Faculty of Humanities, Social and Management Sciences, Edwin Clark University, 5(3): 75-79.

Pratap,A .2019. Research design and its types: Exploratory, descriptive and causal. Available from: <https://notesmatic.com/2018/07/research-design-and-its-types-exploratory-descriptive-and-causal/> [Accessed 7 July 2020].

Radasanu, A.C. 2016. Inventory management, service level and safety stock. Alexandru Ioan Cuza University, Romania, Europe. Journal of Public Administration, Finance and Law, 9(9):145-153.

Rodeck, D .2011. "How Does Inventory Impact the Liquidity of a Business?" Available from: <https://smallbusiness.chron.com/inventory-impact-liquidity-business-42746.html> [Accessed 23 January 2020].

Samakosky, N. 2016. Here's why mobile marketing in South Africa is a must. Memeburn Newsletter. Available from: <https://memeburn.com/2016/05/mobile-marketing-south-africa/> [Accessed June 25 2020].

Shah, N. H & Mittal, M. 2019. Optimization and Inventory Management. Business & Economics. Springer Nature, Singapore Sep 2019.

Shin, S. Ennis, K. L. and Spurlin, W.P 2015. Effect of inventory management efficiency on profitability: current evidence from the U.S. manufacturing industry. Journal of Economics and Economic Education Research Mississippi State University, 16(1): 98-106.

Statista.com 2020. Smartphone users in South Africa. Available from: <https://www.statista.com/statistics/488376/forecast-of-smartphone-users-in-south-africa/> [Accessed 27 February 2020]

Thulo, L.2019. South Africa's SMEs landscape report. Available from: <https://smesouthafrica.co.za/south-africas-smes-landscape-report/> [Accessed 18 June 2020].

Wagemaker, H. (red.). 2020. Reliability and Validity of International Large Scale Assessment. IEA Research for Education. Newlands, Wellington, New Zealand.

Walts, A. 2020. Your essential guide to effective inventory management + 18 techniques. Available from: <https://www.bigcommerce.com/blog/inventory-management/#inventory-management-techniques> [Accessed 17 June 2020].



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Diken Oseki*, Agbogidi, R. B., Okondu, O. E, Charles Aronu |

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THE COMPOSITION OF GOVERNMENT EXPENDITURE ON GROWTH OUTPUT (GDP) IN NIGERIA'S CURRENT REPUBLIC (1999-2021)

Diken Oseki *, Rioborue B. Agbogidi, Ogechukwu E. Okondu, Charles Aronu

ABSTRACT

This study looked at the composition of government expenditure on growth output (GDP) in Nigeria with the current republic (1999-2021). The government expenditures considered in the study include: government expenditure on education (GEE), government expenditure on health (GEH), government expenditure on Agriculture (GEA), government expenditure on Road & Construction (GER&C), government expenditure on Transportation & communication (GET&C). The objectives of the study include determining the order of integration of the variables considered in the study and examining the short-run and long-run effect of the selected macroeconomic variables on the growth output with the current republic in Nigeria. The study used various tests such as ADF, Jarque-Bera, and co-integration test to determine the order of integration of variables and examine the short-run and long-run effect of the variables on growth output. The study found that government spending on education increased more than all other expenditures from 2000 to 2021, and GEH was greater than GER&C, GEA, and GET&C from 2010 to 2021. The study concluded that government expenditure has an insignificant short-run and long-run impact on growth output with the current republic in Nigeria, and recommended reversing budgetary allocations to the sectors to have an impact on the economy's overall production.

KEY WORDS:

Government expenditure, Growth Output, Education, Health, Agriculture

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1. INTRODUCTION

Economic growth may be significantly impacted by government spending. The demand for products and services may be stimulated by government spending, which can raise output and create jobs. In addition, government expenditure may encourage investments in Research and development, infrastructure, and education, all of which can boost long-term economic growth and productivity. Fiscal stimulus is one method of government spending that might increase demand. This may entail actions like tax reductions or higher public spending on goods and services. Increasing consumer spending and company investment, these activities may boost the economy. Such as when the government spends more money on infrastructure projects, this is expected to result in more employment being created in the construction industry and more supplies and equipment is needed.

Government expenditure is a critical component of economic growth in any country. It is believed that increased government spending can lead to increased economic growth by providing an enabling environment for investment and promoting the development of infrastructure. In Nigeria, government expenditure has been a topic of great interest over the years, as policymakers seek to balance the need for development with the need for fiscal prudence.

Government expenditure is expected to also promote economic expansion by making investments in human capital. This can include money spent on healthcare, education, and training. These investments have the potential to raise employee productivity and skill levels, which might boost economic development. One of such instance is when the government spends more money on education, this may result in a workforce that is more educated, which could enhance productivity and creativity. Another important element of government expenditure that might stimulate economic development is infrastructure investment. Transportation systems, such as buses and trains, are examples of infrastructure. These expenditures may enhance communication and transportation, which may simplify company operations and increase public access to goods and services. Increased economic activity and the development of jobs may result from this. Thus, it is necessary for the present study to look at the composition of government expenditure and growth output in the current republic of Nigeria. It is on record that Nigeria has experienced so far four

Republics; the first republic is the republican government of Nigeria between 1963 and 1966 which was governed by the constitution of the first republic, the second republic (1979–1983), the third republic (1993) and the fourth/current republic (1999–present). The aim of this study is to investigate the impact of government expenditure on economic growth in Nigeria within the current republic, using data from 1999 to 2021. The study seeks to address the following research questions: i. Does government expenditure have a significant impact on economic growth in Nigeria in the short run?, ii. Are the variables stationary?, iii. Is there a cointegrating relationship between government expenditure and economic growth in Nigeria?, and iv. What is the significance of the error correction coefficient in the relationship between government expenditure and economic growth in Nigeria? The specific objectives of the study are as follows: i. To investigate the short-run and long-run impact of government expenditure on economic growth in Nigeria within the current republic, ii. To examine the trend and stationarity of the variables using unit root tests and Jarque-Bera tests, iii. To determine if there exists a long-run relationship between government expenditure and economic growth in Nigeria, and iv. To evaluate the significance of the error correction coefficient and the ECT coefficient for oscillatory convergence.

Several studies have been conducted on the impact of government expenditure on economic growth in Nigeria. For instance, Okoro and Udeh (2020) found a positive and significant relationship between government expenditure and economic growth in Nigeria using Vector Error Correction Model (VECM). Ogunleye and Ogunrinola (2021) also found that government expenditure has a positive and significant impact on economic growth in Nigeria using the Autoregressive Distributed Lag (ARDL) approach. Uremadu et al. (2019) conducted a study to examine the impact of government spending on economic development in Nigeria from 1999 to 2016. The authors categorized the government's current spending into five groups and found that spending on the national assembly, pensions, and gratuities had no bearing on economic expansion. On the other hand, the administration and service of public debt had a significant and positive impact on economic growth. The study recommended that annual government recurrent spending on administration and public debt servicing be maintained, while all leakages resulting from such spending should be stopped to achieve increased growth. Ogar et al. (2019) investigated how government spending affects the expansion of the Nigerian economy from 1980 to 2017. The study focused on the effects of government capital, recurrent spending, and fiscal imbalance on economic growth. Results indicated that

government capital spending contributed to the expansion of the Nigerian economy in a favourable but small way. Additionally, it was shown that the government's budgetary deficit had little adverse impact on the expansion of the Nigerian economy. The analysis found that while government recurrent spending has a negligible short-term positive effect on the growth of the Nigerian economy, it has a negligible long-term beneficial impact on economic growth. Based on the findings, the study suggested that the government overhaul ineffective capital projects to reduce inefficiency in capital expenditure and closely monitor its contract awarding process to prevent overestimation of execution cost and promote economic growth. The government was also urged to increase its recurrent expenditure to sustain the economic growth potential by increasing its expenditure in running governmental activities and planning and coordination. Jibir and Aluthge (2019) used time series data from 1970 to 2017 to estimate the factors influencing government spending in Nigeria. The authors found that a number of factors, including oil income, GDP, population, trade openness, oil price, taxation, and inflation, have a significant impact on how much money Nigeria's government spends. The study suggested that the country's income sources be expanded outside the oil industry, that fiscal and monetary policy be tightened to maintain price level and exchange rate stability, that the use of financial regulation through the surplus crude oil account be enhanced to act as a buffer against oil price fluctuations, and that suitable population control measures be used to slow down the country's fast population increase.

Arawomo and Adeoye (2020) investigated the impact of institutional quality on the link between public spending and economic development in Nigeria from 1986 to 2016. Using the autoregressive distributed lag (ARDL) Bound testing technique, the authors found that corruption has a negative but considerable influence on the link between recurrent spending and economic development, while it has no effect on the association between capital expenditure and economic growth. Democratic accountability affects capital spending and economic growth link negatively and significantly, but positively and significantly affects the relationship between recurrent expenditure and economic growth. The association between recurrent spending and economic growth is similarly impacted negatively by law and order, but the relationship between capital spending and growth is positively impacted. In their study, Ugochukwu and Oruta (2021) examined the impact of various government expenditure components on economic growth in Nigeria from 1981 to 2020. The authors employed secondary data for analysis and utilized the Granger Causality Test

and Error Correction model. The results of the short-run model showed that recurrent expenditures on health, education, and agriculture had a negligible adverse effect on economic development. In contrast, recurrent spending on debt service, road building, and other expenses had a favorable and insignificant influence on economic development. Capital spending on social services had a negative and considerable effect on economic growth, whereas government spending on economic services had a positive and negligible influence. The study did not provide conclusive evidence for the applicability of either Keynesian theory or Adolf Wagner's law in Nigeria. The authors recommended that the government allocate more funds to key sectors, including agriculture, infrastructure, health, and education, and implement monetary and fiscal policies to encourage output and investment to boost domestic revenue and reduce government borrowing.

The link between public spending and economic development is a subject of debate among researchers, as noted by Ekpo et al. (2022). The pro-market perspective suggests that significant government spending contributes to economic instability and impedes economic expansion, whereas the anti-market perspective emphasizes the beneficial impact of government expenditure on economic growth. The authors utilized the bound test (ARDL) technique to investigate the effects of government spending at the aggregate level on economic growth in Nigeria from 1981 to 2018, using a modified and extended aggregate production model. The co-integration findings indicated a long-term connection between total government spending (LTGE) and economic growth in Nigeria. The ARDL findings further revealed that Nigeria's total government spending (LTGE) had a favorable influence on economic growth. The study supported Wagner's theory, indicating a one-way causal link from LGDP to LTGE during the observed time. The authors recommended that public funds be used effectively to provide security and essential infrastructure, particularly for energy and road infrastructure, and emphasized the need for accountability, transparency, and fiscal responsibility in public assignments.

Yerima et al. (2022) utilized time series data from 1986 to 2020 to examine the effect of government spending on economic growth in Nigeria, using the pairwise causality test and structural vector auto-regression (SVAR) model. The study found that public spending on health and education had little effect on economic expansion, and government debt had no bearing on economic growth. The authors recommended a significant increase in government spending on health and education to meet regional and global benchmarks, as well as a

reduction in borrowing, given that non-productive borrowing accounted for a significant portion of revenue.

In the study by Aluthge et al. (2021), time series data from 1970 to 2019 were utilized to examine the effects of Nigerian government spending (divided into capital and recurrent) on economic development, using the Autoregressive Distributed Lag (ARDL) model. The authors conducted unit root tests and co-integration analysis, taking structural breakdowns into consideration to ensure robust conclusions. The study found that while recurrent spending did not significantly affect economic growth in either the short or long term, capital investment positively and significantly affected economic growth in both the short and long term. The authors recommended that the government increase its share of capital spending, particularly on initiatives that directly impact the welfare of its citizens. Furthermore, the government should reallocate resources toward constructive activities that enhance the nation's human development to improve the spending patterns of recurrent expenditure.

2. METHODS

2.1. Source of Data Collection

This research utilizes secondary data obtained from the 2021 Central Bank Statistical Bulletin. The dataset includes six variables: government expenditure on education (GEE), health (GEH), agriculture (GEA), road and construction (GER&C), transportation and communication (GET&C), as well as economic output (GDP) from 1999 to 2021.

2.2. Method of Data Analysis

Most macroeconomic time series data are often non-stationary in real-world scenarios. A time series dataset is considered to be stationary if the mean and variance are independent of time over the observed period, and the covariance between two time periods depends only on the time interval between the periods and not the actual time at which this covariance is computed. If any or both of these requirements are not met, the process is considered to be non-stationary.

Several tests can be used to evaluate the stationarity of a time series of data. These include the Augmented Dickey-Fuller (ADF) test, the Phillips-Perron test, the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test, and the Phillips-Perron tests. According to Kwiatkowski et al. (1992), the KPSS test is more effective

when detecting trend stationarity, while the ADF test is more effective when detecting difference stationarity. The present study will use the ADF test to assess the stationarity status of the data obtained for the study.

2.2.1 The Augmented Dickey-Fuller (ADF) test

The Augmented Dickey-Fuller (ADF) test is a popular method for checking the presence of a unit root in a time series dataset. The ADF test statistic is typically negative, and as it becomes more negative, the hypothesis that there is a unit root is rejected with greater confidence (Johansen and Juselius, 1992). One common way to perform the ADF test is to test for the presence of a unit root with an intercept. If the test statistic has critical values that are less than the negative value, the null hypothesis of no unit root is rejected. Otherwise, the first difference is taken, and the test is repeated until the null hypothesis is rejected. The number of differences required to reject the null hypothesis is equal to the order of integration or the number of unit roots.

2.2.2. Cointegration Test

Cointegration is the study of stationary linear combinations of integrated variables, which implies a shared stochastic trend and long-run equilibrium. It is useful in distinguishing between short-term and long-term relationships between variables and improving the accuracy of long-term forecasts. To examine the long-term relationship between variables, either the Engle-Granger technique or the Johansen-Juselius approach can be used for cointegration analysis, provided that the variables of interest are integrated into the same order. However, the autoregressive distributed lag (ARDL) approach is preferred when the variables have different orders of integration (Engle and Granger, 1987). In this study, the ARDL approach was used to examine the long-run relationship between the variables since the variables had different orders of integration ($I(1)$ and $I(0)$).

2.2.3. The Autoregressive Distributed Lag (ARDL) Cointegration Approach

After determining the appropriate lag length (p) using a criterion such as the Final Prediction Error (FPE) criterion, Akaike Information Criterion (AIC), or Schwarz Bayesian Criterion (SBC), the ARDL model is estimated to ensure that the errors are white noise. White noise is a time series sequence of independently distributed random variables with a constant mean and variance. Once the appropriate lag length has been established, the ARDL model is formulated and estimated.

The hypothesis set to achieve the objectives of this study were stated as:

Hypothesis 1:

Null hypothesis (H₀): Government expenditure has no significant short-run and long-run impact on economic growth in Nigeria within the current republic.

Alternative hypothesis (H_a): Government expenditure has a significant short-run and/or long-run impact on economic growth in Nigeria within the current republic.

Hypothesis 2:

Null hypothesis (H₀): The variables are non-stationary and do not have a normal distribution.

Alternative hypothesis (H_a): The variables are stationary and have a normal distribution.

Hypothesis 3:

Null hypothesis (H₀): There is no long-run relationship between government expenditure and economic growth in Nigeria.

Alternative hypothesis (H_a): There exists a long-run relationship between government expenditure and economic growth in Nigeria.

Hypothesis 4:

Null hypothesis (H₀): The error correction coefficient and the ECT coefficient are not significant for oscillatory convergence.

Alternative hypothesis (H_a): The error correction coefficient and the ECT coefficient are significant for oscillatory convergence.

3. RESULTS.

3.1. Result of the Descriptive Analysis of the Variables considered in the study

The result of the descriptive statistics presented in Table 1 found that the mean growth output (GDP) over the period of the study was N10.6731 billion, government expenditure on education (GEE) was N5.2309 billion, government expenditure on health (GEH) was N4.6494 billion, government expenditure on agriculture (GEA) was N3.3483 billion, government expenditure on road & construction (GER&C) was N3.9589billion, while government expenditure on transportation & communication (GET&C) was N3.1189 billion. The standard deviation for the variables showed that the values in the data set were approximately close to their various means.

Table 1. Descriptive Statistics of GDP, government expenditure on education (GEE), government expenditure on health (GEH), government

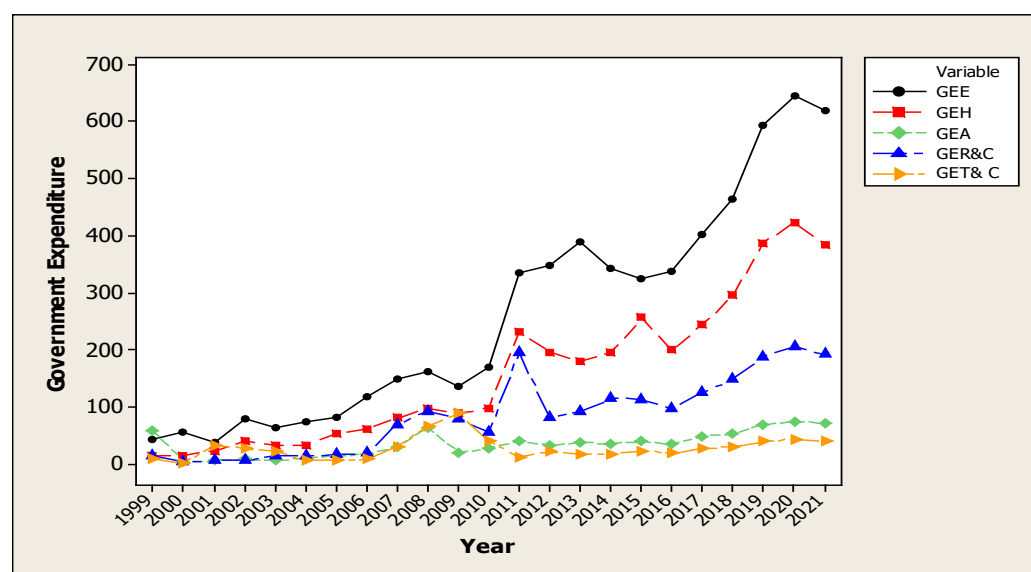
expenditure on Agriculture (GEA), government expenditure on Road & Construction (GER&C), and government expenditure on Transportation & communication (GET&C).

| Measures | LOG(GDP) | LOG(GEE) | LOG(GEH) | LOG(GEA) | LOG(GER&C) | LOG(GET_&C) |
|--------------|-----------|----------|----------|----------|------------|-------------|
| Mean | 10.6731 | 5.2309 | 4.6494 | 3.3483 | 3.9589 | 3.1189 |
| Median | 10.9235 | 5.1405 | 4.5961 | 3.5919 | 4.4224 | 3.1940 |
| Std. Dev. | 1.0601 | 0.8941 | 1.0351 | 0.7883 | 1.1902 | 0.7679 |
| Skewness | -0.5152 | -0.2415 | -0.3932 | -0.6206 | -0.6185 | -0.6509 |
| Kurtosis | 2.0545 | 1.7215 | 1.9455 | 2.1571 | 1.9840 | 3.4371 |
| Jarque-Bera | 1.8743 | 1.7901 | 1.6583 | 2.1573 | 2.4556 | 1.8066 |
| Probability | 0.3917 | 0.4086 | 0.4364 | 0.3400 | 0.2929 | 0.4052 |
| Observations | 23 | 23 | 23 | 23 | 23 | 23 |

Source: Eview 9.0

All the variables were found to be negatively skewed as indicated the negative Skewness coefficients with a coefficient of -0.5152, -0.2415, -0.3932, -0.6206, -0.6185, and -0.6509 respectively. The result of the Jarque-Bera test showed that the variables were approximately normally distributed after taking logarithm of the variables with p-values greater than 5% critical value.

Figure 1. Graph of GEE, GEH, GEA, GER&C and GET&C from 1999-2021



According to the result presented in Figure 1, government spending on education (GEE) increased more than all other expenditures between 2000 and 2021, despite the fact that GEA was larger than GEE in 1999. From 2010 to 2021, GEH was found to be greater than GER&C, GEA, and GET&C.

3.2. Testing the variables for Stationarity

A stationary process is a process or series whose properties do not depend on the time at which the series is observed. For this purpose, the Augmented Dickey-Fuller (ADF) test was used to test the stationarity of the data.

Table 2. Result of Augmented Dickey-Fuller unit root test for the variables

| Variables | Level | | 1 st Difference | | Order of integration |
|-----------------|----------|------------|----------------------------|------------|----------------------|
| | No Trend | With Trend | No Trend | With Trend | |
| LOG(GDP) | -4.7708 | -1.3706 | - | - | I(0) |
| LOG(GEE) | -1.0152 | -2.2818 | - | - | I(0) |
| LOG(GEH) | -1.8454 | -2.7615 | - | - | I(0) |
| LOG(GEA) | -1.8312 | -2.7534 | - | - | I(0) |
| LOG(GER&C) | -1.0012 | -2.9368 | - | - | I(0) |
| LOG(GET&C) | -3.8437 | -3.9844 | -2.5888 | -2.5223 | I(1) |
| Critical values | | | | | |
| 5% | -3.0049 | -3.6329 | -3.0124 | -3.6450 | |

Source: Eview 9.0

The result of the unit root test on the variables using the Augmented Dickey-Fuller test statistic obtained in Table 2 found that the GDP, GEE, GEH, GEA, and GER&C has no unit root and stationary overtime at the zero difference with trend since the test statistic value has more negative values (-1.3706, -2.2818, -2.7615, -2.7534, and -2.9368 respectively) at 5% significant level while the GET&C was found to have no unit root and stationary overtime at the first difference with trend since the test statistic value has more negative value (-2.5223) at 5% significant level.

This result implies that GDP, GEE, GEH, GEA, and GER&C are integrated of order 0 (I(0)) while GET&C was integrated of order 1 (I(1)). Hence, all the series

were stationary over the study period with the presence of trend.

3.3. Result of the Co-integration Analysis

The result presented in Table 2 showed that some of the variables were found to be stationary at zero difference $I(0)$ but after first differencing $I(1)$, they all became stationary. The differencing was applied to avoid having a spurious regression. Since the differenced variables were stationary, there could be co-integration between the variables. This test enables one to know if some of the variables in the model are cointegrated and as well shows if there is long term relationship existing between the set of the variables. When the variables are integrated of different order as the situation in the present study, the appropriate method to employ is the autoregressive distributed lag (ARDL) approach. Hence, the present study shall employ the ARDL approach to examine the long-run relationship of the variables since the variables were integrated of order ($I(1)$ and $I(0)$). The number of the lag used in the co-integration test is based on the information criterion used in the underlying model. The co-integration trace test of GDP, GEE, GEH, GEA, GER&C and GET&C were presented in Table 3.

The ARDL Model for the model was presented by performing the ARDL bound test to determine whether the level relationship is present amongst the variables considered in the ARDL model. The result presented in Table 3 shows the estimates of the ADRL model describing the relationship that exists between the GDP, GEE, GEH, GEA, GER&C and GET&C. The result of the ARDL bound test for co-integration presented in Table 3 found a calculated F -statistic value of 10.3196 which was above the upper bounds critical value of 3.79 assuming a 5% significance level. This result indicates the rejection of the null hypothesis of no cointegrating relationship amongst the variables of the ARDL model. Hence, the findings imply that GDP is cointegrated with GEE, GEH, GEA, GER&C and GET&C. Also, the result further implies that there exists a long-run relationship amongst the variables.

Table 3. Result of test for the existence of level relationship amongst the variables in the ARDL

| Number of regressors | Value of statistic $K=5$ |
|----------------------|--------------------------|
| Computed F-statistic | 10.3196 |
| 5% critical value | |
| Lower bound value | 2.62 |
| Upper bound value | 3.79 |

The critical bound values were extracted from (Pesaran et al., 2001).

The result obtained in Table 3 revealed that there exist a long-run relationship amongst the variables of the ARDL model since the computed F-statistic value of 10.31955 was greater than the lower and Upper bound values at significant level of 0.05 ($10.3196 > (3.79, 2.62)$). Hence it is appropriate to obtain the estimates of the ARDL long-run coefficient for the model and also obtain the estimates of the error correction model (ECM). The result of the long-run estimates is presented in Table 4 while the result obtained in Table 5 presents the estimates of the corresponding ECM. After evaluating 21 models, the ARDL (1, 1, 1, 1, 1, 1) model was selected as the better model using the Hannan-Quinn criterion (HQ). The result indicates that GDP has 1 lag, GEE has 1 lag, GEH has 1 lag, GEA has 1 lag, GER&C has 1 lag and GET&C has 1 lag in the model; this can be seen in the result presented in Table 5.

Table 4. Estimated long-run coefficients: ARDL(1, 1, 1, 1, 1, 1) selected by Hannan-Quinn criterion (HQ).

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|------------|-------------|------------|-------------|--------|
| LOG(GEE) | 0.3420 | 1.9385 | 0.1764 | 0.8635 |
| LOG(GEH) | 0.8238 | 1.6475 | 0.5000 | 0.6279 |
| LOG(GEA) | -0.4672 | 1.3232 | -0.3531 | 0.7314 |
| LOG(GER&C) | 1.3784 | 1.9598 | 0.7033 | 0.4979 |
| LOG(GET&C) | -0.2442 | 0.4028 | -0.6062 | 0.5579 |
| Constant | -1.1271 | 11.0408 | -0.1021 | 0.9207 |

Source: Eviews 9

The result of the long-run relationship between the GDP and variables such as GEE, GEH, GEA, GER&C and GET&C presented in Table 4 found that the coefficients for all the variables were insignificant since their p-values less than significant level of 0.05. It was found that GEE, GEH and GET&C have positive

coefficients while GEA and GET&C has a negative coefficient.

From the result presented in Table 4, the Co-integration equation can be expressed as equation (1):

$$\text{Cointeq} = \text{LOG}(\text{GDP}) - (0.3420 \cdot \text{LOG}(\text{GEE}) + 0.8238 \cdot \text{LOG}(\text{GEH}) - 0.4672 \cdot \text{LOG}(\text{GEA}) + 1.3784 \cdot \text{LOG}(\text{GER\&C}) - 0.2442 \cdot \text{LOG}(\text{GET\&C}) - 1.1271) \quad (1)$$

The result presented in Table 5 showed that the error correction coefficient of -1.1271 (p -value = 0.4900) was significant and indicates that the system corrects its previous period disequilibrium at a speed of 12.7% annually. The result of the ECT (Error Correction Term) implies an oscillatory convergence since the ECT coefficient falls between 0 and -2; this ensures that the system will be convergent. A further result showed that the lag of all the variables has an insignificant short-term effect on GDP within the observed period.

Table 5. Error correction representation of the selected ARDL model: ARDL ARDL(1, 1, 1, 1, 1, 1) selected by Hannan-Quinn criterion (HQ).

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------|-------------|------------|-------------|--------|
| DLOG(GEE) | 0.0853 | 0.0868 | 0.9827 | 0.3489 |
| DLOG(GEH) | -0.0320 | 0.0747 | -0.4285 | 0.6774 |
| DLOG(GEA) | 0.0669 | 0.0442 | 1.5130 | 0.1612 |
| DLOG(GER_C) | -0.0945 | 0.0310 | -3.0447 | 0.0124 |
| DLOG(GET__C) | -0.0179 | 0.0192 | -0.9317 | 0.3734 |
| CointEq(-1) | 0.0524 | 0.0749 | 0.6998 | 0.4900 |

Source: EvIEWS 9

4. CONCLUSION

This study looked at the composition of government expenditure on growth output in Nigeria with the current republic (1999-2021). The findings of the study showed that the mean growth output (GDP) over the period of the study was N10.6731 billion, government expenditure on education (GEE) was N5.2309 billion, government expenditure on health (GEH) was N4.6494 billion, government expenditure on agriculture (GEA) was N3.3483 billion, government expenditure on road & construction (GER&C) was N3.9589billion, while government expenditure on transportation & communication (GET&C) was

N3.1189 billion. All the variables were found to be negatively skewed as indicated the negative Skewness coefficients. The result of the Jarque-Bera test showed that the variables were approximately normally distributed after taking logarithm of the variables with p-values greater than 5% critical value.

It was found that government spending on education (GEE) increased more than all other expenditures between 2000 and 2021, despite the fact that GEA was larger than GEE in 1999. From 2010 to 2021, GEH was found to be greater than GER&C, GEA, and GET&C.

The result of the unit root test on the variables using the Augmented Dickey-Fuller test statistic found that variables such as GDP, GEE, GEH, GEA and GER&C are integrated of order 0 ($I(0)$) while GET&C was integrated of order 1 ($I(1)$). Hence, all the series were stationary over the study period with the presence of trend.

The result of the ARDL bound test for co-integration showed that GDP is cointegrated with GDP, GEE, GEH, GEA, GER&C and GET&C. Also, the result further implies that there exists a long-run relationship amongst the variables. Hence it is appropriate to obtain the estimates of the ARDL long-run coefficient for the model and also obtain the estimates of the error correction model (ECM). After evaluating 21 models, the ARDL (1, 1, 1, 1, 1, 1) model was selected as the better model using the Hannan-Quinn criterion (HQ). The result indicates that GDP has 1 lag, GEE has 1 lag, GEH has 1 lag, GEA has 1 lag, GER&C has 1 lag and GET&C has 1 lag in the model.

The error correction coefficient was found to be -1.1271 (p -value = 0.4900) which indicates that the system corrects its previous period disequilibrium at a speed of 12.7% annually. The result of the ECT (Error Correction Term) implies an oscillatory convergence since the ECT coefficient falls between 0 and -2; this ensures that the system will be convergent. A further result showed that the lag of all the variables has an insignificant short-term effect on growth output within the observed period.

Based on the findings made in the present study, the following recommendations are hereby made:

- i. In order to give the education, health, agriculture, road & construction and transportation & communication sectors the funding they require to have an impact on the economy's overall production, the study recommends that budgetary allocations to the sectors should be reversed from their current downward trend.
- ii. The study strongly recommends that the government and key stakeholders should ensure that monies intended for the aforementioned sectors' growth are managed effectively.

DISCLOSURE OF CONFLICT

The authors declare that they have no conflicts of interest.

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REFERENCES

- Aluthge, D. N., Jibir, A. B., & Iyawa, G. U. (2022), "Determinants of public spending in Nigeria: An econometric analysis", *Economic and Social Development: Book of Proceedings, 58th International Scientific Conference on Economic and Social Development*, 84-91.
- Arawomo, D. F., & Adeoye, A. O. (2020), "Institutional quality, public spending and economic development in Nigeria: An autoregressive distributed lag (ARDL) bound testing approach", *Journal of Economics and Sustainable Development*, 11(11), 87-97.
- Ekpo, A. H., Udah, E. B., & Usar, S. J. (2022), "Public spending and economic growth in Nigeria: Evidence from the bound test approach", *Journal of Policy Modeling*, 44(1), 74-94.
- Engle, R. F., & Granger, C. W. (1987), "Co-integration and error correction: representation, estimation, and testing", *Econometrica: Journal of the Econometric Society*, 55(2), 251-276.
- Jibir, A. B., & Aluthge, D. N. (2019), "What drives government spending in Nigeria? An econometric investigation", *CBN Journal of Applied Statistics*, 10(2), 15-30
- Johansen, S., & Juselius, K. (1992), "Testing structural hypotheses in a multivariate cointegration analysis of the PPP and the UIP for UK", *Journal of Econometrics*, 53(1-3), 211-244.
- Kwiatkowski, D., Phillips, P. C., Schmidt, P., & Shin, Y. (1992), "Testing the null hypothesis of stationarity against the alternative of a unit root: How sure are we that economic time series have a unit root?", *Journal of Econometrics*, 54(1-3), 159-178.
- Ogar, E. O., Ojong, C. M., & Ajilima, S. U. (2019), "Government spending and economic growth in Nigeria: Evidence from a time series analysis", *International Journal of Economics, Commerce and Management*, 7(3), 87-98.
- Ogunleye, E. K., & Ogunrinola, I. O. (2021), "Government expenditure and economic growth nexus in Nigeria: An ARDL approach", *CBN Journal of Applied Statistics*, 12(1), 99-118.
- Okoro, O. I., & Udeh, S. N. (2020), "Government expenditure and economic growth in Nigeria: Evidence from Vector Error Correction Model (VECM)", *Journal of Economics and Sustainable Development*, 11(6), 1-10.
- Pesaran, M.H., Shin, Y, Smith, R.J. (2001), "Bounds testing approaches to the analysis of long run relationships", *Journal of Applied Econometrics.*, 16(3):289- 326. Available: <https://doi.org/10.1002/jae.616> 2001
- Ugochukwu, A. I., & Oruta, N. N. (2021), "Government expenditure components and economic growth in Nigeria: An econometric analysis", *Journal of Economic and Sustainable Growth*, 12(1), 63-74.
- Uremadu, S. O., Okonkwo, U. C., & Onoh, J. K. (2019), "Impact of government spending on economic development in Nigeria (1999-2016)". *Asian Journal of Economics, Business*

and Accounting, 11(4), 1-13.

Yerima, Y., Usman, U., & Yusuf, A. (2022), "Government spending and economic growth in Nigeria: A structural VAR analysis", *International Journal of Social Science and Economic Research*, 7(3), 1335-1347.



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ASSESSMENT OF THE IMPACT OF HOUSEHOLD INCOME ON CHILD LABOUR IN BAUCHI STATE, NIGERIA

Ibrahim Musa* |

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ASSESSMENT OF THE IMPACT OF HOUSEHOLD INCOME ON CHILD LABOUR IN BAUCHI STATE, NIGERIA

Ibrahim Musa*

ABSTRACT

This study examines the impact of household income on child labour in the Bauchi Local Government Area of Bauchi State. The study employs the use of a survey research design through questionnaires. Data were obtained from 50 respondents who reside in the Bauchi Local Government Area of Bauchi State. The study makes use of percentage analysis and chi-square for data analysis and tables for data presentation. The result shows that low household income and lack of economic opportunities are the major determinants of child labour in the area, with an inverse relationship between household income and child labour. The research finds that a large majority of respondents (80%) do not receive grants or support from the government. Therefore, the study recommends policies that will provide more employment opportunities and household income schemes.

KEY WORDS:

Household Income, Child Labour, Household Education, Child Education and Children's Health

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1. INTRODUCTION

Child labour is a worldwide phenomenon. An estimated 160 million child labourers are in both industrialized and developing countries (UNICEF, 2022). In Africa, it is estimated that about 26% of activities related to child labour involve children between the ages of 5 and 17 (UNICEF, 2022). In Nigeria, it is estimated that 12-15 million minors work more as a consequence of abject poverty, hunger and destitution. Various research studies on the social characteristics of children susceptible to child labour linked the phenomenon to the socio-economic status of poor parents who subsist at the periphery of the urban economy (Magaji & Musa, 2015). These parents are found among three identifiable economic groups: the small farmers, the petty traders, the employed and the unemployed (Okojie, 2017). These are people whose income, more often falls below the figure established as the poverty line and are counted as poor because they lack the resources to sustain socially acceptable minimum living conditions in terms of income and consumption (Magaji, 2005). The gap between the poverty line and household consumption is, therefore, an important factor that determines child labour (Musa, Magaji & Tsauni, 2022). Child labour is broadly defined as a worker or economically active if he/she is remunerated for the work he/she does or if the output of the work the child does is destined for the market. As noted by the World Bank, (2021), this definition is very narrow and it excludes several activities such as household domestic activities. As a result, this narrow definition leads to an underestimation of the extent of child labour in the household mainly from girls. This limited definition assumes that child labour should only encompass risky jobs for children. Any work that harms children's physical and mental development, robs them of their youth, their potential, and their dignity, according to ILO (2018). In Nigeria, any economic activity that employs a kid younger than the age of 14 is regarded as child labour according to official policy. Child labour, according to Musa, Magaji, and Tsauni (2023), is any activity that exploits children or hinders them from going to school and has a bad impact on their health, and social, cultural, psychological, moral, and religious development. Working seven or more hours per week is included in the temporal components of child labour. Since it is impossible to distinguish between hazardous and non-hazardous child labour, any work performed by children that are younger than 14 in any industry is considered to be child labour (ILO, 2018).

Millions of families face economic difficulties on a global scale, and in certain instances, it comes at the expense of a child's safety. At the start of 2020, almost 160 million children were working as children, and COVID-19's effects put an additional 9 million children in danger (UNICEF, 2022). Nearly 1 in 10 youngsters globally fall under this category. Almost half of them are working in dangerous labour that directly jeopardizes their moral development and well-being. For a variety of reasons, parents sometimes drive their children to school. Child labour most frequently occurs when families face financial hardship or uncertainty, whether as a result of poverty, an unexpected illness among caregivers, or the loss of their main source of income.

The results are devastating. Child labour can lead to serious physical, mental, and even fatal harm. Slavery and other forms of economic or sexual exploitation may result. Additionally, it almost always restricts children's access to healthcare and education, risking their futures and their fundamental rights. Children run the risk of being forced into labour and possibly trafficked if they migrate alone or take irregular routes with their families. Many of these children have been displaced because of war, tragedy, or destitution.

2. REVIEW OF THE LITERATURE AND THEORETICAL FRAMEWORK

2.1. Conceptual Issues

In this investigation, two main concepts were utilized. Household income and child labour are two of these ideas. The following is a review of them:

2.1.1 Concept of Child Labour

The concept under discussion defies straightforward definition. This is because a person who is regarded as a child in one context may not be one in another, just as labour may not be considered to be such in another.

Child labour, according to UNICEF (2022), is defined as work that is hazardous to children physically, psychologically, socially, or morally and that tends to rob them of possibilities for growth and education. A kid is a person who is younger than the age of eighteen, according to the United Nations Convention on the Rights of the Child (CRC). The Convention places a strong emphasis on the requirement that children be shielded from abuse, violence, and sexual exploitation as well as from forced labour and dangerous jobs.

According to the International Labour Organization (ILO, 2022) "child labour" is

generally defined as work that deprives children of their youth, their potential, and their dignity and that is detrimental to their physical and mental development. It refers to work that prevents children from attending school, requires them to leave early, or requires them to juggle school attendance with highly arduous labour while also harming them mentally and physically and interfering with their education.

Whether or not a certain type of "work" qualifies as "child labour" depends on the kid's age, the nature and duration of the work, the working environment, and the goals that various nations have. The response varies between nations as well as between states within nations (ILO, 2022).

2.1.2 Household Income

According to the OECD countries (2022), household disposable income is the sum of final consumer spending and savings (excluding changes to household net equity in pension funds). Additionally, this is supported by the overall wages and salaries, mixed income, net property income, net current transfers, social benefits other than social transfers in kind, lower income and wealth taxes, and social security contributions made by employees, independent contractors, and the jobless. The non-profit institutions serving households (NPISH) disposable income is a component of the indicator for the household sector. The price deflator used to obtain real values is consistent with that used to deflate the final consumption expenditure of households and NPISH. The term household income generally refers to the combined gross income of all members of a household above a specified age. Household income includes every member of a family who lives under the same roof, including spouses and their dependents. The incomes of everyone count even if they aren't all used to support the household. Household income also includes anyone living in that home even if they're not related. Household income is an important risk measure used by lenders for underwriting loans and is a useful economic indicator of an area's standard of living.

2.2. Theoretical Framework

2.2.1. Theory of Child Labour

This heading touches on the theory of household decision-making about the employment of children. Greater emphasis will be placed on the more recent literature that addresses the role of income, particularly household income and its relationship with child labour.

The ultimate objective of the review is to identify the household characteristics that ought to emerge in the empirical analysis as statistically significant determinants of child labour. standard of living.

2.2.2. Becker's New Household Economic Theory

The traditional consumer theory with all its weaknesses is an incomplete interpretation of consumer behaviour and particularly of the behaviour of a household. The so-called alternative model which still represents neoclassical models of consumer behaviour has incorporated some of the elements missing from the traditional theory.

Gary Becker (1962) considers the family to be the most fundamental societal institution in the society and his theory; the new household economic theory was originally adopted to describe resource allocation decision-making and utility maximization processes of households in the USA, Japan and Israel. Later the theory was also applied to developing countries and particularly to the analysis of agricultural households. Becker's approach brings noteworthy new insights to the traditional consumer theory; for example, he considers the household as both a consumption and a production unit. However, many of Becker's ideas on household economic behaviours have been presented earlier and thus cannot be regarded as thoroughly new. However, compared to any of the prior presentations, his was more formalized. Neoclassical household decision-making models, which are typically derived from Becker (1962), are frequently used in the examination of child labour. Models of family negotiations can be divided into two main groups: both those where children have little negotiating power and those where children have some sort of innate value. In models where children don't have a say in family decisions, parents make choices that serve their interests without taking the child's needs into account. This class of models lends analytical support for public policies that constrain the choices that parents are allowed to make for their children, e.g. compulsory schooling, minimum age of work, and a ban on bonded child labour.

2.3. Empirical Review

In Nigeria's Katsina State, Abdu, Rabi'u, and Usman (2020) investigate how child labour affects students' access to education. From three senatorial districts in Katsina State, 216 child labourers were chosen using a multistage sampling technique. Data on the respondents' socioeconomic characteristics, engagement in child labour, causes of child labour, and effects of child labour

were gathered using a structured interview schedule. When analyzing the data, descriptive and inferential statistics were utilized. The findings indicate a strong relationship between the extent of child labour, its root causes, and its perceived impact on education. The findings also demonstrate a substantial association between the effect and family income and the mother's profession. The report suggests that free and obligatory primary and secondary education in the state is taken seriously and that parents who might try to prevent their children from attending school face consequences. Even though it was discovered that there is an inverse and significant association between family income and child labour, this study focuses on the impact of child labour on children's education.

But Oli & Nweke (2021), examine the determinants and prevalent forms of child labour practices in Anambra State's Awka South Local Government Area and Southeast, Nigeria. The target population consisted of only adults who were 18 years and above. The study adopts a mixed-methods research design. A sample size of 200 was statistically generated using the Taro Yamane formula. The study used a multistage sampling procedure which involved simple random sampling and purposive sampling techniques in selecting respondents. The major instruments of data collection used were the questionnaire schedule which is a quantitative method and the in-depth interview guide which is a qualitative method. Quantitative data collected from the field study were processed with the use of Statistical Package for the Social Sciences (SPSS) software. The findings of the study show the determinants of child labour practices include low household income, poverty, educational level of parents, family size, cultural beliefs and living in a slum area. Also, results from the study show that prevalent forms of child labour practices in the Local Government Area of Awka South include hawking, street begging, domestic work, farming and working in factories. This study was conducted only in Awka South Local Government Area of Anambra State in Southeastern Nigeria.

Musa, Magaji, and Tsauni (2022), using the Tobit regression model as the methodology, analyze the socioeconomic determinants of child labour in Northeastern Nigeria. This is done to cover additional areas and socioeconomic determinants of child labour. Their research shows that household income was identified as the primary socioeconomic driver of child labour. Therefore, their study advises taking the required steps including severely punishing individuals involved in child labour-related activities, educating people about the effects of child labour, and providing enough basic infrastructure. Even though Northeastern Nigeria is included in the study, along with many socioeconomic

factors that affect child labour, family income is not given much attention, and there is no clear explanation provided for how much household income influences child labour.

Olukunmi (2017), investigates the socioeconomic determinant of child labour in Ilorin, Kwara State, Nigeria. The data for the study was collected using questionnaires. 400 questionnaires were administered in the five Local Government Areas of the Ilorin metropolis. The data were analyzed using the descriptive statistical method and inferential statistics of Chi-square. The result of the findings shows that low household income is a major determinant of child labour concerning different households. Family size and educational background of parents also affect and influence child labour respectively.

In their 2009 study, Ugal and Undyaundeye look at the problem of child labour in Nigeria. He defined the term broadly and examined the problem of child labour from several angles to uncover the primary causes and effects of national development. His research shows, however, that the idea of child labour is inescapable in some countries due to the poor and socioeconomic conditions of the families, and that this trend can only be reversed when these conditions are changed. By using the aforementioned cures, it can also be stopped. A word from Mill (1970), stated that for a parent to fail to educate the child is a breach of duty not only towards the child but towards the members of the community generally, who are all liable to suffer seriously from the consequences of ignorance. While some situations call for stringent measures as their condition does not warrant this scenario, the only way out is to make the parents aware of the dangers of not educating their children. Therefore, it is important to safeguard children and young people who have not yet reached adulthood from being overworked. It is also forbidden to work too hard or too long a day. Instead of focusing on household income, this study focuses more on household education. Therefore, a study that looks at home wealth as the only factor in determining child labour is required, especially in Bauchi State, Nigeria, which is one of the states with the highest incidence of child labour. This is what this study's goal is.

3. METHODOLOGY

3.1. Research Approach

The research design was the most appropriate one for this investigation. Survey research is described as "the collection of information from a sample of individuals through their responses to questions" (Check & Schutt, 2012). This

kind of study permits the use of numerous techniques for participant recruitment, data collection, and instrumentation. The methods used in survey research can be either quantitative (using questionnaires with numerically rated items) or qualitative (using open-ended questions), or both (mixed method). Surveys are widely utilized in social and psychological research because they are frequently used to describe and explore human behaviour (Singleton & Straits, 2009).

The choice of survey research design was informed by the fact that the research was a social survey with management variables. The design was useful to answer research questions. One of the merits of this method is that it has a wide scope which allows a great deal of information to be obtained from a large population that is geographically dispersed (Ndiyo, 2016).

3.2. Area of the Study

Bauchi State is a state in the North-East geopolitical zone of Nigeria, bordered by Kano and Jigawa to the north, Taraba and Plateau to the south, Gombe and Yobe to the east, and Kaduna to the west. It takes its name from the historic town of Bauchi, which also serves as its capital city. The state has a land mass of 45,893 km² with an area of 2,630 km² and was created on 3rd February 1976. Bauchi Local Government is the biggest local government and the state capital in Bauchi State where the study area has a land mass of about 2,640km².

3.3. Data collection and Analysis of Data

The study's population comprises residents of the Bauchi Local Government Area of Bauchi State. 50 persons constitute the population of the study which consists of child labourers and household heads.

3.4. Sampling Techniques and Sample Size

The sampling technique adopted is the random sampling technique. Fifty (50) respondents were randomly selected to represent the population of the study which consists of child labourers and household heads.

3.5. Research Instrument

The research tool utilized in this study was a questionnaire. The questionnaire was divided into two sections: Section A and B. Section A was on the demographic data of respondents while Section B provided the answer to the question developed by the researcher on the Nexus between child labour and household income

3.6. Data collection procedure

Fifty (50) copies of the questionnaire were administered to the respondents within the Bauchi Local Government area of Bauchi State. These copies were personally administered to explain portions that were not clear to the respondents. The assignment was carried out within one week, and copies of the questionnaire were administered and retrieved on the spot to ensure 100% return and avoid waste.

3.7. Method of Data Analysis

Utilizing frequency counts, basic percentages, and correlation analysis, the survey data was examined.

4. RESULTS AND DISCUSSION

4.1. Data Analysis and Presentation

The results of the data analysis were presented in tables while the interpretation followed immediately.

4.2. Respondent Rate

A total of 50 copies of the questionnaire were administered to the resident of the Bauchi Local Government Area of Bauchi State. All the copies of the questionnaire distributed were filled, retrieved and found useable, making a 100% response rate. The high response rate could be attributed to the self-administration of the instrument by the researcher and the cooperation received from the respondent.

Table 4.1: Gender of Respondents

| | Frequency | % | Valid % | Cumulative % |
|--------|-----------|-------|---------|--------------|
| Male | 31 | 62.0 | 62.0 | 62.0 |
| Female | 19 | 38.0 | 38.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |

Source: Field Survey, 2023

Table 4.1 Shows that 31 (62%) of the respondents were males while 19(38%) were females. This indicates that male respondents form the majority of the sample.

Table 4.2: Category of Respondents

| | Frequency | % | Valid % | Cumulative |
|-----------------|-----------|-------|---------|------------|
| Household head | 35 | 70.0 | 70.0 | 70.0 |
| Child labourers | 15 | 30.0 | 30.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |

Source: Field Survey, 2023

Table 4.2 Reveals that 35 (70%) of the respondents consist of household heads while 15(30%) of the respondent are made up of child labourers.

Table4.3: Age of Respondents

| | Frequency | % | Valid % | Cumulative % |
|----------|-----------|-------|---------|--------------|
| 18-30 | 7 | 14.0 | 14.0 | 14.0 |
| 31-40 | 4 | 8.0 | 8.0 | 22.0 |
| 41-50 | 16 | 32.0 | 32.0 | 54.0 |
| 51-above | 23 | 46.0 | 46.0 | 98.0 |
| Total | 50 | 100.0 | 100.0 | |

Source: Field Survey, 2023

Table 4.3 Reveals that 7 (14%) of the respondents belong to the age range of 18- 30 years, 4 (8%) are within the range of 31-40 years and 15 (30%) belong to the age range of 41-50 years while 23 (46%) fall between age range 51-above. This shows that respondents with age 51-above years had the highest frequency

Table 4.4: No. of people in the Household

| | Frequency | % | Valid % | Cumulative % |
|----------|-----------|-------|---------|--------------|
| 2-4 | 11 | 22.0 | 22.0 | 22.0 |
| 5-8 | 25 | 50.0 | 50.0 | 72.0 |
| 9-14 | 9 | 18.0 | 18.0 | 90.0 |
| 15-above | 5 | 10.0 | 10.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |

Source: Field Survey, 2023

Table 4.4 Reveals that 11 (22%) of the respondent's household constitute a range of 2 – 4 people, 25 (50%) of the respondent household constitute a range of 5-8 people, 9(18%) has between 9-14 people in their household while 5 (10%) of the respondents have between 15people or more in their household with a range of 5-8 people having the highest number in their household.

Table 4.5 Household Income

| | Frequency | % | Valid % | Cumulative % |
|---------------|-----------|-------|---------|--------------|
| 16,000-30,000 | 7 | 14.0 | 14.0 | 14.0 |
| 31,000-50,000 | 17 | 34.0 | 34.0 | 48.0 |
| 51,000-above | 26 | 52.0 | 52.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |

Source: Field Survey, 2023

Table 4.5 reveals the household income of the respondent. 7(14%) of the respondent's household income falls between N16,000 – N30,000, 17 (34%) of respondents' household income falls between N31,000 – N50,000; 26 (52%) of the respondent household income falls between the range of N51,000 – above. This shows that the majority of the respondent's households earn between N51,000 – above.

Table 4.6 Education

| | Frequency | % | Valid % | Cumulative % |
|-------|-----------|-------|---------|--------------|
| NO | 10 | 20.0 | 20.0 | 20.0 |
| YES | 40 | 80.0 | 80.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |

Source: Field Survey, 2023

Table 4.6 Reveals that about 10(20%) of respondent children do not receive any formal education while 40(80%) of respondent children or children receive formal education. This shows that a larger population of the respondent children are educated.

Table 4.7 Do your children help in business or farms?

| | Frequency | % | Valid % | Cumulative % |
|-------|-----------|-------|---------|--------------|
| NO | 10 | 20.0 | 20.0 | 20.0 |
| YES | 40 | 80.0 | 80.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |

Source: Field Survey, 2023

Table 4.7 reveals that about 10(20%) of respondent children do not assist either in business or farms while 40(80%) respondent children or children assist one way or the other either in business or farms. This shows that a larger population of the respondent engage in child labour

Table 4.8 Are you currently receiving any child support or grant from the Government?

| | Frequency | % | Valid % | Cumulative % |
|-------|-----------|-------|---------|--------------|
| NO | 46 | 92.0 | 92.0 | 92.0 |
| YES | 4 | 8.0 | 8.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |

Source: Field Survey, 2023

Table 4.8 reveals that about 46(92%) of respondent children do not receive any child support or grant from the government while 4 (8%) of respondent enjoys child support from the Government. This shows that a larger population of the respondent are self-dependent on their income.

Table 4.9 Family or household income is said to be a major determinant of the increase or decrease in the rate of child labour in Bauchi LGA of Bauchi State

| | Frequency | % | Valid % | Cumulative % |
|-------|-----------|-------|---------|--------------|
| NO | 6 | 12.0 | 12.0 | 12.0 |
| YES | 44 | 88.0 | 88.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |

Source: Field Survey, 2023

In Bauchi LGA of Bauchi State, Table 4.9 presents the respondent's perspective on whether household income plays a significant role in determining the prevalence of child labour. While 44 (88%) of the respondents agree that family or household income is a major factor in changes in the rate of child labour in the Bauchi LGA of Bauchi State, 6 (12%) of the respondents disagree with the idea that household income plays a significant role in determining whether child labour rates increase or decrease. However, the idea is backed by a bigger portion of the respondents. Additionally, this would suggest that there is a connection between household income and child labour in Bauchi LGA, Bauchi State.

Table 4.10 What is the highest level of education our child has completed

| | Frequency | % | Valid % | Cumulative % |
|----------------------------|-----------|-------|---------|--------------|
| Primary Certificate | 16 | 32.0 | 32.0 | 32.0 |
| Secondary Certificate | 26 | 52.0 | 52.0 | 84.0 |
| Post-secondary Certificate | 8 | 16.0 | 16.0 | 100.0 |
| Total | 50 | 100.0 | 100.0 | |

Source: Field Survey, 2023

Table 4.10 reveals the highest level of education of the respondent child, 16(32%) attended up to the primary level of education, 26(52%) attained up to secondary school education, and 8(16%) only attained post-secondary school education. However, it could be deduced that the level of education of respondent wards with the highest frequency is those with a secondary certificate with 26 (52%) respondents.

4. 3. Research Questions

Research Question One: What is the relationship between household income and child labour in the Bauchi Local Government Area of Bauchi State?

Table 4.11: Correlation between household income and participation of wards in labour.

| | Do your wards help in Business or Farms? | Household Income |
|--|--|------------------|
|--|--|------------------|

| | | | |
|--|----------------|-------------------------|-------|
| | | Correlation Coefficient | |
| | | 1.000 | -.567 |
| Do your wards help in Business or Farms? | | | |
| | Sig.(1-tailed) | . | 2.124 |
| | N | 50 | 50 |
| | | Correlation Coefficient | |
| | | -.567 | 1.000 |
| Household Income | | | |
| | Sig.(1-tailed) | 2.124 | . |
| | N | 50 | 50 |

Source: Field Survey, 2023

Table 4.11 reveals that there is a negative and inverse relationship between household income and child labour in Bauchi LGA of Bauchi state, this relationship is however significant as evaluated with the t-stat of 2.124 which shows that it is statistically significant.

This leads us to reject our null hypothesis (HO1) and draw the conclusion that there is a substantial correlation between household income and child labour in the Bauchi Local Government Area of Bauchi State.

4.4. Discussion of Findings

This research investigates the connection between family income and child labour in Bauchi LGA of Bauchi State. According to the findings of this study, the vast majority of respondents (80%) do not get government subsidies or assistance, which may contribute to the high rates of child labour in the area. This suggests that government support and social programs may be necessary to address the issue of child labour in the area. Additionally, the research found that 52% of respondents had a monthly earning within the range of #52,000 and above, which highlights that poverty is not the only driver of child labour and there may be other factors such as lack of economic opportunities, cultural norms, or poor access to education and social services.

It's also crucial to remember that although a significant portion of respondents (80%) permit their kids or wards to pursue formal education, this does not preclude the possibility of child labour. Children who are also working might not have the time to get to school or the energy they need to do well. This emphasizes the necessity for education and child labour laws that address the

relationship between work and education and make sure that kids can go to school while simultaneously making a safe and sustainable contribution to their families incomes..

5. Conclusion and Recommendations

In conclusion, the study contends that the main causes of child labour in Bauchi LGA, Bauchi State, are poverty and a lack of employment opportunities. To effectively address this issue, the government must offer assistance and social programs to low-income families as well as create employment options for local people to lessen the reliance on child labour. It is crucial to develop laws that strike a balance between the demands of families for a living and the rights of children to an education and protection from hazardous employment. Other elements to take into account include cultural norms and insufficient access to social services and education and it is recommended that the government at all levels (federal, state, and local) should provide and also implement policies and economic programmes that will enhance household heads daily income in Bauchi Local Government Area of Bauchi State, Nigeria

Limitation and Further Research

In the course of this study, some limitations were faced; issue of proper funding made the study to have limited sample size and barrier in language in that in some areas populations could not read English nor write.

Based on the research findings, it would be beneficial to conduct further studies that delve deeper into the other factors that drive child labor in Bauchi Local Government Area of Bauchi State, Nigeria. For example, a study that specifically examines the cultural norms and attitudes towards child labor in the area and how they contribute to the problem.

Additionally, it would be interesting to investigate the effectiveness of different types of government support and social programs in reducing child labor. This could include a study that compares the impact of cash transfers, education subsidies, and vocational training programs on child labor rates. Furthermore, it would be valuable to study the impact of interventions that target families and children simultaneously, such as conditional cash transfers linked to education attendance, in order to understand how best to support families and children in the area.

DISCLOSURE OF CONFLICT

The authors declare that they have no conflicts of interest.

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REFERENCES

Abdu, A., Rabi, I. & Usman A. L. (2020), Effect of Child Labour on Children's Education in Katsina State, Nigeria: Mediterranean Journal of Social Sciences. 2(6), 70-92.

Becker, G. S. (1962), the Economic Approach to Human Behaviour, University of Chicago Press.

Check, J., & Schutt, R. K. (2012), Teacher research and action research. Research methods in education, 255-271.

Cheek, J. & Schutt, R. K. (2012), Research Method in Education, Scientific Research Publishing, <http://www.scrip.org>.

ILO (2018), World Report on Child Labour Economic Vulnerability, Social Protection and the Fight against Child Labour, Geneva.

ILO (2020), Development of indicators on child labour. Cambridge, MA, U.S.A.;

ILO (2021). Investing in Every Child. An Economic Study of the Costs and Benefits of Eliminating child labour. ILO, Geneva, Switzerland.

ILO (2020), Report III: Child labour statistics 18th International Conference of Labour Statisticians Geneva, 24 November–5 December 2008 ICLS/18/2008/III [Internet]. 2008 [cited 2020 Oct 11]. Available from: http://www.ilo.org/global/publications/ilobookstore/orderonline/books/WCMS_106182/lang%2D%2Den/index.htm International Labour Organization. World Report on Child Labour [Internet] 2015.

Magaji, S. & Musa, I. (2015), Effect of Household Income on Child Labour in Nigeria. Lapai International Journal of Management and Social Sciences, 8(1) 32-56.

Magaji, S. (2005), Legislative Challenges in Study Going Policies against Child Labour, "In Liman, A. N. & Dauda, S. (eds) Issues in Nigeria's Political Development, Zumunta

Publication, 176-190."

Mills, W. C. (1970). *The Sociological Immigration*, Penguin Book, 1970, Social Sciences.
Musa, I., Magaji, S. & Tsauni, A. M. (2022), Analysis for the Socioeconomic Determinants of Child Labour in Northeastern Nigeria, *Inclusive Society and Sustainability Studies (ISSUES)*, 2(1), 46-58.

Musa, I., Magaji, S., & Tsauni, A. M. (2023), Analysis of the socio-economic consequences of child labour in Northeastern Nigeria. *Asian Journal of Management, Entrepreneurship and Social Science*, 3(02), 1-14.

NBS (2022), "Sources of income for Household in Nigeria" Nigeria National Bureau of Statistics Brief Nigerian Government. Nigerian Labour Act. 2011;1-40.
Available from: <http://www.nigeria-law.org/LabourAct.htm>

OECD (2022), "Together, we Create Better Policies for Better Lives" 2022.

Okojie, C. E. (2017), "Income Generation in Occupational Structure among the Urban Poor: The case of Women in Benin City" (Pp.79.90) In P, Mkinwa and A.O Ozo (eds.), *The Urban Poor*. Ibadan: Evans Publishers.

Oli, N. P. & Nweke, C. K. (2021), Determinants and Prevalent Forms of Child Labour Practices in Awka South Local Government Area, Anambra State, Southeastern Nigeria. *ZIK Journal of Multidisciplinary Research*, 4(6), 33-48.

Olukunmi, O. (2017), Socioeconomic Determinants of Child Labour in Ilorin, Kwara State, Nigeria, *KIU Journal of Social Sciences*, Kampala International University, 3(1), 59-65.

Singleton, D. & Straits, R. (2009), Understudying and Evaluating Survey Research, www.researchgate.net.

Ugal, D. B. & Undyaundeye, J. (2009), Child Labour in Nigeria: Causes and Consequences for National Development, *Social Science Research Network*, 1-16.

Ugal, D. B., & Undyaundeye, F. (2009), Child labour in Nigeria: causes and consequences for national development. Available at SSRN 1514460.

UNICEF (2022), *The State of the World Children 2022: Focus on Child Labour*. Oxford University Press, Oxford.

World Bank (2021), *Gender Issues in Child Labour*. PREM Notes Number 1000. The World Bank, Washington, D. C.



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INVESTIGATION OF THE RELATIONSHIP BETWEEN ECONOMIC DEVELOPMENT AND INCOME INEQUALITIES IN TURKEY

Yağmur Akarsu*

ABSTRACT

Development is a very broad concept that includes economic as well as political, cultural, social, health and education issues. Economic growth in developing countries can be achieved by a fair distribution of income among individuals, as in developed countries. From this point of view, policies that reduce income inequality among individuals will increase the living standards of disadvantaged groups. In addition, policies designed to reduce income inequality can help foster more inclusive economic growth. As a matter of fact, minimizing income inequality is among the priorities of countries with a social state understanding. In this study, the relationship between economic growth and income distributions was examined in line with the latest data announced in Turkey. As a result, policy recommendations for reducing poverty for Turkey, which is included in the group of developing countries, are presented.

KEY WORDS:

Economic Growth, Income Inequality, Turkey

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1. INTRODUCTION

Income inequality, which shows the degree of income distribution in economies, is not only an economic problem, but also a psychological and social problem in both developed and developing and less developed countries. (Getaye, 2021). Positive trends in income distribution allow individuals to benefit more from education, health, culture, and other activities. It also enables individuals to seize certain opportunities in their lives.

Economic growth is expressed as the increase in GDP, which is the monetary value of final goods and services produced by countries during a given period. In addition, the increase in the factors of production consisting of labor, capital, entrepreneur and natural resources is also defined as economic growth. Income distribution, on the other hand, emerges from the way this monetary value is distributed among societies. Naturally, any imbalance in this distribution is likely to exacerbate the disparities between the lower, middle, and upper classes, leading to social unrest and adversely affecting various factors such as economic growth, development, education, health, inefficiency, and changes in living standards (Todaro and Smith, 2014; Karaş, 2021).

Policies designed to reduce income inequality can help foster more inclusive economic growth. For example, investing more in education or increasing infrastructure services can reduce income inequality.

Increasing income inequality among individuals can effect economic growth negatively. When incomes are concentrated among specific groups, it can lead to a decrease in demand for goods and services. When the demand for goods and services decreases, economic growth progresses at lower levels. Additionally, the increasing income inequality among individuals can also lead to social and political unrest.

Income inequality is a complex issue and has important implications for economic growth. Up to a certain level of income inequality provides incentives for innovation and investment and this makes it a positive power for economic growth. Wealthy individuals and businesses have resources to invest in new technologies and ideas that can stimulate economic growth and create new jobs. Furthermore, individuals with high incomes can also contribute to economic growth by financing research and development that can advance science and

technology, benefiting the overall economy (Gelgo, Hirko, 2023).

2. THEORY OF ECONOMIC GROWTH AND INCOME INEQUALITY

The direct impact of income inequality on economic growth has been the subject of numerous studies in the field of economics for a long time. The classical perspective claims a positive relationship between income inequality and economic growth. This claim is based on the idea put forward by Adam Smith (1776). Although Adam Smith based economic growth on the division of labor, he argued that increases in the amount of production as a result of increasing labor power and productivity would positively affect economic growth. Neoclassicals (Solow and Swan) argued that there is no meaning between these two variables. The studies of modern economists, however, have shown that income inequality has uncertain effects on economic growth (Galor, 2009-2011; Topuz, Yıldırım, 2017; Lahouij, 2017).

The relationships between economic growth and income distribution were first examined by Kuznets (1955). In his study, Kuznets examined the relationship between per capita income and how this income is distributed among the population. Additionally, it is known that income inequality in countries can be beneficial for incentives and can contribute to the process of economic growth. Several studies have been conducted using different methods to explain the relationship between income inequality and economic growth. The first study on this topic was conducted by Simon Kuznets. Kuznets' work suggests an inverted U-shaped relationship between per capita gross national product and income inequality. In the early stages of economic growth, income inequality increases within a country. The increase in income inequality leads individuals to save more, and these savings are then transformed into investments, resulting in economic growth until a certain point is reached. In the long run, when Kuznets refers to the advanced stage, labor preferences will change. In other words, as per capita income increases in less developed countries, income inequality continues to increase until it reaches a maximum point, and then it decreases as per capita income further increases. Kuznets initially examined the trajectory of income inequality during the process of economic growth in the United States, United Kingdom, and Germany. In his research, he observed a significant decrease in income inequality in America and the United Kingdom after World War I. He then investigated how the transition from the agricultural sector to the industrial sector affected income. In this case, Kuznets found that individuals

transitioning from the agricultural sector to the industrial sector experienced greater income growth, but this also resulted in increased income inequality. The basis of this assumption lies in the income differences from the agriculture and industry sectors. Capital is shifting from one sector (agriculture) to another (industry). Individuals are choosing to leave their land and migrate to developed cities in order to earn higher incomes. If migration and urbanization occur simultaneously, income inequalities can decrease, and economic growth can be achieved (Brussola, 2011).

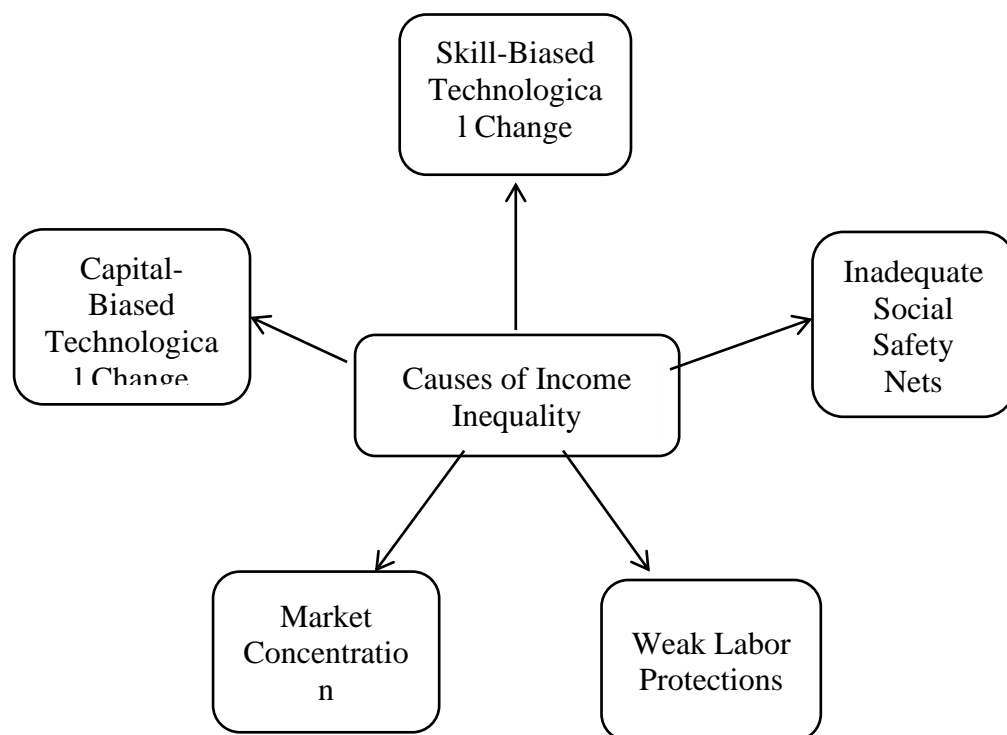
Reducing income inequality through economic growth has been a controversial issue in the field of economy for many years. The relationship between income inequality and economic development has been tried to be explained by different theorists at different times. Due to the fact that the periods are taken as short and long in the studies, the differences in development between the countries and the results obtained as a result of the different distinctions are different, there is no consensus on how these two variables affect the economic development. Income inequality is generally high in developing and underdeveloped countries. Ensuring income equality will also bring sustainable development for countries (Aghion et al., 1999). In addition to studies in which the effect of income inequality between individuals on economic growth is positive (Amar and Zghidi 2016, Bénabou 1996, Fosu 2008, Getaye 2021, Jin and Lee 2017, Madsen, Islam and Doucouliagos 2018, Vo et al. 2019), there are also studies that concluded the relationship between these two variables negatively (Girma and Shete 2018, Majeed 2016, Wan, Lu and Chen 2006, Barro 2000).

3. INCOME INEQUALITY AND ECONOMIC GROWTH IN TURKEY

Income distribution is one of the key indicators of a country's development. Ensuring a fair distribution of income can lead to a better quality of life for individuals within a society. Otherwise, income inequality can cease to be just an economic issue and become a social, political, and psychological problem. Furthermore, achieving income justice among individuals can contribute to social harmony. Reducing income inequality is a priority for countries with a social welfare state concept. Income inequality should not be perceived solely as an economic problem. It can lead to a decrease in savings, which in turn reduces investments. This can result in a slowdown of the market and further decrease in individuals' income levels, leading to an increase in poverty (Ravallion, 2011).

In Turkey, regional inequalities, especially between the Eastern and Western regions, have been a major focus of policymakers. The Five-Year Development Plans prepared since 1960 also address the issue of income inequality. Measures taken by policymakers to reduce income inequality in Turkey include improvements in the labor market, education conditions, healthcare, social security networks, as well as adjustments in social transfers and tax policies (https://www.sbb.gov.tr/wpcontent/uploads/2022/07/On_Birinci_Kalkinma_Plan_i-2019-2023.pdf). In recent times, to explain the increasing income inequality, factors such as regional economic conditions, changes in the labor market, demographic changes among individuals, regional shifts in labor markets, and changes in institutions and organizations have been examined (Breau, 2015).

Figure 1: Causes of Income Inequality



Source: (Rahaman, 2023)

Figure 1 presents the causes of income inequality. Income inequality can vary over time and have both positive and negative effects on economic growth. Among the reasons for income inequality, market concentration, weak labor protections, inadequate social security networks, capital-biased technological

change, and skill-biased technological change are highlighted.

Market Concentration: During periods of rapid economic growth, certain firms may capture a larger share of the market compared to other firms. In such cases, wealth distribution tends to favor the firms with higher market share during times of growth.

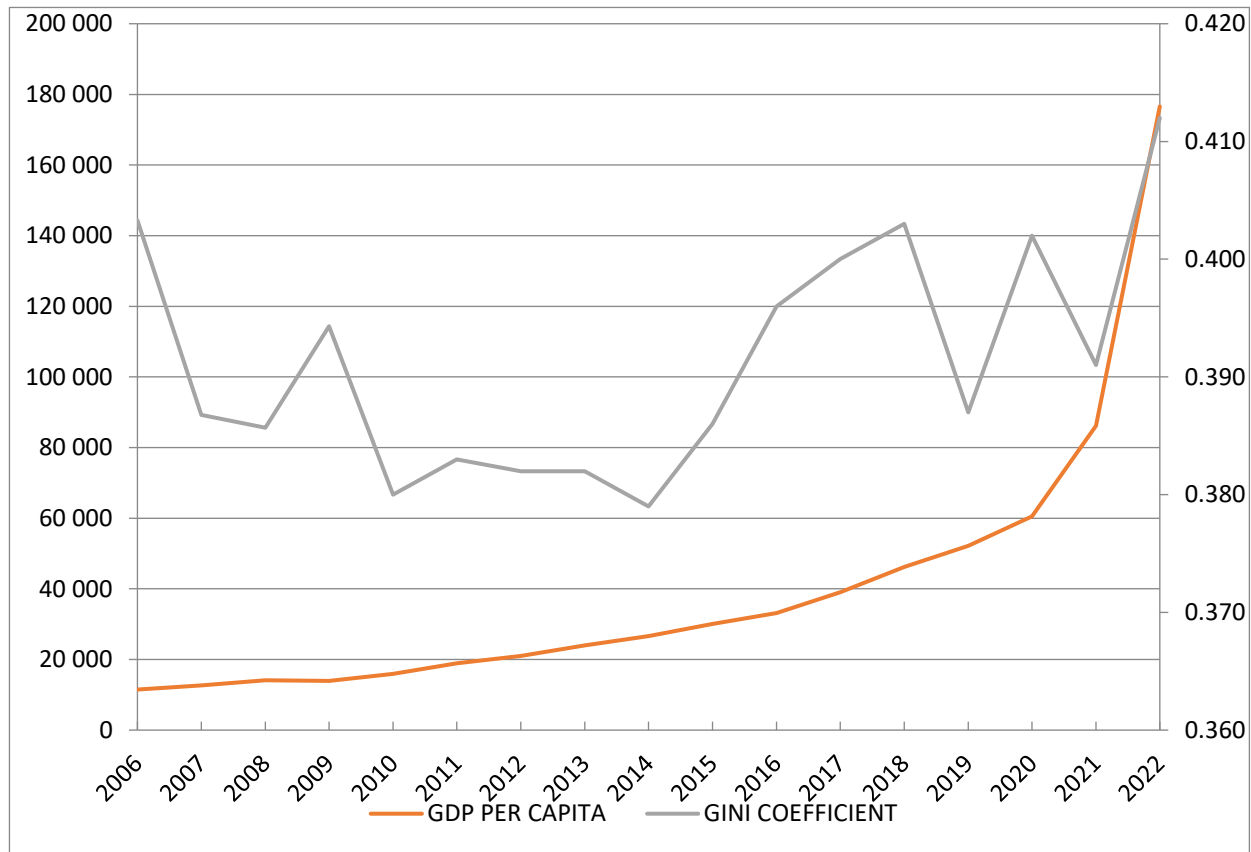
Weak Labor Protections: In periods of increased economic growth, there may be instances where labor unions are unable to adequately protect workers' rights. This can lead to a decrease in workers' wages, resulting in an increase in income inequality among individuals.

Inadequate Social Security Networks: During times of rapid economic growth, disadvantaged groups may struggle to access social security networks due to factors such as job loss, illness, or other adverse circumstances. This can contribute to a further increase in income inequality between the poor and the wealthy.

Capital-Biased Technological Change: With the advancement of technology, capital owners can achieve higher returns. This can contribute to an increase in income inequality.

Skill-Biased Technological Change: As technology continues to advance, there is a shift in demand from unskilled labor to skilled labor. This leads to higher wages for skilled workers than unskilled workers, increasing income inequality among individuals.

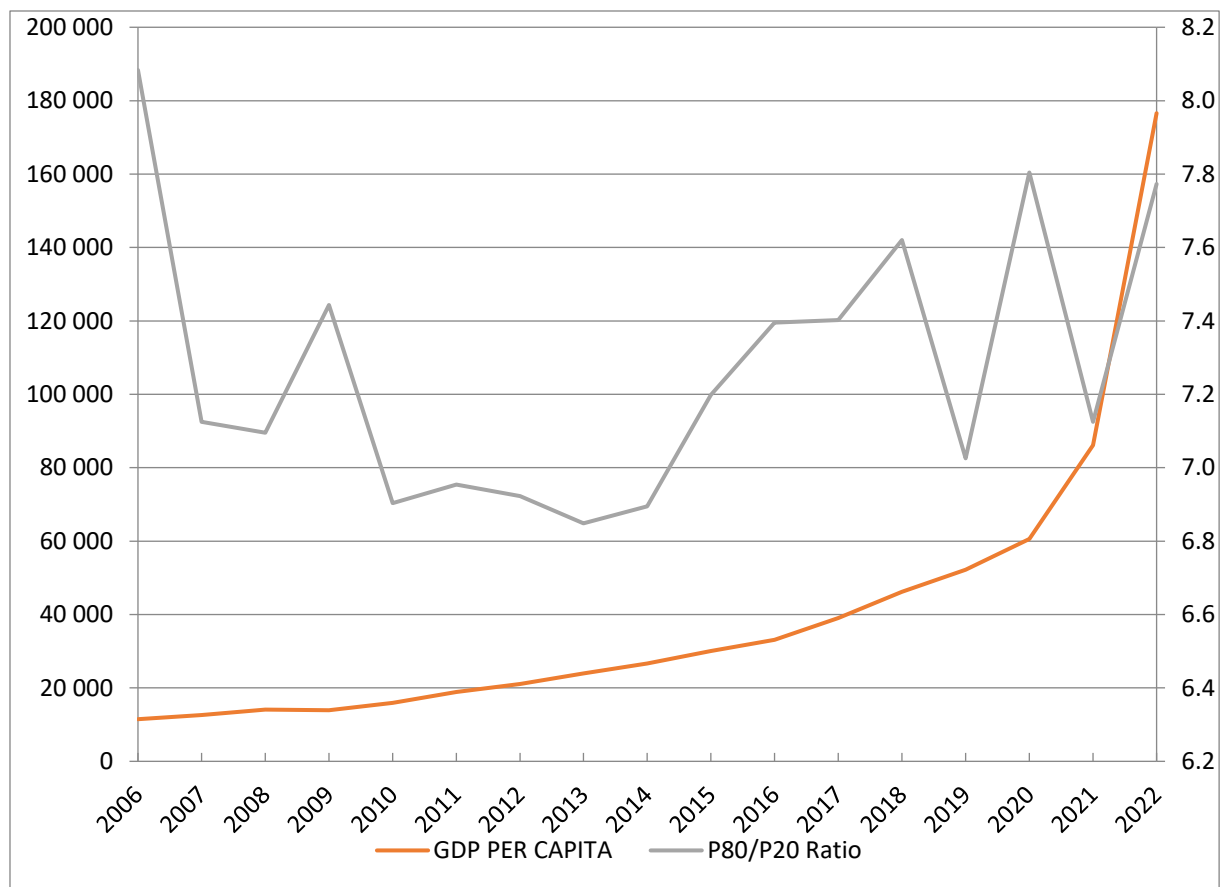
Figure 1: Income Inequality and GDP per Capita in Turkey



Source: TÜİK

In Chart 1, per capita GDP and gini coefficient values for the years 2006-2022 in Turkey are given. The Gini coefficient is a value that shows income inequality within social groups and takes a value between 0 and 1. If this value approaches 1, it indicates that income inequality among individuals increases, and if it approaches 0, income inequality decreases. Accordingly, GDP per capita, which was 11484 TL in 2006, increased to 176589 TL in 2022. With the effect of the economic crisis in 2009, there was a decrease in GDP per capita. If we look at the Gini coefficient values, the value which was 0.403 in 2006 increased to 0.412. This shows that income inequality has increased, albeit slightly. Afterwards, with the changes that occurred in Turkey, increases and decreases are seen in the Gini coefficient from time to time. With the first case that started in China in 2019 and emerged in Turkey in 2020, an increase in income inequality is observed due to the damage to many sectors, the closure of workplaces, curfews and other measures taken. In addition, the increase in inflation rates with Covid in the same period both affected economic growth negatively and caused the income distribution differences between the segments to increase.

Chart 2: Income Inequality and GDP per Capita in Turkey



Source: TÜİK

In Graph 2, GDP per capita and P80/P20 values for the years 2006-2022 in Turkey are given. The P80/P20 value is the ratio of the income of the 20% with the highest income to the income of the 20% with the lowest income. As this ratio gets smaller, it means that income inequality decreases. An increase in this ratio means that income inequality also increases. The P80/P20 value, which was 8.1 in 2006, decreased to 7.8 by 2022. A decrease in the ratio means that the income inequality between the poor and the rich decreases.

Table 1: Annual Average Equivalent Household Disposable Individual Income (TL)

| | Total 2022 |
|----------------------------|---------------|
| TR Türkiye Average (TL) | 48 642 |
| TR10 (İstanbul) | 69 904 |
| TR51 (Ankara) | 59 798 |

| | |
|--|--------|
| TR31 (İzmir) | 59 272 |
| TR21 (Tekirdağ, Edirne, Kırklareli) | 55 740 |
| TR41 (Bursa, Eskişehir, Bilecik) | 54 433 |
| TR61 (Antalya, Isparta, Burdur) | 52 782 |
| TR32 (Aydın, Denizli, Muğla) | 50 014 |
| TR42 (Kocaeli, Sakarya, Düzce, Bolu, Yalova) | 47 575 |
| TR22 (Balıkesir, Çanakkale) | 46 162 |
| TR90 (Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane) | 45 680 |
| TR52 (Konya, Karaman) | 45 672 |
| TR81 (Zonguldak, Karabük, Bartın) | 44 054 |
| TR71 (Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir) | 43 745 |
| TR83 (Samsun, Tokat, Çorum, Amasya) | 43 008 |
| TR82 (Kastamonu, Çankırı, Sinop) | 42 833 |
| TR33 (Manisa, Afyon, Kütahya, Uşak) | 42 430 |
| TR62 (Adana, Mersin) | 41 141 |
| TR72 (Kayseri, Sivas, Yozgat) | 40 767 |
| TRA1 (Erzurum, Erzincan, Bayburt) | 35 302 |
| TRB1 (Malatya, Elazığ, Bingöl, Tunceli) | 33 193 |
| TR63 (Hatay, Kahramanmaraş, Osmaniye) | 32 700 |
| TRC1 (Gaziantep, Adıyaman, Kilis) | 31 186 |
| TRA2 (Ağrı, Kars, Iğdır, Ardahan) | 27 659 |
| TRC3 (Mardin, Batman, Şırnak, Siirt) | 25 038 |
| TRC2 (Şanlıurfa, Diyarbakır) | 24 462 |
| TRB2 (Van, Muş, Bitlis, Hakkâri) | 23 063 |

Source: TÜİK

In Table 1, annual average equivalent household disposable income is given. In 2022, the annual average household disposable income in Turkey was 48,642 TL. Accordingly, TR10 (Istanbul), TR51 (Ankara), TR31 (Izmir), TR21 (Tekirdag, Edirne, Kırklareli), TR41 (Bursa, Eskişehir, Bilecik), TR61 (Antalya, Isparta, Burdur), TR32 (Aydın, Denizli, Muğla) regions earn income above the Turkey average. Based on this situation, the lowest annual average equivalent household income in 2022 was realized in TRB2 (Van, Muş, Bitlis, Hakkari) region with 23 thousand 063 TL.

Table 2: Gini Coefficient by Equivalent Household Disposable Individual Income

| | Gini coefficient |
|--|------------------|
| | 2022 |
| TR81 (Zonguldak, Karabük, Bartın) | 0.295 |
| TR42 (Kocaeli, Sakarya, Düzce, Bolu, Yalova) | 0.309 |
| TRB1 (Malatya, Elazığ, Bingöl, Tunceli) | 0.314 |
| TRC2 (Şanlıurfa, Diyarbakır) | 0.340 |
| TRC1 (Gaziantep, Adıyaman, Kilis) | 0.341 |
| TR82 (Kastamonu, Çankırı, Sinop) | 0.346 |
| TR90 (Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane) | 0.351 |
| TR22 (Balıkesir, Çanakkale) | 0.354 |
| TR33 (Manisa, Afyon, Kütahya, Uşak) | 0.354 |
| TR41 (Bursa, Eskişehir, Bilecik) | 0.355 |
| TR21 (Tekirdağ, Edirne, Kırklareli) | 0.358 |
| TR32 (Aydın, Denizli, Muğla) | 0.360 |
| TR61 (Antalya, Isparta, Burdur) | 0.362 |
| TRB2 (Van, Muş, Bitlis, Hakkâri) | 0.363 |
| TR63 (Hatay, Kahramanmaraş, Osmaniye) | 0.373 |
| TR83 (Samsun, Tokat, Çorum, Amasya) | 0.375 |
| TRA1 (Erzurum, Erzincan, Bayburt) | 0.377 |
| TR71 (Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir) | 0.383 |
| TR31 (İzmir) | 0.385 |
| TR72 (Kayseri, Sivas, Yozgat) | 0.387 |
| TRC3 (Mardin, Batman, Şırnak, Siirt) | 0.396 |
| TR62 (Adana, Mersin) | 0.399 |
| TRA2 (Ağrı, Kars, Iğdır, Ardahan) | 0.399 |
| TR51 (Ankara) | 0.402 |
| TR52 (Konya, Karaman) | 0.413 |
| TR Türkiye | 0.415 |
| TR10 (İstanbul) | 0.444 |

Source: TÜİK

In Table 2, the gini coefficients are given according to the equivalent household

disposable income. Accordingly, the gini coefficient in Turkey in 2022 was 0.415. If this value is close to 1, it indicates that income inequality has increased, and if it is close to 0, it indicates that income inequality has decreased. According to the latest researches, the region with the highest income inequality is TR10 (Istanbul) Region with 0.444. In addition, the regions with the least income inequality are TR81 (Zonguldak, Karabük, Bartın) and TR42 (Kocaeli, Sakarya, Düzce, Bolu, Yalova).

Table 3: P80/P20 Ratio by Equivalent Household Disposable Individual Income

| | P80/P20 Ratio |
|--|---------------|
| | 2022 |
| TRB1 (Malatya, Elazığ, Bingöl, Tunceli) | 4.5 |
| TR81 (Zonguldak, Karabük, Bartın) | 4.5 |
| TR42 (Kocaeli, Sakarya, Düzce, Bolu, Yalova) | 4.9 |
| TRC1 (Gaziantep, Adıyaman, Kilis) | 5.0 |
| TRC2 (Şanlıurfa, Diyarbakır) | 5.3 |
| TR41 (Bursa, Eskişehir, Bilecik) | 5.5 |
| TR32 (Aydın, Denizli, Muğla) | 5.7 |
| TR90 (Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane) | 5.9 |
| TR33 (Manisa, Afyon, Kütahya, Uşak) | 5.9 |
| TRB2 (Van, Muş, Bitlis, Hakkari) | 5.9 |
| TR61 (Antalya, Isparta, Burdur) | 5.9 |
| TR82 (Kastamonu, Çankırı, Sinop) | 6.0 |
| TR21 (Tekirdağ, Edirne, Kırklareli) | 6.0 |
| TRA1 (Erzurum, Erzincan, Bayburt) | 6.1 |
| TR22 (Balıkesir, Çanakkale) | 6.1 |
| TR63 (Hatay, Kahramanmaraş, Osmaniye) | 6.4 |
| TR71 (Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir) | 6.5 |
| TR83 (Samsun, Tokat, Çorum, Amasya) | 6.6 |
| TR31 (İzmir) | 6.8 |
| TRC3 (Mardin, Batman, Şırnak, Siirt) | 6.9 |
| TR51 (Ankara) | 7.0 |
| TR72 (Kayseri, Sivas, Yozgat) | 7.2 |
| TR62 (Adana, Mersin) | 7.2 |

| | |
|-----------------------------------|------------|
| TR52 (Konya, Karaman) | 7.4 |
| TRA2 (Ağrı, Kars, Iğdır, Ardahan) | 7.9 |
| TR Türkiye | 7.9 |
| TR10 (İstanbul) | 8.1 |

Source: TÜİK

In Table 3, P80/P20 ratios are given according to the equivalent household disposable income. As of 2022, this rate is 7.9 in Turkey. Accordingly, the regions with the highest income inequality are TR10 (İstanbul) with 8.1, TRA2 (Ağrı, Kars, Iğdır, Ardahan) with 7.9. The regions with the lowest value and the lowest income inequality are TRB1 (Malatya, Elazığ, Bingöl, Tunceli) with 4.5, TR81 (Zonguldak, Karabük, Bartın) with 4.5 and TR42 (Kocaeli, Sakarya, Düzce, Bolu, Yalova) with 4.9.) regions.

4. CONCLUSION

Equitable distribution of income among individuals increases the welfare of individuals, but also contributes positively to economic growth as they spend more with their increased income. For this purpose, income inequality and the elimination of this inequality are among the main goals of policy makers. In this study, per capita income and gini coefficients for the period 2006-2022 in Turkey are presented and P80/P20 ratios and per capita income are compared. In addition, region-based disposable personal incomes and gini coefficients for 2022 are also included.

In developing and underdeveloped countries, there are reasons that make the rich richer and the poor poorer. For a developing country like Turkey, in order to overcome these problems, policy makers need to implement practices that will promote fair income distribution. In addition, in order for everyone to benefit from economic growth, it is necessary to establish systems where everyone can easily benefit from education and health services. Policies should be implemented to strengthen labor protections as well as to improve social safety nets. In addition, policy makers need to provide financial support to those with low capital and equal opportunity in their access to financial instruments. With the development of education and health services, the existing income inequality can be reduced to a minimum. Therefore, investments in these sectors should also be supported.

DISCLOSURE OF CONFLICT

The authors declare that they have no conflicts of interest.

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REFERENCES

Aghion, P., Caroli, E., and Garcia-Penalosa, C. (1999). Inequality and Economic Growth: The Perspective Of The New Growth Theories. *Journal of Economic literature*, 37(4), 1615-1660.

Alesina, A., Rodrik, D. (1994). Distributive Politics and Economic Growth. *The Quarterly Journal of Economics*, 109(2), 465-490.

Alesina, A., Perotti, R. (1996). Income Distribution, Political Instability and Investment. *European economic review*, 40(6), 1203-1228.

Amar, B. M., Nahed, Z. (2016). The Relationship between Inclusive Growth, Inequality and Poverty in Africa. *Theoretical and Applied Economics* 23 (1), 117-126.

Barro, R. J. (2000). Inequality and Growth in a Panel of Countries, *Journal of Economic Growth*, 5, 5-32.

Bénabou, R. (1996). Inequality and Growth. *NBER Macroeconomics Annual*, 11, 11 - 74.

Brussolo, M. E. (2011). The kuznets hypothesis revisited: Exploring mexican inequality at the sub-national level, (Order No. 3455596), Available from ProQuest Dissertations & Theses Global. (868713427).

Fosu, A. K. (2008). Inequality and the Growth-Poverty Nexus: Specification Empirics Using Africa Data, *Applied Economics Letters*, 15, 563-566.

Galor, O. (2009). Inequality and Economic Development: An Overview. Providence, RI: Brown University, Working Paper, No. 2009-3.

Galor, O. (2011). Inequality, Human Capital Formation and The Process of Development. *National Bureau of Economic Research Working Paper*, No: 17058.

Galor, O., Moav, O. (2004). From Physical to Human Capital Accumulation: Inequality and The Process of Development. *The Review of Economic Studies*, 71(4), 1001-1026.

Getaye, G. (2021), Linkage between Economic Growth and Income Inequality in Ethiopia, *International Journal of Sustainability Management and Information Technologies* 7 (1):1-10. doi:10.11648/j.ijsmi.20210701.11.

Gelgo, B. Hirko, T. (2023). Income Inequality and Economic Growth Nexus in Ethiopia: A Critical Review, *Journal of Economics and Sustainable Development*, 14(1), 15-20.

Girma, T. Maru S. (2018). Relationship between Income Inequality and Economic Growth in Ethiopia, *JBAS*, 10 (1),1-41.

Jin, F. Keun L. (2017). Dynamics of the Growth–Inequality Nexus in China: Roles of Surplus Labor, Openness, Education, and Technical Change in Province-Panel Analysis, *Journal of Economic Policy Reform* 20 (1), 1-25. doi: 10.1080/17487870.2016.1258311.

Karaş, G. (2021). Gelir Dağılımı ve Kalkınma İlişkisi: BRICS-T Ülkeleri Örneği, *Maliye Dergisi*, 180, 233-251.

Madsen, J., Islam, M. Hristos D. (2018). Inequality, Financial Development and Economic Growth in the OECD, 1870 2011, *European Economic Review* 101, 605-624.

Majeed, M. T. (2016). Economic Growth and Income Inequality Nexus: An Empirical Analysis for Pakistan. Munich Personal RePEc Archive.

Rahaman, M. (2023). A Conceptual Study on Income Inequality and Economic Growth in Bangladesh, *Journal of Economics and Sustainable Development*, 14(5), 36-41.

Ravallion, M. (2001). Growth, Inequality and Poverty: Looking Beyond Averages. *World Development*, 29(11), 1803-1815.

Robinson, S. (1976). A Note on the U Hypothesis Relating Income Inequality and Economic Development, *American Economic Review*, 66(3), 437-440.

Smith, A. (1776). *The wealth of nations*. New York: Modern Library.

Solow, R. M. (1956). A Contribution to The Theory of Economic Growth. *The quarterly journal of economics*, 70(1), 65-94.

Todaro, M.P. Smith, S.C. (2014). *Economic Development* (12.ed.), USA: Pearson

Topuz, S., Yıldırım, K. (2017). Gelir Eşitsizliğinin Ekonomik Büyüme Üzerindeki Etkisi, *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, 17(3), 57-72.

Vo, D. H., Thang C. N., Ngoc P. T., Anh T. V. (2019). What Factors Affect Income Inequality and Economic Growth in Middle-Income Countries?, *Risk and Financial Management* 12(40),1-12.

Wan, G., Ming L., Zhao C. (2006). The Inequality-Growth Nexus in the Short and Long Runs: Empirical Evidence from China. *UNU-WIDER*, Helsinki.

<https://data.tuik.gov.tr/Bulten/Index?p=Gelir-ve-Yasam-Kosullari-Arastirmasi-Bolgesel-Sonuclari-2021-45582> (Erişim tarihi: 20.06.2023)

<https://data.tuik.gov.tr/Bulten/Index?p=Gelir-Dagilimi-Istatistikleri-2022-49745>(Erişim tarihi: 20.06.2023)

https://www.sbb.gov.tr/wp-content/uploads/2022/07/On_Birinci_Kalkinma_Plani-2019-2023.pdf (Erişim tarihi: 24.06.2023).



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DO GROSS NATIONAL SAVING AND GROSS CAPITAL FORMATION CONTRIBUTE TO OMAN'S ECONOMIC GROWTH? AN EMPIRICAL STUDY

Neetu Kwatra*

ABSTRACT

The purpose of this study is to examine the relationship among gross domestic product (GDP), gross capital formation (GFC), and gross national savings (GNS) at the current price level in the Oman economy. This study also looks at the long-term relationship between GDP and the GFC and GNS. The study's main objectives are to find out the causal relationship between GDP, GNS, and GFC and identify the long-run cointegration between GDP, GFC, and GNS at the current price level. The study has taken secondary data from the last 10 years (2010–2021). The study design is longitudinal as time series data have been used to meet our objectives. The study applied the correlogram test to check whether the series are stationary or not. and also, the Granger causality test to find the direction of the GDP, GFC, and GNS. This study further used the Eagle Granger residual-based cointegration test and DOLS approaches to identify the long-run cointegration between GDP and its independent variable. With the application of the correlogram test, it has been discovered that GDP and GFC are stationary at their current levels, whereas GNS is stationary at the first difference to satisfy the assumption of the cointegration test. The study reported that there is no significant relationship between saving, capital formation, and economic growth at current prices in Oman 's economy. However, the finding also that there is no long-run cointegration between GDP at current prices and GNS and GFC Overall, the findings of the study are based on current prices, which affect nominal GDP. Provide the evidence, as in Oman the savings rate is very low, which means a reduction in capital formation, so it is suggested to focus on other variables that could result in constant growth of the country's economy in the long run.

KEY WORDS:

Gross domestic product, Gross National saving, Gross capital formation, cointegration, casual

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1. INTRODUCTION

Gulf countries have experienced significant economic growth, primarily driven by the oil sector. This has led to increased revenues, allowing these countries to invest in various sectors such as infrastructure, education, and healthcare. However, relying heavily on the oil sector poses risks due to frequent changes in the price of oil and the finite nature of these resources. Consequently, understanding the factors contributing to economic growth beyond the oil sector is crucial for diversifying their economies and ensuring sustainable development. Finance Map of the World (2013) defined economic growth as an increment in the productivity of goods and services in any country from the previous year.

Roy Harrod (1939) and Evsey Domar (1946) gave a slow growth model, which suggested that if the government encouraged saving in the country, it would lead to economic growth. They gave a mathematical equation, $G = (\Delta Y/Y) = (s/k)$, which states that if you increase saving, it will increase output. According to Prashanth Kanniga (2021), capital formation is the result of saving which further accelerates economic growth by adding the productivity of labor and large-scale production. He also stressed that if a country increases its saving it can use its resources in the best manner which increase output, reduce unemployment solve the problem of unemployment, and make the economy free from debt.

(Chow, 1993) researched that in China those who have accumulated savings act as an engine for economic growth Saving stimulates fixed capital and the country can achieve high economic growth with sufficient savings. According to (Wollasa. L.Kumo, 2011) insufficient saving and investment specifically in developing nations is a constraint for economic growth, especially in sub-Sahara Africa.

Bakare (2011) used the OLS model to investigate the relationship between capital formation and economic growth in Nigeria. He discovered that there is a significant positive relationship between national income and saving, which accelerates economic growth, and he suggested that the government promote the habit of saving to have sustained economic growth.

C. Mphuka (2010) examines the causality between economic growth and saving in Zambia using the VAR model. Findings indicate that economic growth and saving are unidirectional, which means economic growth is the cause of saving and not vice versa. Nicholas M. Odhiambo (2008, 2009) conducted two studies, one in Kenya and the other in South Africa, to compare the relationship between

saving and economic growth. He used causality and co-integration tests to conduct the study. A study proved that there is a significant positive relationship between savings and economic growth.

Mohan (2006) examined the relationship between economic growth and saving at different levels of income. He collected secondary data from 20 countries and found that growth rate leads to saving in 13 countries, but in other countries, growth rate and saving are bidirectional and cause each other. Jagadeesh, D. (2015), investigates the application of the Harrod model in the economy of Botswana to understand the relationship between saving and economic growth. He used the ARDL model to prove his result. The study found that there is a significant relationship between saving and economic growth, and the study also supports the Harrod-Domar growth model. Kaur, S. (2021) found that the GDP of Saudi Arabia is largely dependent on capital formation and gross savings, and she proved a positive linear relationship between gross capital formation and the GDP of the country. K. R. V. Rao (1980): The main objective of this study based on financial planning is to determine how much capital formation and saving have increased in India during the last three decades, which stimulates economic growth. This paper examined the policy of the government as well as the effective utilization of the resources in the country for economic and social welfare.

Therefore, the main aim of this study is to find the causal relationship and cointegration between gross domestic product (GDP), gross national saving (GNS), and gross capital formation (GCF) in the Oman economy. This study also focused on whether the behavior of Saving and capital formation contributes to the economic growth (GDP at current price) of the Oman economy.

2. RATIONALE OF THE STUDY

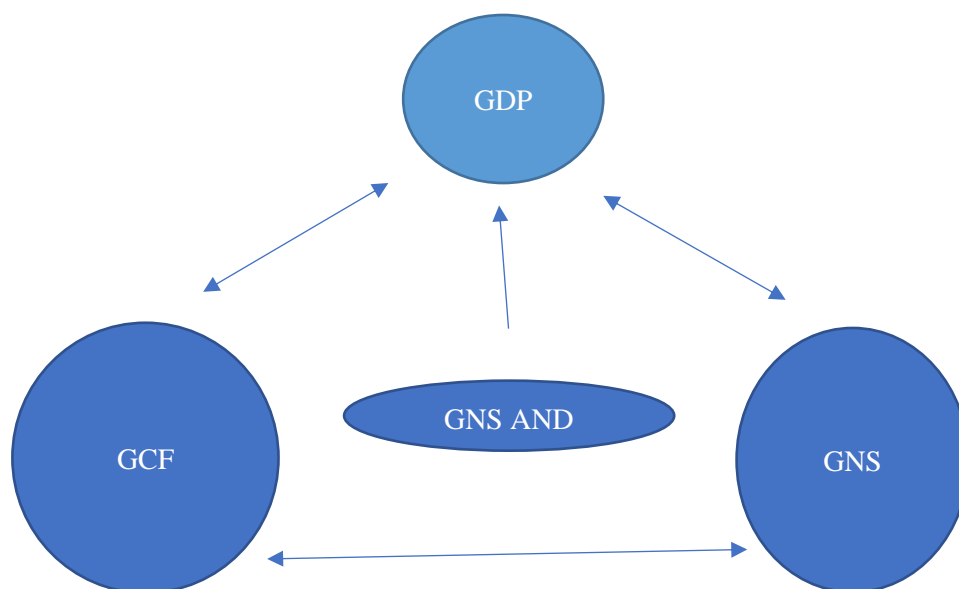
The above research produced diverse findings addressing the relationship between savings, capital formation, and economic development. While some studies claim that savings lead to economic development, others support savings and growth as being indirectly related. The effects of saving and growth are different in different countries, and they purely depend on whether a country is developed or developing. Because per-capita income is different among the countries. However, countries with a high rate of saving lead to capital formation and accelerate economic growth indirectly, and some result shows that economic growth causes saving. There is a mixed view about the relationship among the given variables.

Oman is a developing nation, and there is a low rate of saving. Inadequate savings is a common question in most developing nations, which leads to poor economic growth, a high unemployment rate, and increased poverty. Although this study provides insight into whether saving, capital formation, and GDP have a unidirectional, bidirectional, no relationship or all three are independent of each other, it also examines the cointegration of capital formation, saving, and economic growth in the Sultanate of Oman. Therefore, the main objective of this study is to analyze the role of capital formation and saving in the economic development of Oman at the current price level.

3. CONCEPTUAL FRAMEWORK

We can derive a mathematical model here based on the growth model given by Harrod and Domar which is $GDP = f(GCF, GNS)$ as per our objective. Figure 1 explains the conceptual framework where relationships among GDP, GNS, and GCF have been established and the combined impact of GNS and GCF on gross domestic product. This figure shows that GDP, GNS, and GCF are affecting each other, and GCF and GNS jointly affect GDP.

Fig 1. Conceptual Framework



4. AIMS AND OBJECTIVES OF THE STUDY

The main aim of this study is to examine the role of savings and capital formation in the economic development of the Sultanate of Oman.

4.1. Specific objectives of the study

1. To investigate the causal relationship between gross savings, gross capital formation, and gross domestic product of the country
2. To identify the long-run integration among GNS, GCF, and GDP of Oman

4.2. Hypotheses of the study

For objective 1, there are six hypotheses, and for objective 2, there are two hypotheses.

1. For objective -1, we have created six null hypotheses.
2. H (1)-GDP does not cause GNS.
3. H (2)-GNS does not cause GDP.
4. H (3)-GDP does not cause GCF
5. H (4)-GCF does not cause GDP.
6. H (5)-GNS does not cause GCF.
7. H (6)-GCF does not cause GNS.

For objective 2, we have created two hypotheses.

1. H (0): There is no long-run cointegration among GNS, GCF, and GDP.
2. H (1): There is long-run cointegration among GNS, GCF, and GDP.

5. RESEARCH METHODOLOGY

In this study, we have examined the relationship between GDP, GNS, and GFC in Oman's economy. The study design is descriptive as we have explained the behavior of the given variables. The study constitutes a longitudinal study as secondary data has been collected over the last 11 years. The research design is descriptive and longitudinal, and a quantitative method has been used to reach our objectives. Time series data on gross national savings, gross capital formation, and GDP at current prices covering the period from 2010 to 2021 have been collected from NCSI-Oman (Table 2). Gross Domestic Product, Gross National Savings, and Gross Capital Formation are the variables listed in Table No. 1 of this paper. The econometric software package E-Views for Windows is used to process these statistics.

Table 1 -Variables of the study

| Variable Type | Variable Name |
|---------------|---|
| Dependent | Gross domestic product at the current price |
| Independent | Gross national savings at the current price |

| | |
|-------------|--|
| Independent | Gross capital formation at the current price |
|-------------|--|

Table 2. -GDP, GNS, GCF for the period (2010-2021)

| Time | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Gross National Saving at the current price | | 11607.90 | 13098.50 | 13110.60 | 11844.00 | 6708.60 | 5502.90 | 6194.50 | 9449.00 | 7457.90 | 3329.82 | 5878.23 |
| Gross Fixed Capital Formation at the current price | | 8508.10 | 9293.80 | 10354.80 | 10631.30 | 10293.30 | 11352.30 | 10359.50 | 10728.10 | 9803.40 | 9215.71 | 8687.47 |
| GDP at Current Prices | 24990.02 | 29797.76 | 33608.68 | 34580.44 | 35642.81 | 30264.33 | 28887.04 | 31089.35 | 35184.00 | 33859.40 | 29187.16 | 33909.82 |

Source: NCSI-Oman

To examine the causality and co-integration among GDP, GNS, and GCF, various time series models have been applied. To test whether the data series is stationary or not, the correlogram method has been applied in the study, and further Eagle Granger residual-based co-integration, and the OLS approach has been used.

We must determine whether the data series is stationary or not before running the Granger causality test and both co-integration tests. All the tests can only be used if the series is stationary. In this study, the correlogram formal method has been used to determine whether the GDP, GCF, and GNS time series is stationary or not, which is going to justify the autocorrelation between data sets over various periods with the help of the E-views program. Further, the data will be analyzed using the Granger causality and Eagle Granger cointegration models and the OLS model to test the cointegration between the series.

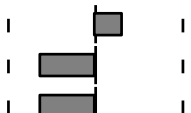
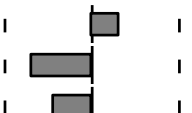
5.1. Data analysis and Interpretation

In an attempt to find the direction of causality and co-integration between all

variables (savings, economic growth, and capital formation) it is important to understand whether the time series are stationary or not. Given below is the autocorrelation of the GDP, GNS, and GCF in Tables no. 3, 4, 5, and 6.

Fig 2. GDP at the level

CORRELOGRAM OF GDP AT LEVEL

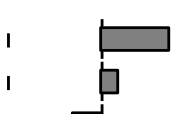
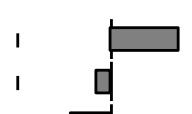
| Autocorrelation | Partial Correlation | AC | PAC | Q-Stat | Prob |
|---|---|----------|--------|--------|-------|
|  |  | 1 0.177 | 0.177 | 0.4778 | 0.489 |
| | | 2 -0.356 | -0.399 | 2.6020 | 0.272 |
| | | 3 -0.369 | -0.258 | 5.1402 | 0.162 |

Sample: 2010-2021, observation-12, lag-3

Here the p-value is greater than 0.05, so we can conclude that the data is stationary at the level. Even the spikes of autocorrelation are in between the vertical dotted lines, which shows that the data is stationary at the level.

Fig 3. GFP at level

CORRELOGRAM OF GFC AT LEVEL

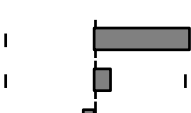
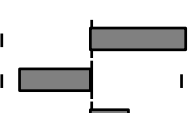
| Autocorrelation | Partial Correlation | AC | PAC | Q-Stat | Prob |
|---|---|----------|--------|--------|-------|
|  |  | 1 0.434 | 0.434 | 2.6932 | 0.101 |
| | | 2 0.114 | -0.092 | 2.8988 | 0.235 |
| | | 3 -0.185 | -0.248 | 3.5137 | 0.319 |
| | | 4 -0.279 | -0.120 | 5.1065 | 0.277 |

Sample: 2011-2021, observation-11 after adjustment, lag-3

Here p-value is greater than 0.05 so we can conclude that data is stationary at the level. Even the Auto correlation spikes are also in between the vertical lines which shows that the data series is stationary at level.

Fig 4. GNS at level

CORRELOGRAM OF GNS AT LEVEL


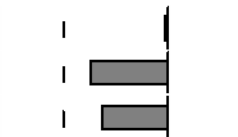
| Autocorrelation | Partial Correlation | AC | PAC | Q-Stat | Prob |
|---|---|----------|--------|--------|-------|
|  |  | 1 0.627 | 0.627 | 5.6262 | 0.018 |
| | | 2 0.111 | -0.466 | 5.8212 | 0.054 |
| | | 3 -0.072 | 0.250 | 5.9135 | 0.116 |

Sample: 2011-2021, observation-11 after adjustment, lag-3

Here p-value is less than 0.05 so we can conclude that the data series is non-stationary at the level. Even the spikes of auto correlation are also outside the vertical lines which shows that the data series is nonstationary at a level. To make it stationary we have created a new series of GNS with the first difference as given below in Fig no. 5

Fig 5. GNS at the first difference (DGNS)

CORRELOGRAM OF GNS AT FIRST DIFFERENCE (DGNS)

| Autocorrelation | Partial Correlation | AC | PAC | Q-Stat | Prob |
|---|---|----------|--------|--------|-------|
|  |  | 1 -0.009 | -0.009 | 0.0010 | 0.974 |
| | | 2 -0.473 | -0.473 | 3.3607 | 0.186 |
| | | 3 -0.295 | -0.394 | 4.8570 | 0.183 |

Sample: 2012-2021, observation-10 after adjustment, lag-3

In Fig No. -5 Here p-value is greater than 0.05 so we can conclude that data is stationary at the first level not at the level. Even the spikes are also in between the vertical lines which shows that the DGNS is stationary at the first difference.

As a result of the correlogram test, we can conclude that GDP and GCF are stationary at the level and DGNS stationary at the first difference. Further, to perform the causality and co-integration tests, we have used GDP, GCF, and DGNS (gross national saving at first difference) to satisfy our above-mentioned objectives.

Objective-1

Table 3. Pairwise Granger Causality Test

PAIRWISE GRANGER CAUSALITY TEST

| Null Hypothesis | Observations | F-Statistics | Prob. |
|---------------------------------|--------------|--------------|--------|
| GDP does not granger cause DGNS | 8 | 3.85867 | 0.1481 |
| DGNS does not granger cause GDP | | 0.16497 | 0.8551 |
| GFC does not granger cause DGNS | 8 | 2.50611 | 0.2291 |

| | | | |
|---------------------------------|---|---------|--------|
| DGNS does not granger cause GFC | | 0.38108 | 0.7121 |
| GFC does not granger cause GDP | 9 | 0.71325 | 0.5434 |
| GDP does not granger cause GFC | | 0.00792 | 0.9921 |

Sample: 2010-2021, lag-2

The Granger causality test, as reported in Fig. 6, shows that there is no causality between gross national saving, gross capital formation, and GDP. The p-value is greater than the significance level of 0.05, indicating that null hypotheses are accepted. None of the variables is the cause of the other. All variables are independent, which means GDP, DGNS, and GCF are not statistically significant. Hence, we can conclude that there is no causality among the GDP, DGNS, and GCF. Additionally, the behavior of DGNS and GFC is not able to forecast the behavior of economic growth and vice versa.

Objective -2

To identify the long-run integration among GNS, GCF, and GDP of Oman. We have used two tests. The main assumption of this test is all variables should be stationary which we have satisfied by the correlogram test.

1. Eagle granger residual-based cointegration test
2. OLS (ordinary least square)

Empirical test-1-eagle granger residual-based cointegration test

This test has been performed in three steps

Step-1 - Model for Eagle Granger residual-based test

$GDP = a + b_1 (GCF) + b_2 (DGNS) + e$ where a is the intercept, b_1 and b_2 are the coefficient and e is the error

Step 2 -Estimate its residual error.

Given Below is the fig no. 7 of residual error of Eagle Granger residual cointegration test. We have identified the residual error to identify whether the unit root is present or not in the error series and to satisfy step number 3 as

given below. - In performing an augmented dickey fuller test. If the series has a unit root that means the data is non-stationary and it will justify the cointegration between dependent and independent variables as given in step 3.

Residuals from the equation with dependent variables GDP

Modified: 2010 to 2021// Residual error

Table 4. Residual error from the equation with dependent variable

| |
|---------------|
| -3398.1701... |
| -489.93573... |
| 121.497301... |
| 1634.89004... |
| -1426.5551... |
| -2640.8739... |
| -403.06347... |
| 2171.51062... |
| 2010.92121... |
| -693.00742 |
| 3112.78664 |

Sample-2010-2021

analyses and discusses the responses to questions on the techniques used in forecasting stock purchases by SMEs in the mobile industry, the stock management measures they employ, the factors that hinder the effectiveness of stock management, as well as the correlation between stock turnover and financial performance among the SMEs concerned.

Table 5. Application of unit root test on the error series

Null Hypothesis is: ERROR has a unit root

Exogenous: Constant

Lag Length :0 (Automatic -based on SIC, maxlag=1)

| | | t-statistics | Prob* |
|--|-----------|--------------|--------|
| Augmented Dickey-Fuller test statistics | | -2.474684 | 0.1483 |
| Test Critical value | 1% Level | -4.297073 | |
| | 5% Level | -3.212696 | |
| | 10% Level | -2.747676 | |

*MacKinnon (1996) one-sided p-values

Warning: Probabilities and critical; values calculated for 20 observations and may not be accurate for a sample size of 10

Augmented Dickey-Fuller test equation

Dependent variable :D (ERROR)

Method : :Least Square

Sample adjusted 2012 to 2021

Observations: 10 after adjustment

Table 6. Residual error from the equation with dependent variable GDP

| Variables | Coefficient | Std. error | t-statistics | Prob. |
|----------------------|-------------|------------------------|--------------|----------|
| ERROR (-1) | -0.833884 | 0.336966 | -2.474684 | 0.0384 |
| C | 391.5254 | 611.0750 | 0.640716 | 0.5396 |
| R-Squared | 0.433591 | Mean Independent Var | | 651.0957 |
| Adjusted R-squared | 0.362709 | S.D. dependent Var | | 2384.839 |
| S.E. of regression | 1903.709 | Akaike info criterion | | 18.11785 |
| Sum Squared residual | 28992856 | Schwarz criterion | | 18.17837 |
| Log Likelihood | -88.58926 | Hannan-Quinn Criterion | | 18.05146 |
| F-statistics | 0.124062 | Durbin -Watson Stat. | | 1.721285 |
| Prob.(F-statistics) | 0.038429 | | | |

Sample-2010-2021

As shown in Fig. 8, the null hypothesis is error has a unit root, indicating that the error series is non-stationary. In the figure, the p-value is 0.1483, which is more than 0.05 significant level, so hypotheses have been accepted and we can conclude that the error series has a unit root and series is non-stationary at level, which proves GDP, which is a dependent variable, is not co-integrated with saving and capital formation.

As the Engle-Granger test considers the null hypothesis that there is no cointegration, which means there is no correlation between GDP (a dependent variable) and DGNS and GCF (an independent variable) in the long run which accepts the null hypothesis of our objective -2 and reject the alternate hypothesis.

Empirical Test-2-OLS method to test cointegration

Table 7. Least square method, GDP as the dependent variable, GFC,

DGNS as the independent variable

| Variable | Coefficient | Std Error | t-Statistic | Prob |
|--------------------|-------------|-----------------------|-------------|----------|
| C | 34388.27 | 9598.617 | 3.582627 | 0.0089 |
| DGNS | 0.542417 | 0.282997 | 1.916688 | 0.0968 |
| GFC | -0.144577 | 0.951461 | 0.151953 | 0.8835 |
| R-squared | 0.350177 | Mean dependent var | | 32621.30 |
| Adjusted R-squared | 0.164514 | S.D. dependent var | | 2524.181 |
| SE of Regression | 2307.226 | Akaike info criterion | | 18.56880 |
| Sum squared resid | 37263044 | Schwarz criterion | | 18.65958 |
| Log-likelihood | -89.84402 | Hannan-Quinn Criter | | 18.46922 |
| F-statistic | 1.886085 | Durbin-Wats on stat | | 1.445586 |
| Prob (F-statistic) | 0.221198 | | | |

Sample-2012-2021 Number of observation-10 after adjustment

In this study, the DOLS approach is also applied to identify dynamic long-run cointegration between GDP and its independent variables. Here, the p values of GFC and DGNS are greater than 0.05, so the result is insignificant, and we accept the null hypothesis that there is no cointegration among GDP, DGNS, and GCF. Even the value of R, which is 0.3, is not much and does not count for GDP. value of f-statistics 1.8860, which is above 0.05, which shows that we accept the null hypothesis that GDP, DGNS, and GFC do not co-integrate and affect GDP much. So, we can conclude that capital formation and saving do not explain GDP at the current price in the Oman economy as per the last 11 years of data. Both tests provide the same decision, which means there is no long-term integration between GDP, DGNS, and GFC.

5.2. The Findings of the Study

Given below are the table of hypotheses and their related decision

Table 7. The findings of the study

| Objectives | Hypothesis | P value is greater than 0.05 | Decision |
|------------|------------------------------|------------------------------|--------------|
| 1 | H0(1)-GDP does not cause GNS | Yes | Don't Reject |
| | H0(2)-GNS does not cause GDP | Yes | Don't Reject |
| | H0(3)-GDP does not cause GCF | Yes | Don't Reject |
| | H0(4)-GCF does not cause GDP | Yes | Don't Reject |
| | H0(5)-GNS does not cause GCF | Yes | Don't Reject |
| | H0(6)-GCF does not cause GNS | Yes | Don't |

| | | | |
|---|---|-----|--------------|
| | | | Reject |
| 2 | H(0)-There is no long-run cointegration among GNS, GCF, and GDP | Yes | Don't Reject |
| | H(1)-There is long-run cointegration among GNS, GCF, and GDP | Yes | Reject |

level of significance 5% (0.05)

The result shows that Oman's economic growth (GDP at current prices) does not cause GNS or GCF, and neither gross capital formation nor gross national saving cause gross domestic product as per 2010–2021 data at current prices. Also, there is no long-run correlation between growth, saving, and capital formation at the current price.

6. CONCLUSION

We investigate the causal relationship of GDP, GCF, and GNS and the long-run impact of GNS and GCF on GDP, and for this, the last 11 years of time series were used. The study conducted by Roy Harrod (1939); Evsey Domar (1946), Prashanth Kanniga (2021), (Chow, 1993), (Wollasa. L.Kumo, 2011) showed that saving led to the capital formation which accelerated economic growth and any country with insufficient saving will lead to more unemployment and constraint economic growth but in our study, it has been concluded that there is no causal relationship among the GNS. GDP and DGNS mean that the behavior of GDP, national savings, and capital formation cannot be forecasted with each other at the current price level. The study conclusion is based on the current price level, not the real price level which is the significant limitation for giving such a result. most of the studies were conducted at real prices rather than the current price level. Even Bakare (2011), C. Mphuka (2010), Odhiambo (2008, 2009), and Jagadeesh, D. (2015) in their studies they have used different models like OLS, VAR, and Casualty tests to identify the direction between saving and economic growth and all those studies do not support our conclusion of the research paper. The study found that there is a significant relationship between saving and economic growth, and the study also supports the Harrod-Domar growth model as a result of objective number -2, it was explained that economic growth is not co-integrated with saving and capital formation with the application of both the model of Eagle Granger residual-based cointegration and the ordinary least squares method. There is no combined effect of GNS and GCF on GDP at the current price of the country in the long run.

DISCLOSURE OF CONFLICT

The authors declare that they have no conflicts of interest.

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REFERENCES

Bakare, A. S. (2011). A theoretical analysis of capital formation and growth in Nigeria. *Far East Journal of Psychology and Business*, 3(2), 11-24.

Chow, G. C. (1993). Capital Formation and Economic Growth in China. *The Quarterly Journal of Economics*, volume 108, no 3, 809-842.

Domar, E. D. (1946). Capital expansion, rate of growth, and employment. *Econometrica, Journal of the Econometric Society*, 137-147.

Finance map of the world. (2013). Savings and Economic Growth, retrieved June 28, 2013, from Google:[http:// finance. Maps of world.com /savings/account/economic-growth.html](http://finance.Maps of world.com/savings/account/economic-growth.html).

Harrod, R. F. (1939). An essay in dynamic theory. *The economic journal*, 49(193), 14-33.

Harrod, R., & Domar, E. (2008). The Solow Growth Model.

Jagadeesh, D. (2015). The impact of savings in economic growth: an empirical study based on Botswana. *International Journal of Research in Business Studies and Management*, 2(9), 10-21.

Kaur, S. (2021). Is Gross Capital Formation And Gross Savings A Component In Saudi Arabia's Economic Growth? *International Journal of Islamic and Social Sciences (ISOS)*, 1(3), 23-27.

Mohan, R. (2006). The causal relationship between savings and economic growth in countries with different income levels. *Economics Bulletin*, 5(3), 1-12.

Mphuka, C. (2010). Are Savings Working for Zambia's Growth? *Zambia Social Science Journal*, 1(2), 6.

Odhiambo, N. M. (2009). Finance-growth-poverty nexus in South Africa: A dynamic causality linkage. *The Journal of Socio-Economics*, 38(2), 320-325.

Odhiambo, N. M. (2008). Financial depth, savings and economic growth in Kenya: A dynamic causal linkage. *Economic Modelling*, 25(4), 704-713.

Prashanth Kanniga; Justin T.S. (2021). The Role of Saving in the economic development of the sultanate of Oman. *Global Scientifica journal*, 9(5), 1-14.

Rao, V. K. R. V. (1980). Savings, capital formation, and national income. *Economic and Political Weekly*, 965-977.

Wolassa. L K. (2011), Investment Efficiency, Savings and Economic Growth in Sub Saharan Africa retrieved on 5th September 2011, from <http://www.politicalarticles.net/blog/2011/09/05/investment-efficiency-savings-and-economic-growth-in-sub-saharan-africa/>