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THE ROLE OF DIGITALIZATION IN THE AIRLINE INDUSTRY PERFORMANCE AMID COVID-19: EVIDENCE FROM EMIRATE AIRLINE BALANCED SCORECARD PERFORMANCE

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Abstract

A number of studies in the digitalization-organizational performance literature have evaluated airline performance from the traditional performance theory; yet, fewer studies have evaluated the role of digitalization to optimize organizational bottom line performance. In view of the importance of digitalization-organization bottom line performance, this study empirically evaluates the role of digitalization in the airline performance before and during COVID-19 using the balanced scorecard performance model in the sample study, Emirate airline between 2015 and 2020. Importantly, multiple Pearson Product Moment correlation and descriptive statistics methods were used to estimate the relationship among the balanced scorecards performance. Also, the differential impact was used to show the differential impact and recovery period between before-COVID and during COVID-19 on the balanced scorecards performance. The empirical results showed that the role of digitalization practices is more effective in non-financial bottom lines than financial bottom line at both before and during COVID-19 in this study. Further, the study concluded that digitalization practices before COVID-19 enhances non-financial bottom lines than financial bottom lines whereas the role of digitalization practices during COVID-19 enhances neither financial nor non-financial bottom lines in Emirate airline. Therefore, this study recommends the need for Emirate airline management to further intensify and integrate digitalization practices across all the balanced scorecard bottom lines, especially the financial bottom lines such as revenue, operating cost and net debts to remain immune from current and future external shocks as well as become financial and non-financial sustainable.

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Introduction

Over five decades ago, the performance in the global airline industry which is one of the frontline operational subsets in the aviation industry has been consistently vulnerable to global shocks that ranged across political, economic and health outbreaks. Specifically, these global shocks include the oil crisis (1973), Iran-Iraq war (1980), Gulf war (1990), Asian crisis (1997), 9/11 terrorist attack (2000), severe acute respiratory syndrome (SARS) (2003), global recession (2009), and the latest is the coronavirus (COVID-19) (2019). Nonetheless, the global aviation industry has contributed about 3.6 percent of the world GDP and created a total of 65.6 million jobs around the world in the aviation sector and other related industries. Out of the 65.6 million jobs, the global airlines industry directly employed over 2.7 million people and approximately 4.1 billion and 4.4 billion passengers were carried and expected in 2017 and 2018 respectively (Olaganathan, 2021; Air Transport Action Group (ATAG), 2018). Meanwhile, Figure 1
revealed that all past external shocks except COVID-19 exhibited a V-shape impact on the aviation industry performance and a magnitude of 60 percent decline in the world total passengers as of 2020.

Apparently, the global airline industry has been proven resistant to past shocks including the 9/11 terrorist attack and SARS of the 21st century pandemic events because their recovery were less than one financial year (IATA, 2020; ICAO, 2020). Surprisingly, COVID-19 is an unprecedented and a novel global health outbreak that has persisted for almost two years and still ravaging the world as well as the only health diseases that accounted for almost 38 percent world countries lockdowns of the 198 United Nations (UN) member when compared with the Spanish flu between 1918 and 1920 in the World (Dowling, March 2, 2020). Importantly, the coronavirus disease 2019 that is abbreviated as COVID-19 is known as an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-COV-2), first broke out in December 2019 in Wuhan, the capital of China’s Hubei province and has since spread geometrically across all continents and countries in the world. Sadly, since December 2019 till October, 28, 2021, coronavirus had infected more than 245 million people globally and had killed at least 4 million people while over 223 million people had recovered from the disease (Reavelo & Jerving, October 29, 2021; Worldometer, October 29, 2021).

Following the numerous external shocks and the recent COVID-19 threat to global aviation industry and particularly, the global airline industry, the evidences in a number of studies (Xuan, Khan, Su, & Khurshid, 2021; Meng, Gong, Liang, Li, Zeng & Yang, 2021; Olaganathan, 2021) found that about 7.5 million international and domestic flights cancelled, IATA member countries lost $239 million on average per day as well as halve annual revenue declined from $838 million to $419 million in 2020, and also the ICAO accounted for 80 percent passengers reduction when compared to 2019. Yet, none of these studies except (World Economic Forum (WEF), 2017; Frost & Sullivan, 2018; Olaganathan, 2021) consider the role of digital technology to salvage and optimize the COVID-19 pandemic losses in the airline industry performance, however, this is motivated to evaluate the role of digitalization practices in the airline industry from the system management performance theory.

Indeed, the role of digitalization since the 4th industrial revolution as a catalyst to achieve the triple bottom line (growth in people, profit, and place) vis-à-vis the business models remains controversial among firms, industries, and economies in the literature. Digitalization is defined as the automation of activities from manual process to the digital operations through the Internet of Things (IOT), cloud, 5G, artificial intelligence (AI), virtual reality, among to meet growing demand, reduce costs, and become competitive over rivalry. In otherwise, digitalization is simply the adoption of
disruptive technologies to deliver organizational value across profit, risk and time to market.

Following the proponent gains of digitalization, many organizations have massively invested in digital technologies with obsessions and optimist to affect the organization bottom line (Fitterling, 2017). Yet, in 2019, companies in European region invested $256 billion on digital technologies, but only 25% of those organizations delivered returns on investment (ROI) from digital investments. Then, the two arising questions are, first, does the value of digital investments match the meet the triple bottom line? Second, in the new normal periods of persistent global pandemic such as trade war, political upheaval, climate changes, and the recent COVID-19, how has the organizational digitalization investments achieve or sustain organizational triple bottom line? In line with this argument for the returns on digitalization investments (RODI) in many organizations, this study empirically evaluates the role of digitalization on organizational bottom line performance. In specific, this study contributes to existing literature in three fold. First, the appraisal of the Emirate airline performance using scorecard balance performance model. Second, the role of digitalization practices in the Emirate airline performance between before COVID-19 and during COVID-19. Third, the analysis of differential impact and recovery periods of the Emirate airline balanced scorecard performance between before COVID-19 and during COVID-19. To this end, the main objective of this study is to empirically evaluate the role of digitalization in the airline industry performance amidst COVID-19, using the Emirate airline balanced scorecard performance as sample study. Besides, the introduction, this paper is organized in the following sections: Section 2 discusses the literature review. Section 3 provides the theoretical framework and methodology. Also section 4 presents the results and discussions. Lastly, section 5 presents the conclusion and recommendations of the study.

2. Literature Review

Performance in the management discipline is broadly viewed from corporate and industrial performance, however, both corporate and industrial performance are synonymous in performance metrics. Importantly, performance is the comparison between the actual results (output) and the intended results (outputs) expressed in units and monetary values over a specified period. In the passage of time, organizational performance measurement has changed from the conventional to the modern to meet different stakeholders’ objectives in the changing world. Besides the conceptual understanding of performance, the two underlying theories of performance are drawn from the traditional organizational performance theory and the system organizational
The Role of Digitalization in the Airline Industry Performance AMID COVID-19: Evidence from Emirate Airline Balanced Scorecard Performance

performance theory. The former, traditional organizational performance plays emphasis on financial performance indicator that is measured from the past historical records in the financial statement of a company. In financial performance, many organizations use the key performance indicators (KPIs) that ranges from profitability, liquidity, and debt ratios to assess how well a company perform in the past and not from the bottom line of business performance such as customers, employees, process, technology and innovations (DU pliesie, Jooste & Stydom, 2001 cited in Shackleton, 2007). In line with the traditional organizational performance theory, a number of studies (Attayah, Dhaif, Najaf & Frederico, 2021; Sobieralski, 2020; Kasim & Mahmut, 2020) have analysed the airline performance using the traditional financial performance approach. Although, only Attayah et al. (2021) explored financial performance metrics in the logistic times during the COVID-19 in their studies, while others measured financial in the airline industry before COVID-19 in their studies.

On the other hand, the system organizational performance measures not only past financial performance, but also the current and the future performance of an organization. More importantly, the system organizational performance theory focuses on measuring the bottom line of business performance from the holistic perspective. Further, the system organizational performance theory is sub-divided into four approaches- the goal-attainment, the system, the strategic-constitution and the competing-value respectively. In line with the digitalization era, the study considers the competing-value approach that is further decomposed into three competing-value management as drawn from the following management models- the total quality management (TQM), the excellence model, and the balanced scorecard model. Notably, this study embraces the balanced scorecard model developed by Kaplan & Norton (1992) to measure both past and future performance as well as the arising issues from both internal and external factors to meet the financial and non-financial objectives in the organization. Unlike traditional performance indicators that focuses only on key financial performance indicators (KFPIs), the balanced scorecard model measures financial and non-financial organizational performance using four indicators- financial, internal business process, learning & growth, and customer.

First, the financial indicator like the traditional financial performance considers the key financial performance indicators like profitability, liquidity and debt, however, the financial indicator under balanced scorecard model intends to achieve growth financial performance indicators through the role of digitalization operations that reduces the operational cost in the organization. Second, the internal business processes is a non-financial indicator that emphasises on the effectiveness and efficiency of the entire organizational activities. Otherwise, the process of digitalizing the internal business processes saves cost and increases productivity. Third, the learning and growth is
another non-financial indicator that is motivated and prepared to improve financial performance through constant future investment in what we have done and doing to remain very competitive. Lastly, the fourth indicator is the customer that focuses on how customer satisfaction, retention and growth can be improved to achieve sustainable financial objectives of the organization through digitalization practices (Shackleton, 2007).

In line with the role of digitalization in the organization performance, few studies (WEF, 2017; Wang, Tsai, Hsu & Nguyen, 2019; Aman & Altass, 2020; Mazis, 2020) have examined the role of digitalization in the organization performance but their studies have been limited to financial performance in the airline industry. In specific, Aman & Altass (2020) investigated the pre and post COVID-19 past financial performance as well as future performance in the airline industry while in the study of Wang, Tsai, Hsu & Nguyen (2019), they employed data envelopment analysis (EDA) and grey forecasting methods was used to evaluate the 16 major Asian airline performance over the study period 2012 to 2016. In their study, they measured the organizational efficiency to improve the airline productivity and performance, unlike Aman & Altass (2020) that measured the financial performance between pre and post COVID-19 through the rate of recovery for each financial performance indicators. Unlike existing studies, Mazis (2020) assessed 8 success factors through the digital transformation in the airline industry, but failed to classify the 8 successful factors into the four balanced scorecard performance areas. Following the existing studies gap to capture both financial and non-financial performance through the digitalization practices in the airline industry, this study uses the balanced scorecard performance model to fill the gap in the digitalization-performance nexus literature.

3. Theoretical Framework and Methodology

Since the objective of this study is to appraise the role of digitalization on both financial and non-financial performance in the airline industry, hence, the balanced scorecard performance is theoretically modelled as shown in Figure 2. To achieve specific objectives, the balanced scorecard theoretical framework shows the relationship between financial indicator and non-financial indicators that comprises of financial, internal business process, learning and growth and customer, to achieve the end-result of a balanced scorecard performance
Following the theoretical framework and the existing studies of Wang, Tsai, Hsu & Nguyen (2019) and Aman & Altass (2020), the relevant variables used are justifiable in this study. Further the variables are source from Emirates annual report that range from 2015 to 2020. Although, the study periods is grouped into Pre COVID-19 era that covers between 2015 and 2018 while the post COVID-19 range from 2019 to 2020 to justify how the digitalization practices affects organizational performance before and after COVID-19 in the sample study, Emirates Airline full periods of study ranged from 2015 to 2020. Importantly, multiple correlation and descriptive statistics are employed to estimate the relationship and the extent at which digitalization affects emirate airline financial and non-financial performance between 2015 and 2020 in this study. Lastly, Table 1 shows the definition and measurement of the variables drawn from the balanced scorecard in this study.
### Definition and Measurement of the Variables

<table>
<thead>
<tr>
<th>Balanced Scorecard Performance Metrics</th>
<th>Variable</th>
<th>Definition</th>
<th>Formula</th>
<th>$A$ priori Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial</strong></td>
<td>Revenue Growth (RG)</td>
<td>This measures the rate of change in revenue over a state period as a result of digitalization process in an organization. It is obtained as the ratio of change in revenue to the base revenue expressed in percentage.</td>
<td>$RG = \frac{\Delta R}{G}$</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Operating Cost Growth (OCG)</td>
<td>It defines the cost minimization rate in the digital era over a given period. It measures the percentage change in operating cost to the base year operating cost.</td>
<td>$\frac{\Delta OC}{OC_{t-1}}$</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Net Debt Growth (NDG)</td>
<td>This shows the changes in the debts including the aircraft operating leads to equality ratio. The lower the NDG, the greater the role of digitalization to mutilate the debt growth in an organization and</td>
<td>$\Delta Net Debt \frac{D_{t-1}}{D_{t-1}}$</td>
<td>-</td>
</tr>
<tr>
<td><strong>Internal Business Process</strong></td>
<td>IT Asset Growth (ITAG)</td>
<td>This is defined as the changes in the investment in information technology. In the Emirate financial report, computer software represents the IT investment. The higher the IT asset growth the higher the internal business process performance of an organization and vice-versa.</td>
<td>$\frac{\Delta ITA}{ITA_{t-1}}$</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Revenue per airline employee growth (RPEG)</td>
<td>The revenue per airline employee growth indicates airline employee productivity which leads to greater internal business process performance.</td>
<td>$\frac{\Delta RPE}{RPE_{t-1}}$</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Average airline employee strength growth (AVEG)</td>
<td>The average airline employee strength growth measures the changes in the number of airline employee is expected to be negative as the internal business processes are digitalized.</td>
<td>$\frac{\Delta AVE}{AVE_{t-1}}$</td>
<td>-</td>
</tr>
<tr>
<td>Learning &amp; Growth</td>
<td>Number of Destination Cites growth (NDCG)</td>
<td>This is defined as the expansion of this number of destination cites that the airline fly or serve. The greater the NDCG, the higher the extent of learning and growth performance due to advancement in airline digitalization or technology.</td>
<td>( \frac{\Delta NDC}{NDC_{t-1}} )</td>
<td>+</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Fleet Growth(FG)</td>
<td>Fleet is defined as the number of aircraft owned or leased. The higher the number of craft, the greater the extent of leasing &amp; growth due to intense digitalization in the learning and growth.</td>
<td>( \frac{\Delta F}{FT} )</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Total Assets Growth (TAG)</td>
<td>Total assets growth is defined as the change in assets over a specified period of time. The higher the total assets the greater the learning and growth due to advancement in digital technology in an organization and vice-versa.</td>
<td>( \frac{\Delta TA}{TA_{t-1}} )</td>
<td>+</td>
</tr>
<tr>
<td>Customer</td>
<td>No of Passengers carried growth (NPCG)</td>
<td>The number of passengers carried growth is defined as the change in the number of passengers carried over a stated period. The higher the number of passengers carried, the greater the customer performance due to intense digital practices</td>
<td>( \frac{NPC}{NPC_{t-1}} )</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Goodwill growth (GG)</td>
<td>Goodwill is defined as the non-tangible assets of firm. In other words, the goodwill growth indicates the degree of improvement in the organization reputation and customer loyalty. The higher the goodwill growth, the higher the level of customer satisfaction, retention and performance due to intense digital practices</td>
<td>( \frac{G}{G_{t-1}} )</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Customer relationship growth (CRG)</td>
<td>Customer relationship is also one of the non-tangible assets of a firm. This is defined as the extent at which customer royalty and perception about the firm changes over time. The higher the customer relating, the higher the customer satisfaction &amp; retention due to intense digitalization which aid customer relationship via all social networks and vice-versa.</td>
<td>( \frac{\Delta CR}{CR_{t-1}} )</td>
<td>+</td>
</tr>
</tbody>
</table>

**Source:** Authors compilation, 2021
4. Results and Discussions
4.1. Correlation Matrix

Tables 2 and 3 show the degree of relationship among the balanced scorecard performance variables before COVID-19 and during COVID-19 era in the Emirate airline in this study.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Correlation Matrix for Emirate Airline Performance Before COVID-19 (2015-2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>OC</td>
</tr>
<tr>
<td>R</td>
<td>1.00</td>
</tr>
<tr>
<td>OC</td>
<td>0.953*</td>
</tr>
<tr>
<td>ND</td>
<td>-0.681</td>
</tr>
<tr>
<td>ITA</td>
<td>0.399</td>
</tr>
<tr>
<td>RPE</td>
<td>0.928</td>
</tr>
<tr>
<td>AVES</td>
<td>-0.478</td>
</tr>
<tr>
<td>NDC</td>
<td>0.817</td>
</tr>
<tr>
<td>F</td>
<td>0.894</td>
</tr>
<tr>
<td>TA</td>
<td>0.900</td>
</tr>
<tr>
<td>NPC</td>
<td>0.786</td>
</tr>
<tr>
<td>G</td>
<td>0.975*</td>
</tr>
<tr>
<td>CR</td>
<td>0.794</td>
</tr>
</tbody>
</table>

Note: *, ** and *** represent 1%, 5% and 10% significance levels

Source: Authors’ Compilation, 2021

Table 2 correlation coefficients results found that operation cost (OC) and goodwill (G) have the highest significant correlation coefficients of 0.975 and 0.953 at 1% significance levels respectively. However, the operation cost coefficient sign conforms not to the A priori expectation because the digitalization practices at Emirate airline should show a negative or very low associations between operation cost and revenue. Meanwhile, Table 2 found that the number of passengers carried and number of destination cities have a positive and significant highest degree of association of 0.984 in this study. This suggests that Emirate airline digitalization practices have consistently concentrated more in these two bottom lines, customer and learning and
growth scorecard performance than others before COVID-19 between 2015 and 2018. Although, the high positive association of 0.87 between IT asset and customer in Table 2 also confirmed that Emirate airline used digitalization practices in these two bottom lines, internal business operations and customer but has not been consistent in the intensity of the digital technology, as compared to customer and learning and growth bottom lines in this study. In line with the Table 2 results, the correlation matrix results concluded that the role of digitalization in Emirate airline has a positive association with non-financial performance indicators than the financial indicators before COVID-19 between 2015 and 2018. In specific, Emirate airline between 2015 and 2018 has consistently digitalized customer and learning and growth bottom lines performance than other bottom lines in the balanced scorecard performance in this study.

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>OC</th>
<th>ND</th>
<th>ITA</th>
<th>RPE</th>
<th>AVES</th>
<th>NDC</th>
<th>F</th>
<th>TA</th>
<th>NPC</th>
<th>G</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OC</td>
<td>0.983**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ND</td>
<td>-0.769</td>
<td>0.756</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITA</td>
<td>-0.182</td>
<td>-0.130</td>
<td>0.417</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPE</td>
<td>0.973**</td>
<td>0.958**</td>
<td>-0.051</td>
<td>-0.918</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>AVES</td>
<td>0.930**</td>
<td>0.894*</td>
<td>-0.817*</td>
<td>0.473</td>
<td>0.548</td>
<td>1.00</td>
<td></td>
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<tr>
<td>NDC</td>
<td>-0.024</td>
<td>0.145</td>
<td>0.273</td>
<td>0.537</td>
<td>0.042</td>
<td>-0.184</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>0.404</td>
<td>0.523</td>
<td>0.031</td>
<td>0.567</td>
<td>0.493</td>
<td>0.182</td>
<td>0.862*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td>-0.294</td>
<td>-0.285</td>
<td>0.832*</td>
<td>0.538</td>
<td>-0.129</td>
<td>-0.450</td>
<td>0.413</td>
<td>0.430</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPC</td>
<td>0.992**</td>
<td>0.967**</td>
<td>-0.788</td>
<td>-0.200</td>
<td>0.939**</td>
<td>0.969**</td>
<td>-0.073</td>
<td>0.343</td>
<td>-0.337</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>0.097</td>
<td>0.189</td>
<td>0.453</td>
<td>0.570</td>
<td>0.258</td>
<td>-0.162</td>
<td>0.797</td>
<td>0.876*</td>
<td>0.789</td>
<td>0.021</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>-0.186</td>
<td>-0.064</td>
<td>0.355</td>
<td>0.875*</td>
<td>-0.095</td>
<td>-0.373</td>
<td>0.806</td>
<td>0.732</td>
<td>0.448</td>
<td>-0.244</td>
<td>0.696</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: *, **, and *** represent 1%, 5% and 10% significance levels
Source: Authors’ Compilation, 2021

Result from Table 3 revealed that of all the correlation coefficients in the first column, revenue (R) and number of passengers carried (NPC) have the highest positive and significant correlation coefficient of 0.99 at 1% level of significance. This suggests that Emirate airline before and during COVID-19 has consistently used digitalization practices.
practices in these two bottom lines, the financial and customer scorecard performance over other balanced scorecard indicators between 2015 and 2020. Furthermore, Table 3 results found that there is a strong positive and significant relationship between revenue and revenue per airline employee (RPE) of about 93.0% at 5% significance level, implying that Emirate airline digitalization practices have greatly enhanced financial and internal business operations performance unlike table 2 in this study. In line with the Table 3 results, the correlation matrix results concluded that the role of digitization practices in Emirate airline has a positive association with both financial and non-financial bottom lines performance before and during COVID-19 between 2015 and 2020. This finding is line with Mazis (2020) that airlines revenues nearly doubled while the industry overall grew by 32 percent between 2017 and prior to the pandemic due to digital transformation.

4.2 Descriptive Analysis

4.2.1. Trend Analysis of Emirate Airline Performance: The Pre and Post COVID-19

Table 4 shows the trend in Emirate Airline balanced scorecard performance before and during COVID-19 between 2015 and 2020 in this study. Importantly, the balanced scorecard performance in Table 4 is expressed in percentage which indicates the change in each balanced scorecard performance. Apparently, Table 4 found that all the changes in the balanced scorecard performance are not consistent and sustainable both before and during COVID-19 but it is evident that Emirate airline digitalization practices before COVID-19 enhance both financial and non-financial bottom line performance while Emirate airline digitalization practices during COVID-19 enhance neither financial nor non-financial bottom line performance in this study. In specific, year 2017 exhibited the best balanced scorecard performance which signified the intensified digitalization practices in Emirate airline while year 2020 was the worst balanced scorecard performance in spite the role of digitalization practices in Emirate airline. This inferred that Emirate airline digitalization practices during COVID-19 were not effective to enhance all balance scorecard performance indicators, except average airline employee growth (AVEG) and customer relationship growth.
### Trend in Emirate Airline Balanced Scorecard Performance (2015 -2020)

<table>
<thead>
<tr>
<th>Year</th>
<th>R</th>
<th>RG (%)</th>
<th>OC</th>
<th>OCG (%)</th>
<th>ND</th>
<th>NDG (%)</th>
<th>ITA</th>
<th>ITAG (%)</th>
<th>RPE</th>
<th>RPEG (%)</th>
<th>AVES</th>
<th>AVESG (%)</th>
<th>NDC</th>
<th>NDCG (%)</th>
<th>F</th>
<th>FG</th>
<th>TA</th>
<th>TAG (%)</th>
<th>NPC</th>
<th>NPCG (%)</th>
<th>G</th>
<th>GG (%)</th>
<th>CR</th>
<th>CRG (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>85,044</td>
<td>-</td>
<td>76,714</td>
<td>-</td>
<td>215.9</td>
<td>125</td>
<td>-</td>
<td>1,717</td>
<td>-</td>
<td>48,023</td>
<td>-</td>
<td>153</td>
<td>-</td>
<td>251</td>
<td>119,179</td>
<td>51,833</td>
<td>1555</td>
<td>73</td>
<td></td>
<td></td>
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<tr>
<td>2016</td>
<td>85,083</td>
<td>0.05</td>
<td>82,648</td>
<td>6.76</td>
<td>237.9</td>
<td>154</td>
<td>23.2</td>
<td>1,580</td>
<td>-9.8</td>
<td>51,628</td>
<td>7.51</td>
<td>156</td>
<td>1.96</td>
<td>259</td>
<td>3.19</td>
<td>121,558</td>
<td>2.00</td>
<td>56,076</td>
<td>8.14</td>
<td>1707</td>
<td>9.77</td>
<td>137</td>
<td>87.67</td>
<td></td>
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<tr>
<td>2017</td>
<td>92,322</td>
<td>8.51</td>
<td>88,236</td>
<td>6.76</td>
<td>216.4</td>
<td>480</td>
<td>211.7</td>
<td>1,784</td>
<td>12.91</td>
<td>49,740</td>
<td>-3.66</td>
<td>157</td>
<td>0.64</td>
<td>268</td>
<td>3.47</td>
<td>127,587</td>
<td>4.96</td>
<td>58,485</td>
<td>4.30</td>
<td>1909</td>
<td>11.83</td>
<td>487</td>
<td>255.47</td>
<td></td>
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<tr>
<td>2018</td>
<td>97,907</td>
<td>6.05</td>
<td>95,260</td>
<td>7.96</td>
<td>209.8</td>
<td>1,98</td>
<td>-58.75</td>
<td>1,975</td>
<td>10.71</td>
<td>47,808</td>
<td>-3.88</td>
<td>158</td>
<td>0.64</td>
<td>270</td>
<td>0.75</td>
<td>127,398</td>
<td>-0.15</td>
<td>58,601</td>
<td>0.20</td>
<td>2065</td>
<td>8.17</td>
<td>363</td>
<td>-25.46</td>
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<td></td>
<td></td>
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<tr>
<td>DURING COVID-19</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>91,972</td>
<td>-6.06</td>
<td>85,564</td>
<td>-10.18</td>
<td>381.2</td>
<td>372</td>
<td>87.88</td>
<td>1,935</td>
<td>-2.03</td>
<td>47,518</td>
<td>-0.61</td>
<td>157</td>
<td>0.63</td>
<td>270</td>
<td>0</td>
<td>172,062</td>
<td>35.06</td>
<td>56,162</td>
<td>-4.16</td>
<td>2266</td>
<td>9.73</td>
<td>348</td>
<td>-4.13</td>
<td></td>
</tr>
</tbody>
</table>


Table 5
Differential Impact and Recovery of Emirate Airline Balanced Scorecard Performance Between Before and During COVID-19

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial</strong></td>
<td>RG</td>
<td>4.86%</td>
<td>-36.22%</td>
<td>-31.35%</td>
<td>-80.85%</td>
<td>6 years 5 months</td>
</tr>
<tr>
<td></td>
<td>OCG</td>
<td>17.15%</td>
<td>-28.24%</td>
<td>-11.09%</td>
<td></td>
<td>8 months</td>
</tr>
<tr>
<td></td>
<td>NDG</td>
<td>220%</td>
<td>420.1%</td>
<td>-200.1</td>
<td></td>
<td>11 months</td>
</tr>
<tr>
<td><strong>Internal Business Process</strong></td>
<td>ITAG</td>
<td>58.72</td>
<td>42.20</td>
<td>-16.52%</td>
<td>-12.66%</td>
<td>3 months</td>
</tr>
<tr>
<td></td>
<td>RPEG</td>
<td>5.21</td>
<td>-27.01</td>
<td>-21.8</td>
<td></td>
<td>4 months</td>
</tr>
<tr>
<td></td>
<td>AVESG</td>
<td>-0.01</td>
<td>-0.32</td>
<td>+0.33</td>
<td></td>
<td>33 years</td>
</tr>
<tr>
<td><strong>Learning and Growth</strong></td>
<td>NDCG</td>
<td>1.08</td>
<td>-0.315</td>
<td>0.765</td>
<td>3.52%</td>
<td>2 months</td>
</tr>
<tr>
<td></td>
<td>FG</td>
<td>2.47</td>
<td>-2.035</td>
<td>+0.435</td>
<td></td>
<td>2 months</td>
</tr>
<tr>
<td></td>
<td>TAG</td>
<td>2.27</td>
<td>11.635*</td>
<td>+9.365*</td>
<td></td>
<td>10 months*</td>
</tr>
<tr>
<td><strong>Customer</strong></td>
<td>NPCG</td>
<td>4.21</td>
<td>-46.245</td>
<td>-42.035</td>
<td>-49.13%</td>
<td>9 years 11 months</td>
</tr>
<tr>
<td></td>
<td>GG</td>
<td>9.92</td>
<td>-2.46</td>
<td>-7.46</td>
<td></td>
<td>9 months</td>
</tr>
<tr>
<td></td>
<td>CRG</td>
<td>105.89</td>
<td>-99</td>
<td>-97.9</td>
<td></td>
<td>11 months</td>
</tr>
</tbody>
</table>

Source: Authors’ Computation, 2021

Table 5 shows the differential impact between the before and during COVID-19 among the four areas of balanced scorecard performance in Emirate airline within the study periods 2015 and 2020. Specifically, the differential impact found that all the learning and growth indicators are positive whereas other balanced scorecard performances are negative except internal business process that is mixed in Emirate airline over the study period 2015 to 2020. Furthermore, in line with differential impacts among the balanced scorecard performance, Table 5 results showed the recovery period for each of the balanced scorecard performance. Like the differential impact results, Table 5 found that all the learning and growth performance indicators have the lowest recovery periods over other balanced scorecard performance indicators in Emirate airline within the study periods. This suggests that Emirate airline will recover quickest to the numbers of destination cities and number of fleet achieving the results
of before-COVID-19 era within 2 months respectively and followed by the number of total assets as of the pre-COVID-19 era within 10 months. This shortest recovery period is learning and growth bottom line performance which attests more to effective role of digitalization practices in non-financial bottom lines than financial bottom line in Emirate airline. On the contrary, the average airline per employee (AVE) has the longest recovery of 33 years but signifies the effective role of digitalization in Emirate airline, while the number of passengers and revenue with 9 years 11 months and 6 years recovery periods confirmed that digitalization practices in financial bottom lines are not very effective whereas other balanced scorecard performance indicators recovery periods except number of passengers are all less than one year, indicating effective role of digitalization practices in Emirate airline in this study.

5. Conclusion and Recommendations

This study has conducted an empirical appraisal of the role of digitalization in the airline industry performance amidst COVID-19. Importantly, the study used the balanced scorecard performance indicators of Emirate airline before and during COVID-19 over the study period 2015-2020. Specifically, the study concluded that the role of digitalization practices is more effective in non-financial bottom lines than financial bottom lines at both before and during COVID-19 in this study. Further, the study concluded that digitalization practices before COVID-19 enhance non-financial bottom lines than financial bottom lines whereas the role of digitalization practices during COVID-19 enhances neither financial nor non-financial bottom lines in Emirate airline. In particular, the digitalization practices in learning and growth remain the most effective when compared with other balanced scorecard performance in this study. Therefore, this study recommends that there is a need for Emirate airline management to further intensify and integrate digitalization practices across all the balanced scorecard bottom lines, especially the financial bottom lines such as revenue, operating cost and net debts to remain immune to current and future external shocks as well as become financial and non-financial sustainable. In specific, the Emirate airline digital technology should invest more in marketing, advertisement, and other business applications that would increase the revenue through increase in number of passengers via the e-booking flights on the passengers smartphones, destinations and fleets and ultimately reduce workforce via e-boarding passes issuance by the passengers and not staff and thus eventually decrease the operational cost and debt financing cost on the going forward in the competitive airline industry through digitalization practices.
Acknowledgements

We appreciate the relevant materials consulted, the valuable contribution of our like mind colleagues and importantly, the editor of this journal for accessibility of this academic information without any financial commitments.

Funding

The authors did not receive any form of a grant from any funding agency in the public, commercial, or non-profit sector.

Agreement for Publication

The authors agreed with the valuable contributions of the anonymous reviewers and editor to publish this article for academic contribution to knowledge.

References


INTEGRATED PERSONNEL AND PAYROLL INFORMATION SYSTEM AND FINANCIAL ACCOUNTABILITY

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JEL: E62, M41, M48

Abstract

Every government desires a financial management system that positively transforms the economy. This is why the Nigerian government initiated the Integrated Personnel and Payroll Information System (IPPIS), for its financial management in the public sector. The study examined the impact of the IPPIS on Financial Accountability in Nigerian Federal Universities. The survey method was used. The population comprised 2,217 accountants and internal auditors. The sample size was 106. Analysis of data was done using descriptive statistics and multiple regression analysis. Findings show that IPPIS has a significant positive impact on budgeting of Nigerian Federal Universities. It also has a significant positive impact on the internal audit function of Nigerian Federal Universities. The study concludes that IPPIS improves financial accountability of Nigerian Federal Universities.

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INTRODUCTION

Public service reform is dynamic, it changes as a new government emerges. Every government brings policies that will reform the public service in a bid to improve the economy of the nation. Management of public finance is a very important issue of concern to the government and it evolves. Nigeria began its journey in electronic financial management when the administration of late President Yar’ Adua introduced...
electronic payment in 2009 for all public sector organizations as against the cash and cheque payment system that was the acceptable means of payment at that time (Agbata, Egbunike and Eze, 2020). Government Integrated Financial and Management Information System (GIFMIS) was in existence at the time of President Goodluck-led government, but his administration focused more on Integrated Personnel and Payroll Information System (IPPIS) which is a world bank assisted project started by president Obasanjo in 2006. This could be because the former is an instrument that facilitates transformation but does not drive change to better management of public funds (gifmis.gov.ng) and does not have perfect control. In line with these reforms, president Buhari in seeking the best means of managing public finance that will promote effective and efficient public sector financial system management, achieve cost reduction in payroll, enhancement in budgeting among others, introduced the Treasury Single Account (TSA) where all revenues to the government of the federation will be housed in one account.

The administration also mandated the full implementation of IPPIS. According to MRL (2016), the objective of the IPPIS project is to ensure improvement in effective and efficient government transactions, enhancement of confidence in payroll cost/budgeting as well as achieving great improvement in management information and reporting.

IPPIS is a government centralized payroll for all the staff of Ministries, Departments, and Agencies (MDA) of the federal government, which is in charge of preparation and payment of all MDAs’ salaries. It captures all staff, registers them, and allots unique identification numbers to each registered government employee before paying them. It was introduced by the government to checkmate ghost worker syndrome, as well as checkmate frivolous spending as MDAs were having custody of money so that government can have absolute control and will know its personnel cost at every point in time. IPPIS is not 100% effective as it has so many challenges/loopholes and associated problems encountered by MDAs using it. Examples of such problems are salary variations without basis/reasons for such discrepancy with the solution being difficult to obtain. Paying arrears when salary is missed becomes a problem and affecting promotion takes time, overpayment, underpayment, and so on. Consequently, it has not met the expected benefits and the purposes for which it was initiated which includes financial accountability, transparency, and curbing corruption in the government payroll system, among others.

Financial accountability is the duty of public service officers entrusted with public funds to expand the fund per the established rules and objectives and give proper account/report on how the funds were expended. On the part of a payment system, it is the responsibility of the system to function accurately and reliably, thus achieving the objectives for which it was intended. This is in line with the introduction of IPPIS but the implementation seems so far from it, especially with the lapses encountered.
Implementation up till now has been flogged with so many complaints. Union and cooperative deductions are not remitted, irregular payment of salary without reason resulting in incessant calls and visits to their Abuja office for remedial actions which do not come forth easily, underpayment which are mostly not reversed. These posed serious questions on the systems improvement of financial accountability and therefore call for financial accountability on the part of the government to checkmate/address all the loopholes experienced in public sector financial management before the introduction and implementation of IPPIS. The loopholes include the incidence of ghost workers, payroll fraud, embezzling of public funds, corruption, and so on with their adverse effects on the Nigerian economy in terms of billions of naira disappearing in the process. This is in line with Bello (2001) that Nigerian lose enormous amounts of Naira in financial malpractices.

These anomalies experienced in the Nigerian financial management show that the Nigerian public service lacks accountability ethics thus conforming with Appah and Appiah (2010) that fraud exists in all segments of the Nigerian public sector. Hence, since IPPIS was introduced to fight corruption, frivolous spending, checkmate ghost workers, and fraud in the public service, this study sought to find out whether its implementation for about 2 years in the federal universities has improved financial accountability in the system.

**Gap in Literature**

Many scholars have studied IPPIS since its application and implementation in the Nigerian public sector but these studies differ clearly from this study. Most of these previous studies focused on IPPIS as a tool for financial performance (Rotimi et al, 2021); the association between IPPIS and government recurrent expenditure (Ibanichuka & Sawyer, 2019); application and implementation of IPPIS (Chima, Ahmadu & Folorunsho (2019), Effiong et al, 2017); its effect on payroll fraud and ghost workers (Okafor, Abad &Omeh (2018), Mbotor & Bassey (2018), Efiong et al (2017), Idrs, Adaja & Audu (2015). The few studies that focused on accountability and transparency did not study financial accountability and did not use the determinants of financial accountability in measuring accountability. These previous studies focused on other public sector organizations but not on Universities. They did not measure IPPIS based on its effective and efficient public sector financial management, improved confidence in budgeting and payroll and its enhancement of financial management information and reporting which are the objectives of the IPPIS project according to MRL, (2016). A few of the previous studies developed models and they are different from the model developed by this study. Studying universities is very important as due to university peculiarities they refused to enroll in IPPIS but in 2019 a good number of
the non-teaching staff were captured in the IPPIS platform and in February 2020, IPPIS began to pay university workers. Therefore, examining the impact of IPPIS on the financial accountability of Nigerian federal universities is very necessary to determine how IPPIS has improved their financial accountability for 2 years their payment was done through IPPIS.

**Objectives of the study**
The main objective of the study is to determine the impact of IPPIS on financial accountability in Nigerian Federal Universities. Specifically, the study sought to:
- Determine the impact of IPPIS on the budgeting of Nigerian Federal Universities
- Examine the impact of IPPIS on the internal audit function of Nigerian Federal Universities
- Investigate the impact of IPPIS on financial reports of Nigerian Federal Universities

**Research Questions**
The following research questions were raised to guide the study
- What is the impact of IPPIS on the budgeting of Nigerian Federal Universities?
- What is the impact of IPPIS on the internal audit function of Nigerian Federal Universities?
- What is the impact of IPPIS on financial reports of Nigerian Federal Universities?

**Research Hypotheses**
Three research hypotheses in their null forms were formulated as follows:

\[ H_0 \] IPPIS has no significant positive impact on the budgeting of Nigerian Federal Universities

\[ H_0 \] IPPIS has no significant positive impact on the internal audit function of Nigerian Federal Universities

\[ H_0 \] IPPIS has no significant positive impact on financial reports of Nigerian Federal Universities

**REVIEW OF RELATED LITERATURE**

**Conceptual Review**

**IPPIS**
IPPIS is the acronym for Integrated Personnel and Payroll Information System. It is an inherent component of the Government Integrated Financial Management
Information System (GIFMIS). It is a World Bank project initiated to help develop financial systems which have the capacity of providing support for an entrepreneurial venture. It provides the government the ability of managing services and payroll in the framework of public sector output and limitations of government revenue, precedence, and financial plan (MRL, 2016).

**Accountability**

Accountability is the belief in which persons and groups are liable for what they do and are expected to explain those acts to other people (Benjamin, Fallon, Jarris & Libbey, 2006). Adetunji (2021) defines it as an established way of rendering an account. Similarly, Ola (2015) defines it as a societal association where individuals have the responsibility of explaining and justifying their actions to a reasonable degree/level. The Law dictionary defines it as the responsibility of being answerable to the roles assigned to one. According to Hall, (2005) accountability is the glue that collectively holds social organizations. Based on the foregoing, it can be deduced that accountability is the means where one is liable for his/her actions/behaviour to a reasonable extent. It is the process in which a person or a financial unit/department charged with responsibility renders due to report after execution of the task/function.

**Financial Accountability**

Financial accountability involves holding a person accountable for carrying our financial duties/functions effectively. This includes an important control process in a financial deal method. A properly specified financial accountability setup is the bedrock for forming effectual financial processes (UC Santa Cruz, 2021). It is the responsibility of any public officer in the headship position in charge of public funds to give appropriate reports on how funds will be used or were used (Onuorah, 2012).

**Origin of IPPIS in the Nigerian Public Service**

The Integrated Personnel and Payroll Information System (IPPIS) is a government reform program initiated in October 2006 by President Olusegun Obasanjo administration to enhance effective and efficient storing of staff data and management of monthly salary to promote confidence in workers’ payroll costs and budgeting. It is a World Bank-assisted project conceived with the intention that its implementation will be similar to international best practices of improving management reporting using information and communication technology. The testing stage of the implementation process authorized by the Federal Executive Council in February 2006, was at the Bureau of Public Service Reforms (BPSR) and was sponsored by the World Bank. It became operational in April 2007 and was tested on the following MDAs:
Federal Ministry of Education
Federal Ministry of Transportation (Works division)
Federal Ministry of Finance
Federal Ministry of Information
Ministry of Foreign Affairs
Budget Office of the Federation, and
National Planning Commission.

The office of the Accountant General of the Federation (OAGF) was vested with its administration in October 2008. Other ministries were subsequently enrolled with IPPIS and as of April 2018, about 480 MDAs were captured (IPPIS.gov.ng). In February 2020, all Federal Universities started receiving their salaries through the IPPIS platform.

**Determinants of Financial Accountability in Public Service**

The Determinants of financial accountability include the following:

**Budgeting**

Budget is a financial management tool and through its effective operation helps in achieving efficiency in managing public funds thereby ensuring financial accountability. In the public sector, the budget is used as a means of accountability for funds previously assigned and allocations freshly authorized. It serves as a guide for allocating existing resources, thus making the government accountable.

**Internal Audit**

The internal audit which is an independent assessment task set up by the senior executives of organizations to review their entire financial and non-financial control systems helps in the efficient functioning of organizations. The internal audit established in every public sector entity ensures among others that the organization’s funds/resources are utilized in a way that is economical, efficient, and effective thus ensuring financial accountability. Internal auditors prepare periodic reports of the operations of their organizations and measure their actual performance, comparing it with the budget to assist management in taking immediate corrections, this helps to checkmate public sector entities, makes them accountable, and thus improves financial accountability. Rotimi et al. (2021) stated that the internal auditors of public sector entities improve financial accountability by evaluating and enhancing internal control systems, risk management, and governance process.
Financial Reporting

Financial reporting is significant in the financial management process of the public sector as it is the means through which public entities disclose their financial activities and position to the public, thereby proving an important instrument of accountability. According to Herath and Albarqi (2017), financial reporting has the quality of faithful representation in which it reflects and represents the actual financial position of its economic data reported. This quality of faithful representation is the value that explains the best way in which responsibilities and financial resources, transactions as well as occurrences were completely represented in financial reports, i.e. financial accountability. This, therefore, makes financial reports reliable and hence useful for decision making.

Theoretical Framework

The study is anchored on the theory of public finance management. The theory posits that managing every aspect of public financial resources which involves mobilizing revenue and allocation of public funds should be done properly in a way that will be beneficial to the entire populace. IPPIS is a public sector financial management tool, its proper management will benefit the Nigerian economy as well as the entire workforce thus leading to financial accountability.

Empirical Review

Rotimi et al. (2021) studied public financial management tools and performance in the Nigerian public sector. The paper investigates the effectiveness of selected public financial management tools in curtailing financial leakages in the Nigerian public sector. It adopted a descriptive research design and a questionnaire was used in gathering data. The finding shows a strong positive association between Treasury Single Account, GIFMIS, IPPIS, and financial performance in the public service of Nigeria. It was concluded that financial management tools show effectiveness in minimizing leakages in public sector funds.

“Integrated Personnel and Payroll Information System (IPPIS) and transparency in government payroll administration in Nigerian civil service: A unique approach”, was studied by Abdusalami, Kabir, Sani, Jafaru, and Lawal (2020). The study examined the effect of IPPIS on transparency in the administration of civil service in Nigeria. Descriptive cross-sectional survey research design was adopted and a questionnaire was used. The population was made up of 100 treasury staff of the Accountant General office in Sokoto and Kebbi. Total population count was used. Analysis of data was done with the use of summary and inferential statistics aided by SPSS version 21. The finding showed that IPPIS, transparency, and accountability significantly, moderately,
and positively relate to one another. The conclusion was based on this finding.

Idris (2019) studied the impact of the Integrated Payroll and Personnel Information system on public accountability in Nigeria. The study examined the impact of IPPIS on internal control, corruption, public finance budgeting as well as the incidence of ghost workers. A descriptive research design was employed, thus primary data collected through a questionnaire was used. The population comprised 730 workers in the office of the Accountant General of the Federation Abuja and the sample size was 130. Ordinary Least Square (OLS) regression analysis was adopted in analyzing data. Results revealed that IPPIS has a significant positive impact on the internal control system and public finance budgeting, and a significant negative impact on ghost workers and corruption. It was concluded that IPPIS enhances the accountability of the Nigerian public sector.

Ibanichuka and Sawyer (2019) studied “Integrated Payroll System and Government Recurrent Expenditure in Nigeria”. The paper examined the association between the above two variables. Primary and secondary data were used. Descriptive statistics and Ordinary Least Square regression analysis were employed in analyzing data. It was found that there is a strong positive association between an integrated payroll system and personnel/overhead costs. The study concludes that electronic accounting, as well as accounting systems, helps in preventing fraud in Nigerian public service.

Implementation of digital Integrated Payroll and Personnel Information System: Lesson from Kenya, Ghana, and Nigeria was researched by Chima, Ahmadu, and Folorunsho (2019). The paper examined how effective IPPIS is and identified the challenges as well as palliating factors set up in curtailing the effects of the challenges that arose from IPPIS. The study concluded that IPPIS is an important mechanism for public service reform to a large extent as it is effective, efficient, and transparent and has improved accountability as well as secured the information management and inclusive financial reporting.

Okafor, Abada, and Omeh (2018) studied “Exposing ghost workers in Nigeria: An emerging ethical dimension to get things right”. The study examined if IPPIS has exposed payroll fraud in the Enugu State of Nigeria. It used qualitative and quantitative research design, thus both primary and secondary data were employed. The result showed that introducing IPPIS and computerizing the financial management in Enugu state has brought to light the inefficiencies in the system, prevented payroll fraud, and improved better budgeting and planning. The study based its conclusion on the finding and recommended that whistle-blowing policy in public service should be encouraged and the blowers should be protected by law.

Mbotor and Bassey (2018) studied Treasury Single Account: The fraud reduction strategy. The study investigated the influence of TSA in controlling fraud and ensuring accountability of the Nigerian public sector. A cross-sectional research design was
adopted and a questionnaire was used in collecting data. Linear regression was used in hypothesis testing and findings show that TSA promotes efficiency and effectiveness of tax administration, reduces fraud and misappropriation of public funds. The conclusion was based on these findings.

Research on “Treasury Single Account (TSA), Integrated Payroll and Personnel Information System (IPPIS), and Integrated Financial Management Information System (IFMIS): Application and implementation effects on fraud management in the public sector in Nigeria” was carried out by EFFiong, et al (2017). The research work investigated the effects of implementing TSA, IPPIS, and IFMIS on fraud in Nigerian public sector organizations. The study used a descriptive research design. The sample size was 120 staff of the ministry of finance. Data was collected from a primary source through the use of a questionnaire. The linear regression model was adopted in data analysis. The study disclosed that TSA, IPPIS, and IFMIS are significantly and positively connected to fraud and fraud management. They also have an impact on public sector performance. The researchers conclude that the adoption and implementation of TSA, IPPIS, and IFMIS are paramount to effective fraud control and management in public sector organizations in Nigeria.

Nnamani, Ochiaka, and Eze (2016) studied public sector reform and public accountability in Nigeria: A case study of Integrated Personnel Payroll and Management Information System. The paper examined how IPPIS implementation has improved accountability. Primary data involving a questionnaire was used. The analysis result showed that IPPIS had checkmated public service of its corrupt practices. The study concluded that a strong positive association exists between implementing IPPIS reform and reducing corruption in the public sector. Thus the federal government’s public reforms have attained its goals.

Idris, Adaja, and Audu (2015) studied “Integrated Personnel Payroll and Information System (IPPIS) panacea for ghost workers syndrome in Nigerian public service”. The paper investigated ghost workers syndrome and how IPPIS helped in curtailing its effect in Nigeria. Primary and secondary data were used. Analysis of data was done with the aid of simple percentages, frequency tables, mean scores, and spearman correlation techniques. Findings revealed that a connection exists between ghost workers syndrome and employee productivity reflected in moral value among workers, increased level of corruption, reduction in workers’ professional prospects, etc. The study concluded that workers’ syndrome is inevitable in the public sector and has affected workers’ performance and the Nigerian economy.
METHODOLOGY AND DATA

Methodology

The study used a survey method. The area of study was South East (SE) and South-South (SS) geopolitical zones of Nigeria. Primary data were used, which were collected through a well-structured questionnaire designed on a 5 point Likert scale. The population consisted of 2,217 accountants and internal auditors working in Bursary and Internal Audit departments respectively, in Federal Universities in the South-East (SE) and South-South (SS) geopolitical zones of Nigeria. The purposive sampling technique was used to select a sample size of 106 respondents being employees from the ranks of senior accountants and senior internal auditors in the Bursary and Internal audit departments respectively, of the selected universities. The reasons for choosing this category of respondents were because they had undergone training and are well knowledgeable on IPPIS. Therefore, they are more suitable and reliable in giving accurate and unbiased information on the subject matter. Moreover, the two departments: the Bursary department and the internal unit department were chosen because financial accountability which IPPIS is expected to improve if it is effective and efficient is mostly obtainable from the budget division & final account division of the bursary department and internal audit department. The collected data were analyzed using descriptive statistics and multiple regression analysis with the aid of Stata version 14. Content validity of the research instruments was determined by experts who deal directly with IPPIS. They examined and confirmed that the instruments measured exactly what they were supposed to. The reliability of the instrument was tested using Cronbach Alpha at a 5% level of significance. The decision rule is to accept the alternate hypothesis when the $p>\alpha$ i.e. P-value is significant at 5% or 1%, otherwise reject the alternate hypothesis and accept the null hypothesis.

Model specification

The researchers developed a regression model which is mathematically represented as:

\[ y = \alpha + \beta b + \varepsilon \]

In its functional form, it is stated as follows:

\[ \text{FA} = \beta_0 + \beta_1 \text{IPPIS} + \beta_2 + \beta_n + \varepsilon \]

Where:

\[ y = \text{Dependent Variable (Financial Accountability)} \]
\[ \alpha = \text{Intercept/Constant} \]
\[ b = \text{Independent variable (IPPIS)} \]
\[ \beta = \text{Regression coefficients} \]
\[ \varepsilon = \text{Error term} \]

The model is further represented in its regression forms as below:

\[ \text{BD} = \beta_0 + \beta_1 \text{EPFM} + \beta_2 \text{BRPC} + \beta_3 \text{FMIR} + \varepsilon \quad \text{equation (3)} \]
\[ \text{IA} = \beta_0 + \beta_1 \text{EPFM} + \beta_2 \text{BRPC} + \beta_3 \text{FMIR} + \varepsilon \quad \text{equation (4)} \]
\[ \text{FR} = \beta_0 + \beta_1 \text{EPFM} + \beta_2 \text{BRPC} + \beta_3 \text{FMIR} + \varepsilon \quad \text{equation (5)} \]

**Table 1**

**Operationalization of Variables**

<table>
<thead>
<tr>
<th>S/N</th>
<th>VARIABLE</th>
<th>TYPE</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Effective and Efficient Public sector Financial Management</td>
<td>Independent</td>
<td>EPFM</td>
</tr>
<tr>
<td>2</td>
<td>Improved Budgeting and Reduced Payroll Cost</td>
<td>Independent</td>
<td>BRPC</td>
</tr>
<tr>
<td>3</td>
<td>Improved Financial Management Information and Reporting</td>
<td>Independent</td>
<td>FMIR</td>
</tr>
<tr>
<td>4</td>
<td>Budgeting</td>
<td>Dependent</td>
<td>BD</td>
</tr>
<tr>
<td>5</td>
<td>Internal Audit</td>
<td>Dependent</td>
<td>IA</td>
</tr>
<tr>
<td>6</td>
<td>Financial Reporting</td>
<td>Dependent</td>
<td>FR</td>
</tr>
</tbody>
</table>

**Source:** Authors conceptualization (2022)

**Procedure for Testing Hypotheses**

Equations 3, 4, and 5 were used in testing hypotheses 1, 2, and 3 respectively.

- Equation 3 involves all questions in questionnaire table 1 and questions 17-20 of questionnaire table 2.
- Equation 4 involves all questions in questionnaire table 1 and questions 13-16 of questionnaire table 2.
- Equation 5 involves all questions in questionnaire table 1 and questions 21-24 of questionnaire table 2.
- Questions 1-4 of questionnaire table 1 focused on EPFM.
- Questions 5-8 of questionnaire table 1 focused on BRPC.
- Questions 9-12 of questionnaire table 1 focused on EPFM.

**Justification for the Variables**

The proxies of the independent variable were used by the study because they are in line with the objectives of the IPPIS which, according to MRL (2016), are to:

- Ensure improvement in effective and efficient government transactions,
• Enhancement of confidence in payroll cost/budgeting, and
• Achieving great improvement in management information and reporting.

The researchers coded these proxies as EPFM, BRPC, and FMIR respectively. They considered the determinants of financial accountability (i.e. dependent variable) as suitable proxies for it. They are Budgeting (BD), Internal Audit (IA), and Financial Reporting (FR).

The researchers, therefore, raised questions that are focused on the variables/proxies.

Data

Data Analysis and Discussion of Results

Data Analysis

Table 2

<table>
<thead>
<tr>
<th>Description</th>
<th>Number Distributed</th>
<th>Number Retrieved</th>
<th>Number Unretrieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>106</td>
<td>103</td>
<td>3</td>
</tr>
<tr>
<td>Percentage</td>
<td>100%</td>
<td>97.2%</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

Researchers Computation based on Field Survey Data (2022)

Table 2 above shows that out of 106 questionnaires distributed, 103 were retrieved, which represents 97% approximately. 3 questionnaires could not be retrieved, representing approximately 3%.

Table 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>epfm</td>
<td>103</td>
<td>10.00971</td>
<td>1.124549</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>brpc</td>
<td>103</td>
<td>12.01942</td>
<td>2.109644</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>fmir</td>
<td>103</td>
<td>12.21359</td>
<td>2.15866</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>bd</td>
<td>103</td>
<td>12.18447</td>
<td>2.252439</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>ia</td>
<td>103</td>
<td>12.39806</td>
<td>3.479181</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>fr</td>
<td>103</td>
<td>12.80583</td>
<td>2.063018</td>
<td>10</td>
<td>16</td>
</tr>
</tbody>
</table>

Source: Analysis Output (2022)

Table 3 shows the properties of the data set. The summary statistics show that the proxies of the independent variable which are EPFM, BRPC, and FMIR have a
mean value of 10.00971, 12.01942, and 12.21359. The mean value of all the proxies – both independent and dependent variables fall within 12.80883 to 12.01942 except that of EPFM which is below that at the value of 10.06971. EPFM, BRPC and FMIR have standard deviation values of 1.124549, 2.109644& 2.15866, maximum value of 12, 15&16, and minimum values of 8, 10 & 10 respectively. The dependent variable proxied by BD, IA, and FR has an average value of 12.18447, 12.39886, and 12.88583 respectively, with FR having the highest value. BD has a standard deviation of 2.252439, a maximum value of 14, and a minimum value of 8. IA has a maximum value of 17 being the highest, a minimum value of 7, and a standard deviation of 3.479181. FR has a maximum value of 16, a minimum value of 10, and a standard deviation of 2.063.

Table 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>W</th>
<th>V</th>
<th>z</th>
<th>Prob&gt;z</th>
</tr>
</thead>
<tbody>
<tr>
<td>epfm</td>
<td>103</td>
<td>0.94832</td>
<td>4.373</td>
<td>3.279</td>
<td>0.00052</td>
</tr>
<tr>
<td>brpc</td>
<td>103</td>
<td>0.92597</td>
<td>6.265</td>
<td>4.077</td>
<td>0.00002</td>
</tr>
<tr>
<td>fmir</td>
<td>103</td>
<td>0.90437</td>
<td>8.093</td>
<td>4.646</td>
<td>0.00000</td>
</tr>
<tr>
<td>bd</td>
<td>103</td>
<td>0.86671</td>
<td>11.280</td>
<td>5.384</td>
<td>0.00000</td>
</tr>
<tr>
<td>ia</td>
<td>103</td>
<td>0.98001</td>
<td>1.692</td>
<td>1.168</td>
<td>0.12131</td>
</tr>
<tr>
<td>fr</td>
<td>103</td>
<td>0.99169</td>
<td>0.703</td>
<td>-0.782</td>
<td>0.78291</td>
</tr>
</tbody>
</table>

Source: Analysis Output (2022)

The normality test in table 4 reveals that the data set is normally and non-normally distributed.
Table 5

Correlation Analysis

<table>
<thead>
<tr>
<th>Key</th>
<th>----------------------</th>
</tr>
</thead>
<tbody>
<tr>
<td>rho</td>
<td>----------------------</td>
</tr>
<tr>
<td>Number of obs</td>
<td>103</td>
</tr>
<tr>
<td>Sig. level</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>epfmbrpcfmirbdiafr</th>
</tr>
</thead>
<tbody>
<tr>
<td>epfm</td>
</tr>
<tr>
<td>brpc</td>
</tr>
<tr>
<td>fmir</td>
</tr>
<tr>
<td>bd</td>
</tr>
<tr>
<td>ia</td>
</tr>
<tr>
<td>fr</td>
</tr>
</tbody>
</table>

Source: Analysis Output (2022)

The result of the correlation analysis in table 5 shows that the correlation between BRPC and EPFM is 0.1000, i.e. 10% and it is positive. FMIR has a correlation of -0.3822 with EPFM but has a very high correlation of 0.8242 with BRPC which is 82% and positive. This shows that the variables are almost perfect as the coefficients are too high, thus resulting in the problem of colinearity. BD has a correlation of -0.0587, 0.7972, and 0.6481 with EPFM, BRPC, and FMIR respectively. IA has a correlation of -0.1566, 0.7336, 0.6879, and 0.9745 with EPFM, BRPS, FMIR, and BD respectively.
The coefficient of 0.9745 is too high, which shows that the 2 variables are the same and thus there is a problem of colinearity. FR also has a correlation of -0.1811, 0.9250, 0.8994, 0.6481, and 0.5896 with EPFM, BRPC, FMIR, BD, and IA respectively. The coefficients of -0.1811, 0.6481, and 0.5899 are adequate but 0.9250 and 0.8994 are very high, indicating that the proxies are doing the same functions and thus there is evidence of redundancy among them.

Test of Hypotheses
Tables 6, 7 and 8 below show the results of the hypotheses tested.

Hypothesis One
H₀: IPPIS has no significant positive impact on the budgeting of Nigerian Federal Universities

Table 6

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>Number of obs</th>
<th>Source: Analysis Output (2022)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>281.599548</td>
<td>3</td>
<td>93.866516</td>
<td>F(3, 99) = 39.39</td>
<td>Number of obs = 103</td>
</tr>
<tr>
<td>Residual</td>
<td>235.895598</td>
<td>99</td>
<td>2.38278381</td>
<td>Prob&gt; F = 0.0000</td>
<td>Total</td>
</tr>
</tbody>
</table>

| Source | Coef. | Std. Err. | t     | P>|t| | [95% Conf. Interval] |
|--------|-------|-----------|-------|-----|---------------------|
| epfm   | .5530687 | .1529361 | 3.62  | 0.000 | .2496103 .8565271 |
| brpc   | .7341738 | .128119  | 5.73  | 0.000 | .4799578 .9883897 |
| fmir   | .0595678 | .1337123 | 0.45  | 0.657 | -.2057465 .3248821 |
| _cons  | -2.903468 | 2.039134 | -1.42 | 0.158 | -6.949551 1.142616 |

Table 6 shows the regression analysis result of hypothesis one. The result reveals that F-statistics is 29.39, Prob> F is 0.0000, R-Squared is 0.5442, and Adj. R-Squared is 0.5303. EPFM has a coefficient of .5530682, t-value of 3.62, and p-value of 0.000, which is significant. This implies that EPFM has a significant positive impact on the budgeting of Nigerian Federal Universities. BPRC has a coefficient of .7341738, t-value of 5.73, and p-value of 0.000 which is also significant and implies that BPRC has a significant positive impact on the budgeting of Nigerian Federal Universities. The third proxy FMIR has a coefficient of .0595678, t-value of 0.45, and p-value of 0.657 which
however is not significant, and implies that FMIR has no significant positive impact on the budgeting of Nigerian Federal Universities. We reject the null hypothesis, accept the alternate, and therefore conclude that IPPIS has a significant positive impact on the budgeting of Nigerian Federal Universities but this significant positive impact occurs when IPPIS is measured as EPFM and BRPC only.

**Hypothesis Two**

$H_0^2$: IPPIS has no significant positive impact on the internal audit function of Nigerian Federal Universities.

**Regression Analysis of Hypothesis Two**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>Number of obs = 103</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>925.589272</td>
<td>3</td>
<td>308.529757</td>
<td>F(3, 99) = 98.82</td>
</tr>
<tr>
<td>Residual</td>
<td>309.09034</td>
<td>99</td>
<td>3.12212464</td>
<td>Prob&gt; F = 0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R-squared = 0.7497</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Adj R-squared = 0.7421</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Root MSE = 1.767</td>
</tr>
<tr>
<td>Total</td>
<td>1234.67961</td>
<td>102</td>
<td>12.1047021</td>
<td></td>
</tr>
</tbody>
</table>

| ia     | Coef.     | Std. Err. | t     | P>|t| | [95% Conf. Interval] |
|--------|-----------|-----------|-------|------|---------------------|
| epfm   | .4612872  | .1750624  | 2.63  | 0.010| .1139255 .808649    |
| brpc   | .8480845  | .1466548  | 5.78  | 0.000| .5570895 1.13908    |
| fmir   | .6862699  | .1530574  | 4.48  | 0.000| .3825709 .989969    |
| _cons  | -10.7946  | 2.334148  | -4.62 | 0.000| -15.42605 -6.163139 |

**Source:** Analysis Output (2022)

As presented in the regression result of table 7, F-statistics is 98.82, Prob> F is 0.0000, R-Squared is 0.7497, and Adj. R-Squared is 0.7421. The coefficient of EPFM is .5530682, the t-value is 2.63, and the p-value of 0.010, which is significant and positive. The coefficient of BRPC is .8480845, the t-value is 5.78 and the p-value is 0.000, which is also significant and positive. Similarly, the coefficient of FMIR is .68626399, the t-value is 4.48 and the p-value is 0.000, which is also significant and positive. These results imply that IPPIS has improved the internal audit function of Nigerian Federal Universities. Consequently, the null form of hypothesis two is rejected. We accept that IPPIS proxied by EPFM, BRPC, and FMIR has a significant positive impact on the internal audit function of Nigerian Federal Universities.
Hypothesis Three
H$_0^3$: IPPIS has no significant positive impact on the financial reports of Nigerian Federal Universities.

Table 8

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>Number of obs = 103</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>383.888575</td>
<td>3</td>
<td>127.962858</td>
<td>F(3, 99) = 252.22</td>
</tr>
<tr>
<td>Residual</td>
<td>50.2279296</td>
<td>99</td>
<td>.507352852</td>
<td>R-squared = 0.8843</td>
</tr>
<tr>
<td>Total</td>
<td>434.116505</td>
<td>102</td>
<td>4.25604417</td>
<td>Adj R-squared = 0.8808</td>
</tr>
</tbody>
</table>

| fr | Coef. | Std. Err. | t | P>|t| | [95% Conf. Interval] |
|----|-------|-----------|---|-------|----------------------|
| epfm | -.0998587 | .0705704 | -1.42 | 0.160 | -.2398857 | .0401684 |
| brpc | 1.045689 | .0591189 | 17.69 | 0.000 | .9283845 | 1.162994 |
| fmir | -.1680381 | .0616999 | -2.72 | 0.008 | -.290464 | -.0456121 |
| _cons | 3.289154 | .9409323 | 3.50 | 0.001 | 1.42214 | 5.156168 |

Source: Analysis Output (2022)

Observations from table 8 show that F-statistics is 252.22, Prob> F is 0.0000, R-Squared is 0.8843, and Adj. R-Squared is 0.8808. Moreover, EPFM has a coefficient of -.0998587, t-value of -1.42, and p-value of 0.160, which is not significant and implies that EPFM has no significant negative impact on the financial reports of Nigerians Federal Universities. However, BRPC has a coefficient of 1.045689, t-value of 17.69, and p-value of 0.000. This is a significant positive impact. FMIR has a coefficient of -.1680381, t-value of -2.72, and p-value of 0.008 which is also significant but negative. Based on these results, we conclude that IPPIS proxied by BRPC and FMIR has a significant impact on financial reports of Nigerian Federal Universities, but the significant impact is positive when IPPIS is proxied by BRPC and negative when IPPIS is proxied by FMRC. However, IPPIS proxied by EPFM has no significant negative impact on the financial reports of Nigerian Federal Universities.

RESULTS/OUTCOMES AND CONCLUSIONS

Summary of Results
Findings from the result are summarized as follows:

- IPPIS has a significant positive impact on budgeting of Nigerian Federal
Universities (EPFM: $p = 0.000$, $t = 3.62$, BRPC: $p = 0.000$, $t = 5.73$).

- IPPIS has significant positive impact on internal audit function of Nigerian Federal Universities. (EPFM: $p = 0.010$, $t = 2.63$. BRPC: $p = 0.000$, $t = 5.78$. FMIR: $p = 0.000$, $t = 4.48$)

- IPPIS has significant impact on financial reports of Nigerian Federal Universities. (BRPC: $p = 0.000$ $t = 17.69$. FMIR: $p = 0.008$, $t = -2.72$)

**Conclusion**

The study examined the impact of IPPIS on the financial accountability of Nigerian Federal Universities. Findings show that IPPIS proxied by EPFM and BRPC has a significant positive impact on the budgeting of Nigerian Federal Universities but when proxied by FMIR, it has no significant positive impact. The three proxies of IPPIS have a significant positive impact on the internal audit function of Nigerian Federal Universities. It was also found out that IPPIS measured as BRPC and FMIR have a significant impact on financial reports of Nigerian Federal Universities though positive for BRPC but negative for FMIR. However, IPPIS proxied by EPFM has no significant impact on financial reports. The implication of these is that IPPIS proxied by EPFM and BRPC except FMIR improves the budgeting of Nigerian Federal Universities. When proxied by the three proxies, IPPIS improves the internal audit function of Nigerian Federal Universities. Furthermore, IPPIS improves the financial reports of Nigerian Federal Universities when measured using BRPC and FMIR but brings no improvement when measured by EPFM. We, therefore, conclude that IPPIS improves the financial accountability of Nigerian Federal Universities.

**Recommendations**

Consequent upon the findings, these recommendations were made:

- IPPIS officials should endeavour to remit union dues, tax, cooperative payments, pension, and other deductions accurately and on time to the appropriate bodies to improve its financial accountability in that aspect which is slackened.

- IPPIS’s improvement of the internal audit function is commended and encouraged to keep it up.

- IPPIS officials need to improve on its effective and efficient public sector financial management by paying staff salaries as when due. We recommend it on or before the last working day of every month. Regularize staff salaries across all federal universities, effect promotions timely, to prove its worthiness as an effective public sector financial management tool that helps in achieving financial accountability in the Nigerian public sector.
Contribution

This study enriched accounting literature with the impact of IPPIS on the financial accountability of Nigerian federal universities. It brought newness by measuring IPPIS using the objectives of the IPPIS project which it measured as EPFM, BRPC, and FMIR. It also developed the determinants of financial accountability as Budgeting (BD), Internal Audit (IA), and Financial Reporting (FR). These were used by this study in measuring financial accountability. Financial Accountability is new in IPPIS studies as most studies on IPPIS and accountability did not consider financial accountability but only accountability. The study also developed 3 models for examining the impact of IPPIS on the financial accountability of Nigerian federal universities. The results of the study have practical and theoretical implications for the policy makers (i.e. the office of the Accountant General for the Federation and the Budget Office), academia and the executives of Nigerian public sector organizations.

REFERENCES


Amaka Elizabeth Agbata, Patricia Chinyere Oranefo.
Integrated Personnel and Payroll Information System and Financial Accountability


16. Law Dictionary: Definition of Accountability.


**APPENDIX 1 Questionnaire**


**Questionnaire Table 1**

**Independent Variable – Integrated Personnel and Payroll Information System**

<table>
<thead>
<tr>
<th>S/N</th>
<th>QUESTIONS</th>
<th>SA</th>
<th>A</th>
<th>UD</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Staff receive their salaries as at when due</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Staff who are not yet captured in IPPIS platform receive their salaries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>IPPIS remit all its deductions to the appropriate bodies – tax authorities, Pension Fund Administrators/Custodians, University unions, Cooperative society</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>IPPIS facilitates effective tax administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Has IPPIS ensured strategic management of public financial resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The use of IPPIS has regularized salaries across federal universities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>The incidence of ghost workers in the payroll has been eliminated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>IPPIS saves costs for the government</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>IPPIS enables greater transparency in payroll</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Amaka Elizabeth Agbata, Patricia Chinyere Oranefo.  
Integrated Personnel and Payroll Information System and Financial Accountability

IPPIS has ensured improvement in financial reporting of universities through timely financial reporting
IPPIS has ensured improvement in financial reporting of universities through quality financial reporting
If IPPIS transfers employee pension benefits directly to their accounts instead of to PENCOM, do you think that it will reduce rampant cases of pension fraud?

### Questionnaire Table 2

<table>
<thead>
<tr>
<th>S/N</th>
<th>QUESTIONS</th>
<th>SA</th>
<th>A</th>
<th>UD</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>IPPIS has enhanced the auditing process in the universities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Public funds are currently managed efficiently</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>IPPIS ensures adequate internal control system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Implementation of IPPIS has eliminated payroll fraud</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>IPPIS has improved the credibility of the university budget</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Budget planning and preparation have been more efficient as a result of IPPIS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Anomalies in executing budgets are now minimized</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Appropriate salaries are paid based on grade level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>IPPIS is in line with International Public Sector Accounting Standards (IPSAS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>IPPIS has enhanced financial reporting in the universities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>IPPIS has helped to restore confidence in financial reports disclosed by public entities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>IPPIS is an effective public financial management tool for achieving financial accountability in the Nigerian public sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
HUMAN RESOURCE MANAGEMENT PRACTICES AS PREDICTORS OF EMPLOYEE ENGAGEMENT AMONG INDEPENDENT NATIONAL ELECTORAL COMMISSION STAFF

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JEL: J24, J33, J40

Abstract

The study examines human resource management practices (HRMP) on employee engagement among Independent National Electoral Commission (INEC) staff in Osun State, Nigeria. Specifically, the study’s objectives are to investigate the influence of recruitment & selection, training & development, compensation management, and employee relations on employee engagement among INEC staff in Osun State, Nigeria. Four hypotheses were postulated for testing. A cross-section research design was adopted in the study. The target population was 512 staff across the INEC offices in Osun State. Multi-stage sampling techniques, which comprised stratified, purposive, and simple random sampling techniques, were used in the study to select 160 respondents. Data collected by use of a questionnaire was analyzed through descriptive and inferential statistics. Multiple regression and ANOVA were used to test the formulated hypotheses. The study found a significant effect of recruitment & selection, compensation management, and employee relations on employee engagement. However, the study also found no significant influence of training and development on employee engagement. The study then concluded that engaged employees are the main drivers of the organization’s productivity, and human resource management practices are important factors influencing employee engagement among INEC staff in Osun State, Nigeria. The study recommends that organizations revise their HR policies, keeping the above factors in attaining the targeted goals.
Introduction

Human Resource Management methods are critical for every organization’s growth (Hallberg & Schaufeli, 2006; Paul & Anantharaman, 2003). Staff recruitment, selection strategies, market-adapted training, performance development, an appropriate exchange system, social security appraisal, and planned strategic needs are critical Human Resource Management practices (HRMP) (Teeseema and Soeters, 2006; Macey & Schneider, 2008).

To some extent, an organization’s “success” is dependent on employee engagement. This position cannot be attained if the organization fails to establish a strong employee relationship that allows all employees to be maintained to motivate them to contribute optimally to achieving its goals (Alvesson, 2009). According to several studies, the link between Human Resource Management Practices and Employee Engagement is significant (Jung, Yoon, & Yoon, 2016). As a result, organizations must have HRMPs in place to raise employee engagement.

Employee engagement has increased emotional connections to work and organization that goes beyond satisfaction and helps employees perform well while also desiring to stay with their employers and recommend them to others (Gubman 2004). Employees engaged in their work give their employers a competitive advantage (Joo and Mclean, 2006). Hence there is a need to keep them engaged. A workplace approach creates the proper conditions for employees to give their all and adhere to the organization’s values and goals and motivation to contribute to its success and a greater sense of personal well-being. Employee engagement is based on the organizations’ and employees’ integrity, trust, two-way communication, and dedication. It is a strategy for increasing a company’s success by improving human and organizational performance, well-being, and productivity.

Employee engagement and the impact of human resource management methods have been extensively explored. According to research conducted in developed and developing countries, human resource practices substantially impact employee engagement (Gubman 2004). Unfortunately, little research has been undertaken in Nigeria on government Ministries, Departments, and Agencies (MDAs). The parastatals continue to use the traditional approach to people management, which
focuses on administrative procedures and is related to a hierarchical model of public services. Administrative norms are set by the federal government and followed by public organizations.

This strategy is considered to sabotage performance and de-motivate employees. Modern HRM, according to Lankeu and Maket (2012), entails putting in place measures that ensure that people in an organization are used to their full potential. This is accomplished in a systematic and planned manner by ensuring a shift in the way parastatals employees are managed to ensure that they deliver the desired results. To accomplish these changes, leaders must have knowledge and experience in modern or advanced human resource management. Considering this, the purpose of this study was to fill a research gap by investigating the influence of Human Resource Management Practices (HRMP) on employee engagement among INEC employees in Osun State. The research tasks examine the influence of recruitment and selection, training and development, employment relations, and compensation management on employee engagement among INEC staff in Osun State.

1.0. Theoretical Review

1.1. Human Capital Theory

The industrial revolution spawned Human Capital Theory (HCT), sometimes known as Taylorism. The cost of learning the work, according to the argument, is tangential to the net gain. Building on this, some economists have claimed that all else being equal, education and training investment is a predictor of personal income. This viewpoint emphasizes the concept of an organization’s need to invest in “human capital” to “create the skill-base required for labour force economic development” (HCT, 2017).

Consequently, HCT’s overarching purpose is to boost individual worker productivity, commitment, and engagement. Employee training and development, proper compensation schemes for workers, and timely employee recognition have all been prioritized by government parastatals in Nigeria. However, the research found that certain Nigerian government parastatals administer T&D initiatives ineffectively (Emeti, 2015). The human capital theory examines the relevance and value of knowledge, skills, and talents supplied by people in an organization in assisting the company in attaining its set goals and objectives, hence extending its capacities. The human capital hypothesis, which claims that training is one of the most important employee motivators, backs up the diverse training approach. Employees are more engaged when they are instructed or permitted to be trained.
1.2. Resource-Based Theory.

Selznick (1957) claimed that work organizations have “distinctive competence” that permits them to outperform rivals, while Penrose (1959) described a corporation as a “gathering of productive resources.” The believability of the hypothesis was bolstered by Barney (2001). This concept is generally accepted to comprehend the connection between organizational employee engagement and strategic human resource management. According to Schuler, Jackson, and Storey (2001), organizations have three types of resources: physical resources (plant, technology, and equipment), human resources (employee experience and knowledge), and organizational resources (structures, a system for planning, monitoring, and controlling activities; social relations within and between organization and external contingencies).

A resource may be considered a source of persistent competitive advantage if it meets the criteria of value, rarity, non-substitutability, and inimitability (Barney, 2001). Human resources may be thought of as an individual’s accumulated reservoir of knowledge, skills, and talents that the business has honed into a distinct specialization through time. This point of view stresses the company’s human resource quality and its capacity to learn and adapt quicker than its rivals. Individual managers and employees in an organization’s human resources include their experience, training, judgments, intellect, connections, and insights.

According to this hypothesis, a person’s overall knowledge and experience, and social connections can provide non-replaceable attributes that may be exploited to obtain a competitive advantage (Cappelli & Singh, 1992). Employee recruitment and selection and training and development enable a company to acquire the most important competencies and grow them to maintain a higher level of employee engagement. Effective management tactics, such as decentralized teams, provide a high level of competent labour productivity. It is necessary to incorporate mechanisms for maintaining abilities, such as incentives. These factors provide a corporation with a competitive edge over its competitors. Because enterprises must identify their resources and select how to utilize them to produce outstanding services, the RBV theory is important to the present research.

1.3. Empirical Review.

They concluded that Human Resource Management Practices, both individually and collectively, had a major impact on teacher turnover intentions at Ibadan’s private institutions. This might be accomplished by promoting faculty members regularly and establishing a clear Human Resource Management Practices route for them to follow.

Alima and Faizuniah (2017) looked at the link between human resource management techniques and employee engagement. The researchers constructed a framework to analyze the influence of perceived organizational support (POS) on HRM practices-employee engagement connection based on social exchange theory (SET) norms. According to the findings of structural equation modelling, HRM practices, such as career development, job security, and performance, were shown to be strongly and positively connected to employee engagement. The findings also revealed that POS might help mitigate the link between HRM and employee engagement. In the presence of POS, workers’ perceptions of job-related resources would impose a high degree of behavioural effects such as engagement.

Tangthong, Trimetsoontorn, and Rojniruttikul (2015) investigated the effects of human resource management (HRM) practices on employee retention in Thai multinational corporations (MNCs) with FDI promoted by the Board of Investment (BOI). Eleven theoretically-based hypotheses pointing to probable positive and negative correlations between HRM practices, mediating factors, and employee retention were generated. The findings revealed that HRM strategies, directly and indirectly, impact employee retention. Out of the five mediating factors, employee engagement has the most significant indirect influence on employee retention. On the other hand, employee retention was unaffected by organizational citizenship behaviours (OCBs). As a result, the research added to our understanding of HRM practices and employee retention by delving into the function of mediating variables, notably employee engagement, in the network of linkages.

The influence of Human Resource Management (HRM) practices that affect recruitment and selection and training and development on the organization performance of the Jordanian Public University in the Kingdom of Jordan is investigated by Saifalishlam Osman Alqudah (2014). Recruitment, selection, training, and development were substantially connected with Jordanian Public University’s organizational success. The study also recommended how the university’s HRM practices could be improved.

Employee engagement was researched by Alzyoud (2018) using Human Resources Management (HRM) strategies (employee communications, employee development, and incentives and recognitions). The article aimed to investigate the factors that impact employee engagement in a printing firm. As independent variables, employee communication, employee development, awards, and recognitions were chosen. It was discovered that the two independent variables had a substantial link
with the dependent variable. Finally, it has been discovered that HRM practices impact employee engagement. This demonstrates that to achieve high levels of employee engagement, businesses must adopt appropriate and well-structured HRM policies.

Veth, Korzilius, Van vanHeijden, Emans, and De Lange (2017) investigated employee outcomes and perceived availability and adoption of HRM methods. According to the research, employee engagement is generally linked with the perceived availability and implementation of HRM development activities like training, learning, development, creativity, innovation, and new tasks. However, surprisingly, the research also discovered that employee engagement, perceived availability and usage of management HRM strategies had a substantial negative association.

The link between reward management and employee engagement has previously been investigated. In India, for example, Patil (2018) conducted research on employee engagement and productivity among bank staff. Correlation and regression analyses were used in the research. According to the study, incentive management had a considerable positive impact on employee engagement among Indian bank staff. This implies that reward management is a factor in employee motivation. Earlier research on employee involvement in Nigeria, on the other hand, focused on other elements and sectors of the Nigerian economy other than manufacturing.

Alzyoud (2018) evaluated the influence of human resource management techniques on employee engagement in Bahrain (employee communication, employee development, incentive and recognition). According to the report, staff communication, employee development, incentive, and recognition substantially impact employee engagement in Bahrain’s manufacturing industry. The research was conducted in a setting that was not similar to Nigeria’s.

2.0. Methodology

This study adopted a cross-sectional survey design to collect data. The target population for the study comprised all staff members in INEC Osun State, Nigeria. According to the General Administration and procurement (GAP) department, there were five hundred and twelve (512) staff members in INEC Osun State. Multi-stage sampling techniques were used in the study, comprising stratified, purposive sampling, and simple random sampling techniques. In the first stage, the State was divided into three senatorial districts. The second stage used purposive sampling to select one rural and one urban area from 2 local governments in each senatorial zone of the State. Finally, a random sampling technique was used to pick 20 respondents from each local government, making 120 respondents, and 40 respondents were randomly selected from the State headquarters in Osogbo, making a sample size of 160
2.1. Research Instrumentation.

The main instrument used for the study was a structured questionnaire. The questionnaire consisted of three sections. Section A contained socio-demographic information. Section B was an adapted version of the Human Resource Management Practices Scale (HRMPS) developed by Mukiibi (2017). The Cronbach’s alpha for the scale is 0.83. Finally, in Section C, Employee engagement was assessed using the shortened nine-item version of the Utrecht Employee Engagement Scale (UWES-9) developed by Schaufeli and Bakker (2003). The scale constitutes three indicators measured with three items: Vigor, Dedication, and Absorption, and scored on a 5-point Likert scale. The reliability coefficient for the scale was 0.91 on Cronbach’s alpha.

Data collected were analyzed using the simple percentage frequency counts for the demographic variables, while correlation and Linear Regression Analysis were used for testing the hypotheses of the study.

2.2. Research Hypotheses.

Four hypotheses were postulated for the study viz.:

i. Recruitment and selection would significantly influence employee engagement among INEC staff in Osun State.

ii. Training and development would significantly influence employee engagement among INEC staff in Osun State.

iii. Employment relations would significantly influence employee engagement among INEC staff in Osun State.

iv. Compensation management would significantly influence employee engagement among INEC staff in Osun State.

3.0. Results and Discussion

Table 1

<table>
<thead>
<tr>
<th>Demographic Information of the Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>20-29 years</td>
</tr>
<tr>
<td>30-39 years</td>
</tr>
<tr>
<td>40-49 years</td>
</tr>
<tr>
<td>50-59 years</td>
</tr>
</tbody>
</table>
Table 1 above reveals the demographic characteristics of the respondents. It was reported that 72 (45.0%) were male while 88 (55.0%) of the respondents were female. This result is pertinent to note that women were slightly more than men working with INEC in Osun State. The study found that 43 (26.9%) of the respondents’ age fell between 20-29 years, 53 (33.1%) between 30-39 years, 44 (27.5%) between 40-49 years, and 20 (12.5%) between 50-59 years. No respondent was above 60 years old or more. The implication is that age has become an important factor in this study. The younger generation is to take over from the older generation. The study showed that most of the respondents, 117 (73.1%), were married compared to 35 (21.9%) who were single, and 8 (5.0%) of the respondents were divorced/separated. Thus, this revealed that most of the staff in INEC are married, and this factor may influence their level of employee engagement. The results indicated B.Sc./B.A./HND frequency of 70 (43.8%), OND/NCE 52 (32.5%), and SSCE 23 (14.4%). Those with Postgraduate
degrees and Professional Certificates were 37 (14.9%) and 4 (2.5%), respectively. The findings displayed that 25.6% of the respondents had 0-5 years of working experience, 18.1% had 6-10 years, 23.1% had 11-15 years, 10.0% had 16-20 years, 7.5% had 21-25 years, 8.1% had 26-30 years, and 7.5% had over 30 years.

3.1. Test of Hypotheses

Multiple Regression Analysis

The study employed multiple regression analysis to investigate the influence of human resource management practices on employee engagement among INEC staff in Osun State. The univariate and multiple regression analyses were conducted to empirically determine whether the independent variables were significant determinants of employee engagement among INEC staff in Osun State since Regression analysis is an important test to ascertain the magnitude of independent variables’ effect on dependent variable variable.

Table 2

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.740*</td>
<td>.540</td>
<td>.364</td>
<td>6.32914</td>
</tr>
</tbody>
</table>

Predictors: (Constant), Recruitment & selection, training & development, Compensation management, employment relations.

Table 2 indicates the goodness of fit for the regression between HRMP (Recruitment & selection, training & development, compensation management, and employment relations) and satisfactory employee engagement. An R-squared of 0.740 indicates that the variations in HRMP explain 74.0% of the variations in employee engagement. These results further mean that the model applied to link the relationship of the variable was satisfactory.

Table 3

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>6</td>
<td>421.095</td>
<td>10.512</td>
<td>.000b</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>153</td>
<td>40.058</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8655.435</td>
<td>159</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Employee engagement
b. Predictors: (Constant), Recruitment & selection, training & development, Compensation management, employment relations

Table 3 above provides the result from the analysis of the variance (ANOVA). The ANOVA results indicated that the model was statistically significant, and there was a goodness of fit of the model with \( F_{(6,153)} = 10.512, \ P < 0.05 \). Furthermore, the result implied that HRMP (Recruitment & selection, training & development, compensation management, and employment relations) were good predictors of employee engagement. The study, therefore, concludes that human resource management practices would significantly influence employee engagement among INEC staff in Osun State.

**Table 4**

<table>
<thead>
<tr>
<th></th>
<th>( \beta_i )</th>
<th>Std. Error</th>
<th>Beta</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>57.186</td>
<td>10.609</td>
<td>5.391</td>
<td>.000</td>
</tr>
<tr>
<td>R&amp;S</td>
<td>.438</td>
<td>.122</td>
<td>-.312</td>
<td>3.574</td>
<td>.000</td>
</tr>
<tr>
<td>T&amp;D</td>
<td>-.274</td>
<td>.275</td>
<td>-.088</td>
<td>-.995</td>
<td>.321</td>
</tr>
<tr>
<td>ER</td>
<td>.170</td>
<td>.161</td>
<td>.104</td>
<td>1.053</td>
<td>.004</td>
</tr>
<tr>
<td>EI</td>
<td>1.456</td>
<td>.488</td>
<td>-.281</td>
<td>-2.981</td>
<td>.003</td>
</tr>
</tbody>
</table>

a. Dependent Variable: EE

The HRMP coefficients are presented in Table 4. This table revealed the findings of the formulated hypotheses for the study.

**HYPOTHESIS 1: Recruitment and selection would significantly influence employee engagement among INEC staff in Osun State.**

The results showed that recruitment and selection had coefficients (\( \beta = 0.438, t = 3.574, p = 0.000 < \alpha = 0.05 \)), indicating significant influence of recruitment and selection on employee engagement. Hypothesis one was accepted. The study concluded that recruitment and selection significantly influence employee engagement among INEC staff in Osun State. According to the results, recruiting and selection significantly influence employee engagement among INEC personnel in Osun State.

This is consistent with Ojo, Olonade, and Eguavoen (2020), who investigated the influence of Human Resource Management Practices on Faculty Turnover Intention at Ibadan’s private institutions. One of their results was that faculty turnover intention at private institutions in Ibadan was impacted by recruiting and selection. This research also backs up Armstrong’s (2010) claim that HRM resourcing strategies strive to get the proper main material in the form of a workforce with the necessary qualities, skills, knowledge, and future training potential. Most other HRM methods aimed at growth and motivation should be centred on identifying and recruiting employees who are most
suited to meet the company’s objectives (Armstrong, 2010). In their study of the link between recruiting/selection procedures and business performance, Terpstra and Rozell (2013) revealed a substantial and positive relationship between the extensiveness of recruitment, selection, and formal selection techniques and firm performance.

**HYPOTHESIS 2: Training and development would significantly influence employee engagement among INEC staff in Osun State.**

The results showed that training and development had coefficients ($\beta = 0.274$, $t = -0.995$, $p = 0.321 > \alpha =0.05$), which implies that training and development have no significant influence on employee engagement. Therefore, the second hypothesis was rejected. Therefore, the study concluded that training and development have no significant influence on employee engagement among INEC staff in Osun State. Furthermore, the results of this research agreed with those of Igbal, Shabbir, Zameer, Khan, and Sandhu (2017), who showed that training and coaching are not major antecedents of employee engagement. However, the results of this research contradict those of Huang and Su (2016) and Jepkoge and Kiprotich (2016), all of whom showed that training had a significant influence on employee engagement.

**HYPOTHESIS 3: Employment Relations would significantly influence employee engagement among INEC staff in Osun State.**

The results show that employment relation had coefficients ($\beta = 0.170$, $t = 1.053$, $p = 0.004 < \alpha =0.05$), implying a significant influence of employment relation on employee engagement. Hence, hypothesis three was accepted. The study concluded a significant influence of employment relations on employee engagement among INEC staff in Osun State. This finding is similar to Ugwu, Onyishi, and Rodriguez-Sanchez (2014) and Shuck, Reio, and Rocco (2015). (2011). According to Rees, Alfes, and Gatenby (2013), they affirm that employee industrial relations have a significant impact on employee engagement.

**HYPOTHESIS 4: Compensation management would significantly influence employee engagement among INEC staff in Osun State.**

The results show that compensation management had coefficients ($\beta = 0.883$, $t = 3.493$, $p = 0.001 < \alpha =0.05$). This implies a significant influence of compensation management on employee engagement. Therefore, hypothesis four was accepted. The study concluded that compensation management significantly influences employee engagement among INEC staff in Osun State. This study backs with previous research that revealed pay management had a positive and substantial effect on employee engagement (Ahmed, Ahmad &Joarder, 2016; Jani &Balyan, 2016). It contradicts the
findings of Shah and Beh (2016), who discovered that pay had a negative influence on employee engagement. Similarly, the findings of this research contradict those of Njanja, Maina, Kibet, and Njagi (2013), who found no effect of pay on employee engagement.

4.0. Conclusion

The study examined the effect of the HRMP dimension (Recruitment & Selection, Training & Development, Compensation Management and Employee Relations) on the employee engagement of INEC staff. The study employed a cross-sectional survey design by administering a structured questionnaire to the targeted respondents. The findings revealed that recruitment and selection, employee relations, and compensation management significantly influence employee engagement; therefore, an increase in recruitment and selection, employee relations, and compensation management will most likely enhance employee engagement among the INEC staff. However, training and development do not significantly affect employee engagement among INEC staff. This is inconsistent with the findings of Huang and Su (2016) and Jepkogeai and Kiprotich (2016) that training and development significantly influenced employee engagement. Therefore, it can be concluded that recruitment and selection, employee relations, and compensation management are the major components of HRMP driving employee engagement among INEC staff.

It can be recommended that INEC seeking improved employee engagement, should enhance its HRM practices. However, the organization conducts extensive training and development programs for its employees, relevant to the changing needs of jobs.

4.1. Research Contribution

The study expands the frontier of knowledge by contributing to the scanty literature on HRMP and employee engagement, particularly in the public sector in Osun State, Nigeria. Existing literature on human resources and employee engagement concentrates mainly on recruitment and selection, training and development, compensation management, and employee relations. The study also established that policymakers, business executives, and HR managers who implement HR practices encourage employee engagement and enhance organizational performance.

4.2. Research Implications

The study indicated that HRMP has a positive and significant effect on employee engagement among INEC staff. The adjusted coefficient of the determination (adj. $R^2$) revealed that HRMP accounts for a 74.0% variation in the employee engagement of INEC
staff. Therefore, an increase in HRM practices will enhance employee engagement. Therefore, management should utilize human resources management (especially recruitment and selection, employee relations, and compensation management) to enhance their level of engagement. However, the study focused on the public sector in Osun State; as a result, the outcome might not apply to other sectors of the Nigerian economy and in other countries.

Further studies can equally be conducted by adapting other HR theories. Furthermore, the use of interviews can be considered by other researchers, as an interview tends to reveal more information.

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DETRIMENTAL IMPLICATIONS OF MICROMANAGEMENT

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JEL: M5, M120

Abstract

The concept of micromanagement might appear suitable to managers, but it does more harm to employees than good. This study examined the detrimental implication of micromanagement on employee performance by obtaining data from one hundred and eighty-six non-teaching staff of a public school in Nigeria. A statistical package called RStudio was used to analyze the data. The study discovered that micromanagement harms employee productivity, retention, and satisfaction. The study suggests that managers should ensure employees have maximum autonomy when assigned tasks.

Key words:
Micromanagement, Employees, Productivity, Satisfaction, Retention

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DOI: 10.56065/IJUEV2022.66.1-2.60

INTRODUCTION

Organizations strive to succeed amidst the turbulent and ever-changing environment. To achieve this, they appoint individuals saddled with the responsibility of orchestrating organizations’ resources to ensure they are channelled towards accomplishing organizational goals. These individuals, known as line managers or supervisors, see to the general affairs of the organization.
Managers employ different managerial styles and skills to ensure effectiveness and efficiency in using the organization’s resources. The need to ensure efficiency and effectiveness in the organization birthed the tactical approach to manage holistically by monitoring and supervising details of activities in the organization. Micro-managing, in the opinion of these managers, ensures perfection, is error-free and provides more than necessary information when jobs are assigned. However, this may do the organization more harm than favour. (Raja, Furqan, & Muhammad, 2011) Opined that training is part of elements that enhance employees’ performance, this training can be off-the-job or on-the-job. Bafaneli and Setibi (2015) argued that employees tend to gain more with on-the-job training. On-the-job training requires employees to learn while doing the job with little or no manager’s input; this will allow them to learn, make mistakes and learn from their mistakes. Micromanagement prevents this from happening. When a manager micromanages, employers may have to invest resources (money and time) in off-the-job training.

In contrast, organizations might not be willing to commit resources to this off-the-job training scheme regularly. One of the advantages of on-the-job training over off-the-job training is the efficiency and minimal resources needed to execute it. Bafaneli and Setibi (2015) noted that employees’ training is crucial to performance. Performance tends to decrease without proper training that reveals techniques and strategies to new intakes. Organizations that have not been able to commit resources to off-the-job training are compelled to opt for on-the-job-training, which is at variance with the management style of micromanagers.

Poornima and Kavitha (2017) believe that the micromanagement style frustrates employees, reduces productivity, and potentially leaves a damaging effect. Hyacinth (2018) believed micromanagement is a time waster and influencer of high-stress environments. This style of management is not healthy for organizational survival. Managers that engage in this practice micromanage the organization by majoring in the minor. Kadhem and Mohammed (2020) ascertained that a manager that micromanages tends to limit employees’ productivity. The inclination of managers to be involved in all the activities and leaving nothing to employees to manage without their involvement motivate their desire to micromanage. Shuford (2019) believes lack of trust and low self-esteem are weaknesses that lead managers to embrace this management style. He further noted that managers who practice micromanagement lack leadership skills. Based on these scholars’ (Hyacinth, 2018; Kadhem and Mohammed, 2020; Shuford, 2020; Poornima, 2017) assertions, Micromangers could be seen as nothing but ravagers of organizational long-term goals and enemies of going concerned of the organization. Managers handling different activities may prevent employee mistakes but are insufficient in the long run as employees are left without experience and the
ability to act independently without managers’ input. Time spent by these managers to supervise or manage micro activities can be channelled towards strategic goals beyond employees’ capacity.

Although many of these micromanagers may not be aware of their actions, as Schneider (2014) pointed out, nobody wants to be considered a micromanager. Some of these managers micromanage. Micromanagers aware of their actions may be ignorant of the impact on employees and the organization. This management style is typical in different establishments. However, less attention is paid to its existence as the practice looks like a mechanism that can enhance employee and organizational performance. However, it threatens employees’ performance and the organization’s survival. The present study seeks to establish the effect of this micromanagement style on employees’ performance which will be measured in terms of employee productivity, satisfaction, and retention. The study seeks to fill a gap in the paucity of studies examining this management style’s effect on employees.

2.0. LITERATURE REVIEW

2.1. Conceptualization of Micromanagement

Micromanagement is a situation whereby managers overmanage people. Instead of giving an instruction and allowing employees to carry it out, they monitor every step involved in the assignment. Rajkumar, Ajay, and Gayathri (2016) defined micromanagement as a situation whereby managers observe employees’ movements while performing assigned tasks. It is a management style characterized by excessive control from the manager to employees. White (2010) pointed out that micromanagers find it challenging to develop people rather than control them to do things in their way to ensure perfection.

In practice, it is expected of the manager to monitor and supervise employees’ activities to ensure the realization of the big pictures conceptualized but giving too much information, excess control, and zero tolerance for mistakes instill fear in employees (White, 2010). Fear of criticism from managers reduces employees’ innovation and creative ability (Hyacinth, 2018). Some managers micromanage in the name of managing resources and saving the organization from wastage that the organization might experience when employees make mistakes or perform below the standard. Micromanagers prefer to sacrifice time and energy to attend to every activity in their organization which in the long run leaves employees with little or no experience, which could be translated to knowledge. Mahoney (2019) noted that the desire to control organizational activities obsessively leads the manager to micromanage.

Formichelli (1997) opined that those employees under micromanagers find it
challenging to develop to their full potential. Micromanagers have no trust in others and (are) control freaks with psychopathic personalities (Martinez-Lewi, 2008; Ransky, 1998). They further stressed that their activities are dangerous to organizational performance and might force such organizations to suspend activities or perform below expectations or standards. Micromanagers cannot produce individuals that are independent, creative, and good decision-makers. An organization with micromanagers often has difficulties with continuity since employees are denied access to operate independently. Hence, the death or dismissal of a micromanager in such an organization will create a big vacuum, which might require many resources (money and time) to train available individuals or recruit new managers to fill such a vacuum.

Possible Causes of Micromanagement

Leaders often have a micromanaging approach to running things. Chambers (2014) lists the leader’s confidence in his abilities, familiarity with handling a crisis, independence, and capability as some of the individual causes that were ultimately found to be beneficial. Negative influences on the leader’s or manager’s behavior toward micromanagement have been widely reported. As in Porterfield’s (2003) study, organizational insecurity is one cause of a leader’s tendency toward micromanagement. Badger, Sullivan, Weizel, and Bopp (2009) cite organizational culture; Khatri (2009) cites organizational structure and hierarchy; fear of adverse outcomes (cites) a lack of trust in subordinates’ abilities; Li and Khalid (2015) cite subordinate attributes, and Baer (2005) cites a sense of helplessness (2016). Chambers (2009) identified the three factors - fear, confusion, and the leader’s comfort level - that contribute to the practice of micromanagement.

Lack of confidence, the possibility of failure, being ignored, the threat of other competence, and loss of recognition were all mentioned by Chambers as contributing factors to fear and thus to micromanagement. Similarly, Chambers (2014) portrayed the manager’s lack of patience, emotional insecurity, and increased pressure as the root causes of their micromanagement style. Some of the causes of micromanagement, he said, include a leader’s fear, ego, failure to set priorities, lack of meaningful feedback from subordinates, and a chaotic work environment. Fear of disconnection, job failure, and returning to a previous position are three reasons cited by Artale (2015) for the practice of micromanagement. According to Berchelmann (2015), a supervisor’s tendency toward micromanagement stems from a sense of “perceived need” on the supervisor’s part. Lack of competence (perceived or actual), distrust, and an inflated sense of self-importance were cited as additional causes. Fear is viewed differently as apprehension about being able to exercise dominion over a chaotic or unclear situation. Fear of isolation, job failure, and being forced to return to a previous position are
among the factors that contribute to micromanagement, according to Artale (2015).

A supervisor’s tendency toward micromanagement is often motivated by a sense of urgency, as noted by Berchelmann (2015).

Competency issues (real or imagined), trust issues, and inflated sense of self-importance were also mentioned. Fear, viewed from a different angle, as a fear of losing control and a fear of one’s healthy ego, was also portrayed as a cause of micromanagement, as in Murphy (2017). Crossby (2018) identified the root causes as the leader’s inability to distinguish between accountability and micromanagement (as in Bhattacharya and Basu, 2009), uncertainty about the project, the desire to appear knowledgeable, and a sense of powerlessness. Murphy shows that a healthy ego can also lead to excessive micromanagement (2017). Like Bhattacharya et al. (2009), Crossby (2018) identified the root causes as the leader’s inability to distinguish between accountability and micromanagement, uncertainty about the project, the desire to appear knowledgeable, and a sense of powerlessness.

2.2. Concept of Employees’ Productivity

One of the significant focuses of organizations is to gain a competitive edge; this cannot be achieved without employees’ productivity. Productivity is the ratio of employee results relative to the input/resource committed. Resources are limited in nature; for an organization to maximize these resources, there is a need to increase employees’ productivity. Hanaysha (2016) stated that productivity is the result obtained after evaluating an employee’s output over a specific time. It is the evaluation of work done by employees compared to the resources invested. A productive employee will be effective and efficient, considering the limited resources available. Sharma and Sharma (2014) perceived economic growth, high-profit level, and social progress as a function of high productivity. This implies that without improvement in employee productivity, an organization cannot progress nor experience growth. Cato and Gordon (2009) believe organizational success can never be possible regardless of the level of strategic policies and strategies put in place without aligning them with employee productivity. This suggests that employees’ productivity is crucial to an organization’s success. Hanaysha (2016) also stated that one of the advantages of employees’ productivity is that it could lead to organizational success. It is necessary to note that productivity is needed for economic development, improvement in society’s well-being, and organizational success. It could be concluded that productivity is a vital ingredient for success. In a study conducted in 2016 by Hanaysha, he discovered that employees’ engagement has a significant effect on their productivity; micromanagement gives no room for employees to be engaged without their manager’s permission. There is a need to explore the effect of this management style on employees’ productivity.
2.3. Employees’ Retention

Organizations rely on human resources to realize set goals and objectives. The organization’s success and failure depend on the human resources capacity employed. Khalid and Nawab (2018) defined *employee retention* as the live wire of the organization’s success. To achieve organizational success, the organization employs a pool of individuals with skills and knowledge that align with the set goals and train them to align with the organization stated goals. Al Kurdi, Alshurideh, and Al afaishata (2020) noted that an organization’s ability to attract and retain capable employees plays a vital role in determining success. *Employee retention* can be defined as an organization’s ability to keep its employees committed to the organization. Organizations invest heavily in attracting and training employees to ensure they contribute positively to organization goals. This makes employee retention a must for organizations to maximize return on investment in human resources. High employee turnover adversely affects performance as the organization runs the chance of losing the best employees to competitors. Also, the cost of hiring new employees to fill the vacuum is high; organizations cannot afford to keep seeing this exact cost appearing in their financial statements. Alshurideh (2019) asserts that the cost of replacing an employee is high; that is why Al Kurdi et al. (2020) noted that employee retention is essential to organization survival. AlDamoe, Yazam, and Ahmid (2012) revealed in their study that employee retention significantly affects organizational performance. For an organization to keep to its stated objectives, available resources must be well utilized to derive maximum output; employee turnover must be reduced to the barest minimum to reduce the cost of hiring and training new employees. Job satisfaction could be seen as one factor influencing employees’ decision either to stay or leave; employee satisfaction might be difficult in an environment where they are not allowed to think and make decisions on their own, which is part of micromanagers’ attributes. Khalid and Nawab (2018) revealed that delegation of assignment to employees and consultation on a matter that deals with their work are factors that guarantee employee retention. These two are impossible where micromanagement has been practiced. There is a need to hypothetically explore the significant effect of micromanagement on employees’ retention.

Employees’ Satisfaction

Motivation is the fuel that energizes employees’ commitment to organizational goals; motivation can be intrinsic and extrinsic. The satisfaction derived from work is part of the factors that contribute to employees’ motivation. Okolocha, Akam, and Uchehara (2021) defined employee satisfaction as the satisfaction employees derive when intrinsic and extrinsic aspects of their work are evaluated. *Employee satisfaction* can be defined as the addition of satisfaction employees derive at work,
which drives improved performance. *Employee satisfaction* is a catalyst that motivates an employee to give their all to their organization and remain loyal and committed to organizational success. Al Kurdi, Alshurideh, and Alnaser (2020) opined that employee satisfaction is vital to the enhancement and is the best route to improve business operations. Employee service is one tool organizations use to ensure customers’ needs are met, which could lead to customer satisfaction. Seeking customer satisfaction is not sufficient to achieve organizational success without ensuring customer satisfaction is satisfactory. Employee satisfaction is critical to employee performance, while employee performance is critical to organizational success. Evanschitzky et al. (2011) reported that improving employees’ satisfaction is proportional related to improvement in customers’ satisfaction. Okolocha, Akam, and Uchehara (2021) believe the autonomy employees derive while performing their given task is a significant source of satisfaction. Satisfied employees will go to any length to ensure they give their best to ensure customer satisfaction. Managers often seek to engage in activities that will enhance employees’ satisfaction to have them committed to organization success but does micromanaging management style enhance employees’ satisfaction?

**Micromanagement and Employees’ Performance**

De-Caro et al. (2011) opined that employees’ performance tends to decrease whenever they perceive excessive monitoring. Employees’ autonomy increases their performance, and commitment to the organization as Saragih (2011) noted that job autonomy often leads to employee satisfaction and improved performance. Employee satisfaction is one factor determining commitment; dissatisfied workers will leave the organization seeking job satisfaction elsewhere. From an employee’s perspective, growth and development are solid antecedents for the satisfaction they get in an organization, which is impossible under micromanaging management. The study seeks to establish the influence micromanagement has on employees’ performance.
**Methodology**

The study was carried out in a public University in the Southwest part of Nigeria. There are two categories of workers in the case organization: academic and non-academic staff. The study focused on non-academic staff in the University; the justification for the selection is that these staff are saddled with the responsibilities of enhancing the smooth operations of the University. Operational procedure and superior-subordinate reporting relationships are much more structured and regulated for the non-academic staff than for academic staff. The academic staff has more independence in line of teaching, research, and planning schedule of duties. Most non-academic staff receive instructions and have superiors they are accountable to, unlike academics. The study employed judgemental sampling techniques to select a sample size of two hundred and fifty (250) non-academic staff. Two hundred and fifty (250) questionnaires were administered with the help of research assistants over five weeks. The term micromanagement was explained in clear language in the questionnaire while research assistants helped in clarifying shady areas.

Two hundred and two (202) of the questionnaires were returned. One hundred and eighty-six (186) items were helpful for further analysis. Ordinary Least Square was adopted to test the objectives raised in the introductory part of the study on Rstudio. Rstudio is a statistical package that uses the R programming language for data analysis and visualization for presentation and reporting. This study used lm() command to build the Ordinary Least Square Model used in this study and output the result via the stargazer library.

**Result and Discussion**

Table 1 shows the summary of the socio-demographical characteristics of the respondents. 62.4% of the sample are male, while 37.6% are female. In terms of age, 8.6% of the respondents are between 18 and 25 years old, 43% of the respondents are between 26 and 35, 22.6% of the respondents are [...] while the lowest frequency is 8.6% who are between 18 and 25; this implies that respondents sampled are youths who are agile and active with the passion to contribute to organizational performance with their energy. 73.1% of the respondents are married, 22.6% are unmarried, while 4.3% are no more with their spouse; we may reasonably infer that quite a few of the respondents may be responsible: have a family to cater to and decide on. 62.4% of the respondents are in the senior staff category; this implies that the sampled employees have people under their control; they instruct people and receive instruction from the management: this makes them be in the best position to answer questions raised in this study. Regarding the number of years they have worked in the organization, 29% of the sample have less than three years in the organization, 17.2% have spent between
3 and 5 years in the organization, 25.8% have been in the organization between 6 and 10 years while the remaining 28% have been in the organization for over ten years. This implies that the study balances different categories of people in the sample case organization; it samples those in the early stage, mid-stage, and old stage of their career in the case organization.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage (%)</th>
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<tr>
<td><strong>Gender</strong></td>
<td></td>
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<tr>
<td>Male</td>
<td>116</td>
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<tr>
<td>Female</td>
<td>70</td>
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<th>Frequency</th>
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<td>Unmarried</td>
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<tr>
<td>Married</td>
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<td>73.1</td>
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<td>Divorced</td>
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<table>
<thead>
<tr>
<th><strong>Age</strong></th>
<th>Frequency</th>
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<tbody>
<tr>
<td>18 – 25</td>
<td>16</td>
<td>8.6</td>
</tr>
<tr>
<td>26 – 35</td>
<td>80</td>
<td>43</td>
</tr>
<tr>
<td>36 – 45</td>
<td>42</td>
<td>22.6</td>
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<tr>
<td>46 – 50</td>
<td>20</td>
<td>10.8</td>
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<td>Above 50</td>
<td>28</td>
<td>15.1</td>
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<td>Senior</td>
<td>58</td>
<td>62.4</td>
</tr>
<tr>
<td>Junior</td>
<td>14</td>
<td>15.1</td>
</tr>
<tr>
<td>Contract Staff</td>
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<td>11.8</td>
</tr>
<tr>
<td>Casual Staff</td>
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<tr>
<td>IT/SIWES/NYSC</td>
<td>8</td>
<td>8.6</td>
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<tr>
<td><strong>Total</strong></td>
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<table>
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<th><strong>Duration at work</strong></th>
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<tr>
<td>&lt; 3 years</td>
<td>54</td>
<td>29</td>
</tr>
<tr>
<td>3 – 5 years</td>
<td>32</td>
<td>17.2</td>
</tr>
<tr>
<td>6 – 10 years</td>
<td>48</td>
<td>25.8</td>
</tr>
<tr>
<td>&gt; 10 years</td>
<td>52</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>186</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>


**Test of Hypotheses**

For this study, the dependent variable will be Employees’ Performance, measured in terms of Employees’ Productivity, Satisfaction, and Retention, while the independent variable will be Micromanagement. The study tested the negative effect of this management style on employee performance via employees’ productivity, satisfaction, and retention.
Regression Table

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Productivity</th>
<th>Satisfaction</th>
<th>Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Micromanagement</td>
<td>0.803***</td>
<td>0.545***</td>
<td>0.232**</td>
</tr>
<tr>
<td></td>
<td>P = 0.000</td>
<td>P = 0.00001</td>
<td>P = 0.017</td>
</tr>
<tr>
<td>Constant</td>
<td>0.892***</td>
<td>1.506***</td>
<td>2.368***</td>
</tr>
<tr>
<td></td>
<td>P = 0.00002</td>
<td>P = 0.000</td>
<td>P = 0.000</td>
</tr>
<tr>
<td>Observations</td>
<td>186</td>
<td>186</td>
<td>186</td>
</tr>
<tr>
<td>R²</td>
<td>0.319</td>
<td>0.117</td>
<td>0.031</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.315</td>
<td>0.112</td>
<td>0.026</td>
</tr>
<tr>
<td>Residual Std. Error (df = 184)</td>
<td>0.743</td>
<td>0.947</td>
<td>0.825</td>
</tr>
<tr>
<td>F Statistic (df = 1; 184)</td>
<td>86.191***</td>
<td>24.450***</td>
<td>5.860**</td>
</tr>
</tbody>
</table>

Note: *P<0.1; **P<0.05; ***P<0.01

**Result and Discussion**

Table 2 shows the result obtained using R studio with stargazer library and lm () command.

The result shows a positive and significant relationship between Micromanagement and its negative implication on Employees’ productivity. The estimated coefficient of 80.3% implies that for every unit increase in the level of Micromanagement, the negative implication on employee productivity increases by 80.3%. R-squared value of 0.319 (31.9%); indicates that Micromanagement explains 31.9% of the variation in employees’ productivity. Micromanagement influences employees’ productivity negatively by 31.9%, with 68.1% explained by other factors not captured in the model. The table also revealed a significant effect level, 0.000 (P<0.01). The result above established that Micromanagement significantly affects employees’ productivity. When the level at which a manager adopts micromanagement increases by a unit, the negative implication on employees’ productivity increases by 80.3%

The second column in Table 2 revealed a Beta coefficient (β) of 0.545, which explains a positive relationship between Micromanagement and its negative implication on employee satisfaction. The table shows that an increase in the level of Micromanagement produces negative implications on employees’ satisfaction. The
R-squared value of 0.117 (11.7%) shows that Micromanagement accounts for 11.7% of the variation in employee satisfaction. The P-value of 0.0001 shows that the effect is significant since it is less than 0.01. The study thereby hypothetically established that Micromanagement significantly affects employee satisfaction.

The third column in Table 2 revealed a positive Beta coefficient (β) of 0.232, which is significant at a 0.017 confidence level since the P-value is less than 0.05. This implies that for every unit increase in the level of Micromanagement in an organization, its negative implication on employee retention increases by 23.3%. R-squared of 0.031 (3.1%) explains that of variation in employee retention, Micromanagement accounts for 3.1% of it. In comparison, the remaining 96.9% is a function of other variables that can influence employee retention, which is not captured in this study. The result of this analysis answered the question asked about Micromanagement and employee retention. The study established that Micromanagement does not enhance employee retention but increases employee turnover.

Conclusion

The study examined the detrimental implication of micromanagement on employees’ performance by using employees’ productivity, satisfaction, and employee retention as dimensions to measure employee performance. The study dug deep to understand the word micromanagement from different perspectives and established the objectives in the introductory part of the study. According to the analysis done on the data obtained for the study, micromanagement significantly impacts employees’ performance.

The first objective is to explore the effect of this management style on employees’ productivity. The result of the analysis shows that micromanagement has a significant impact on employees’ productivity. This implies that when a manager/superior micromanages people under their control, the negative implication of such an act increases more than the level at which they micromanage. A unit increase in the level of micromanagement from the manager/superior will lead to an 80.3% increase in the level at which it negatively affects employees’ productivity. Also, micromanagement significantly impacts employees’ satisfaction, according to the analysis of the study. The study discovered that a unit increase in the level of micromanagement in an organization would lead to a 54.5% increase in its negative implication on employee satisfaction. If a manager micromanages, employee satisfaction will decrease, affecting employee performance. The analysis also shows that micromanagement has a significant effect on employee retention. This connotes that a unit increase in micromanagement level will lead to a 23.2% increase in the negative implication of micromanagement on employee retention.
The study shows the negative implication of micromanagement on employees’ performance. Productivity, Satisfaction, and Retention are dimensions of employees’ performance adopted for the study. The study affirms that micromanagement has no good to do to an organization than to reduce employees’ productivity levels, increase their dissatisfaction and increase employee turnover. Though micromanagement might appeal good to managers, it hurts employees more and threatens employee performance. The study concludes that micromanagement is evil, harmful, and threatens the organization’s survival. It significantly impacts employees’ performance, and the effect is detrimental, which is dangerous to the organization’s success.

**Recommendation**
Managers should ensure employees have maximum autonomy to perform assigned tasks and provide the employee with an overview of what they expect prior to job assignment; this will enable employees to carry out the assigned task in alignment with the picture the manager conceptualized. Place of training and orientation cannot be overemphasized to minimize error rate while performing a task and ensure competent employees are recruited; this will reduce managers’ involvement and give them peace of mind when assigning tasks. Managers are to be orientated to know. Micromanagement is an evil that kills employee morale, increases employees’ turnover rate, and robs the organization of employee performance. Periodic evaluation policy needed to be implemented to ensure managers focus on the broad objectives of the organization and leave micro activities to employees.

**References**
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MIGRANT REMITTANCES, GROWTH AND POVERTY REDUCTION: ARDL-BOUNDS TEST AND GRANGER CAUSALITY APPROACH

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JEL: F24, I32, P2

Abstract

This study examines the relationship among remittances, growth and poverty reduction in Nigeria. Secondary data from the World Development Indicators was utilized from 1981-2019. ARDL Bounds test and Granger causality techniques were employed in analyzing the objective of the study. Consequently, the major findings in this study could be submitted as follows: GDP per capita has a positive and significant relationship with migrant remittances. Furthermore, economic growth motivates poverty reduction in the country. Hence, it could be concluded that migrant remittances and growth are important economic variables that drive poverty reduction in Nigeria. Moreover, following the emergence of these important findings, these pertinent recommendations are therefore made for the policymakers in Nigeria and Africa by extension, that whenever poverty reduction is the goal of these policymakers, implementation of the policies that would stimulate sporadic inflows of migrant remittances should be embarked upon. Similarly, policies that will ensure double digit growth rate in sustainable manners in the country should be embarked upon by the policymakers.

Key words: Migrant Remittances, Growth, GDP Per Capita, Poverty Reduction, ARDL and Nigeria

1. Introduction

Continuous rising in the level of migrant workers in the advanced countries has been the critical factor fuelling the growth of remittances across the developing economies (Basanta and Malvika, 2016). Migrant remittances have been the strategic component of foreign capital inflows that cannot be overemphasized in the developing world in general and Africa in particular in recent times. In 2016, developing countries received 24% of the world’s total international migrant remittances (Migration and Remittances Factbook, 2016). In sub-Saharan Africa, migrant remittances accounted for about 3.7% of its Gross Domestic Product (GDP) in 2013 (World Development Indicators, 2014).

Meanwhile, in the past few decades, it has been observed that Nigeria has experienced a massive migration of its vibrant and productive human resources to Europe, the United States of America, South Africa, UAE and a host of others in search of greener pasture and education. In view of the above, the inflows of remittances by the Nigerians in diaspora to support their families back home become inevitable (Fagerheim, 2015; Van-Dalen et al., 2005; Lucas and Stark, 1985). However, despite the fact that Nigeria has been the most popular recipient of remittances among the African countries in the last few years, poverty is yet one of the critical challenges confronting the country in the most recent times (Aderemi et al., 2020; WDI, 2019; Adebayo, 2018; Hernandez-Coss and Bun, 2006). In Nigeria, nearly 90 million people live in extreme poverty and hunger with no hope of coming out of the poverty cycle in any moment (World Poverty Clock, 2018). Whereas combating poverty menace in Nigeria requires a holistic approach. One of the viable approaches is the opening of the Nigerian economy to more inflows of remittances. On the other hand, it is encouraging double digit growth of the economy through investment of foreign capital, which could guarantee inclusiveness among the Nigerian populace. It has been argued in the literature that remittances had been a strategic source of finance and poverty reduction in some countries since 2000 (Imai et al. 2014). In the same vein, remittances could stimulate growth if invested in productive ventures (Cazachevici et al., 2019; Okoduwa, Ewetan and Urhie, 2015; Lucas and Stark, 1985).

Succinctly put, from a theoretical standpoint, remittances have the capacity to generate opportunities for growth and consequently poverty reduction via investment and capital accumulation (Todaro, 1969; Englama, 2009). However, empirical evidence regarding remittances, growth and poverty reduction nexus has been a burning issue among both the scholars and policymakers over the years. It is instructive to state that both cross countries and country specific studies focusing on developing economies have been extremely controversial in terms of results and policy implications. (See
Dennis and Godspower, 2018; Katsushi and Bilal, 2017; Fayomi, Azuh and Ajayi, 2015; Yilmaz, 2015; Aboulezz (2015) Beyene, 2014; Bugamelli and Paternò 2011). Against this backdrop, further study of this subject matter becomes a continuous exercise in a developing country such as Nigeria, where poverty is endemic. The controversies surrounding the past studies were largely due to methodological issues regarding poverty reduction and growth measurements. As a departure from the existing studies, this study employed GDP per capita and growth rate as measurements for poverty reduction and growth simultaneously, (in) which past studies have not fully explored in Nigeria in the most recent times. This measurement is appropriate for this study because the dynamics of it can actually lay a foundation for poverty reduction. Similarly, besides the use of available up-to-date […], this study is unique in terms of estimation technique while utilizing the ARDL-Bounds test and Granger causality approach in addressing remittances, growth and poverty reduction nexus in Nigeria. The scope of this study ranges from 1981 to 2019. In addition to the introductory aspect of this work, review of relevant literature was carried out in section two, whereas section three captures methodology, discussion of results and policy implication of the paper.

2. Literature Review

Several theoretical propositions have been put forward to justify the various factors that motivate the migration of people and migrant remittances globally. (In) the views of the Neo-classical theory of migration championed by Hicks (1932), which was later expanded in the works of Lewis (1954) and Harris and Todaro (1970) concurrently enunciated cross border labour migration in the phase of economic development. This theory argued that it is only the migrant welfare that informed his decision to migrate and not the social welfare of his household. However, the macroeconomic perspective of the theory submitted that the differences in real wages among various countries are the main factor that is responsible for migration and flow of capital. Consequently, various attempts by scholars to provide empirical arguments to substantiate the impact of remittances on various macroeconomic variables such as economic growth and poverty reduction have given birth to different scholastic views globally in the literature. For instance, while examining the contributions of remittances to poverty alleviation with the case study of some selected emerging markets, Tsaurai (2018) explored the fixed effects approach and the pooled ordinary least squares (OLS) as analytical techniques to posit that the inflows of remittances led to a rise in poverty levels in the selected emerging markets. In another related study, Dennis and Godspower (2018) investigated the nexus between international remittances and poverty reduction within the Nigerian economy, utilizing the ARDL approach. It was discovered from the study that the
impact of both inward and outward remittances showed diverse results on poverty reduction in the short run. Meanwhile, inward remittances exacted a significant impact in Nigeria in the short run, while reverse was the case of outward remittances in the country. But the long run results indicated that inward remittances orchestrated poverty and outward remittances caused poverty reduction in the country. Meanwhile, Imai et al. (2014) evaluated the contribution of remittances to the growth of GDP per capita using panel data analysis for 24 Asian and Pacific economies. The authors concluded that remittances had a direct impact on economic growth and the reduction of poverty in the region.

Moreover, Imai, Malaeb and Bresciani (2017) provided a critical review of literature and empirical evidence regarding the linkage between international remittances, migration, growth and poverty reduction in Asia and the Pacific region with the aid of panel data analysis. It was discovered from the study that remittances stimulated economic growth and consequently orchestrated both national and rural poverty reduction. In a related work, Cazachevici et al. (2019) employed a quantitative survey to estimate how remittances stimulated economic growth using 538 estimates reported in 95 studies. The results from the study indicated as follows: approximately 40% of the studies reported a positive effect, 40% reported no effect, and 20% reported a negative effect. It was concluded that the mean effect of remittances on growth was still positive but economically small. However, the study identified noticeable regional differences such that remittances were growth-enhancing in Asia whereas reverse was the case in Africa. While investigating the nexus between internal remittances and poverty, McKay and Deshingkar (2014) subjected household surveys from Vietnam, Bangladesh, South Africa, Rwanda, Nigeria and Uganda to empirical analysis. The authors submitted that remittances favoured poverty reduction hypothesis in those countries under investigation. Bertoli and Marchetta (2014) used household survey data to assess the linkages that existed among remittances, migration and poverty in Ecuador. It was pinpointed from the study that migration contributed to an insignificant reduction in poverty among migrant households. Meanwhile, the levels of poverty were reduced significantly among the remittance receiving households. Akano et al. (2013) applied Cointegration and Granger causality technique to investigate the relationship between the inflows of remittances and economic growth in Nigeria. A long run equilibrium relationship existed among the various variables of interest in the study. Also, feedback relationship runs from GDP to remittances. Azam et al. (2016) adopted panel Fully Modified Ordinary Least Squares (FMOLS) in exploring how foreign remittances influenced alleviation of poverty using 39 high, middle and lower-income economies as a case study between 1990 and 2014. The study provided evidence to support how foreign remittances led to the reduction in poverty levels across all the
selected economies. However, the impact of foreign remittances was significantly positive in reducing poverty in high-income countries.

In conclusion, it has been observed from the studies reviewed that the empirical literature lacks consensus regarding linkage between remittances, growth and poverty reduction in developing economies. Therefore, using GDP per capita as a measure of poverty in this study is a departure from the existing bodies of knowledge. Hence the relevance of this paper.

3. Methodology

The nature of this study motivates the adoption of an ex post facto research design, which has been submitted in the literature to be appropriate for a study like this whose main interest explored the viable relationship, and describe how migrant remittances and growth predict variation in poverty reduction over time in Nigeria. In addition, the study employed secondary data spanning from 1981 to 2019, and these data were extracted mainly from the World Bank Development Indicators.

3.1. Theoretical Framework and Model Specification

This study is anchored on the conventional neo-classical growth theory as its theoretical framework. This theory was propounded by Robert Solow (1956) with the postulate that the accumulation of physical capital, an expansion of the labour force and exogenous factor - technological progress or effective knowledge are drivers of economic growth. The aggregate production function could be formulated in terms of a Cobb-Douglas production function as follows;

\[ Y_t = A_t K_t^\alpha H_t^\beta L_t^\gamma \]  

(1)

From equation one (1), where \( Y = \) Output, \( A = \) Technology or effective knowledge, \( K_t = \) Physical capital, \( H_t = \) Human capital and \( L_t = \) Labour force. \( (\alpha + \beta + \gamma) = 1 \). Therefore, it is important to state that the production function is therefore homogenous of degree 1 which at same time exhibits a constant returns to scale.

If the labour factor is normalized and natural log is taken in equation one (1), equation two (2) could emerge in a linear form as this;

\[ \log Y = \log A + \alpha \log K + \beta \log H + \gamma \log L \]  

(2)

The elasticity effect of the equation two (2) generated by incorporating the intensive form of the independent variables in equation (2) as this;

\[ y = a + ak + bh + rl \]  

(3)
However, remittances have been argued to be an important component of international capital flow that drives economic growth and consequently brings about poverty reduction in developing countries. Therefore, the focus of this study necessitates the re-specification of equation three (3) to capture the objective of this study where migration remittances, GDP per capita, and growth rate are principal variables in the study. Therefore, the study could draw an insight from studies such as Ogunleye et al. (2020) and Aderemi (2019) in formulating its model as follows;

$$GDPCA_t = \emptyset + \alpha \text{MGRTA}_t + \beta \text{GCF}_t + \gamma \text{GRR}_t + \mu_t$$  \hspace{1cm} (4)

Introducing natural log to the above equation could further transform the empirical model for this study, which is expressed thus;

$$GDPCA_t = \emptyset + \alpha \log \text{MGRTA}_t + \beta \log \text{GCF}_t + \gamma \text{GRR}_t + \mu_t$$  \hspace{1cm} (5)

### 3.2. ARDL Model Specification

Drawing an insight from the submission of Pesaran, Shin and Smith (2001); Pesaran and Pesaran (1997), which argues that if the results of stationary test of dataset show that the variables of interest comprise of I(0) and I(1) variables, ARDL and Bounds test would be the appropriate technique of estimation. In the light of the above, this work utilized the ARDL model, which is specified as follows;

$$\Delta GDPCA_t = \emptyset + \sum_{i=1}^{p} \emptyset1 \Delta GDPCA_{t-1} + \sum_{i=0}^{p} \alpha \Delta \log \text{MGRTA}_{t-1} +$$

$$\sum_{i=0}^{p} \beta \Delta \log \text{GCF}_{t-1} + \sum_{i=0}^{p} \gamma \Delta \text{GRR}_{t-1} + \mu t$$  \hspace{1cm} (6)

### 3.2.1. Pairwise Granger Causality Test between Remittances, Growth and Poverty Reduction in Nigeria

In examining the Granger causality test between remittances, growth and poverty reduction, the model for this would be estimated in VAR modelling in equation (7-9) as stated below;

$$GDPCA_t = \alpha_0 + \sum_{i=0}^{p} \alpha_1 \text{GDPCA}_{t-1} + \sum_{i=0}^{p} \alpha_2 \text{MGRTA}_{t-1} +$$

$$\sum_{i=0}^{p} \alpha_3 \text{GCF}_{t-1} + \sum_{i=0}^{p} \alpha_4 \text{GRR}_{t-1} + u_{1t}$$  \hspace{1cm} (7)

$$\text{MGRTA}_t = + \beta_0 + \sum_{i=0}^{p} \beta_1 \text{MGRTA}_{t-1} + \sum_{i=0}^{p} \beta_2 \text{GCF}_{t-1} +$$

$$\sum_{i=0}^{p} \beta_3 \text{GDPCA}_{t-1} + \sum_{i=0}^{p} \beta_4 \text{GRR}_{t-1} + u_{2t}$$  \hspace{1cm} (8)
In examining the Granger causality test between remittances, growth and poverty reduction, the model for this would be estimated in VAR modelling in equation (7-8):

\[ \Delta G_{GDP,t} = \alpha_0 + \sum_{i=0}^{p} \alpha_i \Delta G_{GDP,t-i} + \sum_{i=0}^{p} \lambda_{3} \Delta GDPCA_{t-i} + \sum_{i=0}^{p} \lambda_{4} \Delta GCF_{t-i} + \mu_{t} \]

\[ \Delta GRR_{t} = \lambda_{0} + \sum_{i=0}^{p} \lambda_{1} \Delta GRR_{t-i} + \sum_{i=0}^{p} \lambda_{2} \Delta MGRTA_{t-i} + \mu_{t} \]

Where:

GDPCA = Gross Domestic Product per capita measures a country’s economic output that accounts for its number of people, and is measured in dollars in this study. This is the household consumption per capita in an economy and is therefore used to proxy poverty reduction in this study. MGRTA = Migrant remittances which is inflows of migrant remittances into Nigeria and its value is measured in million US dollars. GCF = Real gross fixed capital formation which could stand for domestic investment in physical capital, its value is measured in billion US dollars. GRR = Growth rate, this measures the rate at which an economy grows per annum and is measured in percentage (%).

Log = Natural logarithm
\( \phi \) = Intercept or effective knowledge. \( \alpha, \beta \) and = Elasticity parameters and \( \mu_{t} \) = White noise error term i.e. \( \mu_{t} \approx N(0, \sigma_{t}) \)

4. Result and Discussion

Table 1

Descriptive Statistics of Annual Data Series

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>Log MGRTA</th>
<th>GDPCA</th>
<th>GRR</th>
<th>Log GCF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>20.42723</td>
<td>1315.077</td>
<td>3.506154</td>
<td>23.70234</td>
</tr>
<tr>
<td>Median</td>
<td>20.87770</td>
<td>902.0000</td>
<td>3.200000</td>
<td>23.81207</td>
</tr>
<tr>
<td>Maximum</td>
<td>24.10911</td>
<td>3223.0000</td>
<td>33.70000</td>
<td>26.21342</td>
</tr>
<tr>
<td>Minimum</td>
<td>14.50866</td>
<td>270.0000</td>
<td>-13.10000</td>
<td>24.13107</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>3.211964</td>
<td>891.4920</td>
<td>7.034292</td>
<td>0.711454</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.388449</td>
<td>0.541167</td>
<td>1.522585</td>
<td>0.058533</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>1.722254</td>
<td>1.885429</td>
<td>10.75300</td>
<td>3.119124</td>
</tr>
<tr>
<td>Jargue-Bera</td>
<td>3.633835</td>
<td>3.922289</td>
<td>112.7457</td>
<td>1.614314</td>
</tr>
<tr>
<td>Probability</td>
<td>0.162526</td>
<td>0.140697</td>
<td>0.000000</td>
<td>0.377732</td>
</tr>
</tbody>
</table>
Table 1 shows the summary of the descriptive statistics of remittances in a log form, growth rate, GDP per capita and gross fixed capital formation in a log form within periods of 39 years. Descriptive statistics of variables is one of the pre-estimations in empirical analysis […] involves econometrics as technique of estimation, this is because the use of econometrics heavily relies on the principle of the normal distribution before its estimated parameters could be described as “BLUE”. Consequently, Log MGRTA which is used to measure migrant remittance in Nigeria from 1981 to 2019 has a mean of $20.4, the minimum value and maximum value of $14.5 and $24.1 respectively. This implies that migrant remittances rose as high as $24.1 billion and fell as low as $20.4 billion in Nigeria in the last 39 years simultaneously. The value of mean of Log MGRTA is more than the value of its standard deviation. This implies that migrant remittances data dispersed in a moderate manner from its mean area within the periods of the analysis. The variable is skewed in a positive direction with a kurtosis value that is not far from 3. This shows that migrant remittances data, to a certain degree agreed with the principle of symmetry in terms of its distribution.

In the same vein, GDPCA is a proxy for poverty reduction from 1981 to 2019, and it has a mean value of $1315 alongside with a minimum value of $270 and maximum value of $3223 simultaneously. The implication of this is that GDP per capita rose as high as $1315 and fell as $270 in Nigeria in the last 39 years. There was a moderation in the dispersal of the data during the periods of analysis because the mean value of the data is greater than its standard deviation. The data is positively skewed and possesses kurtosis value that is not far from 3. These features exhibited by GDP per capita data, show that the variable agrees with the symmetrical distribution assumption.

Furthermore, economic growth rate has a mean value of 3.5%, with 33.7% and -13.1% as the maximum and minimum values respectively. This means that economic growth rose as high as 33.7% and fell as low as -13.1% in Nigeria in the last 39 years. Growth rate has a standard deviation that is greater than its mean value, this points to the data that it is widely dispersed from its mean value. Similarly, the values of both skewness and kurtosis indicate that the data is not in agreement with the symmetrical distribution assumption.

However, gross fixed capital formation in log form has a mean value of $23.7 billion, maximum value of $26.2 billion and minimum value of $24.1 billion
respectively. The [...] implies that gross fixed capital formation rose as high as $26.2 billion and fell as $24.1 billion in Nigeria in the last 39 years. In addition, this variable has standard deviation whose value is less than that of the mean value. Therefore, the variable is dispersed in a moderate way from the mean point. It is positively skewed as its kurtosis has a value of 3.1, this shows that real gross fixed capital formation is in agreement with the symmetrical distribution assumption.

In summary, it could be deduced from the above that the majority of the data employed for the variables of interest agreed with the symmetrical distribution assumption. Therefore, these data to a large extent are normally distributed, they could be used further for econometric analysis.

### Table 2

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF Test</th>
<th>PP Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level</td>
<td>Probability</td>
</tr>
<tr>
<td>LMGRTA</td>
<td>-2.941145***</td>
<td>0.8106</td>
</tr>
<tr>
<td>GDPCA</td>
<td>-2.943427***</td>
<td>0.7104</td>
</tr>
<tr>
<td>GRR</td>
<td>-2.941145***</td>
<td>0.0006</td>
</tr>
<tr>
<td>LGFC</td>
<td>-2.943427***</td>
<td>0.3087</td>
</tr>
</tbody>
</table>

**Source:** Authors' computation (2021)

*** 5%***

One of the problems that cannot be undermined while employing time series data for empirical analysis is unit root problem. The problem associated with unit root is that it is a major cause of spurious results in an empirical study. This could make the findings of the study to be biased if the problem is not eliminated. In order to eliminate this problem in this study, the authors utilized the technique of the standard Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests in table 2 to verify the stationarity properties of the data. The estimated results in the table indicate that all the variables are stationary after first differencing except economic growth rate which is otherwise stationary in its native form. The implication of the above finding is that the relevant variables of interest in the study are combination of both I (1) and I (0) variables.

Table 3

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Value</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>1.829355</td>
<td>3</td>
</tr>
<tr>
<td>Critical Value Bounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance 5%</td>
<td>I0 Bound</td>
<td>I1 Bound</td>
</tr>
<tr>
<td>3.23</td>
<td>4.35</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Authors’ computation (2021)

Following the submissions of Pesaran, Shin and Smith (2001), and Pesaran and Pesaran (1997), when variables of study are made up of different order of integrations, especially I (0) and I (1), examining the long-run relationship or otherwise of the variables via the framework of ARDL Bounds test becomes inevitable. Against this backdrop this study examined a long-run relationship between migrant remittances and other macroeconomic variables in Nigeria. Looking at table 3, it could be established that there is no long-run convergence among migrant remittances, growth and poverty reduction in Nigeria due to the fact that F-Statistic has a value that is not up to the value of the upper and lower Critical Value Bounds at 5% significant level. Therefore, the short-run ARDL model is appropriate in this paper.

Table 4

**VAR Lag Order Selection Criteria**

<table>
<thead>
<tr>
<th>Lag</th>
<th>LogL</th>
<th>LR</th>
<th>FPE</th>
<th>AIC</th>
<th>SC</th>
<th>HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-469.6186</td>
<td>NA</td>
<td>6665617.</td>
<td>27.06392</td>
<td>27.24167</td>
<td>27.12528</td>
</tr>
<tr>
<td>1</td>
<td>-347.3487</td>
<td>209.6056*</td>
<td>15486.38*</td>
<td>20.99135*</td>
<td>21.88012*</td>
<td>21.29816*</td>
</tr>
<tr>
<td>2</td>
<td>-342.1809</td>
<td>7.677825</td>
<td>29913.32</td>
<td>21.61034</td>
<td>23.21012</td>
<td>22.16258</td>
</tr>
</tbody>
</table>

**Source:** Authors’ computation (2021)

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion
The ARDL model shows how a variable in the previous period influences the current period, this is one of the principal factors that makes the optimal lag length selection important in this study. Consequently, Table 4 indicates that all the information criteria point to lag one. This implies that lag one is appropriate for this ARDL model.

### Table 5

**Short-Run Relationship between Remittances, Growth and Poverty Reduction in Nigeria**

<table>
<thead>
<tr>
<th>Short Run</th>
<th>Coefficient</th>
<th>T-statistics</th>
<th>Prob. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(GDP/CA(-1)</td>
<td>0.822000*</td>
<td>9.183223</td>
<td>0.0000</td>
</tr>
<tr>
<td>D(LMGRTA)</td>
<td>30.93102***</td>
<td>2.071137</td>
<td>0.0468</td>
</tr>
<tr>
<td>D(GRR)</td>
<td>9.148947**</td>
<td>1.732574</td>
<td>0.0931</td>
</tr>
<tr>
<td>D(LGCF)</td>
<td>499.4843***</td>
<td>2.573310</td>
<td>0.0151</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.963330</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ computation 2021

*Significant at 1%; ***significant at 5%; ** Significant at 10%

The estimated results of the short-run relationship between remittances and poverty reduction in Nigeria were shown in table 5. The explanatory variables of the study were in agreement with the a priori expectation of the study. Also, R-Squared has a value of 0.963330. The implication of this value is that approximated 96% of deviation in dependent variable, GDP per capita was explained by the remittances, growth rate, gross fixed capital formation and the lag value of GDP per capita in the model, leaving 4% unexplained due to a random chance. This justified the relative goodness of this model for the empirical analysis.

Meanwhile, the lag value of GDP per capita has a positive relationship with its present value, the relationship is significant at 1% level of significance. This implies that the past GDP per capita led to a rise in present GDP per capita in Nigeria. Similarly, GDP per capita has a positive and significant relationship with migrant remittances in Nigeria. A unit change in migrant remittances brings about 0.3% rise in GDP per capita in the country. This implies that migrant remittances are a poverty reducing agent in Nigeria. Furthermore, economic growth rate and GDP per capita have a significant direct relationship. A unit change in economic growth rate leads to a rise in GDP per capita by 9.1% in Nigeria. This implies that economic growth supports poverty reduction in the country. This corroborates the argument of inclusive growth theory. In the same vein, GDP per capita and gross fixed capital formation have a significant positive relationship in Nigeria. As gross fixed capita formation changes by a unit, GDP per capita increases...
by 4.99% in the country. This shows that gross fixed capital formation causes poverty reduction in Nigeria. From the above, it could be inferred that migrant remittances lead to poverty reduction in the economy. This finding is validated by the submissions of Adeyi (2015) and Adarkwa (2015) in related studies in Nigeria and Sri Lanka and some selected ECOWAS countries respectively. Azam et al. (2016) in a similar study focusing on 39 high, middle and lower-income countries, Betti and Lundgren (2012) in Tajikistan, Beyene (2014) in Ethiopia, Bertoli and Marchetta (2014) in Ecuador, and Hobbs and Jameson (2012) in Costa Rica, despite the fact that a different technique was employed. However, the finding in this study contradicts the finding of Tsaurai (2018) in some selected emerging markets.

### Diagnostic Tests

![Figure 1: Normal Distribution of the Residuals](image)

The residual value of the estimated model shown in Figure 1 has a distribution that is fair despite that the fact that its distribution is negatively skewed because the value of its kurtosis is very close to 3, and at the same time the probability JB is not significant at 5% critical value.

### Table 6

<table>
<thead>
<tr>
<th>Breusch-Godfrey Serial Correlation LM Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
</tr>
<tr>
<td>Obs*R-squared</td>
</tr>
</tbody>
</table>

*Source: Authors’ computation (2021)*

The estimated results shown in Table 6 indicate that both the F-statistic and the observed R-squared have values of 0.1716 and 0.1318 respectively. This implies that
the residual value is not suffering from the problem of serial correlation because the values (of) these probabilities are higher than 0.05. And as such, the null hypothesis (Ho) of no serial correlation could not be rejected.

Table 7

<table>
<thead>
<tr>
<th>Heteroskedasticity Test: Breusch-Pagan-Godfrey</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>1.218633</td>
</tr>
<tr>
<td>Prob. F(5,31)</td>
<td>0.6311</td>
</tr>
<tr>
<td>Obs*R-squared</td>
<td>2.452334</td>
</tr>
<tr>
<td>Prob. Chi-Square(5)</td>
<td>0.0912</td>
</tr>
<tr>
<td>Scaled explained SS</td>
<td>1.398209</td>
</tr>
<tr>
<td>Prob. Chi-Square(5)</td>
<td>0.0857</td>
</tr>
</tbody>
</table>

Source: Authors’ computation (2021)

The null hypothesis of no heteroscedasticity could not be rejected in the above table because the probability values of both the F-statistic and the observed Rsquared are 0.6311 and 0.0912 respectively, and these values are greater than 0.05. Therefore, the residuals of the model is homoscedastic.

Table 8

| Pairwise Granger Causality Test between Remittances, Growth and Poverty Reduction in Nigeria |
|-----------------------------------------------|--|--|--|--|
| Null hypothesis                              | F-statistic | Prob. | Decision | Causality |
| LMGRTA does not Granger Cause GDP/CA         | 4.40727     | 0.0204 | Reject   | Unidirectional |
| GDP/CA does not Granger Cause LMGRTA         | 0.98472     | 0.3846 | Accept   |          |
| GRR does not Granger Cause GDP/CA            | 2.50721     | 0.0974 | Accept   | None      |
| GDP/CA does not Granger Cause GRR            | 0.61106     | 0.5490 | Accept   |          |
| GRR does not Granger Cause LMGRTA            | 5.55869     | 0.0085 | Reject   | Unidirectional |
| LMGRTA does not Granger Cause GRR            | 0.14899     | 0.8622 | Accept   |          |

Source: Authors’ computation (2021)

The technique of Granger causality test was utilized to examine the existence or otherwise of causal relationship between remittances, growth and poverty reduction in Nigeria. In Table 8, the estimated results show that a unidirectional causality flows from remittances to GDP/CA. Since remittances Granger caused GDP per capita in Nigeria, this is a vital signal that remittances as one of the international inflows of capital are an important variable for the achievement of poverty reduction in Nigeria. This finding contradicts the submissions of Hatemi-J and Uddin (2014) and Gaaliche and Zayati (2014) who discovered bidirectional causality between remittances and poverty reduction in Bangladesh and developing countries respectively. There is a way
feedback relationship flowing from growth rate to migrant remittances in Nigeria. No Granger causal relationship existed between migrant remittances and growth in Nigeria.

5. Conclusion and Policy Implications

While moving the frontiers of knowledge, this study examined the nexus between migrant remittances, growth and poverty reduction in Nigeria from 1981 to 2019 with the application of ARDL Bounds test and Granger causality technique. Consequently, the summary of the major findings in this study could be submitted as follows: the past GDP per capita led to a rise in the present GDP per capita in Nigeria. Similarly, GDP per capita has a positive and significant relationship with migrant remittances in Nigeria. Therefore, migrant remittances are a poverty reducing agent in Nigeria. Furthermore, economic growth rate and GDP per capita have a significant direct relationship. In other words, economic growth supports poverty reduction in the country. GDP per capita and gross fixed capital formation have a significant positive relationship in Nigeria.

In the same vein, migrant remittances Granger caused GDP per capita in Nigeria. This is a vital signal that remittances as one of the international inflows of capital are an important variable for the achievement of poverty reduction in Nigeria. One-way feedback relationship flowing from growth rate to migrant remittances was discovered in the country. Hence, it could be concluded that migrant remittances and growth are important economic variables that drive poverty reduction in Nigeria. Moreover, following the emergence of important findings in this study, these pertinent recommendations are therefore made for the policymakers in Nigeria and Africa by extension that whenever poverty reduction is the goal of these policymakers, implementation of the policies that would stimulate sporadic inflows of migrant remittances should be embarked upon. Similarly, policies that will ensure double digit growth rate in a sustainable manner in the country should be embarked upon by the policymakers. In other words, inclusive growth-oriented policies and programs should be embarked upon by the Nigerian policymakers.

References


Economics, OSLO University, May 2015


HEALTHCARE COMPANIES PERFORMANCE BEFORE AND DURING COVID-19: EMPIRICAL EVIDENCE FROM 150 COMPANIES IN INDONESIA, MALAYSIA, AND SINGAPORE

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JEL: M4

Abstract

The aim of this study is analyzing the effects of Economic Value Added (EVA) and Cash Value Added (CVA) on firm performance, also analyzing whether COVID-19 pandemic affected the firm performance of listed healthcare companies in South-east Asia countries significantly. The objective of this study is to see if healthcare sectors company are really a better option for investors in this time, especially because of the emergence of COVID-19. The firm performance in this study was measured with Market Value Added (MVA). This study took samples of listed healthcare companies from three South-east Asia countries, Indonesia, Malaysia, and Singapore. The study samples included 16 samples from 16 Indonesian Healthcare companies listed in the Indonesia Stock Exchange (IDX), 13 samples from 19 Malaysian Healthcare companies listed in the Bursa Malaysia, and 23 samples from 33 Singaporean Healthcare companies listed in the Singapore Stock Exchange (SGX), the total samples used were of 150 companies. The samples used in this study are from selected companies representing the whole segment. All samples were based on the informations provided in their annual report ended per 31 December. Multi regression analysis method was applied in this study to determine the effects of COVID-19 pandemic on the listed healthcare companies’ performance. Based on the tests conducted for this study, it is found that EVA and CVA have a positive significant effect on MVA. However, there was no significant difference found between MVA before and during COVID-19 pandemic.

Key words:
Firm Performance, COVID-19, Healthcare sectors, Multi Regression Analysis
1. INTRODUCTION

The World Health Organization (WHO) has officially declared a COVID-19 pandemic to hit more than 150 countries across the world. Although the number of people infected in some countries has decreased, but there is still no certainty for how long countries could keep the infection under control or when it would strike back and infect even more people. COVID-19 has changed the world in many ways since its first occurrence in Wuhan, China in December 2019. COVID-19 has brought alteration in society from the way we work, study, socialize, and so on, and there is no exception for business and economic aspect. It is difficult to predict how long this pandemic would impact business and economic world.

At the beginning of this case, it did not affect the stock market, but as more victims were confirmed, the stock market reacted negatively (Khan et al., 2020). Prices on the stock market are declining, especially after WHO stated that Covid-19 was a pandemic (AlAli, 2020). COVID-19 pandemic has trapped many businesses in difficult situation and brought huge turmoil in global commerce, as a result, almost all business sectors suffered from losses. Most companies are opting to save costs, avoid expansion, and conserve their funds (Rababah et al., 2020). Many businesses suffered from downsizing, temporary closure, and even permanent closure. For example, a retail supermarket in Indonesia, PT Hero Supermarket Tbk, permanently closed almost all of their stores across the country, Malaysia Airlines Bhd, a Malaysian airline company, has announced 35% pay cuts for top management, 50% reduction in directors’ monthly fee, and streamlining of allowances for licensed aircraft engineers and technicians.

The implementation of this policy causes a decline in demand for most services and goods along with a decline in people’s purchasing power and has an impact on the company’s performance in creating profitable value for investors, thereby affecting investors’ interest in investing. In measuring the value creation of a company, one of the indicators that can and will be used from companies’ internal point of view in this research are economic value added (EVA) and cash value added (CVA). Meanwhile, from external point of view, as an indicator of market valuation on companies’ performance which is also related to stock prices, this research is going to use market value added (MVA). These measurements were chosen in this study considering various
factors such as globalization, increased competition, interest rate volatility, and foreign exchange fluctuations, as examples of the various types of risks and uncertainties caused by the international financial crisis that affect financial markets and companies’ activities. Therefore, it would be better to re-analyze performance measures not using conventional performance measurement but using company performance measurements that focus on value creation.

Measurement of company performance with a focus in the value creation concept is preferred in this study because it can explain the company’s financial condition even closer to reality than conventional performance measurement. Since value creation based concept also calculates the existence of cost of capital, consisting cost of debt and cost of equity, that the company owes, and these aspects can not be calculated simultaneously with the conventional measurement method and thus financial performance measurement could be biased, especially for externals, such as investors.

When almost all countries in Southeast Asia region were forced to set social distancing along with quarantine and some country even enforced lockdown and banned public places that were not crucial and essential to operate in order to suppress the number of people infected by the highly contagious virus. The implementation of this policy caused a decline in most goods and services demand and had an impact on the companies’ performance in creating profitable value for investors, thereby affecting investors’ interest in investing. These practices have led towards a decline in demand for most common goods and services, resulting to a decline of economic performance. Research noted that the average performance of stock indexes of those three countries, Indonesia, Malaysia, and Singapore from of the end of Q4 2019 to the end of Q1 was -21.7%. If compared with the performance of Q3 2019 to Q4 2019 it was -3.44%. It showed a significant deflation on stock performance since COVID-19 arrival in those countries.

With corona virus (COVID-19) plaguing the world, on the contrary to most sectors, with the increasing number of infected people, the goods and services from the health sector will be increasingly sought after. Therefore, the economic situation for companies which are engaged in an area such as healthcare should be different from the other sectors. Southeast Asia’s consumer health industry is in a good position to grow, as consumers demand on necessities such as medicines and immune-boosting supplements is increasing.

The retail sales of consumer health in Southeast Asia countries are set to grow by 3% from 2019 to 2020, more dynamic than Asia Pacific’s aggregated 1% growth. ASEAN’s healthcare sector has been driven towards reforms and open investment opportunities by the emergence of COVID-19 pandemic. According to World Health Organization (WHO), ASEAN spends almost 4% of its GDP on healthcare, with expenditure per
capita at USD 2,700, Singapore is placed at the top of the list. The increasing demand in healthcare related goods and services impacted investors’ interest. Some healthcare companies in Southeast Asia have experienced increased investor demand for their shares. As an example, Malaysian LYC Healthcare Berhad’s stock price has added 13.3% year-to-date as of 22 July 2020, confirming the solid growth prospects for the sector. In Indonesia, this could be seen from the strengthening of PT Kimia Farma Tbk (KAEF) shares on March 26, 2020, by 23.08% to the position of Rp 1,280 per share. Followed by PT Indofarma Tbk (INAF) which rose 23.30% to a position of Rp 1,085 per share.

The steps taken to do this research are, first, authors gathered the published financial data of Indonesian, Malaysian, and Singaporean companies ranging from 2018 to 2020 to determine whether COVID-19 has significant impact on companies’ performance in those three countries and provide comparison between years before and during pandemic. This comparison will provide information about how COVID-19 affected financial performance of healthcare sector in each country. This study is mainly beneficial for investors since based on the results of this study, it can help convince investors and potential investors about the financial performance of health sector companies. As can be seen, the healthcare sector is assumed by many as an investment option in the current pandemic condition. The awareness of the importance of other factors that influenced firms’ performance has been raised during COVID-19 pandemic. (Kells, 2020; Obrenovic et al., 2020). Accordingly, this study will use the relation between firms’ performance with firm-specific and country-specific factors.

This research is divided into five parts, arranged in the following order: Part 2 contains review of literature and research hypothesis, Part 3 contains details about the data, sample, and statistical methodology used to test the hypothesis, Part 4 contains the tests results and analysis, and Part 5 contains conclusions.

2. LITERATURE REVIEW AND RESEARCH HYPOTHESIS

**Economic Value Added**

Economic value added (EVA) is defined as a surplus in the value created over the expected returns from shareholders as an expression of economic benefit of a business organization. EVA measures the company’s performance in a certain period of time, whether it was a success or failure. This measurement is useful for investors to see how well the company has generated value for its investors. One of the most important aspects reflected by EVA is the cost of capital. Measurement using conventional indicators, most companies could appear profitable even when they are not. EVA measurement can correct this bias in calculating companies’ profit because in EVA, the capital used
Cash Value Added

Cash Value Added (CVA) is a variation of the EVA measurement. CVA is defined as a measure of a company’s ability to generate profit in a cash beyond the required returns to its investors. CVA provides investors with an idea firm’s capability to generate cash from a particular period to another. Kordlar et al. (2006) defines CVA as a measurement of the activities carried out by the company and its employees in order to create value and increase the wealth of the entity. In general, a high CVA indicates the company’s ability to generate liquid profits from one financial period to another. The difference between CVA and EVA is that CVA only focuses on the company’s cash flow while EVA focuses on the overall value of the company.

Year

The virus was discovered in late 2019 and first reported in Wuhan, China, on December 31 in the same year. Not long after the first discovery of this virus, it could already be found in various countries, no exception for Southeast Asian countries. In Singapore, the first case of COVID-19 was confirmed in early 2020 to be exact on January 23, 2020, followed by two days later Malaysia declared its first COVID-19 case on January 25, 2020, while Indonesia only confirmed the first case of COVID-19 on March 3, 2020.

According to the previous information, it is known that COVID-19 has spread to Singapore, Malaysia, and Indonesia in early 2020. In this study, the time range studied was from 2018 to 2020. Therefore, the previous two years, namely 2018 and 2019 are categorized as the years before the spread of COVID-19 and 2020 is categorized as year during COVID-19 pandemic. Year variable determined using dummies, where years before covid-19 will be represented by 0 and year during Covid represented by 1.

Market Value Added

The concept of market value added (MVA) was introduced by Steward and Co in 1993 with the aim of assessing the impact of companies’ decision on the prosperity of their shareholders since the company started their business. When a company has good performance over time, it will be able to maintain profits. This will increase the book value of the company’s share, and investors are more likely to value the company’s shares higher based on the expectation of higher future earnings. An increasing share price will increase the market value of the company.
Based on previous explanation, from the investor’s point of view, market value added (MVA) considered to be the best external measurement tool that can show the company’s performance in accordance with the statement of Vasilescu et al. (2015). (Alipour & Pejman, 2015) stated that MVA is closely related to the ability of a business to create value based on their performance in the future.

Prior study in correlation between pandemic and firm performance conducted by Rababah et al (2020) on the overall firm performance of the Chinese companies showed that there was a decline across various business sectors since the pandemic of COVID-19 struck China. A study carried by (Devi et al., 2020) found a significant difference in the performance of the listed firms between before COVID-19 and during COVID-19. In the research, it was concluded that due to the decline in sales during the pandemic and the company incapability to save costs, this would negatively affect the company’s performance. A similar result stated in (Hu & Zhang, 2021) study, the research concluded that cumulative COVID-19 cases affected firm performance negatively, suggesting that the average firm performance weaken as cumulative COVID-19 cases rise. In a study conducted by (Cho & Saki, 2021) on the effect of the COVID-19 pandemic on the performance of textile and clothing industry companies in the United States, it was found that COVID-19 had a negative or adverse effect on company performance.

This study will be using research model as shown below to gauge the firm performance from external point of view.

\[
\text{Performance}_{it} = \beta_0 + \beta_1 EVA_{it} + \beta_2 CVA_{it} + \beta_3 \text{YEAR}_{it} + \beta_4 \text{SIZE}_{it} + \beta_5 \text{COUNTRY}_t + \epsilon_{it}
\]

In the research model above Performance\textsubscript{it} denotes firm performance and proxied by market value added (MVA). In this study, several control variables are being used such as firm and country. Firm control in this study proxied by firm size will be measured using natural logarithm of total assets. Country-specific control variable in this study measured by using countries’ market capitalization since in (Hu & Zhang, 2021) stated that advanced financial markets could cushion pandemic shocks and alleviate financial constraints.

The sample used in this study consists of firms located in three different countries in Southeast Asia, that is Indonesia, Malaysia, and Singapore. The research in this study will be looking for data between pre-pandemic period, which is year 2018 and 2019, and the pandemic period is year 2020. The Covid-19 cases were confirmed in Malaysia and Singapore on late January 2020, while in Indonesia, the case was first confirmed on early March in the same year.
Signaling Theory

Signaling theory emphasizes the importance of the information issued by the company on the investment decisions of the company’s external parties. This is different from the agency theory that emphasizes more on agency problems between owner as a principal and management as a responsible party to ensure the company’s performance and stability. According to Brigham & Houston (2010), signals are actions taken by the company’s management to provide information for investors regarding how management views the company’s prospects.

Financial report as a signal transmitter to the current and potential investors has an important role to affect the companies’ market value. As EVA and CVA both are financial measures that could be calculated based on the information provided in the financial report, EVA and CVA of a company can affect the investors’ behavior towards that company’s stock. Whether they will have the willingness to buy the stock at a higher price level or instead sell them in accordance to the EVA and CVA they have calculated based on the information in the financial report.

EVA is a value-based measurement that help investors with wealth discovery and company-selection processes. EVA deals with accounting for cost of capital and determines whether a company’s earnings are sufficient or insufficient to cover the cost of capital, and determine whether a company is a value generator or a diluter. EVA is considered to be an appropriate measurement of firm performance. It is highly correlated to shareholder return and able to signal the extent of periodic wealth creation (Bhasin & Shaikh, 2013).

Investor demand and willingness to buy the stock at a higher price level will be reflected in the MVA. The higher gap between company’s share book value and the market share price will result in the higher MVA. According to the explanation above, signaling theory is considered able to outline the correlation between these variables better than other theories.

Based on current conditions, generally, COVID-19 outbreak has had a devastating impact on most companies. Many companies have experienced a decline in profits, even suffered losses during the COVID-19 pandemic. Companies needed more fund sources and appropriate management strategies to be able to survive this condition. This is certainly bad news for investors because the company’s condition is uncertain and unstable and most certain that the companies’ EVA and CVA calculations are not as fit as the previous financial periods. This condition will be responded negatively, which in turn will lower the company’s stock price (Wicaksono & Adyaksana, 2020).
Research Hypothesis

In general, Economic Value Added (EVA) is considered as a measurement for firm performance. EVA identifies the company’s performance from an internal perspective related to how far the company has created value for shareholders by considering the cost of capital that has been placed into the company. Meanwhile, Market Value Added (MVA) is an external measure of performance (Panahi et al., 2014) and can only be measured in public companies because it is related to the company’s stock market price.

The main idea of EVA is built upon economic profit, which means that wealth is only created if a company managed to cover its operating and capital costs. The principle of EVA is to give assessment on firms’ performance and achievements of the companies because EVA is directly related to the market value of a company. EVA and MVA have a close relationship based on the statistical results conducted by (Pinto & Machado-Santos, 2011). The analysis that has been carried out shows that EVA and MVA have a significant relationship. The effect of EVA on MVA also analyzed by (Vijayan, 2018) using company data for a 10-year period from 2005 to 2014 shows a significant effect.

Based on the relationship between the variables described above, the first hypothesis in this study can be formulated:

\[ H_1 : \text{Economic Value Added (EVA) has a positive effect on Market Value Added (MVA)} \]

The concept of CVA is similar to EVA, but CVA only considers cash as the main focus in measuring the company’s ability to generate economic wealth. This measurement shows the company’s ability to generate cash from one period to another. In general, the higher the CVA the better for the company and for investors.

Therefore, the second hypothesis in this study can be formulated:

\[ H_2 : \text{Cash Value Added (CVA) has a positive effect on Market Value Added (MVA)} \]

The decline in company performance could be linked to the increasing uncertainty due to COVID-19 pandemic. The COVID-19 pandemic has had a negative impact on the economies of several Southeast Asian countries. The Organization for Economic Co-operation and Development (OECD) informs that COVID-19 pandemic has brought a threat of major economic crisis marked by the decrease in production activities in countries across the globe, a decline in public consumption levels, and ultimately a fall in stock prices. (OECD, 2020).

\[ H_3 : \text{The difference in years before and after the Covid-19 pandemic has a significant effect on Market Value Added (MVA)} \]
3. RESEARCH METHODOLOGY

Research method used in this study was the quantitative method. The object of research used in this study are the health sector companies listed on the national stock exchanges of Indonesia, Malaysia, and Singapore in the period 2018 to 2020. This study uses secondary data in the form of audited company annual reports for the period 2018 to 2020 which are downloaded from the IDX’s official website (www.idx.co.id), the Bursa Malaysia website page (www.bursamalaysia.com), and the Singapore Exchange website (www.sgx.com). In addition, other necessary additional data such as stock prices are accessed through the yahoo finance website page.

Population and Sample
The population studied in this study were 16 Indonesian companies, 19 Malaysian companies, and 33 Singaporean companies with a total number of 204 samples. However, after being processed by purposive sampling method and removing outlier data, the final number of samples that can be used is in this study are 150 units of analysis. Purposive sampling was used to gather information based only on companies’ financial statement that ended December 31st, so there was no bias in the study due to differences in time periods analyzed.

Research Variables
Economic Value Added (EVA) is a measure of company performance associated with the creation of value for shareholders. EVA calculation can be done by subtracting a net operating profit after tax with the entire cost of capital from investments in the company. Therefore, the formula used in calculating EVA variable is net operating profit after tax minus capital charges.

EVA = NOPAT – CC

NOPAT : Net Operating Profit After Tax
CC : Capital Charges

Cash Value Added (CVA) is defined as a performance measurement carried out by company management and employees to create value and increase company wealth especially in cash. CVA is calculated by deducting the gross cash flow by economic depreciation and capital charges.

CVA = Gross Cash Flow – Economic Depreciation – Capital Charge

Year variable was used to distinguish the years before and after COVID-19. This variable will be indicated using the number 0 if it is a year before being affected and 1
if it is a year that has been affected by COVID-19. According to the information that has been compiled from various sources, it can be concluded that 2018 and 2019 will be indicated using the number 0 and in 2020 using the number 1.

There were two control variables used in this study, firm size and country market capitalization. Control variable is a variable that is controlled or made constant in order to limit the influence of independent variable on the dependent variable. So the dependent variable would not be affected by external factors that are not included as objects in the study (Sugiyono, 2011).

Firm-specific control in this study proxied by firm size. Firm size refined by using natural logarithm (ln) of the total assets since the total assets value are generally larger in value in comparison to other financial variables. Country-specific control variable in this study measured by using countries’ market capitalization. Market capitalization (% of GDP) or also known as market value is calculated by multiplying share price by the number of outstanding shares owned by domestic or domestic companies that are listed. Domestic listed companies are domestic legal entities that are listed on the state stock exchange at the end of the year. Market capitalization (% of GDP) data were obtained from the World Development Indicators (WDI) website.

4. RESULTS AND ANALYSIS

Regression analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVA</td>
<td>0.345223</td>
<td>0.000*</td>
</tr>
<tr>
<td>CVA</td>
<td>-0.2856972</td>
<td>0.001*</td>
</tr>
<tr>
<td>Year</td>
<td>1.47E+08</td>
<td>0.469*</td>
</tr>
<tr>
<td>Firm-Specific</td>
<td>5.10E+08</td>
<td>0.000*</td>
</tr>
<tr>
<td>Country-Specific</td>
<td>-0.006194</td>
<td>0.489*</td>
</tr>
<tr>
<td>Constant</td>
<td>-8.73E+09</td>
<td>0.000*</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.7813</td>
<td></td>
</tr>
</tbody>
</table>

* significant < 0.05;  * not significant > 0.05

Fig 1. Multi Regression Analysis

Based on the analysis result on Table 2, the first hypothesis (H₁) is accepted. Independent variable EVA have a positive significant effect on MVA. Over twenty years
of development, discussion, and verification, EVA valuation model is now considered to be an important selection criteria used by managers and investors all over the world to analyze companies’ economic performance (Hui et al., 2015). Investors and analysts considered intrinsic values that are determined by valuation models, which aid in the borrowing, merging, and acquiring process, are the actual value of equity. Corporate performance is indicated by intrinsic values’ high and low (Behera, 2020). Meanwhile from the analysis, it is shown that Cash Value Added has a negative significant effect on Market Value Added. Investors’ sufficient knowledge regarding calculation and benefits of Cash Value Added in making investment decisions. Investors realize the importance of CVA since calculation of CVA is based on cash flow, therefore CVA provides an overview of the company’s ability to generate cash flow from one period to another. However, lower CVA could also indicate that a company has an investment whether for expansion or future projects that require them to increase their funding source and therefore increasing their cost of capital.

The third hypothesis (H₃) is rejected. Based on regression analysis result, Year variable does not have a significant effect on MVA. It means there was no significant difference on MVA of the healthcare companies throughout years before COVID-19 and a year after COVID-19. An assumption as for why there was no significant difference found on MVA is mainly because the sample of this study were companies engaged in the healthcare sector. During 2020 since the arrival of COVID-19 to Southeast Asian countries that were the object of the study, consumption of goods and services from healthcare companies was not declining as happened to companies engaged in other sectors. This reason caused investors to value healthcare sector companies as more profitable than other sectors.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Indonesia Coefficients</th>
<th>p-Value</th>
<th>Malaysia Coefficients</th>
<th>p-Value</th>
<th>Singapore Coefficients</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVA</td>
<td>-47,96991</td>
<td>0.000*</td>
<td>-18,28346</td>
<td>0.344*</td>
<td>0,3012263</td>
<td>0.000*</td>
</tr>
<tr>
<td>CVA</td>
<td>0,309667</td>
<td>0.418*</td>
<td>-2,240469</td>
<td>0.105*</td>
<td>-0,2375705</td>
<td>0.000*</td>
</tr>
<tr>
<td>Year</td>
<td>2,26E+08</td>
<td>0.371*</td>
<td>1,90E+09</td>
<td>0.685*</td>
<td>5,06E+08</td>
<td>0.627*</td>
</tr>
<tr>
<td>Firm-Specific</td>
<td>6,00E+07</td>
<td>0.705*</td>
<td>6,00E+07</td>
<td>0.044*</td>
<td>3,52E+08</td>
<td>0.000*</td>
</tr>
<tr>
<td>Country-Specific</td>
<td>-0,0060066</td>
<td>0.435*</td>
<td>-0,0392303</td>
<td>0.764*</td>
<td>0,142896</td>
<td>0.578*</td>
</tr>
<tr>
<td>Constant</td>
<td>1,79E+09</td>
<td>0.722*</td>
<td>4,85E+09</td>
<td>0.928*</td>
<td>1,61E+10</td>
<td>0.368*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Prob &gt; F</th>
<th>Adjusted R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>0,0000</td>
<td>0,4183</td>
</tr>
<tr>
<td>Malaysia</td>
<td>0,0026</td>
<td>0,3787</td>
</tr>
<tr>
<td>Singapore</td>
<td>0,0000</td>
<td>0,9249</td>
</tr>
</tbody>
</table>

* significant < 0.05;  * not significant > 0.05

Fig 2. Multi Regression Analysis for Each Country
After examining independent variables effect on MVA based on countries, it was found that there were some differences in the results. Regression analysis result on Indonesian healthcare companies shows that only one independent variable has a significant effect on the dependent variable, which is EVA. Therefore, it can be known that Indonesian investors also see EVA as a considerable indicator in investment decision making. Although based on a study conducted on Indonesian market shows that Indonesian investors have a tendency to focus more on capital gains and dividends, the regression results still show that EVA has affected MVA significantly. EVA calculation considered as suitable indicator because it represents the expectations of creditors and shareholders (Anita, 2009). Indonesia’s need for healthcare goods and services give opportunities for healthcare sector companies to expand their performance. In order to be able to do this, companies might need more funds, therefore companies seek for funding source from debt and equity. This lead to an increase in their cost of capital and therefore decreases their EVA. But investors in the market see this lower EVA not as something unprofitable. Since expansion and projects in the future could make a company better and therefore profitable for investors.

Meanwhile, the other two independent variables, CVA and Year, are not having a significant effect on MVA. A study on companies listed in Indonesia stock exchange and included in LQ45 index shows that cash value added is not able to provide better information than price to earnings ratio. This could be a result of cash value added being not widely used in Indonesia. Cash value added is part of the concept of value-based management as one of the company’s performance measurements. Meanwhile in Indonesia, public and investors still tend to use conventional accounting measurement concepts (Marsiwi, 2016).

Regression analysis result on Malaysian healthcare companies shows that EVA, CVA, and Year independent variable has no significant effect on the dependent variable. Malaysian markets can continue to assess companies’ performance based upon the profitability ratios since it has higher explanatory power on the Malaysian market than EVA (Nakhaei, 2021). The study has also mentioned another reason why EVA has not been performing well in Malaysia: namely, that the adjustments of accounting to net operating profit after tax recommended by Stern Stewart & Co. are sometimes ineffective when implemented in Malaysia and might cause measurement inaccuracy in information that Malaysian investors use in measuring a company’s value. Based on that, it can be said Malaysian investors tend to choose profitability ratios to measure a firm performance and value rather than valuation models such as EVA and CVA.

However, in regression analysis result on Singaporean healthcare companies, EVA has a positive significant effect on MVA and CVA has a negative significant effect on MVA and only Year variable found to have no significant effect on MVA. In Singapore,
EVA is often a preferred standard for performance. Temasek, one of the world’s largest institutional investors is one of the examples which preferred EVA as a standard for performance measurement (Kuk & Teo, 2020). According to a survey conducted based on the views of institutional and retail investors in Singapore, it was found that investors rated operating cash as one of the most important source for investment decision-making in comparison to other financial statement items with 68% of institutional investors and 46% of retail investors rated operating cash as “very important” (Teen & Hong, 2016). While CVA negatively affected MVA because of investors seeing lower CVA means a company is trying to expand or planning a bigger project in the coming years.

5. CONCLUSIONS

This study discusses the effects EVA and CVA on healthcare firm performance measured by MVA and try to find if there is any difference between firm performance before and during the COVID-19 pandemic. The findings of this study generally indicated that EVA and CVA both have a significant effect on MVA. However, when each country is being analyzed separately, it shows that not all countries have the same results as the previous analysis. This is due to investors in each country and the different main factors to consider when making investment decision that finally leads to different effect on the market value of each country.

The other finding in this study is that there is no significant difference found between firm performance in all three countries before and during the COVID-19 pandemic. This result could be explained because the research object in this study is limited to healthcare companies only. During 2020 since the arrival of COVID-19 to Southeast Asian countries, consumption of goods and services in most sectors were decreasing. On the contrary, for healthcare companies, the consumption for medicine, hospital services, and other medical appliances has not declined and some companies have even experienced an increase in revenue. This reason caused investors to value healthcare sector companies as more profitable than in other sectors.

Several analysts assess that stocks in the health sector are quite resilient, both during the pandemic and immediately after the pandemic. This is because the health sector has a relationship between each other. Capital market analyst from PT Ciptadana Sekuritas Asia stated that all lines in the health sector support each other, for instance, with the improvement in the hospital sector having an impact on other sectors such as the distribution of medical devices (Safitri, 2022).

For a long-term prediction, along with the recent decline in COVID-19 cases, income from COVID-19 patients is predicted to decline. The decrease would be compensated by the usual patient volume. Even so, the volume of ordinary patients had
also fallen because people tend to avoid visits to hospitals to minimize transmission of the COVID-19 virus (Intan, 2021).

Moreover, the positive sentiment at the beginning of the vaccines arrival could no longer rise the overall healthcare sector price. People also tend to presume COVID-19 as a normal flu. Based on that, demand of healthcare sectors goods and services would be back to its normal level unless there is a new phenomenon or sentiment that could escalate the healthcare sector stock price.

REFERENCES


