





EPRA International Journal of Economic and Business Review-Peer Reviewed Journal Volume - 8, Issue -10, October 2020 |e-ISSN: 2347 - 9671| p- ISSN: 2349 – 0187 SJIF Impact Factor (2020): 8.107|| ISI Value: 1.433|| Journal DOI URL: https://doi.org/10.36713/epra2012

CONTENTS

S.NO	TITLE	AUTHOR/S	PAGES
1	PATTERN AND CHARACTERISTICS OF	Shreya Nupur,	1-7
	MIGRATION FROM BIHAR: EVIDENCE	Kumari Youkta	
	FROM CENSUS DATA		
	https://doi.org/10.36713/epra5425		
2	NON-PERFORMING LOANS, CAPITAL	Shuibin Gu,	8-16
	ADEQUACY, LOAN LOSS PROVISION,	Ofori Charles,	
	AND BANK PROFITABILITY:	Takyi Kwabena Nsiah,	
	A CASE OF LICENSED GHANAIAN	Eric Dwomoh,	
	BANKS	Weveh-Wilson Benjamin	
	https://doi.org/10.36713/epra5421		
3	FINANCIAL RATIOS AND ANALYSIS OF	MD Qamar Azam,	17-31
	TATA MOTORS	MD Abrar Alam	
	https://doi.org/10.36713/epra5462		
4	THE EFFECT OF CAPITAL STRUCTURE	Putri Renalita Sutra Tanjung	32-40
	AND GOOD CORPORATE GOVERNANCE		
	ON FINANCIAL PERFORMANCE		
	https://doi.org/10.36713/epra5433		
5	THE EFFECT OF THE SIZE OF THE	Issa Ahmad Mahmoud Swiety	41-45
	FACILITIES GRANTED BY BANKS ON		
	THE AMMAN STOCK EXCHANGE INDEX		
	https://doi.org/10.36713/epra5436		
6	PROMOTERS OF ARTIFICIAL	Waribugo Sylva,	46-64
	INTELLIGENCE CAPABILITY IN THE	Onyekachi Chinedu Scott	
	NIGERIAN TELECOMMUNICATIONS		
	INDUSTRY		
	https://doi.org/10.36713/epra5439		
7	PAROLE AND PROBATION AS REMEDY	Gbenemene kpae (Ph.D)	65-70
	FOR NIGERIA'S PRISON CONGESTION		
	PROBLEM		
	https://doi.org/10.36713/epra5446		
8	AN OVERVIEW OF INDIA-BAHRAIN	Dr. Abdul Vajid	71-75
	TRADE RELATIONS		
	https://doi.org/10.36713/epra5538		

Research Paper



EPRA International Journal of Economic and Business Review-Peer Reviewed Journal Volume - 8, Issue -10, October 2020 |e-ISSN: 2347 - 9671| p- ISSN: 2349 – 0187

SJIF Impact Factor (2020): 8.107|| ISI Value: 1.433|| Journal DOI URL: https://doi.org/10.36713/epra2012

PATTERN AND CHARACTERISTICS OF MIGRATION FROM BIHAR: EVIDENCE FROM CENSUS DATA

Shreya Nupur ¹	¹ Research Scholar, Department of Humanities and Social Sciences, Indian Institute of Technology Patna, Bihar, India
Kumari Youkta ²	² Research Scholar, Department of Humanities and Social Sciences, Indian Institute of Technology Patna, Bihar, India,

ABSTRACT

Article DOI URL: https://doi.org/10.36713/epra5425

Migration is closely linked to development process. Due to the stagnant development process in Bihar outmigration have increased in recent two decades. It has it's root in green revolution which continued till date. Migration refers to movement of people from one place to another. When a person is enumerated at different place than his/her place of birth is known as migrant. It may be of permanent or temporary, a short or long term in nature. Several scholars in their studies showed that poor implementation of land reforms, as well as a lack of industrial investments in Bihar, left the state underdeveloped. Low Growth, high levels of poverty and the 'semi-feudal' systems of agricultural production, where the upper castes-controlled land and power, encouraged outmigration. Due to ongoing political, social and economic changes in Bihar, the migration pattern is also changing in past decades. This paper aims to analyse the pattern and causes of migration in Bihar through secondary data sources such as Census of India 2001 and 2011, by using tools like Percentage, ratio, pie chart, histogram, graphical presentation etc. Motivation to this study is to draw attention of policymakers because Outmigration of human capital is important developmental challenge for Bihar. There is urgent need to protect and develop village industries in Bihar which in turn create employment and reduce migration through spill over effect.

KEYWORDS: *Outmigration, pattern, employment, Bihar, Government policy, Developmental challenge* **JEL Classification:** D33, E24, F24, F63, I18

INTRODUCTION

We live in the Age of Migration. Over the years, the process of migration has accelerated, diversified and become increasingly politicised. With developing urbanization process in developing countries the phenomenon of rural to urban migration also took pace. Migration is the response of individuals to better opportunities that (s)he could get by mobility. Development economists such as **Lewis** (1954) and Fei and Rains (1964) well-thought-out rural to urban migration as an important phenomenon which can contribute to the economic development of

countries. the **Harris-Todaro model** anticipated that urbanization would become a stable and 'mainstreamed' characteristic of social life, due to migrants' expectation of jobs and high standard of living in the cities. In the last two decades, the researcher has shifted their focus from rural to rural stream of migration to rural to urban.

After the colonial era several attempts have been made to mitigate the regional disparity in the country. Mixed success has been achieved but Bihar could not grab this opportunity and lagged behind, remain one of most underdeveloped region of India. The root cause of underdevelopment of this state is unstable political system and skewed land distribution with few large landholders. Bihar is predominantly an agriculture based state, over the period of time agricultural productivity has declined forcing people to search for other non-farm activities for survival. Migration is also one of the survival strategy, particularly in rural areas where people are engaged in agricultural activity and try to find jobs in lean season. When these people reach to urban centres they generally get employment in informal sector as daily wage labourers. Their problems increase at destination as well as at origin because they live in the shortage of productive assets and capital which deprived them from any new economic opportunities. In Bihar migration is not a desire but only way to cope up in the difficult situation such as flood in Bihar.

All the segments of the society in Bihar are participating in out-migration. It appears higher among those associated with agriculture, with small or marginal landholdings. Male out-migration from the state is taking place from the household, while household is not leaving the other member for income generating activities. Therefore, migration process is generating a diverse livelihood at the area of origin, particularly among the agricultural household. In recent years trend of migration is changing female migration is increasing other than the reason of marriage while male outmigration has declined as compared to last decades still extent of outmigration is very high which needs policy attention by government.

LITERATURE REVIEW

The beginning of present migration scenario from Bihar have its root in green revolution started in early 1970s in north west India. Due to green revolution the demand for labour had increased in that region, given the high demand and low demand people from Bihar stated migrating to Punjab. Soon the region neighbouring Punjab such as Harvana, due to spill over effect also started demanding labour which in turn opened one more avenue for migrants. However, started in 1970s this trend soon declined near 1990s due to several reasons such as terrorism attacks, modernisation of agriculture, changing cropping demand of farmers etc. These factors together suppressed the influx of migrants from Bihar and diverted this influx to other states such as Delhi and Maharashtra (Singh 1995).

Deshingkar et al. (2006) viewed migration as a life cycle strategy, people generally sends their male member from family when they reach at certain age, in return male migrant send remittance to support their family financially.

According to Rath et al. 2008, among four streams of migration the most prevalent is rural to urban migration. 20 million out of 97.5 million are migrants who moved to urban centres with rural background. The attracting urban centres for prospective migrants are Mumbai, Delhi, Kolkata etc.

The majority of migrant population arrives at these destinations belonged to social disadvantaged group. They migrate due to less agricultural productivity and lack of resources such as land at the origin place. In addition to that lack of employment opportunity also trigger migration from rural Bihar. Moreover, due to lack of bargaining power these migrants face exploitations at origin (Gupta 1988; Karan 2003).

Kumar (2009) in his paper emphasized on the issue of hostile condition of migrants from Bihar at the destination place, since significant amount of them come from lower section of society.

There is urgent need to establish industries in the state so that migrants could get job at the native place only but the industrialization is limited to towns near to Patna. Although there are some rural urban linkage but rural hinterland that are far away from town does not get that benefits (Endow 2017).

Although several studies have been conducted to analyse the trend and pattern of Migration from India. There is lack of study that focuses on migration pattern on regional ground such as Bihar. This study focuses on migration pattern from Bihar. Bihar and Uttar Pradesh are major source state of migration due to lack of employment opportunities in these two reasons. Migration from Bihar needs attention of policy makers so that Bihar can use it's Human Capital in efficient way.

OBJECTIVE

- To analyse the trends and patterns of outmigration from Bihar along with its reasons.
- To analyse the trend and patterns through gendered perspective.

DATA SOURCE AND METHOD APPLIED

Data Source: We have used Census of India as a data source on migration for the period of 2001-2011 to analyse the trends of outmigration from Bihar.

Methods: In order to study the trends of outmigration, tools such as percentage of total migrants, Rural-Urban distribution of the same and reasons to migrate were analysed through bar graph and pie chart. This study uses the definition of migration given by census, advantage of using this is that it not only capture information about last movement but also about return migration.

RESULTS AND DISCUSSION

Figure 1 shows the extent of total number of outmigrants and their relative share for this we have used the data from census 2001 and 2011. The figure also highlighted that people are highly migratory in this state with 5.26 million in 2001 to 7.45 million in the year 2011. The figure highlighted the point that the share of male population in total migrants of Bihar is more than female with the male share 58% and female were 42% of total migrant in 2001 while number of male migrants declined over the decade, in 2011 census 52% male and 48% female were migrating.

Figure 2 shows place of destination of out-migrants. The major destinations of out-migrants are Jharkhand (17.5 percent), West-Bengal (14.5 percent), Delhi (14.5 percent), Uttar Pradesh (14.1 percent), Maharashtra (7.5 percent), Punjab (4.5 percent), Haryana (5 percent), Gujarat (5 percent) and Punjab (4.2 percent). Jharkhand have replaced West-Bengal as a top destination. Delhi is becoming more attractive to migrants. Direction of move have shifted from Punjab, west Bengal to New Delhi and Gujarat



Source: Census of India, 2001 and 2011



Figure 2: Destination of migrants



Source: Census of India 2011





Source: Census of India,2011

According to census, there are six reasons of migration among these reasons migration for work or employment are on the top, then for business, education, mostly females for marriage and moved

with household. Figure 3 shows the reasons of migration on the basis of Census, 2011 data. The major portion of male migrates from Bihar exclusively to find out better economic or

employment opportunity outside the state. When we focus on statics migration in search of work is **60 per cent out** of the total out-migrants with **55 per cent** male and **5 percent** female population. Other important causes of male out-migration is migration of parent or earning member of the family (19% percent), business (2% percent) etc. While biggest reason of female out migration is marriage (47%), other important reason of female out migration is if they have to move with parent or earning member of family (33%).

Figure 4 tells us the several streams of out-migration from Bihar. There are four streams that people take in

the process of migration. These are Rural to Urban, Urban to Urban, Rural to Rural and Urban to Rural. Among four streams the Rural to Urban stream dominates with 80 percent followed by Rural to Rural out-migration with a share of 30 percent of total migrants from Bihar. When we talk about Urban to Urban migration stream it is around 19 percent while Urban to Rural migration stream has lowest percentage in total out-migration that is one percent. So in conclusion we can say that outmigration from state of Bihar is dominated by male population towards urban centres and for work purpose.



Figure 4: Streams of Migration from Bihar

Source: Census of India, 2011



Figure 5: Change in stream of migration from 2001 to 2011

Source: Census of India, 2001 and 2011

Figure 5 shows change in stream of migration over the decade, there is no change in Rural to Urban migration as well as Urban to rural migration. There is increase of Urban to Urban stream of around 4%, on the other hand there is decline in Rural to Rural migration stream over the decade.

CONCLUSION AND POLICY IMPLICATION

From the above analysis we can say that the trends of migration from Bihar in last two decades have changed dramatically. During this period not only the proportion of migrants has doubled but also it became widespread. In addition to that the duration of migration has changed from short term to long term.

The volume of out-migration which was 5.26 million, according to census 2001 increased to 7.45 million in the Census 2011, is indeed very large difference, and more than half of population of male migrants for economic or employment related reasons. For female marriage is most important reason of migration but it shows declining trend and an increasing trend is observed in employment in 2011 as compared to 2001, although the increase is not very significant. The states like Delhi, Maharashtra, Punjab, Haryana and Gujarat became an attractive destination for male out-migrants from Bihar and move of the people is mostly taking place towards urban area. When we talk about change in choice of destination over the decades, early 1980s shows Punjab and Haryana as the most preferred destination. While by the end of 1990s this destination has shifted towards Delhi, Mumbai etc. People started choosing streams from Rural to Urban in recent decades and the extent of migration have become widespread.

Over the year people have become more aware and get information about destinations through their networks and other sources which in turn reduces their dependency on contractor. This pattern has reduced the exploitation and bad working environment of migrant workers at the destination. However, in few places and kind of work such as construction sites still hire migrant workers through contractor but their role has been minimised.

Given the above backdrop, we know people are migrating due to lack of employment opportunity at origin. So There is urgent need to generate employment opportunities at the origin areas. In the rural areas the major development tool can be investment in small and cottage industries, protection and commercialization of traditional artisan work which have potential to generate employment opportunities and reduce migration from Bihar. There are several schemes such as Jawahar Gram Samridhi Yojana (JGSY), Swarna Jayanti Gramin Swarojgar Yojana (SGSY) etc. have potential to absorb prospective migrants if implemented effectively.

Bihar being one of the top origin state of migrants, should prepare and keep the records and information about migrants and prospective migrants Lack of industrial and agriculture sector development of this state is major cause of migration from this area so only way to reduce the out-migration is to attract investment and rapid economic development of this region is urgent need. Government should focus on attracting investment in service sector and should focus on way to increasing productivity of agricultural sector along with development of nonagriculture sector. These efforts can reduce the extent of migration and can retain human capital in the state.

In current scenario, Indian economy is going through major economic, political and social changes but due to non-availability of recent data on internal migration several aspects such as impact of remittances and social impact such as Impact on left behind households have not been analysed. Census of India do not provide data on seasonal migration so further study can take into account this issue through other data sources.

REFERENCES

- 1. Census of India, (2011). Migration Data from table D1, D2 and D3. <u>http://www.censusindia.gov.in/2011census/popula</u> tion_enumeration.html
- Deshingkar P., Kumar S., Choubey H. K., Kumar D. (2006). "The role of Migration and Remittances in promoting livelihoods in Bihar". London, *Overseas Development Institute.*
- 3. Endow, T. (2017). "Urban development and ruralurban linkages in six towns in Bihar". Final Working Paper, Reference number: C-89113-INB-1. International Growth Centre.
- Gupta, A.K. (1988). "Sociological Implication of Rural to Rural Migration: A Case Study of Rural Immigrants in Punjab". Allahabad: Vorah Publications
- Karan, A., (2013), "Patterns of Migration from Rural Bihar", G. lyer (ed.) Migrant Labour and Human Rights in India, pp. 102–39, New Delhi: Kanishka Publishers.
- Kumar, A. (2009). "A Class analysis of the 'Bihari Menace'". *Economic and Political weekly*, Volume 44, No. 28(July 11-17, 2009), PP 124-127.
- Lewis, W. A. (1954). Economic Development with Unlimited Supplies of Labour. *The Manchester School*, 22(2), 139-191.
- Ranis, G., & John C. H. Fei. (1961). A Theory of Economic Development. *The American Economic Review*, 51(4), 533-565.
- Rath, Rishab, Kuldeep Mann and Amit Sharma (2008). "Ludhiana, Surat New Migration Hubs-Plus Points: Plenty of Jobs Going Around, No Xenophobes". *Hindustan Times*, 2-3-2008.
- Singh, Manjit (1995). "Uneven Development in Agriculture and Labour Migration: A case of Bihar and Punjab". Indian Institute of Advanced Studies, Rashtrapati Bhawan, Shimla.
- 11. Singh, Manjit and Karan, Anup K. (2010), "Rural Labour Migration from Bihar", Institute for Human Development, New Delhi.



EPRA International Journal of Economic and Business Review-Peer Reviewed Journal Volume - 8, Issue -10, October 2020 |e-ISSN: 2347 - 9671| p- ISSN: 2349 – 0187

SJIF Impact Factor (2020): 8.107|| ISI Value: 1.433|| Journal DOI URL: https://doi.org/10.36713/epra2012

NON-PERFORMING LOANS, CAPITAL ADEQUACY, LOAN LOSS PROVISION, AND BANK PROFITABILITY: A CASE OF LICENSED GHANAIAN BANKS

¹ Shuibin Gu	^{1,} Jiangsu University, School of Finance and Economics, China				
² Ofori Charles*	^{2,} Jiangsu University, School of Finance and Economics, China				
³ Takyi Kwabena Nsiah	³ Jiangsu University, School of Finance and Economics China				
⁴ Eric Dwomoh	⁴ Nestlé Ghana Limited, Accra, Ghana				
⁵ Weveh-Wilson Benjamin	⁵ SD Dombo University of Business and Integrated Development Studies, Ghana				

*Corresponding author: Ofori Charles, Jiangsu University, School of Finance and Economics, China

ABSTRACT

Article DOI URL: https://doi.org/10.36713/epra5421

This article explored the affiliation between a non-performing loan, capital adequacy ratio, loan loss provision, and bank profitability. The study was conducted on the licensed commercial banks in Ghana for the era 2014-2019. The two-step system generalized method of moments estimator was utilized to test the hypothesis developed for the study. The independent study variables altogether demonstrated a negative and immaterial association with the bank's profitability as proxied by ROA. A robustness test was conducted utilizing the Three-Stage Least-Squares Regression (3SLS); the outcome was analogous to that of the Two-Step System Generalized Method of Moments estimator. The study suggests that the Central Bank fortifies the capital requirement and keenly monitors banks' risk-taking conduct and banks undertaking due diligence procedures to moderate the shock of non-performing loans and loan loss provision in other to augment the profitability of universal banks.

KEYWORDS: Non-Performing Loans, Capital Adequacy, Loan Loss Provision, Bank Profitability, GMM JEL Codes: E58, G21, G32

1.1 INTRODUCTION

The function of commercial banks is significant in the fiscal growth of every nation-state across the world. Banks set up an atmosphere intended for individuals as well as businesses to access credit services. Companies are liable to default on their credits because of moral hazards and adverse selection, imping on the bank's profitability (Basel, 2001). Ghana's banking structure has gone through an enormous deal of distress in the past five years as the country has seen many banks collapse.along with others either merged or consolidated. Nonperforming loans, inadequate capital amid others were the fundamental cause of the distress.

Banks grant credit facilities to its client based on the risk data at their disposal. In a case whereby a party to the contract, herein, the client, is privy to the risk associated with the venture (Edwards and Turnbull, 1994 and Krugman, 2009). Asymmetric information gives rise to moral hazard and adverse selection. Banks might not hold complete knowledge of the kind of venture clients will embark on at the outset. Yet again, loans are insured in recent times, and as such, the debtor has an enticement to default. Subsequently, out of the frequent clients who opt for loan facilities from banks, banks are likely to default in choosing a suitable client who can repay the loan as per the contractual agreement.

The signaling theory states that for banks to build their dependence and legacy, demand for collateral from clients to safeguard the credit in case of non-payment as cited by (Okoye and Eze (2013), Abiola and Ikhu-Omoregbe (2017), Olugboyega (2018)). Based on the bank's risk evaluation, a client who seeks for the facility to commence a riskier enterprise supports the loan request with a levelheaded amount of security to preserve the loan.

Amongst the researchers who considered the determinants of bank profitability, ascribe it to numerous variables. The literary world has surveyed the issue and argument on top of the topic capital adequacy for decades on the capital banks ought to preserve to smooth the progress of lending, expansion, payment of short- and long-term debts, and other extreme issues those banks countenance.

In Ghana, Antwi (2019) investigated Capital Adequacy, Cost Income Ratio, and the profitability of listed banks in Ghana 'posited that capital adequacy negatively influences the bank's profitability. Similarly, Sanyaolu (2019) utilized the fixed effect regression estimator on Nigerian banks and established a considerable affirmative linkage amid CAR and bank profitability.

Previous studies notion non-performing loans as a vital determinant of the bank's profitability. In Sri Lanka, Suganya and Kengatharan (2018) explored the bond connecting banks' specific variables and home registered banks' financial profitability. The discoveries demonstrated the adverse effects of NPL on financial profitability. Again, Kodithuwakku (2015) recognized a negative affiliation between NPL and bank profitability in Sri Lanka for 2009 up to 2013. There exist conflicting conclusions in the studies of (Gizaw and Selvaraj, 2015; Nasserinia, Ariff, and Fah-Fan, 2014; Boahene et al., 2012; Naceur and Omran, 2011; Weersainghe and Perera, 2013) whose study projects a positive link between NPL and banks profitability.

Loan loss provision has developed into a concern in the study of the bank's profitability. The results (Ogboi and Unuafe, 2013; Zulfikar, 2019 and Tariq et al., 2014) bring into being a positive connection between loan loss provision and bank profitability. For the period 2007 - 2016, Annor and Obeng (2017) explored enlisted banks on the Ghana Stock Exchange on credit risk management impacts on profitability. The article established a negative tie connecting loan loss provision and profitability. This investigation was coherent with the works of literature by Islam (2018) and Kolapo (2012).

On the input to existing literature, this study looks at the connection among NPL, CAR, LLP, and bank profitability utilizing the Two-Step System Generalised Method of Moments as newness in the methodology. Earlier studies centered on either the link that exists between one or two of the above factors. Second, the article varies from the previous studies conducted in the Ghanaian setting by including more banks than a small number of listed on the Ghana Stock Exchange (GSE).

2.1 LITERATURE REVIEW 2.1.1 Non-Performing Loans and Bank Profitability

Non-performing loans refer to assets whose installments are past due for at least 90 days (CBK, 2013). Asif (2019), via a panel regression, found a malicious link between NPL and the profitability of banks in Indian amid the period of 2005-2018. Suganya and Kengatharan (2018) considered the Specific Factors and Financial Profitability of Domestic Licensed Commercial Banks in Sri Lanka. The study established that NPL was negatively correlated to bank profitability.

Kodithuwakku (2015) examined the nexus between credit risk management and the profitability of eight banks in Sri Lanka from 2009-2013. The outcome of the study exhibited that NPL and ROA are negatively connected. Kurawa and Garba (2014) studied the consequence of credit risk management on banks' profitability in Nigerian for the interval 2002 to 2011. The study utilized random GLS regression and concluded that NPL has a negative association with ROA. Annor and Obeng (2017) found NPL to be significantly and negatively connected in listed banks in Ghana from 2007 to 2016. An escalating NPL influences the bank's capacity to offer credit facilities, consequently affecting its profitability. Banks must ensure substantial risk management strategies and satisfactory due diligence before granting credits.

(Gizaw and Selvaraj, 2015; Nasserinia et al., 2014). Based on the above, the study embraced the null hypothesis that;

*H*₁: NPLR has a negative affiliation with bank profitability in Ghana.

2.1.2 Capital Adequacy and Bank Profitability

Ozili (2015) analyzing the components that influence profitability and Basel capital regulation on Nigerian banks. The studies bring into being an affirmative and significant association between CAR and ROA and net interest margin (NIM) as proxies for bank profitability. Suganya and Kengatharan (2018) conducted a study on the Specific Factors and Financial Profitability of Domestic Licensed Commercial Banks in Sri Lanka. The study found that capital adequacy is positively linked with bank profitability. Rahman (2018) explored the nexus of capital regulation, risk, and profitability of banks in Bangladesh; the outcome showed a positive linkage between bank capital and profitability. Majumder and Li (2018) found a significantly positive correlation between bank capital and profitability.

Sanyaolu (2019), utilizing the fixed effects regression on the Determinants of Profitability of Nigerian Deposit Money Banks from 2008-2017, asserted that CAR is significantly positive with return on assets (ROA). Rahman et al. (2015) conducted a study in Bangladesh using a sample size of twenty-five banks. Employing the GMM estimator found a significant positive relation between CAR and bank profitability as proxied by ROA and ROE. Çekrezi (2015) examined the factors affecting the profitability of commercial banks in Albania using a sample size of sixteen banks from 2010-2013, found CAR to be complimentary with ROA. Kurawa and Garba (2014) assert that CAR has an immaterially positive link with ROA. Olugboyega (2018) studied the effects of

credit risk and bank profitability in Nigeria using the random effect GLS regression technique; the study found a significantly positive relationship between CAR and bank profitability. Hence the development of the hypothesis below;

H₂: CAR has a positive affiliation with banks' profitability in Ghana

2.1.3 Loan Loss Provision and Banks Profitability

According to the CBK's prudential guideline, banks should make a 20% provision for substandard loans and 100% provision for loans in doubtful and loss categories. Previous studies (Ogboi and Unuafe, 2013; Tariq et al., 2014) found a positive correlation between loan loss provision and bank profitability. The study employed the panel data regression technique and established that LLP has a significant and positive ROA correction. Zulfikar (2019) examined the relationship between LLP and bank profitability in Indonesia. Employing the Partial Least Squares-Structural Equation modeling on thirteen banks. The result depicted a positive link between LLP and bank profitability. Based on the above, we hypothesize that;

H₃: *LLP* has a positive affiliation with the profitability of banks in Ghana.

3.1 METHODOLOGY

3.1.1 Data Source and Study Design

By experimenting, the proposed hypotheses would be negated or upheld quantitatively. Annual financial reports of the twenty-three banks licensed by the Bank of Ghana were utilized for this study. The study collected data from 2014 up to 2019, employing STATA version 15 in analyzing the data. The sample dimension offsets criticism that previous studies in Ghana notably incurred.

Table 1: Definition of study variables						
Dependent	Measurement	Source				
ROA	Net Profit for the year /Net asset	Annual report				
Independent						
Non-performing loans ratio Non-performing loans / Total loans Annual report						
(NPLR)						
Capital Adequacy Ratio (CAR)	Total capital/Total Assets	Annual report				
Loss Loan Provision Ratio (LLPR)	Loss Provisions / Total Loans	Annual report				
	Control					
Bank size (S.Z.)	Log of the bank's total assets	Annual report				
Liquidity (LIQ)	Loans and Advance / Deposit ratio.	Annual report				
Interest Rate (INT)	Annual interest rate	World Development				
		Indicators				

Source: Authors' computation

3.1.2 Model

To aid in fully understanding the correlation between the dependent and independent factors. The study proposes the econometric model below: $ROA_{it} = \alpha + \beta 1 NPLR_{it} + \beta 2 CAR_{it} + \beta 3LLPR_{it} + \beta 3CTL_{it} + e_{it}$ (1)

Where ROA as return on asset (a proxy for bank profitability), NPLR as non-performing loan ratio, LLPR as loan loss provision ratio., CTL (size and liquidity), α is the constant, and e is the error term which should not be correlated with the regressors, *i* (*i*=1, 2, 3...N) represents the studied banks, and t(1, 2, 3...T) denote the time frame. All the data analysis was conducted using Stata version 15.0 software package.

 $\Delta Yit = \alpha + \delta Y_{i,t-1} + \beta_1 Xit + \gamma t + \varepsilon_t.$ (2)

Where Δ Yit represents the change in banks' profitability as proxied by ROA, i represents a bank and t as a given time point. The lag of banks was defined as (i, t-1). The explanatory variables, NPLR, CAR, LLPR, SIZE, LIQUID, and INT at a given time, were represented as Xit. β represents the

3.1.3 Method

To ascertain the affiliation among banks' profitability, non-performing loans, capital adequacy ratio, and loan loss provision ratio. The two-step dynamic panel-data estimation model was adopted for the study, as stated below.

coefficient of the independent variables. The time fixed effects are evenly distributed across all the banks modeled as yt. The disturbance is characterized by ϵt . Coefficient δ measures the relational condition upon the explanatory variable. The equation below was derived from equation (2).

$\Delta ROA = \alpha + \beta_0 ROA_{i,t-1} + \beta_1 NPLR_{it} + \beta_2 CAR_{it} + \beta_3 LLPR_{it} + \beta_4 SZ_{it} + 5LIQ_{it} + \beta_5 INT_{it} + \gamma t + \varepsilon t....(3)$

ROA denotes return on assets, NPLR represents Non-performing loans, CAR as Capital adequacy ratio, LLPR as Loan loss provision ratio, S.Z. as the log of a banks' assets, and LIQ the liquidity of banks, and INT as the interest rate. εt represents individual disturbance. The study theory evaluates the affiliation between credit risk and banks' profitability, and therefore the estimated coefficient supports the model above.

The ordinary least square (OLS) method was not employed in estimating Eq. (2) due to its bias, failure to cater to bank-specific effects, and inability to resolve endogeneity issues of the study regressors. Unlike the OLS, the Generalised Method of Moments developed by (Arellano and Bond (1991), Arellano and Bover (1995)) and the fully modified version by Blundell and Bond (1998) is an appropriate estimator as it offsets all the limitations of OLS.

According to (Arellano and Bover (1995), Blundell and Bond (1998)), the system generalized method of moments is best in regulating issues of weak instruments. The two-step system GMM estimator is developed for a small number of "T" and large "N," which may have an inherent fixed and separate effects. As stated by Reed (2015), the

appropriateness of the lagged values of the explanatory variables precedes the absence of autocorrelation and a weak exogeneity of the study disturbance. The diagnostic tests accompanying the GMM estimator are the Hansen J- stats test to check whether there exists a link between the instruments of the study and its residuals and the Sargan test, which exhibits the validity of the instrument employed. Lastly, the Arellano-Bond test which does establish the first and second-order autocorrelation link.

4.1 RESULTS AND DISCUSSION **4.1.1 Descriptive Statistics**

This section includes a concise description of the research variables aspects of their mean, standard deviations, minimum and maximum values. The results indicated a ROA with mean and standard deviation values of 0.0321 and 0.018, respectively. Similarly, NPLR, CAR, and LLPR produce a mean and standard deviation figures of 0.416, 0.304, and 0.142; 0.134, 0.187, and 0.102. S.Z. Ranges from 5.294 to 9.445. The table contains the interpretation of the other studied variables.

Variable	Obs	Mean	Std. Dev	Min	Max
ROA	138	0.032	0.019	-0.040	0.070
NPLR	138	0.416	0.134	0.092	0.755
CAR	138	0.304	0.188	0.041	0.863
LLPR	138	0.142	0.102	0.001	0.456
SZ	138	7.102	1.155	5.294	9.445
LIQ	138	1.164	0.289	0.109	2.266
INT	138	20.739	3.757	16.014	26.125

Source: Authors' computation

4.1.2 Pearson product-moment correlation

This part of the research presents the association between the dependent and independent factors and the controls. There is an adversely insignificant affiliation between ROA and NPLR, indicating that when banks cannot collect credits granted to their customers, their profitability is adversely affected. Also, CAR had a positive and significant link with the banks' return on assets. The above implies that the capital adequacy ratio significantly improves profitability.

However, the loan loss provision ratio had a negative association with ROA. The implication of

this coefficient indicates that banks make provision of loans at 33.76% of loans granted out to cover bad debts. The size of the firms exhibited a negative and significant relationship with ROA. This affiliation shows that small firms grant fewer credits than more significant firms with large capital base. On the part of liquidity, there was a positive and insignificant connection. The above indicates that banks keep enough cash and cash equivalent to meet their shortterm liabilities and invest in other market securities to improve their profitability. The insignificant association's economic implication suggests that liquidity indirectly affects the profitability of the sampled banks as proxied by ROA.

	Table 5. Pearson Product-Moment Correlation									
	ROA	NPLR	CAR	LLP	SIZE	LIQUID	INT			
ROA	1.000									
NPLR	-0.254	1.000								
	0.003*									
CAR	0.267	-0.511	1.000							
	0.002*	0.0000*								
LLP	-0.334	0.547	-0.400	1.000						
	0.000*	0.000*	0.000*							
SIZE	-0.373	0.459	-0.207	0.294	1.000					
	0.000*	0.000*	0.015*	0.005*						
LIQUID	0.008	0.337	-0.210	0.187	0.488	1.000				
	0.924	0.001*	0.013*	0.028*	0.000					
INT	0.117	0.081	0.066	0.035	-0.017	-0.134	1.000			
	0.174	0.347	0.445	0.681	0.846	0.117				

Table 3. Pearson Product-Moment Correlation

*Note: * denotes significance level of 10%*

4.1.3 The Two-Step System General Method of Moments Estimation

The article adopted the two-step system general method of moments estimator to evaluate the influence of non-performing loans, capital adequacy ratio and loan loss provision on Ghanaian licensed banks' profitability. The GMM results uncovered that NPLR had a negative and insignificant connection with the profitability with a coefficient value of - .05107 and p>0.1 (0.828). This figure implies that a unit increase in NPLR leads to a -.0510724 reduction in return on assets.

Source: Authors' computation

Although CAR negatively affected banks' profitability in the study, the effect was statistically insignificant. A percentage decrease in CAR resulted in a percentage decrease in ROA. Again, the investigation on LLPR had an insignificantly favorable implication on Ghana's commercial banks' profitability. On the test of size, the results show a negative and weak significant connection with the sampled banks' ROA. Liquidity ratio, which measures the ease at which banks' meet its short-term liabilities, had an insignificantly favorable affiliation with the banks' profitability.

Table 4. The Two-Step System General Method of Moments Estimation								
	Coef	Std. Err	Tstat	P> t	[95% Con	f.Interval		
ROA L1								
NPLR	-0.051	0.224	-0.23	0.828	-0.524	0.626		
CAR	-0.002	0.089	-0.02	0.984	-0.233	0.229		
LLP	-0.283	0.205	-1.38	0.226	-0.809	0.244		
SIZE	-0.003	0.014	-0.21	0.846	-0.038	0.032		
LIQUID	0.023	0.022	0.99	0.366	-0.036	0.081		
INT	0.002	0.000	3.26	0.023	0.000	0.004		
Q								

Table 4. The Two-Step System General Method of Moments Estimation

Source: Authors' computation

Test	Statis	stics	Prob.			
AR (1)	z = -1	1.69	0.090			
AR (2)	z = (0.01	0.995			
Sargan test	chi2(8) =	chi2(8) = 112.25		0.000		
Hansen test	chi2(8)	chi2(8) = 0.00		00		
		Prob > F	Number of	Obs. Per		
Observations	Instruments		groups	group:		
				avg.		
132	16	0.000	6	22.00		

Table 5. Diagnostic Estimations

Source: Authors' computation

The study conducted diagnostic statistics to examine the reliability and soundness of the data. The outcome of the AR (1) diagnostic test accepted the null hypothesis of the 1st order, which states that there is no first-order auto serial correlation. The above implies that there exists no link between the current and previous years' error term. In the same way, the AR (2) test proves the non-existence of the 2nd Order Serial correlation between error terms of the current year and two years prior.

The null hypothesis of the Sargan test states that the instruments are exogenous; based on the outcome of the test, the null was rejected. The null hypothesis of the Hansen J test (1982) of overidentifying restriction states that the instruments are valid. Hence the acceptance of the null hypothesis. The article adopted the collapsed with robust and orthogonal options and restricted the number of lags to one.

5.1 DISCUSSIONS AND TEST OF HYPOTHESIS

Hypothesis 1: NPLR has a negative affiliation with the bank's profitability as proxied by ROA.

The article developed some hypotheses to test the connection between NPLR and commercial banks' profitability in Ghana. The explored finding of this study indicated that NPLR had a negative and insignificant association with profitability. Nonperforming loans are credit that a bank has granted to customers for interest and the principal to be paid in a specific time. This result is in support of other works of literature. For instance. in India, the findings of Pervez (2019) using a panel regression method, established an adverse connection between NPL and the profitability of banks between the period of 2005-2018. Again, Suganya and Kengatharan (2018) studied the Specific Factors and Financial Profitability of Domestic Licensed Commercial Banks in Sri Lanka. The study found that NPL was negatively linked to bank profitability. These results on NPLR exhibit a negative relationship with profitability; this article's finding supports such theories.

However, in Nigeria, Sanyaolu (2019) explored deposit money banks' influence from 2008

up to 2017. The results indicated a significant positive association between NPLR and bank profitability calculated proxied as ROA. Similarly, Alshatti (2015) in Jordan study credit risk and commercial banks profitability proxied as ROA. The 13 banks' results show that NPLR had a positive affiliation with the profitability of banks.

Hypothesis 2: Capital adequacy ratio has a positive connection with the bank's profitability.

Capital adequacy is a central policy's regulatory policy to control the capital required on a commercial in Ghana. The research finds a negative correlation between CAR and ROA of the institutions. Consistent with the findings of Antwi (2019), there exists a negative between CAR (proxied as total equity capital to total assets ratio and bank profitability proxied as return on assets (ROA). Also, Pervez (2019) conducted a study on Capital Adequacy, Risk, and Bank Profitability in India employing the Panel Regression Technique to test the profitability of 65 Banks with different ownership structures in Indian from 2005 -2018. The findings of the study showed that CAR and bank profitability are negatively related. The discovery suggests that commercial banks in Ghana adhere to the regulation set by the Central bank. These findings can be attributed to the 2016 recapitalization policy introduced in the country. The implication is that if banks continue to monitor their capital adequacy ratio, profitability will increase.

Contrary to the above findings, Ozili (2015) examining the elements that affect profitability and Basel capital regulation on Nigerian banks. The studies found a materially positive connection between capital adequacy ratio, return on asset, and net interest margin as proxies for bank profitability. Similarly, Suganya and Kengatharan (2018) conducted a study on the Specific Factors and Financial Profitability of Domestic Licensed Commercial Banks in Sri Lanka. The study found that capital adequacy is positively linked with bank profitability. Again, in Bangladesh, Rahman (2018) explored the nexus of capital regulation, risk, and profitability of banks in Bangladesh; the results exhibited an affirmative association between bank capital and profitability.

Hypothesis 3. Loan loss provision has a significant positive affiliation with profitability measured by ROA.

Concurring to the Basel Committee on Banking Supervision (2001) suggests that banks put measures in place to foresee credit and estimate the magnitude of loss provisions to absorb any possible default. The negative implications of loan loss provision affect the profitability of banks. The results showed a negative but insignificant affiliation between LLP and the commercial bank's profitability. The findings are consistent with that of Annor and Obeng (2017), using the listed banks in Ghana from 2007 to 2016. The study employed the random effect regression model and concluded that there is a significant adverse affiliation between LLP and listed banks' profitability. Similarly, in Nigeria, Kolapo

(2012) carried out a study from 2000 to 2010 on C.R. and ROA's impact as a proxy of bank profitability.

Contrary to the above studies, Gizaw (2015) employed the panel data regression technique on Ethiopian banks on the nexus between credit risk and bank performance. The study showed that LLP has a significant and positive correction with ROA. Again, Zulfikar Z. (2019) examined the association between LLP and banks' profitability in Indonesia. Employing the Partial Least Squares-Structural Equation modeling on thirteen banks. The result depicted a positive link between LLP and bank profitability. The results of the findings indicate that banks make a large allocation of their returns into loan loss provision to cover bad debts.

5.1.1 Summary of the Tests of Hypothesis

Table 6. Tests of Hypothesis							
Hypothesis	Analytical Tool	Decision					
H_1 : NPLR has a negative affiliation with bank profitability in Ghana.	Two-Step GMM	Accepted					
H ₂ : CAR has a positive affiliation with banks profitability in Ghana	Two-Step GMM	Accepted					
H ₃ : LLP has a positive affiliation with the profitability of banks in Ghana.	Two-Step GMM	Accepted					
Source: Authors' computation							

5.1.2 Robustness Test

	Ta	able 7: Three-St	age Least-Sq	uares Regress	sion	
	Coef	Std. Err	Т	Prob.	[95% Con	f.Interval
NPLR	-0.003	0.013	-0.27	0.790	-0.029	0.022
CAR	0.014	0.008	1.72	0.086	-0.002	0.031
LLPR	-0.045	0.016	-2.92	0.004	-0.077	-0.015
SIZE	-0.001	0.006	-2.09	0.036	-0.002	-0.000
LIQUID	0.004	0.023	1.53	0.126	-0.001	0.008
INT	0.000	0.000	0.83	0.404	-0.000	0.000

Source: Authors' computation

The three-stage least-squares estimator was employed to test for the validity of the results. Consistent with the system generalized method of moment outcome, NPLR, LLPR, SIZE all exhibited a negative nexus with ROA with LLPR, SIZE revealing significance at 1% and 5%, respectively. Furthermore, CAR, LIQUID, and INT showed a positive connection with ROA.

6.1 CONCLUSION

This article examined the influence of nonperforming loans, capital adequacy, and loan loss provision on banks' profitability in Ghana. The study period was from 2014 up to 2019 on twenty-three commercial banks. The analysis of the hypothesis developed was through the Two-Step System Generalised Method of Moments estimator. The GMM results uncovered that the non-performing loan ratio, capital adequacy ratio had a negative and insignificant link with the bank's profitability. Again,

CAR exhibited a significantly positive connection with the profitability of banks. On the control variables, the size of the firms indicated a negative and insignificant relationship with profitability. Liquidity, on the other hand, exhibited a direct link with the bank's profitability.

This research makes suggestions for policy and strategic decision making. First, we recommend that banks gather enough information on customers and their businesses to mitigate moral hazard and adverse selection in the process of granting loans to customers. Again, banks should demand a reasonable amount of collateral to safeguard depositors' funds. Lastly, the central bank should continually ensure that banks meet the minimum capital requirements for a sound banking operation.

The study was limited because other dimensions like the impact of mergers, the expertise of the board, and the auditors' independence were not considered.

Subsequent investigations can include these to explore new insights.

ACKNOWLEDGMENTS

We sincerely appreciate the contributions of Dr. Ibrahim Muazu (University for Development Studies, Ghana) and Mr. Appiah Michael (PhD. Candidate, Jiangsu University), whose comments and constructive criticism helped to shape this study.

REFERENCES

- Abiola, I., & Olausi, A. S. (2014). The Impact of Credit Risk Management on The Commercial Banks Performance in Nigeria. International Journal of Management and Sustainability, 3(5), 295-306.
- Alshatti, A. S. (2015). The Effect of Credit Risk Management on Financial Performance of Jordanian Commercial Banks. Investment Management and Financial Innovations, 12(1 & 2), 338-345.
- Annor, E. S., & Obeng, F. S. (2017). Impact of Credit Risk Management on The Profitability of Selected Commercial Banks Listed on The Ghana Stock Exchange. Journal Of Economics, Management, And Trade, 1-10.
- 4. https://doi.org/10.9734/JEMT/2017/36881
- Antwi, F. (2019). Capital Adequacy, Cost Income Ratio, and Performance of Banks in Ghana. International Journal of Academic Research In Business And Social Sciences, 9(10), 168-184.
- 6. https://doi.org/10.6007/IJARBSS/v9-i10/6471
- Arellano, M., Bond, S., 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. Review of Economic Studies 58 (2), 277–297.
- 8. Arellano, M., Bover, O., 1995. Another look at the instrumental-variable estimation of errorcomponents models. Journal of Econometrics 68 (1), 29–52.
- 9. Basel Committee on Banking Supervision (2001). Risk Management Practices and Regulatory Capital: Cross-Sectional Comparison. Available On-Line: Www.Bis.Org.
- Boahene, S. H., Dasah, J., & Agyei, S. K. (2012). Credit Risk and Profitability of Selected Banks in Ghana. Research Journal of Finance and Accounting, 3(7), 6-14.
- Çekrezi, A. (2015). Determinants of Financial Performance of The Insurance Companies: A Case of Albania. International Journal of Economics, Commerce and Management. 3(4), Pp. 1-10.
- 12. Dietrich, D., & Hauck, A. (2014). Bank Capital Regulation, Loan Contracts, And Corporate Investment. The Quarterly Review Of Economics And Finance, 54(2), 230-241.
- 13. https://doi.org/10.1016/j.qref.2013.10.005
- Edwards, P.& Turnbull, A. (1994). Finance for Small and Medium Sized Enterprises, Information and The Income Gearing Challenge. International Journal Of Marketing, 12(6), 3-9.
- 15. https://doi.org/10.1108/02652329410048275

- Gizaw, M., Kebede, M., & Selvaraj, S. (2015). The Impact of Credit Risk on Profitability Performance of Commercial Banks in Ethiopia. African Journal Of Business Management, 9(2),
- 17. https://doi.org/10.5897/AJBM2013.7171
- Hassen, T., Fakhri, I., Bilel, A., Wassim, T., & Faouzi, H. (2018). Dynamic Effects of Mergers and Acquisitions on The Performance of Commercial European Banks. Journal Of The Knowledge Economy, 9(3), 1032-1048.
- 19. https://doi.org/10.1007/s13132-016-0389-1
- Idowu Abiola & Awoyemi Samuel Olausi, 2014. "The Impact of Credit Risk Management on The Commercial Banks Performance in Nigeria," International Journal of Management and Sustainability, Conscientia Beam, Vol. 3(5), Pages 295-306.
- Islam, F. T. (2018). Evaluating Loan Loss Provisioning for Non-Performing Loans and Its Impact on The Profitability of Commercial Banks in Bangladesh. Asian Finance & Banking Review, 2(2), 33-41.
- 22. https://doi.org/10.46281/asfbr.v2i2.222
- 23. Kaaya, I., & Pastory, D. (2013). Credit Risk and Commercial Banks Performance in Tanzania: A Panel Data Analysis.
- 24. 16. Kajola, S. O., Adedeji, S. B., Olabisi, J., & Babatolu, A. T. (2018). Effect of Credit Risk Management on The Financial Performance of Nigerian Listed Banks. International Journal Of Business Policy & Governance, 5(6), 53-62.
- 25. https://doi.org/10.19085/journal.sijbpg050601
- Kock, N., & Lynn, G. (2012). Lateral Collinearity and Misleading Results in Variance-Based Sem: An Illustration and Recommendations. Journal Of The Association For Information Systems, 13(7).
- 27. https://doi.org/10.17705/1jais.00302
- Kodithuwakku, S. (2015). Impact of Credit Risk Management on The Performance of Commercial Banks in Sri Lanka.
- Kolapo, T. F., Ayeni, R. K., & Oke, M. O. (2012). Credit Risk and Commercial Banks' Performance in Nigeria: A Panel Model Approach. Australian Journal of Business and Management Research, 2(2), 31-38.
- 30. Krugman, Paul (2009). The Return of Depression Economics and The Crisis Of 2008. W.W. Norton Company Limited. Isbn 978-0-393-07101-6.
- 31. Kurawa, J.M. And Garba, S. (2014). An Evaluation of The Effect of Credit Risk Management (Crm) On the Profitability of Nigerian Banks, Journal of Modern Accounting and Auditing, 10 (1), Pp. 104-115. Available At:Http://Www.Academia.Edu.
- 32. Majumder, M. T. H., & Li, X. (2018). Bank Risk and Performance in An Emerging Market Setting: The Case of Bangladesh. Journal Of Economics, Finance And Administrative Science, 23(46), 199-229.
- 33. https://doi.org/10.1108/JEFAS-07-2017-0084
- Merton, R. C. 1974. On the Pricing of Corporate Debt: The Risk Structure of Interest Rates. Journal Of Finance 29:449-470.
- 35. https://doi.org/10.1111/j.1540-6261.1974.tb03058.x

- 36. Muhammad, I. (2012). Introduction, Reasons and Consequences of Heteroscedasticity.
- Naceur, S. B., & Omran, M. (2011). The Effects of Bank Regulations, Competition, And Financial Reforms on Banks' Performance. Emerging Markets Review, 12(1), 1-20.
- 38. https://doi.org/10.1016/j.ememar.2010.08.002
- 39. Nasserinia, A., Ariff, M., & Fan-Fah, C. (2014). Key Determinants of Japanese Commercial Banks Performance. Pertanika Journal of Social Science and Humanities, 22, 17-38.
- Odunga, R. M., Nyangweso, P. M., Carter, D. A., & Mwarumba, M. (2013). Credit Risk, Capital Adequacy and Operating Efficiency of Commercial Banks in Kenya. International Journal of Business and Management Invention, 2(9), 6-12.
- 41. Ogboi, C., & Unuafe, O. K. (2013). Impact of Credit Risk Management and Capital Adequacy on The Financial Performance of Commercial Banks in Nigeria. Journal of Emerging Issues in Economics, Finance and Banking, 2(3), 703-717.
- Okoye, V., & Eze, O. R. (2013). Effect of Bank Lending Rate on The Performance of Nigerian Deposit Money Banks. International Journal of Business and Management Review, 1(1), 34-43.
- 43. Olugboyega, K. S., Babatunji, A. S., Jayeola, O. L. A. B. I. S.I, & Tobi, B. A. (2018) Effect of Credit Risk Management on Financial Performance of Nigerian Listed Deposit Money Banks.
- 44. Ozili, P. K. (2015). Determinants of Bank Profitability and Basel Capital Regulation: Empirical Evidence from Nigeria. Research Journal Of Finance And Accounting, 6(2), 124-131.
- 45. https://doi.org/10.2139/ssrn.2544647
- Pervez, A., Bansal, R., & Ugc, P. D. F. (2019). Sub Prime Lending Crises and Performance of Public Sector Bank in India. Pimt, 44.
- Rahman, M. M., Chowdhury, A. A., & Mouri, D. E. Y. (2018). Relationship Between Risk-Taking, Capital Regulation and Bank Performance: Empirical Evidence from Bangladesh. Eurasian Journal Of Business And Economics, 11(22), 29-57.
- 48. https://doi.org/10.17015/ejbe.2018.022.02
- Rahman, M.M., Hamid, K., & Khan, A. (2015). Determinants of Bank Profitability: Empirical Evidence from Bangladesh. International Journal of Business and Management. 10(8), Pp. 135-150
- 50. https://doi.org/10.5539/ijbm.v10n8p135
- Samad, A. (2015). Determinants Bank Profitability: Empirical Evidence from Bangladesh Commercial Banks. International Journal Of Financial Research, 6(3), 173-179.
- 52. https://doi.org/10.5430/ijfr.v6n3p173
- 53. Sanyaolu, W. A., Siynbola, T. T., Ogunmefun, G. T., & Makinde, A. B. (2019). Determinants of Profitability of Nigerian Deposit Money Banks. Economic Review: Journal Of Economics & Business/Ekonomska Revija: Casopis Za Ekonomiju I Biznis, 17(1).
- 54. https://doi.org/10.5937/ekonhor2001031S
- Shapiro, S. S., & Wilk, M. B. (1965). An Analysis of Variance Test for Normality (Complete Samples). Biometrika, 52(3/4), 591-611.

- 56. https://doi.org/10.1093/biomet/52.3-4.591
- Suganya, S. J., & Kengatharan, L. (2018). Impact of Bank Internal Factors on Profitability of Commercial Banks in Sri Lanka: A Panel Data Analysis. Journal of Business Studies, 5(1).
- 58. https://doi.org/10.4038/jbs.v5i1.25
- 59. Suganya, S. J., & Kengatharan, L. (2018). Specific Factors and Financial Performance of Domestic Licensed Commercial Banks in Sri Lanka. Scms Journal of Indian Management, 15(2), 5-12.
- 60. Tariq, W., Usman, M., Mir, H. Z., Aman, I., & Ali, I. (2014). Determinants of Commercial Banks Profitability: Empirical Evidence from Pakistan. International Journal Of Accounting And Financial Reporting, 4(2), 1-22.
- 61. https://doi.org/10.5296/ijafr.v4i2.5939
- 62. Weersainghe, V. E. I. W., & Perera, T. R. (2013). Determinants of Profitability of Commercial Banks in Sri Lanka. International Journal of Arts and Commerce, 2(10), 141-170.
- 63. Widarjono, A. (2018). Estimating Profitability of Islamic Banking in Indonesia. Jurnal Keuangan Dan Perbankan, 22(3), 267413.
- 64. https://doi.org/10.26905/jkdp.v22i3.2197
- Widyastuti, A., Komara, R., & Layyinaturrobaniyah, L. (2019). Capital Structure and Bank Performance. Jurnal Bisnis Dan Manajemen, 20(2), 136-144.
- 66. https://doi.org/10.24198/jbm.v20i2.300
- 67. Zulfikar, Z & Wahyuni Sri (2019). The Impact of Discretionary Loan Loss Provision of Sharia Financing on Financial Performance. Banks And Bank Systems, 14(4), 34-41.
- 68. https://doi.org/10.21511/bbs.14(4).2019.04

Research Paper



EPRA International Journal of Economic and Business Review-Peer Reviewed Journal Volume - 8, Issue -10, October 2020 |e-ISSN: 2347 - 9671| p- ISSN: 2349 - 0187

SJIF Impact Factor (2020): 8.107|| ISI Value: 1.433|| Journal DOI URL: https://doi.org/10.36713/epra2012

FINANCIAL RATIOS AND ANALYSIS OF TATA MOTORS

¹ MD Qamar Azam	¹ Department of Economics, Jamia Millia Islamia(Central University), New Delhi-110025
² MD Abrar Alam	² Research Analyst, Ex- Assistant Manager, Vision RI Connexion Services, Sonipat, Haryana.

ABSTRACT

Article DOI URL: https://doi.org/10.36713/epra5462

The paper investigates the financial health of Tata Motors in comparison with the Maruti Suzuki, Ashok Leyland, and SML Isuzu & Force motors for the period 2006-2016 on the aggregate market level data. Debt to total assets is approx. 60-70% which is above the average. Debt to equity ratio is moving between 1.5 to 2.2 which is bad for any company. In the case of the liquidity ratios which are very low relatively to industry. Further, earning per share, price to earning ratio, earning power & market value to book value all these ratios are below and its moving around zero. Overall Tata motors financial ratios indicates that its financial conditions are under performance.

KEYWORDS: Tata Motors; Financial Ratios

INTRODUCTION FINANCIAL RATIO ANALYSIS

- A ratio is an arithmetical relationship between two figures.
- Financial ratio analysis is a study of ratios between various items or groups of items in financial statements.

Following are the important ratios:

1. LIQUIDITY RATIO

- Liquidity refers to the ability of a firm to meet its obligations in the short run, usually one year.
- L.R. are generally based on the relationship between current assets and current liabilities.
- The important liquidity ratios are:

Current ratio & Acid test ratio.

Current ratio:

The current ratio is an important financial ratio which measures the ability of the firm to meet its current liabilities — current assets get converted into cash in the operational cycle of the firm and provide the funds needed to pay current liabilities. Apparently, the higher the current ratio, the greater the short-term solvency.

The current ratio is defined as: $\frac{CURRENT ASSETS}{CURRENT LIABILITIES}$

Acid-test ratio:

The acid-test ratio is also known the quick ratio. It is a fairly stringent measure of liquidity. It is based on those current assets which are highly liquidinventories are excluded from the numerator of this ratio because inventories are deemed to be the least liquid component of current assets.

The acid test ratio is defined as: <u>CURRENT LIABILITIES</u> Where quick assets are defined as current assets excluding inventories)

2. Leverage ratio

Leverage ratio refers to the use of debt finance. While debt capital is a cheaper source of finance, it is also a riskier source of finance. Leverage ratio helps in assessing the risk arising from the use of debt capital.

Two types of ratios are commonly used to analyse financial leverage they are as follows:

a. Debt-equity ratio

Interest coverage ratio b

Debt equity ratio

The debt equity ratio shows the relative contributions of creditors and owners. It is defined as.

TOTAL DEBTS

SHAREHOLDER'S FUND

↓ In general, the lower the debt-equity ratio, the higher the degree of protection enjoyed by the creditors.

INTRESET COVERAGE RATIOS

The interest coverage ratio is a debt ratio and profitability ratio used to determine how easily a company can pay interest on outstanding debt. The interest coverage ratio may be calculated by dividing a company's earnings before interest and taxes (EBIT) during a given period by the amount a company must pay in interest on its debts during the same period.

The method for calculating interest coverage ratio may be represented with the following formula:

EBIT

INTREST CHARGES

INVENTORY TURNOVER RATIO

The inventory turnover or stock turnover ratio measures how fast the inventory is moving through the firm and generating sales. The inventory turnover ratio is deemed to reflect the efficiency of inventory management. The higher the ratio, the more efficient the management of inventories and vice versa. However, this may not always be true. A high inventory turnover ratio may be caused by a low level of inventory which may result in frequent stock outs and loss of sales and customer goodwill. It may be calculated as:

NET SALES

AVERAGE INVENTORIES

ACCOUNT RECEIVABLE TURNOVER RATIO

This ratio shows how many times sundry debtors or trade receivables turn over during the year. It is defined as:

NET SALES

AVERAGE RECEIVABLES

The receivables figure used in the denominator of this ratio is generally the receivables figure at the end of the period. However, when sales are highly seasonal or when sales growth is high, the year-end receivables figure is somewhat inappropriate. When sales are highly seasonal, the average of the receivables figure at the end of each month or each season may be used and when sales growth is high the average of the beginning and ending receivables balances may be used.

NO. OF DAYS SALES IN ACCOUNT RECEIVABLES

Measures, on average, how many days it takes to collect an account receivable. It is defined as:

365

AC. RECEIVABLES TURN OVER

PROFITABILITY RATIOS

PROFIT MARGIN RATIOS

Profit margin ratio measures a company's ability to generate earnings relative to sales, assets and equity. This ratio assesses the ability of a company to generate earnings, profits and cash flows relative to relative to some metric, often the amount of money invested. They highlight how effectively the profitability of a company is being managed.

Common examples of profitability ratios include return on sales, return on investment, return on equity, return on capital employed (ROCE), cash return on capital invested (CROCI), gross profit margin and net profit margin. All of these ratios indicate how well a company is performing at generating profits or revenues relative to a certain metric.

Profit margin ratio is of two types which as follows:

- a. Gross profit margin ratio
- b. Net profit margin ratio

GROSS PROFIT MARGINS

This ratio shows the margin left after meeting manufacturing costs. It measures the efficiency of production as well as pricing. To analyse the factors underlying the variation in gross profit margin, the proportion of various elements of cost (labour, materials and manufacturing overheads) to sales may be studied in detail. It is defined as

NET PROFIT MARGINS

This ratio shows the earnings left for shareholders (both equity and preference) as a percentage of net sales. It measures the overall efficiency of production, administration, selling, financing, pricing, and tax management.

It may be calculated as: N.P.A.T

NET SALES

5. Valuation ratio

Valuation ratios are ratios computed on the basis of parameters in the financial statements of a company and used to estimate the value of a companies. These can be used to easily compare companies and determine which a better investment is. A particular firm's valuation ratio can be compared with that of the industry's or with other companies to determine its investment attractiveness.

It is mainly categorised in to three types which as follows:

- a. Yield
- b. Price-earning ratio
- c. Market price to book value ratio

Price-earning ratio:

It is the most popular financial statistics in stock market.

It is commonly referred to as a summary measure which primarily reflects the following factors: growth prospects, risk characteristics, shareholders' orientation, cooperate image, and degree of liquidity.

Price-earning ratio may be calculated as follows: *Market price per share*

Earning per share

The market price per share may be the price prevailing on a certain day, or preferably the average price over a period of time. *The earnings per share* is simply the profit after tax divided by the number of outstanding equity shares. **Empirical Analysis:**

Market price to book value ratio:

It is a financial ratio used to compare a company's current market price to its book value. It is also sometimes known as a Market-to-Book ratio.

This ratio also gives some idea of whether an investor is paying too much for what would be left if the company went bankrupt immediately. For companies in distress, the book value is usually calculated without the intangible assets that would have no resale value. In such cases, P/B should also be calculated on a "diluted" basis, because stock options may well vest on sale of the company or change of control or firing of management.

Market Value to Book Value Ratio is defined as:

BOOK VALUE

In a very important sense, this ratio reflects the contribution of a firm to the net wealth of the society. When this ratio exceeds 1 it means that the firm has contributed to the creation of net wealth in the society — if this ratio is, say, 2, the firm has created a net wealth of one rupee for every rupee invested in it. When this ratio is equal to 1, it implies that the firm has neither contributed to nor detracted from the net wealth of the society.

TATA MOTORS

Tata Motors Limited, a USD 42 billion organisation, is a leading global automobile manufacturer of cars, utility vehicles, buses, trucks and defence vehicles.

Tata Motors is part of the USD 100 billion Tata group founded by Jamsetji Tata in 1868. Sustainability and the spirit of 'giving back to society' is a core philosophy and good corporate citizenship is strongly embedded in our DNA. Tata Motors is India's largest automobile company.

FINANCIAL RATIOS OF TATA MOTORS										
YEAR	Mar 07	Mar 08	Mar 09	Mar 10	Mar 11	Mar 12	Mar 13	Mar 14	Mar 15	Mar 16
LQUIDITY RATIO										
CURRENT RATIO	1.099	0.796	0.540	0.519	0.577	0.618	0.480	0.359	0.421	0.603
ACID TEST RATIO	0.828	0.610	0.416	0.387	0.373	0.411	0.269	0.153	0.185	0.327
ACCOUNT RECEVABLE TURNOVER	35.601	30.078	19 107	17 924	18 855	20.450	19 780	22 597	31 139	31 585
No. of days sale in ac. Receivable	10.253	12.135	19.102	20.364	19.358	17.849	18.453	16.153	11.722	11.556
Inventory turn over	8.390	9.446	8.099	8.017	8.233	8.803	7.887	6.298	5.684	10.248
LEVERAGE RATIO										
DEBT TO EQUITY	1.795	2.336	2.099	2.452	1.708	1.778	1.727	1.593	2.360	1.344

[©] 2020 EPRA JEBR | EPRA International Journal of Economic and Business Review | www.eprajournals.com 🖈 19

DEBT TO TOTAL	0.642	0 700	0.677	0.710	0.631	0.640	0.633	0.614	0 702	0 573
TOTAL	0.042	0.700	0.077	0.710	0.031	0.040	0.035	0.014	0.702	0.373
CAPITALIZATION	0.311	0.401	0.394	0.488	0.431	0.393	0.384	0.380	0.497	0.355
COVERAGE RATIO	1									
INTREST COVERAGE RATIO	7.602	7.054	2.505	3.270	2.587	2.100	1.126	0.233	-1.466	1.102
EQUITY RATIO	0.358	0.300	0.323	0.290	0.369	0.360	0.367	0.386	0.298	0.427
NET INCOME TO NET SALES	0.072	0.071	0.040	0.063	0.038	0.023	0.007	0.010	-0.131	0.006
ROE	0.308	0.276	0.100	0.165	0.104	0.063	0.016	0.017	-0.278	0.013
PROFTABILITY RATIO										
GROSS PROFIT MARGIN	0.226	0.236	0.185	0.226	0.259	0.267	0.267	0.204	0.240	0.407
NET PROFIT MARGIN	0.072	0.071	0.040	0.063	0.038	0.023	0.007	0.010	-0.131	0.006
RETURN ON INVESTMENT	0.100	0.078	0.026	0.044	0.033	0.023	0.006	0.007	-0.095	0.004
RETURN ON EQUITY	0.279	0.259	0.082	0.151	0.091	0.063	0.016	0.017	-0.319	0.010
EARNING PER SHARE	49.650	52.630	19.780	39.260	6.060	3.900	0.930	1.030	-14.720	0.680
PRICE TO EARNING RATIO	2.711	2.191	1.804	3.809	40.736	69.944	282.462	382.650	-36.965	568.088
EARNING POWER	0.154	0.115	0.044	0.080	0.066	0.047	0.030	0.006	-0.047	0.031
MV/BV	0.020	0.015	0.003	0.010	0.012	0.014	0.014	0.021	0.037	0.017

FINANCIAL RATIOS OF AUTOMOBILE INDUSTRY

	AVERAGE RATIO OF 5 AUTOMOBILE COMPANIES									
RATIO	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
CR	1.16	1.72	1.07	0.97	1.33	1.19	1.09	1.10	1.03	1.04
QR	0.83	1.42	0.75	0.65	0.93	0.82	0.74	0.68	0.65	0.61
AcRT	16.30	17.49	23.62	29.35	45.30	52.33	48.05	63.67	60.62	47.77
NDSAcRT	44.37	35.80	40.66	33.39	25.72	23.05	25.90	27.70	20.67	18.80
IT	7.48	9.30	7.40	7.95	8.11	8.05	7.77	7.32	8.04	9.34
D-E	2.17	1.99	1.83	1.37	1.17	1.27	1.28	1.14	1.22	0.94
D-TA	0.63	0.57	0.57	0.52	0.49	0.52	0.52	0.49	0.49	0.45
TCR	0.55	0.45	0.65	0.49	0.46	0.44	0.44	0.45	0.46	0.41
ICR	21.14	8.20	25.25	13.11	26.91	141.02	275.45	100.35	171.95	260.98
GPM	23.77%	24.87%	24.11%	27.36%	27.93%	27.00%	26.85%	26.21%	28.35%	33.11%
NPM	7.35%	7.09%	5.54%	10.44%	10.67%	8.35%	8.40%	7.89%	6.71%	10.39%
ROI	119.44%	150.77%	71.12%	82.32%	95.25%	101.37%	100.63%	99.74%	106.45%	117.95%
ROE	24.09%	22.97%	4.33%	16.52%	18.48%	16.75%	16.38%	15.28%	12.20%	20.23%
EPS	27.006	29.756	2.206	24.43	24.84	27.17	37.07	56.046	79.054	108.554
MV/BV	1.05	0.80	0.36	0.55	0.82	0.97	0.87	1.22	2.66	2.26
PER	10.20	7.80	7.14	13.25	22.10	29.84	69.69	134.17	28.07	139.77
EP	0.12	0.13	0.06	0.11	0.13	0.11	0.12	0.12	0.14	0.18

1. We have calculated the above average ratios considering 5 automobile companies namely:Tata motors, Maruti Suzuki, Ashok Leyland, SML Isuzu & Force motors.

COMPARISON OF TATA MOTORS FINANCIAL RATIOS WITH INDUSTRIES RATIOS

1. CURRENT RATIO: it gives an idea of company's ability to pay back its liability.Here Tata motors C.R. is highest in 2006-07 period after that it is decreasing and it is under 1.It indicates that its liability is greater than its assets. **So, it is not in good financial health.**



2. ACID - TEST RATIO: It indicates the company short term liquidity and measures company'sability to meet its short-term obligations with most liquid assets. Higher the

acid-test ratio should be for healthy company. In the case of TATA MOTORS, acid test ratio is below 1after 2007.



3. ACCOUNT RECEIVABLE TURN OVER: this ratio measure how many times a company converts its receivables into cash.



4. **INVENTORY TURNOVER RATIO:** Indicates the effectiveness of the inventory management

practices of the firm. In this case it is moving with industry.



5. DEBT TO EQUITY RATIO: shows the relative contributions of creditors and owners. This ratio is currently not high but it is above on

average. Data shows that Tata motors is aggressive in financing its growth with debt. This create a high level of risk



6. **DEBT TO TOTAL ASSETS:** Here TATA MOTORS approx. 60-70 % assets financed by

debt while on an industry shows that it should be below 0.5 or 50%.



7. TOTAL CAPITALIZATION RATIO: The capitalization ratio measures the debt component of a company's capital structure, or capitalization to support a company's operations and growth. Tata

motors has an average TCR relative to industry average.



8. PROFITABILITY RATIOS: a. GROSS PROFIT MARGIN:



b. NET PROFIT MARGIN:



c. RETURN ON EQUITY





d. RETURN ON INVESTMENT:

e. EARNING PER SHARE:



f. PRICE TO EARNING RATIOS:





h. MARKET VALUE TO BOOK VALUE:



Profitability ratio Indicates the efficiency of operations and firm pricing policies. Gross profit margin moving with industry average through the years but net profit margin is moving below the industry average .so earning left for shareholders is very low and it also indicates that it is not good in converting revenue into profits available for shareholders.

Return on investment and return on equity both is below the industry average and it went on a negative side during period 2014-15. After that it has covered but still it is moving around zero.

Earning per share , price to earning ratio , earning power & market value to book value all these ratios are below and its moving around zero .

HORIZONTAL ANALYSIS

Horizontal analysis (also known as *trend analysis*) is a financial statement analysis technique that shows changes in the amounts of corresponding financial statement items over a period of time. It is a useful tool to evaluate the trend situations.

The statements for two or more periods are used in horizontal analysis. The earliest period is usually used as the base period and the items on the statements for all later periods are compared with items on the statements of the base period. The changes are generally shown both in dollars and percentage.

Dollar and percentage changes are computed by using the following *formulas*.

Percentage change=(dollor change/amount of the item in base year)*100

Here as we see for tatamotors the trend that the return on equity has decreased by time majorly during the march 15-16 as well as return on investment has also fallen down during this period.

The total current liabilities has decreased over time which a positive pmlication for the company. The trade paybales has also cited a decireasing trend which ensures that the company is working well and covering the due payments really well. Now if we see the assets of Tatamotors, we see that tangible assets have been approximately same more or less during these 10 years but the intangible assets have changed drastically .Moreover fixed assests have seen a surge which is making the company stronger on its asset side.

Inventories have decreased overtime at slow rate .While total revenue has not seen much progress. On an average there has been slight increase im total revenue.

Horizontal analysis										
	Mar 07	Mar-08	Mar-09	Mar-10	Mar-11	Mar 12	Mar-13	Mar-14	Mar-15	Mar 16
EQUITIES AND LIABILITIES										
SHAREHOLDER'S FUNDS										
Equity Share Capital	0.66	0.03	33.33	11.00	11.76	-0.46	0.52	0.89	0.00	5.50
Total Share Capital	0.66	0.03	33.33	11.00	11.76	-0.46	0.52	0.89	0.00	5.50
Revaluation Reserves	-1.67	-1.70	-1.72	-1.76	-1.79	-1.82	-1.85	-1.89	0.00	0.00
Reserves and Surplus	25.95	15.02	59.59	19.85	36.20	-1.98	-2.60	0.20	-23.31	52.62
Total Reserves and Surplus	25.81	14.95	59.38	19.81	36.13	-1.98	-2.60	0.20	-23.28	52.54
Total Shareholders Funds	24.07	14.12	58.10	19.44	35.19	-1.94	-2.50	0.22	-22.50	50.50
NON-CURRENT LIABILITIES										
Long Term Borrowings	-6.65	81.38	56.07	94.37	-17.87	-17.30	0.59	21.05	26.39	-13.24
Deferred Tax Liabilities [Net]	24.59	42.53	46.43	14.39	-12.04	4.07	-6.72	-97.80	-100.00	0.00
Other Long Term Liabilities						-11.77	-36.80	-6.70	-75.18	-26.74
Long Term Provisions						-48.43	6.95	17.94	158.12	-33.04
Total Non-Current Liabilities	1.22	69.33	53.55	74.45	7.75	-16.22	-6.06	-1.55	25.08	-16.33
CURRENT LIABILITIES										
Short Term Borrowings	190.49	28.29	196.47	-31.84	2.44	-39.36	106.74	-23.29	62.76	-56.82
Trade Payables	3.21	46.87	4.05	35.43	-25.43	-0.82	-3.31	14.40	-8.47	0.72
Other Current Liabilities	-23.19	-1.58	-17.61	1126.75	15.30	132.71	-34.10	-49.97	27.59	35.77
Short Term Provisions	12.29	45.82	-5.64	47.21	-27.12	46.71	-48.91	25.39	-67.61	98.26
Total Current Liabilities	18.92	41.49	37.43	23.84	-14.46	16.72	-4.84	-10.93	8.37	-12.86
Total Capital And Liabilities	17.34	36.20	46.87	33.06	6.04	0.61	-4.28	-4.70	0.42	4.97
ASSETS										
NON-CURRENT ASSETS										
Tangible Assets	7.96	40.25	40.34	48.05	-0.29	7.65	4.61	-1.25	1.05	-0.06
Intangible Assets	37.78	-4.56	111.10	2.71	864.17	30.65	-3.21	-1.92	13.38	-0.33
Capital Work-In- Progress	164.23	101.52	37.30	-24.76	-67.13	11.07	-21.07	13.86	-21.37	8.87
Intangible Assets Under Development						2.27	52.61	42.94	1.13	6.83
Fixed Assets	41.43	63.46	39.68	12.58	4.75	10.69	6.05	6.86	1.06	1.93

Non-Current										
Investments	22.92	98.23	164.10	72.24	0.90	-20.56	1.50	1.02	-7.58	0.05
Deferred Tax Assets [Net]	17.15	125.06	188.06	-30.87	-100.00	0.00	0.00	0.00	0.00	0.00
Long Term Loans And Advances	0.00	0.00	0.00	0.00	0.00	1.70	2.50	-18.37	-17.64	-1.68
Other Non-Current	20 54	40.04	66.61	100.00	0.00	100.22	6.07	21.21	41.94	22.12
Total Non-Current	-28.54	-40.04	-00.01	-100.00	0.00	188.23	-6.07	31.31	41.84	-22.13
Assets	35.17	74.05	82.13	37.79	9.24	-6.18	3.70	2.25	-3.78	0.85
Monetary Item Translation Difference A/C										
CURRENT ASSETS										
Current Investments					0.00	2911.93	-31.95	-94.28	-79.95	8485.56
Inventories	24.29	-3.16	-7.93	31.65	32.56	17.91	-2.90	-13.30	24.32	2.08
Trade Receivables	9.28	44.56	37.54	53.80	8.82	4.05	-32.87	-33.08	-8.40	40.73
Cash And Cash Equivalents	-26.14	189.96	-52.37	53.55	38.54	-24.21	-74.86	-51.14	317.75	-52.15
Short Term Loans And Advances	3.75	-26.49	7.46	-6.46	-58.48	1.14	-18.15	-20.12	28.65	13.97
OtherCurrentAssets	0.00	0.00	0.00	0.00	0.00	1.39	-8.07	4.60	7.31	116.06
Total Current Assets	4.97	2.39	-6.67	19.05	-4.91	24.98	-26.09	-33.51	27.21	24.88
Total Assets	17.34	36.20	46.87	33.06	6.04	0.61	-4.28	-4.70	0.42	4.97
Profit & Loss account of Tata Motors										
	0.94	0.94	0.92	0.92	0.91	0.90	0.89	0.88	0.88	0.87
INCOME										
Revenue From Operations [Gross]	32.35	6.54	-13.84	33.76	33.47	15.64	-16.96	-23.61	4.66	18.16
Less: Excise/Sevice Tax/Other Levies	30.09	-1 58	-33 94	-2.69	46.26	1999	-7 33	-23.81	-6.93	32.43
Revenue From	22.72	7.00	10.00	27.05	22.46	15.26	17.04	22.50	с ог	16.00
Other Operating	32.73	7.09	-10.00	57.05	52.40	13.20	-17.04	-23.39	5.05	10.00
Revenues	0.00	0.00	0.00	0.00	0.00	29.23	30.39	-2.94	6.06	4.35
Revenues	32.73	7.89	-10.80	37.85	33.12	15.33	-17.57	-23.41	5.85	16.74
Other Income	30.15	-34.13	25.49	32.52	-65.35	35.73	263.75	83.56	-50.92	13.37
Total Revenue	32.63	6.20	-9.90	37.67	29.83	15.51	-14.63	-18.64	0.14	16.57
EXPENSES										
Cost Of Materials	24.05	A.C.A	10.70	25.24	27 54	25.27	10 (2	24.70	0.11	0.74
Purchase Of Stock-In	34.95	4.04	-13.72	25.34	27.54	25.27	-19.62	-24.78	0.11	9.74
Trade	46.10	9.52	36.43	107.00	63.15	-12.62	-8.85	-13.89	14.17	-8.78
Operating And Direct Expenses	30.04	3.67	-4.23	48.80	-89.05	65.86	81.75	0.70	2.04	-2.94
Changes In Inventories										
Of FG,WIP And Stock-In Trade	36.11	-111.58	488.04	-354.84	-41.61	76.12	-76.98	-358.86	-336.42	-102.61
Employee Benefit Expenses	19.26	12.90	0.44	18.35	24.94	17.32	5.41	1.43	7.43	-2.09

Finance Costs	32.84	9.17	58.29	84.99	11.03	-11.93	13.88	-3.62	20.50	-8.10
Depreciation And	12 54	11 76	24.07	10 22	21.62	10.00	12 12	12.00	25.74	F 74
Miscellaneous Expenses	12.54	11.20	54.07	10.22	51.02	10.00	15.12	15.90	25.74	-5.74
Written Off	15.23	-24.31	-20.48	181.47	-100.00	0.00	0.00	0.00	0.00	0.00
Other Expenses	31.98	1.53	6.24	40.17	117.88	24.74	-7.40	-10.22	15.64	-0.48
Less: Amounts Transfer To Capital Accounts	0.00	0.00	0.00	0.00	0.00	10.94	5.14	5.80	10.87	-7.56
Total Expenses	33.42	6.83	-5.04	32.06	33.77	17.24	-12.64	-16.55	8.13	5.37
Profit/Loss Before Exceptional, ExtraOrdinary Items	25.22	0.10	60.65	170.11	17 17	17.01	60.21	102.21	624.96	114 29
Finanction of Items	23.32	0.10	-00.03	1/9.11	-17.17	-17.01	-09.51	-102.21	054.00	-114.50
Exceptional Items	0.00	0.00	0.00	0.00	0.00	297.80	-28.88	29.71	-25.21	-10.04
Profit/Loss Before Tax Tax Expenses-Continued Operations	25.32	0.10	-60.65	179.11	-22.37	-38.95	-86.96	-686.41	287.48	-103.78
Current Tax	31.00	-70.80	-100.00	0.00	0.00	-33.43	-78.41	-374.88	-121.73	-337.06
Less: MAT Credit Entitlement	0.00	0.00	0.00	0.00	0.00	-32.25	-78.56	-1281.47	6.20	-100.00
Deferred Tax	24.67	126.58	-100.62	-23678.40	-36.16	-73.89	-229.72	1406.84	-97.38	-109.31
Other Direct Taxes	-63.20	-2.10	114.29	-100.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Tax Expenses	25.80	-17.08	-97.72	4615.68	-34.74	-74.32	-228.42	972.13	-156.18	-110.97
Profit/Loss After Tax And Before ExtraOrdinary Items	25.15	6.03	-50.65	123.73	-19.12	-31.44	-75.70	10.84	-1516.64	-104.94
Profit/Loss From Continuing Operations	25.15	6.04	-49.90	120.36	-19.12	-31.44	-75.70	10.84	-1516.64	-104.94
Profit/Loss For The Period	25.15	6.04	-49.90	120.36	-19.12	-31.44	-75.70	10.84	-1516.64	-104.94
Costs of goods sold	30.75	6.39	-4.79	30.84	27.54	14.04	-17.60	-16.82	1.09	-8.93
gross profit	40.04	13.05	-30.22	68.76	52.18	19.02	-17.47	-41.46	24.41	97.95

VERTICAL ANALYSIS

Vertical analysis (also known as *common-size analysis*) is a popular method of financial statement analysis that shows each item on a statement as a percentage of a base figure within the statement.

To conduct a *vertical analysis of* <u>balance</u> <u>sheet</u>, the total of assets and the total of liabilities and stockholders' equity are generally used as base figures. All individual assets (or groups of assets if condensed form balance sheet is used) are shown as a percentage of total assets. The current liabilities, long term debts and equities are shown as a percentage of the total liabilities and stockholders' equity.

In a vertical analysis, the percentage is computed by using the following formula:

Percentage change= $(\frac{amount of individual item}{amount of base item})100$

Where base item is total liability and capital in case of liability and for assets side total assets

The vertical analysis also has the same results as the horizontal. The current liabilities have decreased slightly over time. While the percentage of profit has decreased a lot over time. This is a serious issue for Tata motors. This has been mainly due the decreasing net sales. Drop in demand for JLR cars in China and weak Indian operations seen as reasons for the tepid quarterly result

			v	ERTICAL A	NALYSIS					
	Mar 07	Mar-08	Mar-09	Mar-10	Mar-11	Mar 12	Mar-13	Mar-14	Mar-15	Mar 16
EQUITIES AND										
SHAREHOLDER'S FUNDS										
Equity Share Capital	2.01	1.47	1.34	1.12	1.18	1.16	1.22	1.29	1.29	1.30
Total Share Capital	2.01	1.47	1.34	1.12	1.18	1.16	1.22	1.29	1.29	1.30
Revaluation Reserves	0.14	0.10	0.07	0.05	0.04	0.04	0.04	0.05	0.05	0.04
Reserves and Surplus	33.64	28.41	30.87	27.80	35.71	34.79	35.40	37.22	28.42	41.33
Total Reserves and Surplus	33.77	28.50	30.93	27.85	35.75	34.83	35.44	37.26	28.47	41.37
Total Shareholders Funds	35.78	29.98	32.27	28.97	36.93	36.00	36.67	38.56	29.76	42.67
NON-CURRENT										
Long Term Borrowings	11.16	14.86	15.79	23.06	17.86	14.68	15.43	19.60	24.67	20.39
Deferred Tax Liabilities [Net]	5.02	5.25	5.24	4.50	3.73	3.86	3.76	0.09	0.00	0.00
Other Long Term	0.00	0.00	0.00	0.00	4.10	3 50	2.27	2.22	0.57	0.40
Long Term Provisions	0.00	0.00	0.00	0.00	2 31	1 1 9	1 3 2	1.52	4.21	2.69
Total Non-Current Liabilities	16.17	20.11	21.02	27.56	28.01	23.32	22.89	23.65	29.45	23.48
CURRENT LIABILITIES										
Short Term Borrowings	9.73	9.16	18.49	9.47	9.15	5.52	11.91	9.59	15.54	6.39
Trade Payables	29.76	32.09	22.73	23.14	16.27	16.04	16.20	19.45	17.73	17.01
Other Current Liabilities	1.46	1.05	0.59	5.45	5.92	13.70	9.43	4.95	6.29	8.14
Short Term Provisions	7.11	7.61	4.89	5.41	3.72	5.42	2.89	3.81	1.23	2.32
Total Current Liabilities	48.05	49.91	46.71	43.47	35.06	40.68	40.44	37.80	40.79	33.86
Liabilities	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
ASSETS										
NON-CURRENT ASSETS										
Tangible Assets	19.56	20.14	19.25	21.42	20.14	21.55	23.55	24.40	24.55	23.37
Intangible Assets	0.65	0.46	0.66	0.51	4.62	6.00	6.07	6.25	7.05	6.70
Capital Work-In- Progress	13.09	19.37	18.11	10.24	3.17	3.50	2.89	3.45	2.70	2.80
Intangible Assets Under Development	0.00	0.00	0.00	0.00	3.84	3.90	6.22	9.33	9.39	9.56
Fixed Assets	33.30	39.97	38.01	32.16	31.77	34.95	38.72	43.42	43.70	42.43
Non-Current Investments	12.90	18.78	33.77	43.71	41.59	32.84	34.82	36.91	33.97	32.38
Deferred Tax Assets [Net]	0.92	1.52	2.98	1.55	0.00	0.00	0.00	0.00	0.00	0.00
Long Term Loans And Advances	0.00	0.00	0.00	0.00	6.33	6.40	6.85	5.87	4.81	4.51
Other Non-Current Assets	0.05	0.02	0.01	0.00	0.06	0.18	0.18	0.25	0.35	0.26
Total Non-Current	47.18	60.29	74.77	77.42	79.75	74.37	80.58	86.45	82.83	79.58

Assets										
Foreign Currency Monetary Item Translation Difference A/C	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
CURRENT ASSETS										
Current Investments	0.00	0.00	0.00	0.00	0.16	4.75	3.38	0.20	0.04	3.31
Inventories	13.03	9.26	5.81	5.74	7.18	8.42	8.54	7.77	9.62	9.35
Trade Receivables	4.07	4.32	4.05	4.68	4.80	4.97	3.48	2.45	2.23	2.99
Cash And Cash Equivalents	4.31	9.17	2.97	3.43	4.48	3.38	0.89	0.45	1.89	0.86
Short Term Loans And Advances	31.42	16.96	12.41	8.72	3.42	3.43	2.94	2.46	3.15	3.42
OtherCurrentAssets	0.00	0.00	0.00	0.00	0.21	0.21	0.20	0.22	0.23	0.48
Total Current Assets	52.82	39.71	25.23	22.58	20.25	25.15	19.42	13.55	17.17	20.42
Total Assets	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

ALTMAN Z-SCORE MODEL OF TATA MOTORS

Altman Z-Score is a quantitative balancesheet method of determining a company's financial health. "Safe" companies, i.e. companies that have a low probability of bankruptcy, have an Altman Z-Score greater than 3.0.

The Altman Z-Score is a measure of a company's health and likelihood of bankruptcy. Several key ratios are used in the formulation of an Altman Z-Score Value.

The Z-Score model is the 1960's brainchild of Professor Edward Altman of NYU. It consists of 5 variables:

The original model to calculate the Z score for public automobile companies is as follows. Z = 1.2*X1 + 1.4*X2 + 3.3*X3 + 0.6*X4 + 1.0*X5

Where:

- X1 = Working Capital / Total Assets
- X2 = Retained Earnings / Total Assets
- X3 = EBIT / Total Assets
- X4 = Market Value of Equity / Total Liabilities
- X5 = Net Sales / Total Asset

	Z SCORE TABLE									
	Mar 07	Mar-08	Mar-09	Mar-10	Mar-11	Mar 12	Mar-13	Mar-14	Mar-15	Mar-16
X1	0.05	-0.10	-0.21	-0.21	-0.15	-0.16	-0.21	-0.24	-0.24	-0.13
X2	0.34	0.29	0.31	0.28	0.36	0.35	0.35	0.37	0.28	0.41
X3	0.15	0.11	0.04	0.08	0.07	0.05	0.03	0.01	-0.05	0.03
X4	0.02	0.01	0.00	0.01	0.01	0.01	0.01	0.02	0.04	0.02
X5	1.39	1.10	0.67	0.69	0.87	1.00	0.86	0.69	0.73	0.81
Z SCORE	2.44	1.76	0.99	1.10	1.42	1.46	1.21	0.95	0.71	1.34





- Here its X1 (Working capital/total assets) ratios shows negative except only in 2006-07. it means major part of its working capital is financed by debt. Proper credit policy or collection of overdue on time would increase this ratio.
- The company is able to maintain it's retained earnings. According to the result of X2, the company is able to generate and retain its profit out of its total assets.
- X3 indicates the company's ability to generate profit out of its total assets. But the company has shown a decline trend from 2008-2009.
- X4 shows the company's market value to overcome its liabilities. The ideal number is 1. Tata Motors X2 ratio is above 1. it showed an increasing trend and after that a sudden dip with market in period 2008-09 maked.
- Analyzing X5 ratio, Tata Motors was not able to utilize its fixed assets fully after 2008-2009 to 20015-16.
- When Z is 3.0 or more, the firm is most likely safe based on the financial data. However, be careful to double check as fraud, economic downturns and other factors could cause unexpected reversals.
- When Z is 2.7 to 3.0, the company is probably safe from bankruptcy, but this is in the grey area and caution should be taken.
- When Z is 1.8 to 2.7,. This is the lower portion of the grey area and a dramatic turnaround of the company is needed.
- If a company is generating lower than 1.8, serious studies must be performed to ensure the company can survive.

CONCLUSION

Overall Z score of Tata motors is lies between 0.71 to 2.44, lowest in 2015. Company needs serious studies. We can say that its main reason is company's working capital to total assets is negative during the periods. Its all profitability ratios are under the average and negative during the years. Debt to total assets is approx. 60-70% which is above the average. Debt to equity ratio is moving between 1.5 to 2.2 which is bad for any company. In the case of the liquidity ratios which are very low relatively to industry. On an average tata motors financial ratios indicates that its financial conditions are under performance.

REFERENCES

- 1. Money control
- 2. The financial express
- 3. Wikipedia
- 4. http://www.tatamotors.com

Research Paper



EPRA International Journal of Economic and Business Review-Peer Reviewed Journal Volume - 8, Issue -10, October 2020 |e-ISSN: 2347 - 9671| p- ISSN: 2349 - 0187

SJIF Impact Factor (2020): 8.107|| ISI Value: 1.433|| Journal DOI URL: https://doi.org/10.36713/epra2012

THE EFFECT OF CAPITAL STRUCTURE AND GOOD CORPORATE GOVERNANCE ON FINANCIAL PERFORMANCE

¹ Putri Renalita Sutra Tanjung	¹ Universitas Mercu Buana, Jakarta, Indonesia
¹ Putri Renalita Sutra Tanjung	¹ Universitas Mercu Buana, Jakarta, Indonesia

ABSTRACT

Article DOI URL: https://doi.org/10.36713/epra5433

This study aims to examine the effect of Capital Structure and Good Corporate Governance on Financial Performance. This research's object is the food and beverages sub-sector manufacturing companies listed on the Indonesia Stock Exchange in 2014-2018. This research was conducted using a sample of 18 selected companies listed on the Indonesia Stock Exchange. Determination of the selection using a purposive sampling method with criteria determined by the researcher using a causal relationship design. Therefore, the data analysis used is statistical analysis in the form of multiple linear regression tests. This study indicates that Debt to Asset Ratio has a significant negative effect on Financial Performance; Independent Commissioners have a significant positive on Financial Performance. At the same time, the Board of Directors and managerial ownership does not affect Financial Performance.

KEYWORDS: Capital Structure, Good Corporate Governance, Financial Performance

INTRODUCTION

In the current era of globalization, Indonesia's industrial world has made a lot of progress. One of the industries experiencing growth is the manufacturing industry, where this industry is the largest contributor to economic growth compared to other sectors; the development of the manufacturing industry mainly occurs in the food and beverage industry sub-sector. However, based on the growth chart of the food and beverage sub-sector submitted by the central statistical agency, a slowdown in growth occurred between the first quarter to the fourth quarter of 2018. The slowdown in growth in this sector was caused by restrained public consumption. The downturn in this sector's development has resulted in several declines in PT Indofood Sukses Makmur Tbk's performance. Net

profit from Indofood Sukses Makmur Tbk decreased slightly by 5.7% from 5.93% in the previous year. This is due to the increase in the cost of goods sold and the company's performance expenses. The increase in the company's performance costs was due to the rise in palm oil prices, where Indofood Sukses Makmur's flagship product uses palm oil as raw material. This reduces profits and makes the financial performance of PT Indofood Sukses Makmur Tbk considered less than optimal.

One indicator that shows that a company successfully manages its resources in assessing the company's financial performance. Financial performance is an achievement that the company has achieved and is stated in a company's financial report for a certain period (Fadillah, 2017). The profitability ratio is a financial ratio used as the basis for measuring economic performance by investors; the profitability ratio commonly used in measurement is Return On Asset (ROA) because ROA can show how much its ability to use its assets efficiently to generate maximum profit. (Kristianti, 2018).

The capital structure is a description of its financial form, namely between its capital, which is the source of company funding, and fortune that comes from long-term debt (Fahmi, 2014: 175). The capital structure can help investors assess the level of risk and rate of return that will be received. In a capital structure study on financial performance, Aziz and Hartono (2017) show that capital structure harms financial performance. Meanwhile, research conducted by Aini et al. (2017) shows different results, namely that it does not affect economic performance.

Apart from capital structure, Good Corporate Governance is also able to influence the company's financial performance. Corporate governance is used to create transparent company management for users of financial reports; if this concept is appropriately implemented, company management's transparency will also continue to improve (Pakpahan et al., 2017). There are several implementing indicators in good corporate governance, including the board of directors, independent commissioners, and managerial ownership.

According to POJK, No.33 / POJK.04 / 2014 is a company organ that has full authority and responsibility for its management and the benefit of the company. According to research conducted by Setiawan (2016), the board of directors does not affect the company's financial performance. Meanwhile, according to Putri and Muid (2017), Chairunesia, Sutra, and Wahyudi (2018), it shows that the board of directors positively affects financial performance. An independent commissioner is a commissioner with no affiliation or business relationship with members of the board of commissioners, the board of directors, and shareholders with a controlling level (Azis and Hartono, 2017). According to research by Sarafina and Saifi (2017), it shows that independent commissioners have a positive effect on financial performance. Meanwhile, according to Wardani and Zulkifli (2017), it shows that independent commissioners do not affect economic performance. Managerial ownership is shares owned by company management (Hermiyetti and Katlanis, 2016). Research conducted by Larasati et al. (2017) shows that managerial ownership affects financial performance. Meanwhile, according to Aprianingsih (2016), managerial ownership does not involve financial performance..

LITERATURE REVIEW Agency Theory

According to Jensen and Meckling (1976), an agency relationship is a contract between the owner (principal) who uses the services of another person (agent) to perform services on behalf of the owner, including delegation of authority and decision-making relating to the company. The agent/manager certainly better knows internal information and its prospects as the company manager than the owner (principal). This often triggers a conflict between the principal and the agent. To minimize friction, companies can implement good corporate governance as a monitoring material and increase debt levels. With this application, it is hoped that the agent can act by the owner's wishes; namely, the increasing company returns so that company performance increases (Tertius and Christiawan, 2015).

Financial Performance

Financial performance is a description of the company's condition in a certain period related to the aspects of raising funds and channeling funds, as measured by indicators of liquidity and profitability (Jumingan, 2014: 239). Return on assets (ROA) is part of the profitability ratio, which is a ratio that measures the company's ability to generate profits using its assets. The ROA value can indicate the level of management effectiveness in using company assets to create profits. The higher the ROA value, the better the company's financial performance (Kristianti, 2018). Return On Asset can be formulated as follows (Brigham, Eugene, & Houston, 2014: 148):

$$ROA = \frac{Net \ income}{Total \ Assets}$$

Capital Structure

Capital structure is a description of its financial form, namely between its capital, which is the source of company funding, and prosperity that comes from long-term debt (Fahmi, 2014: 175). The capital structure in this study is proxied by the Debt to Asset Ratio (DAR). DAR is a part of the leverage ratio. Debt to Asset Ratio is used to measure how much the company's assets are financed by debt. Debt to Asset Ratio can be formulated as follows (Fahmi, 2014: 75):

$$DAR = \frac{Total \ Liabilities}{Total \ Assets}$$

Good Corporate Governance

Good Corporate Governance (GCG) is a form of management a good company, which protecting shareholders' includes interests as company owners and creditors as funders (Setianingsih et al., 2014). According to Saifi (2019), in implementing Corporate Governance, there are several principles that companies need to apply to serve as company guidelines in running their accountability, namely transparency, business. responsibility, independence, and fairness. In assessing good corporate governance, it can be done through several indicators such as the board of
directors, independent commissioners, and managerial ownership.

1. Board of Directors. According to the Financial Services Authority Regulation No.33 / POJK.04 / 2014, the board of directors is an organ of the issuer or public company that has full authority and responsibility for the management of the issuer or public company for the benefit of the issuer or public company, by the intent and purpose of the issuer or company. Public and represent the issuer or public company, both inside and outside the court, by the provisions of the articles of association. The board of directors' task is to determine the direction and strategy of the company's resources in the short and long term. The formula for calculating the board of directors is as follows (Addiyah and Chairiri, 2014):

Board of Directors = Σ Members of the Board of Directors

2 Independent Commissioner. According to the Financial Services Authority Regulation No.33 / POJK.04 / 2014, an independent commissioner is a member of the board of commissioners from outside the issuer or public company and meets the requirements as an independent commissioner as referred to in this financial services authority regulation. Independent commissioners can have a positive effect on the company because the independent board of commissioners provides a variety of perspectives that can increase the potential for the work environment and better solutions in dealing with problems within the company so that they can help improve the company performance (Azis and Hartono, 2017). The calculation formula for independent commissioners is as follows (Oemar, 2014):

Independent Commissioner =
$$\frac{\sum Independent \ Commissioner}{\sum the \ entire \ board \ of \ commissioners} x \ 100\%$$

3. Managerial ownership. Managerial ownership is the total shares owned by the management (manager). Managerial share ownership can help unify interests between shareholders and managers (Hermiyetti and Katlanis, 2016). The higher the proportion of managerial share ownership, the better the company's performance. The formula for calculating managerial ownership is as follows (Gurdyanto et al., 2019).

Managorial ownership	\sum Shares Owned By Management	x 10006
Munuyeriui ownersnip –	Σ Outstanding Shares	x 100%

Past Research

Research conducted by Agustina and Santosa (2019) The effect of DAR, DER, and Corporate Governance on Financial Performance provides hypothesis testing results that DAR does not affect financial performance, DER harms financial performance, Independent Commissioners break financial performance, and DAR, DER, independent commissioners simultaneously have a positive impact on the company's economic performance.

Research conducted by Ningsih, et al. (2019) The Effect of Good Corporate Governance and Ownership Structure on Company Performance. Provide the results of testing the hypothesis of independent commissioners, the board of directors, audit committee, managerial ownership, institutional ownership simultaneously have a positive effect on company performance; independent commissioners do not affect company performance, boards of directors have a positive impact on company performance, the audit committee has no effect on company performance, Managerial ownership has no impact on company performance. Institutional ownership does not affect company performance.

Research conducted by Akshita Arora and Chandan Sharma (2016) Corporate Governance and Firm Performance in Developing Countries shows that board size harms ROA, and board meetings positively impact ROA.

Research conducted by Masitoh and Hidayah (2018) The effect of the implementation of good corporate governance on company performance resulted in the conclusion that public ownership does not affect company performance, managerial ownership does not affect company performance, board size has a positive impact on company performance, independent board of directors has a negative effect. On company performance, the independent panel of commissioners does not affect.

Research conducted by Kennedy Okiro, Josiah Aduda, and Nixon Omoro (2015) The Effect Of Good Corporate Governance And Capital Structure On Performance Of Firms Listed At The East African Community Securities Exchange shows that good corporate governance has a significant positive effect on firm performance, the capital. The structure has a significant positive impact on athletic performance.

Research conducted by Chairunesia, Sutra, and Wahyudi (2018), The Effect of Good Corporate Governance and Financial Distress on Profit Management, shows that good corporate governance does not affect earnings management. Meanwhile, financial distress affects earnings management.

Hidayah the effect of Investment Opportunity Set (using CAPBVA price proxy and MVBVE Investment Proxy) and managerial ownership on firm value The results of this study indicate that the independent variable is IOS (CAPBVA and MVBVE) have a significant effect on firm value, while managerial ownership variables have no significant impact on firm value.

Bintara and Tanjung. Analysis of Fundamental Factors on Stock Return, explains that Return on Assets, Current Ratio, Debt to Equity, and Price Earning Ratio affect the value of the company proxied by Stock Return. In contrast, PBV does not affect the value of the company.

Tanjung and Wahyudi. Analysis of the Effect of Disclosure of Sustainability Report, Economic Value Added, and Other Fundamental Factors of Companies on Company Value explains that Debt to Equity and Price Earning Ratio affect the firm's value.

THINKING FRAMEWORK AND HYPOTHESES The Effect of Capital Structure on Company Financial Performance

Capital structure is the activity of financing the company's operations using debt or equity. Companies with high long-term debt levels increase interest on the debt and increase the risk of default. This will affect the company's profitability and financial performance (Azis and Hartono, 2017).

H1: Debt to asset ratio harms the company's financial performance

The Effect of the Board of Directors on the Company's Financial Performance

The more the number of boards of directors, the more optimal the level of supervision will be. The decision-making process will be more accurate to positively impact the company's financial performance (Lestari and Sari, 2017).

H2: The board of directors has a positive effect on the company's financial performance

The Effect of Independent Commissioners on the Company's Financial Performance

Independent commissioners are thought to have a positive impact on the company because the independent board of commissioners provides a variety of views that can increase the potential of the work environment and offer more creative solutions to problems in the company so that it can help improve the company performance (Azis and Hartono, 2017).

H3: Independent commissioners have a positive effect on the company's financial performance

Effect of Managerial Ownership on Company Financial Performance

Managerial ownership can improve company performance because managers will be more motivated to double their efforts, which have a role as part of the shareholder to manage the company well to maximize its financial performance (Hermiyetti and Katlanis, 2016).

H4: Managerial ownership has a positive effect on the company's financial performance

Based on the theoretical basis and the results of previous research and the problems raised, the following is a theoretical framework outlined in the research model, as shown in the following figure:



METHOD

Population and Sample Research

This study's population is the food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange from 2013 to 2018 that publish annual financial reports.

Sampling was done by using the purposive sampling method, which is part of the non-probability selection. Samples to be taken care of based on predetermined criteria. The sample criteria used in this study are as follows:

1. Food and beverage sub-sector manufacturing

Figure 1. Framework

companies listed on the Indonesia Stock Exchange consecutively in the 2013-2018 period

- 2. Food and beverage sub-sector manufacturing companies whose financial reports were not successful
- 3. Food and beverage sub-sector manufacturing companies that have IPO 2017-2018

Data Analysis Method

Data analysis was performed using multiple linear regression analysis, including the following calculation:

- 1. Descriptive Statistical Test
- 2. Classical Assumption Test which consists of Normality Test, Multicollinearity Test, Heteroscedasticity Test, and Autocorrelation Test
- Model Feasibility Test, which consists of the Analysis of the Coefficient of Determination (R2 Test), Fit Model Feasibility Test (f test), and

Partial Test (t-test).

RESULTS AND DISCUSSION Descriptive statistics

The results of data processing can be seen from the descriptive statistics below:

Table 1. Descriptive Statistics								
	Ν	Minimum	Maximum	Mean	Std. Deviation			
ROA	90	-,2604	,5267	,067522	,1162715			
CS	90	,0387	,9190	,475368	,1891070			
BOD	90	2	10	4,84	2,114			
IC	90	,3333	,5714	,382718	,0715839			
MO	90	,0000,	,3451	,029144	,0709599			
Valid N (listwise)	90							

ble 1. Descriptive Statistics

urce l	Results	of S	PSS	data	processin
		\sim		~~~~~~	p. 0000000

In the SSS output results above, a descriptive statistic can be seen of the capital structure, good corporate governance, and financial performance:

Sc

- Financial performance (ROA) has the lowest a. (minimum) value of (-0.2604) owned by PT Magna Investama Mandiri Tbk in 2016. This is due to weak economic growth, as well as the financing sector that has not grown significantly. Thus, Magna Investama Mandiri decided to move its line of business by acquiring companies engaged in rice milling and rice management. Meanwhile, the highest value (maximum) of 0.5267 was owned by PT Multi Bintang Indonesia Tbk in 2017. This is due to the sales growth carried out by PT Multi Bintang Indonesia by increasing distribution to 10% nationally. This shows that the company's profits demonstrate profitability as a measure of company performance. The number of average (mean) Return on Assets in the company from the 90 data studied was 0.067522.
- b. Capital Structure (DAR) has the lowest (minimum) value of 0.0387 owned by PT Inti Agri Resources Tbk in 2015; this shows that the capital structure used by PT Inti Agri Resources Tbk uses more assets than debt to finance needs. His company. Meanwhile, the highest value (maximum) of 0.9190 owned by PT Magna Investama Tbk in 2018 used a more considerable debt to fund its activities. The overall average DAR value of companies in the food and beverage industry in 2014-2018 is 0.4754 units, which means that every Rp. 1 asset in the company is used to pay off the total liabilities of Rp. 0.4754. In general, it can be concluded that companies in the food and beverage industry in 2014-2018 are solvable. The company can provide guarantees against third parties, namely creditors who provide loans to the company. The average number (mean) of DAR in the companies from the 90 data studied was 0.4754.
- c. The Board of Directors has the lowest (minimum) score of 2 owned by PT Akasha Wira International Tbk in 2018, PT Inti Agri

Resources Tbk for the 2014-2018 period, PT Magna Investama Mandiri Tbk, and PT Tri Banyan Tirta for the 2017-2018 period. This is due to changes in the composition of the board of directors and cost-efficiency. With the number of board of directors of 2 people, the company can still carry out their duties and obligations so that the resulting performance is still relatively good. Meanwhile, the highest value (maximum) of 10 is owned by PT Indofood Sukses Makmur Tbk from 2015-2017. Having ten members of the board of directors can maximize the company's operational structure because of the even distribution of tasks and responsibilities.

- d. Independent commissioners have the lowest (minimum) score of 0.3333 owned by PT Akasha Wira International Tbk, PT Bumi Teknokultura Tbk, PT Budi Strach and sweetener Tbk, PT Wilmar Cahaya Indonesia Tbk, PT Inti Agri Resources Tbk, PT Prasidha Aneka Niaga Tbk, PT Nippon Indosari Tbk, PT Sekar Bumi Tbk, PT Sekar Laut Tbk, PT Ultrajava Milk & Trading Co Tbk in 2014-2018. PT Indofood CBP Sukses Makmur Tbk in 2015, and PT Tri Banyan Tirta Tbk in 2014-2016. This shows that the performance of independent commissioners in the company is low, which is only 33.3%. Meanwhile, the highest value (maximum) of 0.5714 was owned by PT Multi Bintang Indonesia Tbk in 2015 and 2016. This shows that the independent board of commissioners' performance is high, namely 57.14%. The average (mean) number of independent commissioners from the 65 data studied was 0.383791, with a standard deviation of 0.0702273, which means that the standard deviation value is smaller than the average value (mean). This shows that the data is well distributed.
- e. Managerial ownership has the lowest (minimum) value in this study of 0; this shows that the company's lawyers do not own shares in the company. Meanwhile, this study's maximum managerial ownership value was 0.3451, which

was obtained from PT Ultrajaya Milk Industry and Trading Company Tbk in 2018. This shows that the company's shares are owned by layers of managers in the company with the expectation of share ownership by the parties. Management can motivate managers to improve the company's financial performance.

Classic Assumption Test

The classic assumption test is carried out so that the regression model in the research is significant and representative. In the multiple regression analysis, it is necessary to avoid any standard assumption deviation so that problems do not arise in its use. The basic assumption is that the data is normally distributed; there is no heteroscedasticity, multicollinearity, and autocorrelation. Based on the normality test in this study, the Asymp value model. Sig. (2tailed) = 0.200, then according to the provisions of 0.200> 0.05, the residual value is normal. Then the data in the model can be said to be normally distributed. Multicollinearity test which shows that the VIF value is below 10, and the tolerance value is above 0.10. From the results of these tests, it can be concluded that the regression model does not have multicollinearity problems. Heterokedatisitas test shows that there was no heteroscedasticity. This can be seen from the probability of its significance (Sig. Value) on each independent variable above the 5% confidence level or 0.05. So it can be concluded that the regression capital does not contain heteroscedasticity. The autocorrelation test in this study used the autocorrelation test using the Durbin-Watson (DW) test. The results of the autocorrelation test data obtained no positive or negative autocorrelation, or it can be concluded that there is no autocorrelation.

Hypothesis Testing Results

Determinant Coefficient Test Results (R2)

According to Ghozali, the coefficient of determination essentially measures how far the model's ability to explain variations in the dependent variable. The ratio of determination aimed at R² from the regression model is used to determine the dependent variable that can explain the magnitude of the variability of the dependent variable. The coefficient of determination test results is known that the R Square value of 21.7%, this shows that the variation Company Financial Performance can be explained by changes in Capital structure, Board of Commissioners. Directors, Independent and Managerial Ownership by 21.7%. While the remaining 78,3% (100% -21.7%) is solved or influenced by other factors not examined in this study.

Model Feasibility Test Results (Test F)

According to Ghozali, F statistical test is basically to show whether all independent variables are included. Based on the table above, it is known that the calculated F value of 16.637 with a probability of 0,000 < 0.05; this indicates that the model used in this study is feasible. So in this regression model, it can be concluded that the variables of in Capital structure, Board of Directors, Independent Commissioners, and Managerial Ownershi affect the Company Financial Performance

Partial Hypothesis Testing (t test)

The t test is used to determine whether the independent variable partially affects the dependent variable, with a significance level of 5%. If the sig value is greater than 0.05, then H0 is accepted. If the sig value is less than 0.05 then H0 is rejected and Ha is accepted. The results of the T test are as follows:

Μ	odel	Unstand	Т	Sig.	
		B			
	(Constant)	-,155	,071	-2,187	,032
	CS	-,174	,062	-2,806	,006
1	BOD	,009	,005	1,646	,103
	IC	,671	,161	4,156	,000,
	МО	,179	,163	1,100	,275

Table 2. Partial Hypothesis Testing (t test)

Based on the table above, the multiple linear regression equation can be obtained as follows: ROA = (-0,155) + (-0,174) CS+ 0,009 BOD+ 0,671 IC + 0,179 MO + e

1. The Effect of Capital Structure on the Company's Financial Performance The t-test analysis results on the table of capital structure variables measured using DAR (Debt to Asset Ratio) show that t has a value of (-1.248) with a significant probability of 0.217. This indicates that the possibility of significance is greater than the significance level $\alpha = 0.05$ or 5% (0.217> 0.05). So that H1 is rejected, this shows that the capital structure variable measured using DAR (Debt to Asset Ratio) partially does not affect the company's financial performance. This study's results are in line with the results of research conducted by Aini (2017), Jufrizen et al. (2019), which states that the capital structure measured using the Debt to Asset Ratio does not affect financial performance. This shows that large or small the level of debt owed by the company will not affect the company's financial performance, which is usually assessed from profit because the company will still be able to generate high profits when the level of sales increases.

2. The Effect of Directors on the Company's Financial Performance

The t-test analysis results on the table of directors' variables, which is one of the indicators of good corporate governance, shows that t has a value of (-2.476) with a significant probability of 0.016. This indicates that the possibility of significance is less than the significance level $\alpha = 0.05$ or 5% (0.016 <0.05). So that H2 is accepted and rejects H0, this shows that the director's variable partially harms the company's financial performance.

This study's results align with Rimardhani & Dwi Atmanto (2016), Putri, and Dul Muid (2017). The board of directors has a role as a leader who can help direct the company's implementation of strategies and policies to improve performance. However, when a company has a large number of boards of directors. This will create new conflicts, namely difficulties in uniting thoughts so that the board of directors cannot coordinate and make the right decisions in carrying out the control function, which will cause a decline in the company's financial performance.

3. The Effect of Independent Commissioners on the Company's Financial Performance Based on the t-test analysis results on the table, the independent commissioner variable, which is one of the indicators of good corporate governance, shows that t has a value of 6.154 with a significant probability of 0.000. This indicates that the significance probability is smaller than the significance level $\alpha = 0.05$ or 5% (0.000 <0.05). So that H3 is accepted, this shows that the independent commissioner

CONCLUSIONS AND RECOMMENDATIONS Conclusion

From the research results in the previous chapter, the following conclusions can be drawn:

- 1. Capital structure (DAR) does not affect the company's financial performance.
- 2. The Board of Directors harms the company's financial performance
- 3. Independent Commissioner has a positive impact on the company's financial performance
- 4. Managerial ownership does not affect the company's economic performance.

variable partially has a significant positive effect on the company's financial performance.

The results of this study are in line with Putra (2015), Fadillah (2017), Agustina and Awan (2019), which state that independent commissioners have a significant positive effect on financial performance. In theory, an independent commissioner can act as an intermediary in a dispute between internal managers and can oversee policies and serve as a provider of advice to the board of directors. Independent commissioners have a supervisory function over the management of the company to create a company with good governance and improve the company's financial performance.

4. The Effect of Managerial Ownership on Company Financial Performance

Based on the t-test analysis results on the table, the managerial ownership variable, which is one of the indicators of good corporate governance, shows that t has a value of (-0.333) with a significant probability of 0.740. This indicates that the possibility of significance is greater than the significance level $\alpha = 0.05$ or 5% (0.740> 0.05). So this shows that H4 is rejected, and H0 is accepted. So it can be concluded that the managerial ownership variable partially does not significantly affect the company's financial performance.

This study's results are in line with Aprianingsih (2016), Gurdyanto et al. (2019), which state that managerial Ownership does not significantly financial performance. affect Managerial Ownership is a condition where management has share ownership in a company. It has a role as the company's manager and the share owner/investor in the company. However, not all management has a high proportion of share ownership so that managers will feel less satisfied with the benefits taken from the decisions they make. In the future, it cannot unify the interests of managers and shareholders. So that the large or small level of share ownership owned by management will not affect financial performance.

Recommendations

The recommendations put forward in this study include the following:

- 1. From the research results, it is expected that the management of food and beverage companies can reduce debt or manage it wisely because the balance between debt and assets can affect financial performance.
- 2. From the research results obtained, researchers suggest that investors who will invest their funds in food & beverage sector companies pay attention to the companies' capital structure that will be used as a place to invest.

3. Future research is expected to use other ratios to measure the capital structure and use other indicators to measure Good Corporate Governance or use other measurements.

REFERENCES

- Addiyah, Alina, dan Anis Chariri. 2014. Pengaruh Penerapan Corporate Governance Terhadap Kinerja Keuangan Perbankan Studi Pada Perusahaan Perbankan yang Terdaftar Di BEI Tahun 2010-2012. Diponegoro Journal Of Accounting Vol. 3, No. 4.
- Agustina, Riesta Chahya, dan Awan Santosa. 2019. Pengaruh DAR, DER, dan Tata Kelola Perusahaan Terhadap Kinerja Keuangan Perusahaan Farmasi. Jurnal Ekonomi dan Manajemen (Capital). Vol. 3, No. 1.
- Aini, Ayu Nur, Edi B.S., dan Isnani. 2017. Pengaruh Kepemilikan Institusional, Proporsi Dewan Komisaris Independen, Komite Audit, Struktur Modal, Ukuran Perusahaan, dan Leverage Terhadap Kinerja Keuangan Studi Kasus Perusahaan Manufaktur Sektor Industri Barang Konsumsi yang Terdaftar di BEI Tahun 2011-2015. Jurnal Ekonomi Universitas Pandanaran 2017.
- Aprianingsih, Astri. 2016. Pengaruh Penerapan Good Corporate Governance, Struktur Kepemilikan, Dan Ukuran Perusahaan Terhadap Kinerja Keuangan Perbankan. Jurnal Profita Edisi 4 2016.
- Aprinita, B. S. (2016). Pengaruh Good Corporate Governance Terhadap Kinerja Keuangan Pada Perusahaan Sektor Consumer Goods Yang Terdaftar Di Bursa Efek Indonesia Tahun 2012-2014. Jurnal Bisnis Dan Manajemen, 52(11).
- Azis, Abdul, dan Ulil Hartono. 2017. Pengaruh Good Corporate Governance, Struktur Modal, Dan Leverage Terhadap Kinerja Keuangan Perusahaan Pada Sektor Pertambangan Yang Terdaftar Di BEI Tahun 2011-2015. Jurnal Imu Manajemen Universitas Negeri Surabaya Vol. 5 No. 3.
- 7. Brigham, Eugene, F., and Houston. 2014. Dasar-Dasar Manajemen Keuangan. Jakarta : Salemba Empat
- Chairunesia, W., Sutra, P. R., & Wahyudi, S. M. (2018). Pengaruh Good Corporate Governance Dan Financial Distress Terhadap Manajemen Laba Pada Perusahaan Indonesia Yang Masuk Dalam Asean Corporate Governance Scorecard. Jurnal Profita, 11(2), 232.
- Fadillah, Adil Ridlo. 2017. Analisis Pengaruh Dewan Komisaris Independen, Kepemilikan Manajerial, dan Kepemilikan Institusional Terhadap Kinerja Perusahaan Yang Terdaftar Di LQ 45. Jurnal Akuntansi Vol. 12 No. 1.
- Fahmi, Irham. 2014. Manajemen Keuangan Perusahaan dan Pasar Modal. Jakarta : Mitra Wacana Media
- Gurdyanto, Mochammad Feries, Kartika H. T., dan Anita Wijayanti. 2019. Pengaruh Corporate Governance Terhadap Kinerja Keuangan Perusahaan Manufaktur Sektor Industri Barang Konsumsi Sub Sektor Makanan Dan Minuman Di BEI. Research Fair Unisri Vol. 3, No. 1, Januari 2019.
- Hermiyetti, dan Erlinda Katlanis. 2016. Analisis Pengaruh Kepemilikan Manajerial, Kepemilikan Institusional, Kepemilikan Asing, Dan Komite Audit Terhadap Kinerja Keuangan Perusahaan. Media Riset Akuntansi, Vol.6 No.2 Agustus 2016.
- 13. Hidayah, N. (2015). Pengaruh Investment Opportunity

- 4. Further research is expected to add the variables used. Besides that, it can also consider measuring tools to measure the company's financial performance and using ROA, such as ROE, or other measuring instruments.
 - Set (Ios) Dan Kepemilikan Manajerial Terhadap Nilai Perusahaan Pada Perusahaan Property Dan Real Estat Di Bursa Efek Indonesia. Jurnal Akuntansi, 19(3), 420-432.
 - Jensen, M.C and Meckling, W.H. 1976. Theory of the Firm : Managerial Behavior, Agency Costs and Ownership Structure. Journal of Financial Economics, Vol. 3, No. 4, pp.305-360.
 - 15. Jumingan. 2014. Analisis Laporan Keuangan. Jakarta : PT Bumi Aksara
 - Kristianti, I.P. 2018. Analisis Pengaruh Struktur Modal Terhadap Kinerja Keuangan Perusahaan. Akuntansi Dewantara Vol. 2 No. 1 April 2018.
 - Larasati, S., Hendra Titisari, K., & Nurlaela, S. (2017). Pengaruh Good Corporate Governance Dan Corporate Social Responsibility Terhadap Kinerja Keuangan Perusahaan Manufaktur yang Terdaftar di BEI. Seminar Nasional IENACO 2017, 579–586.
 - Oemar, Fahmi. 2014. Pengaruh Corporate Governance Dan Keputusan Pendanaan Perusahaan Terhadap Kinerja Profitabilitas Dan Implikasinya Terhadap Harga Saham Studi Empiris pada Perusahaan BUMN yang Listing di BEI tahun 2008-2011. Jurnal Ilmiah Ekonomi dan Bisnis Vol. 11, No. 2, September 2014: 369 – 402 ISSN: 1829 – 9822.
 - Pakpahan, Novi Y. T., Elly Rasyid, dan Fharel M.H. 2017. Pengaruh Good Corporate Governance Terhadap Kinerja Keuangan Studi kasus pada perusahaan perbankan yang terdaftar di Bursa Efek Indonesia Tahun 2012-2015. fundamental management journal online ISSN: 2540-9220 Volume:2 online No.1. 2017.
 - 20. Peraturan Otoritas Jasa Keuangan No.33/POJK.04/2014 Pasal 1 tentang Direksi dan Dewan Komisaris Emiten Atau Perusahaan Publik.
 - Putri, R. K, Dul Muid . (2017). Pengaruh Good Corporate Governance Terhadap Kinerja Perusahaan. Diponegoro Journal Of Accounting, 6(1), 1.
 - 22. Saifi, Muhammad. 2019. Pengaruh Corporate Governance Dan Struktur Kepemilikan Terhadap Kinerja Keuangan Perusahaan. Jurnal Profit Vol. 13 No. 2, 2019.
 - Sarafina, S., & Saifi, M. (2017). Pengaruh Good Corporate Governance dan Kinerja Perusahaan Terhadap Nilai Perusahaan (Studi Pada Badan Usaha Milik Negara Yang Terdaftar Di Bursa Efek Indonesia Tahun 2010-2013). Jurnal Administrasi Bisnis, 50(3).
 Setianingsih, KT. Y. P., Ananta W. T. A, dan Gede A.
 - Setianingsih, KT. Y. P., Ananta W. T. A, dan Gede A. Y. 2014. Pengaruh Good Corporate Governance Dan Pengungkapan Corporate Social Responsibility Terhadap Kinerja Perusahaan Dan Nilai Perusahaan Studi Kasus Pada Perusahaan Manufaktur Yang Terdaftar Di BEI Periode 2010 – 2012. Journal Universitas Pendidikan Ganesha Jurusan Akuntansi SI Volume: 2 No:1 Tahun 2014.
 - Setiawan, A. (2016). Pengaruh Corporate Governance Terhadap Kinerja Keuangan Perusahaan. Jurnal SIKAP (Sistem Informasi, Keuangan, Auditing Dan Perpajakan), 1(1), 1.
 - Tanjung, P.R.S., Wahyudi, S.M. (2019). Analysis the Effect Disclosure of Sustainability Report, Economic Value Added and Other Fundamental Factors of Companies on Company Value, International Journal

of Academic Research in Accounting, Finance and Management Sciences, 9(2): 237-249

- Tanjung, Putri Renalita Sutra. 2020. Effect of Corporate Social Responsibility Disclosure, Good Corporate Governance Implementation, and Profitability on Corporate Value (Asean Country Study 2016-2018). Saudi Journal of Business and Management Studies. Saudi Journal of Business and Management Studies
- Tertius, Melia Agustina dan Yulius Jogi Christiawan. 2015. Pengaruh Good Corporate Governance terhadap Kinerja Perusahaan pada Sektor Keuangan. Business Accounting Review Vol. 3, No. 1, Januari 2015: 223-232
- 29. Wardani, F. P., & Zulkifli, Z. (2017). Pengaruh Good Corporate Governance Terhadap Kinerja Keuangan. Kajian Bisnis STIE Widya Wiwaha, 25(2).



Research Paper

EPRA International Journal of Economic and Business Review-Peer Reviewed Journal Volume - 8, Issue -10, October 2020 |e-ISSN: 2347 - 9671| p- ISSN: 2349 - 0187

SJIF Impact Factor (2020): 8.107|| ISI Value: 1.433|| Journal DOI URL: https://doi.org/10.36713/epra2012

THE EFFECT OF THE SIZE OF THE FACILITIES GRANTED BY BANKS ON THE AMMAN STOCK EXCHANGE INDEX

¹Issa Ahmad Mahmoud Swiety

¹Zarqa University, Zarqa, Jordan

ABSTRACT

Article DOI URL: https://doi.org/10.36713/epra5436

This research aims to measure the effect of the size of facilities granted by banks on the Amman Stock Exchange Index. The study included all the 16 licensed banks operating in Jordan during the period 2004 up to 2015 through using statistical analysis (SPSS) which shows a positive relationship that statistically significant between the size of the granted facilities and the stocks index.

KEYWORDS: Size of The Facilities, Amman Stock Exchange Index

INTRODUCTION

The banking systems are one of the most important inventions of the modern societies due to the fundamental role they play, through their mediating role among depositors who make up the sid e of money supply in the banking system and the borrowers who make up the demand side of these funds.

The banking systems represent an important mechanical to collect the savings and convert them into investments along their work to attract the foreign investments and channel them to finance the most efficient, productive and profitable projects through the various types of credit facilities provided by it.

Therefore, it is logical that effect of the increasing size of the facilities of all the services and banking facilities which are provided by the banking

systems on the profits of the banks to positively affect their market value, which is appeared through influencing their index sector in the Amman stock Exchange.

THE PROBLEM OF THE STUDY

The bank credit has an Effectiveness Banking importance, where its generated return represents the major centerpiece of revenue for any bank whatever are the numbers of its other sources are or varied, without it the bank will lose its work as financial mediator in the national economy and the primary objective of the banks to provide credit facilities to the companies is to invest their money to achieve the desired yield, and the positive impact reflect in these profits on the market value of these banks and to these companies and which reflected in rising share price in the financial market, and which appears in the value of the sector index to which these banks belong, and thus the researcher studies the possibility of a trace in the volume of the credit facilities granted to the benchmark of Amman, and therefore the researcher is seeking to prove the following hypothesis:

There is no statistically significant effect on the size of the credit facilities granted to Amman Stock Index.

THE IMPORTANCE OF THE STUDY

The importance of the study being shed light on the importance of the role playedby the banks in influencing the economy and through what they are granting of credit facilities to various economic sectors, and to know the reflection of the size of these facilities on the Amman Stock Exchange Index considering that these indicators are the mirror of the performance of these banks.

OBJECTIVES OF THE STUDY

The study aims at identifying the relationship between the size of the facilities granted to certain sectors of the economy by the licensed banks in Jordan on the Amman Stock Exchange in the period (2004 until 2015), where it will rely on the historical data on the banking facilities size given to these sectors, which have been obtained from the website of the Central Bank of Jordan and the Amman Stock Exchange Index and which have been obtained from the website of the Amman Financial Market.

PREVIOUS STUDIES

- 1. A study (Zoubi, Bashir, 200) entitled "the impact of economic flows on the stock prices and trading volume in the Amman Stock Exchange for the period (1978-1998).
- 2. The study aimed at investigating the impact of macroeconomic variable on the Amman Financial Market Index, where he addressed all of (The Gross National Product), the interest rate, the exchange rate, the money supply, and the interest rates on the time-deposits.
- 3. The study concluded that the Amman Financial markets respond to the combined economic variables, while there is no relationship between each independent variable, except in the case of delaying the general index of the general index of the market, and the function of the Amman financial market is stable during the period (1978-1998).

- 4. The Study of (Fyoumi, Nidal, 2003) entitled "the impact of the emerging markets properties on Tests.
- 5. The study aims at measuring the efficiency of the Amman Exchange by using the markets index for the period (1993-2000), where the focus was on non-linear behaviors issues in the stock returns and not trade repeating in addition to the investigation of the impact of the structural and the organizational changes in the Amman Stock Exchange (ASE) starting in (1997) to improve the efficiency of this market.
- 6. A result was reached by taking the (ASE) properties as an emerging tock that has a significant impact on the tests, as well as developments in the Amman Stock Exchange starting from (1997) have positive impact that was reflected on the efficiency of the market in this period.
- Study (Malawi, AlMajali, 2003) entitled "the Credit Banking Effect on the Economic Activity" by using the Self Model Regression Vector (A Jordan Case Study (1970-2003) – (page number 125-143, Mutah University)
- 8. Study (Metas, Rami 2004) "influencing factors on the stock exchange mechanisms of the financial papers.
- 9. This study aimedat investigating the factors influencing the Egyptian Finance Papers Stock Markets Mechanisms.
- 10. The results showed that the most influential factors are the Supply and Demand, transparency, the rumors, the Economic situation and the political climate.
- 11. Study (Kholood Al Fallit, Ishraf Dr. Faris Abu Muammar 2004) entitled The Banking Facilities on the Different Economic sectors, an applicable study on the Banks working in Palestine"

This search aims at determining the effect facilities on the banking bank working in Palestine on different economic sectors, in addition to know the reality of the banks working in Palestine and what are the most important problems which stand barrier against them in developing the economy.

The previous studies and research which focused on this field, were used. The percentage of the facilities which provided by the banks for every sector alone was used. Accordingly, some results that help in identifying how the working banks in Palestine contribute in the economic development.

The study found out that the banks working in Palestine they have a desire to expand in giving facilities for the various economic sectors, except the Agricultural sector and their interest for safeguards which provided by the customer as a basic condition to accept request facilities and the courts in Palestine do not interfere in solving the problems that confronting the banks, and conflicts between banks and the comers customers to pay their facilities helped in weakening the banks to give facilities and weakening the role of the banks in giving facilities and the banks weakness in their effects in economic sectors different.

1. Study (Khaled Al Qadeer, 2005) entitled "the Credit Banking Effect to Fund Imports on the imports in the Kingdom of Saudi Arabia."

The search aims at evaluating the demands function from the imports the Saudi Kingdom's imports using the common integration methodology and segmentation contrast of the error forecasting and the functions pulses response that are built on forum of correcting the error vectors.

The common integration's test indicates the existence of a long term balance relation between the imports and the total output and relative prices of the imports and the banking credit to fund the imports.

The segmentation of the error forecasting and the pulses functions responses on the importance of the resulting of the GDP (Gross National Output), the relative prices of the imports, and the banking credit in financing the imports in the explanation of fluctuations in the function of the total imports.

The functions of the pulses response to the relationship between the direct fluctuationsbetween the gross national output and the banking credit in financing the imports and their fluctuations, while the relationship between the fluctuations in the relative prices and of the imports and the fluctuations in the imports was inverse.

2. Study (Altwaijri, Hamid, 2006) entitled "Influential Factors in the Saudi Stock Market. This study aimed at finding out the factors effecting the stock market in Saudi Arabia and concluded that the most important factors influencing the Saudi stock market are the five basic factors which are the oil prices, the national income, money supply, the interest rates and the inflation rates.

3. Study (Joseph, Dana, 2008) entitled "Determination of Factors Affecting the Amman Financial Market. This study aimed at identifying the most important factors affecting the per share profit and the factors that sharply affecting fluctuations and determine the effect of interior and foreign factors on the shares profit, and the study's sample was stratified and random from (60) companies listed at market Amman Financial year 2006.

The study has found a statistical and positive relation between the inflation rate and the interest prices and the number of stuff and the shares profit the lack of relationship that has positive statistical relation between the deficit or the surplus of the balance of payments and the size of GDP (Gross National Product) and between the shares profit.

4. Study (Abdul Halim, Hibah, 2009) entitled "the Effect of Cash Policy on the Securities Market," the study aimed at identifying the nature of the relationship between monetary policy and the movement of trading in securities in Egypt. The study concluded that the monetary policy affects the stock market in Egypt.

5. Study (2004, Boyer &filion, Entitled "the Main Factors Affecting the Canadian oil Stocks Earning and the Companies (ASS) and aimed at evaluating the relation between the earnings of the oil stocks as a follow variable and independent variables such as the interest price, the U.S and Canadian dollar prices, the oil prices the market revenues using the (General Linear Model)

The study features

This study is regarded as one of the few studies that link between some of the relationship between the size of the facilities granted by the banks of Jordan and their index in the Amman Stock Exchange during the period in question, and this evident through a review of the previous studies.

A table that shows the size of facilities granted since the year 2004 to the year 2015 and the Amman Stock Exchange Index.

The year	The size of facilities granted (JD mn)	Amman Stock exchange index
2004	6189	2729
2005	7744	4259
2006	9761	3013
2007	11295	3675
2008	13044	2758
2009	13317	2533
2010	14451	2373
2011	15815	1995
2012	17829	1957
2013	18937	2065
2014	19019	2165
2015	19021	2136

THE HYPOTHESIS TEST

A describe between the relationship of the independent variable (the size of the facilities) and the dependent variable through the following equation:

Y = a + bx

Y = 4337.87 + 0.0765x

Y = the dependent variable (the stock index)

X = the independent variable (the size of the facilities granted)

The value R (correlation coefficient) (76.5%), and this means that there is positive linear relation that has a statistically strong significant between the size of the facilities granted and the stock index, and also the value of R2 (the coefficient of determination) (58.6%) and has statistically a significant function and by testing (F) to measure the validity of the model to represent the relationship between the dependent variable (the stock index) and the independent variable (the size of the facilities). This shows that this model is fit to represent the relationship which reached the value of (F) 4% and is less level of significance of 5%. This means that there is a relationship between the size of the granted facilities and the stock index, it was found that the facilities granted have been able to explain what accounted for 58.6% of the changes in the index and the remaining 42.4% is due to other variables not included in the model

RESULTS AND RECOMMENDATIONS Results

It has been found that there is relation between the size of the granted facilities and the indicator of the Amman Stock index where it is logical that the size of the facilities affects the size of the investments, which consequently affect the stock index.

Recommendations

Conduct field research based on the other factors, not on the size of the facilities, it may be possible to have an impact on the stock index.

REFERENCES

- Zoubi, Bashir (200). The impact of macro –economic factors on the overall index of stock prices at the Amman Stock Exchange during the period (1978-1998), The Management Sciences Studies 27 (2) 32 43.
- 2. Fayoumi, Nidal (2003). The impact of the emerging markets properties the efficiency tests, an application study on the Amman Stock Exchange.
- A study (published research) Malawi, Al Majali, 2003) entitled "The Credit Banking Effect on The Economic activity using the self-model Vector (VAR). A Jordan case study (1970-2003).page number (125-143) – Mutah University.
- Metas, Rami (2004) the factors influencing the stock exchange financial mechanisms, an electronic copy.<u>http://www.tadawul.net/forum/shothread.php?t</u>
- A PHD Thesis (Kholood Al Fallit, supervision Dr. Faris Abu Muammar 2004) entitled "the Banking Facilities on different economic sectors, an application study on the Banks Working in Palestine".
- A Study (published research) Khalid Al Qadeer, 2005) entitled: the Effect of the Credit Banking to Finance the Imports on the Imports in the Kingdom of Saudi Arabia – The King Saud University.
- Altwairi, Hamad (2006). Influential factors in the Saudi stock market: a working paper submitted to the first forum and exhibition of the Saudi stock market, the Saudi university, Suadi Arabia.
- Joseph, Dana (2008). Determination of the Factors Affecting the Shares profit at the Amman Financial Market, unpublished Master thesis, the Middle East University for high studies.
- Abdul Halim, GIFT (2009). The Impact of the Monetary Policy on the Financial Securities Markets, an electronic copy, <u>http://wwwtadawul.net/forum/showthread.php?t</u>

- Factors on common and fundamental Boyer, M Filion, D, (2000) stock returns of the candian oil and CAS companies, CIRANO working papers.
- 11. Acknowledgement
- 12. This research is funded by the Deanship of Research in Zarqa University, Jordan.



EPRA International Journal of Economic and Business Review-Peer Reviewed Journal Volume - 8, Issue -10, October 2020 |e-ISSN: 2347 - 9671| p- ISSN: 2349 - 0187

SJIF Impact Factor (2020): 8.107|| ISI Value: 1.433|| Journal DOI URL: https://doi.org/10.36713/epra2012

PROMOTERS OF ARTIFICIAL INTELLIGENCE CAPABILITY IN THE NIGERIAN TELECOMMUNICATIONS INDUSTRY

¹ Waribugo Sylva	¹ Faculty of Management Sciences, University of Port Harcourt, Nigeria
² Onyekachi Chinedu Scott	² University of Port Harcourt Business School, Port Harcourt, Nigeria

ABSTRACT

Article DOI URL: https://doi.org/10.36713/epra5439

The rise of Big Data, coupled with the need for organisations to catch up with the dynamic and complex business environment, has sparked a new wave of interest in the field of Artificial Intelligence (AI). This study investigated vendor partnership and managerial support as enhancers of artificial intelligence capability of telecommunication firms in Nigeria, using competitive pressure as a moderator. A survey was conducted among 141 managers and IT staff from four dominant telecommunication firms, and data were analysed to generate descriptive outputs, with the aid of the Statistical Package for Social Sciences (SPSS) version 27. Moreover, five hypotheses were tested using the Partial Least Squares – Structural Equation Modelling, with the aid of SmartPLS 3.2.9. Inferential output indicates that higher levels of vendor partnership and managerial support amplify artificial intelligence capability, while competitive pressure neither promotes artificial intelligence capability nor buffers the relationship between each of the two exogenous variables and artificial intelligence capability. The study recommends that telecommunication companies should only select partners who are trusted, reliable and knowledgeable in emerging AI- enabled technologies, and emphasize lasting, strong and extensive social, economic, commercial and technical ties. Also, managers should nurture a culture that enables members adapt to new technologies; and channel resources to adequately fund AI-initiatives.

KEYWORDS: Artificial Intelligence Capability, Managerial Support, Vendor Partnership, Competitive Pressure.

1.0: INTRODUCTION

The incredible speed with which Artificial Intelligence (AI) is entering every sector is forcing companies to get into the race to make their company an AI company (Park, 2017). This is also compelling business, experts, pioneers, entrepreneurs and investigators to use AI to design new strategies and create new sources of business value (Klosters, 2016). Primarily, the advancement in AI is the heart of the enhanced performance of all other technologies and the evolution of Industry 4.0. This technological advancement, attributed to AI, would facilitate human-to-machine interactions, change the logic of business models, and transform the lifestyle and living standards of the human. In fact, the advent of new data-driven technologies spurred by automation and developments in artificial intelligence (AI) is promising significant disruption to long-established practices (Brooks, Gherhes & Vorley, 2020).

Through AI capability, organisations orchestrate resources and apply computer systems able to engage in human-like processes such as learning, reasoning, and self-correction towards business tasks. This leads to business value creation via mechanisms such as product design, automation, quality control and smart maintenance. Moreover, AI capability enhances decision support and business innovation. Particularly, it reflects the ability of an AI system to help managers and employees sense external stimuli and assist in decision-making by enabling analysis and offering advice and implementation support (Seshadri, 1996).

In the telecommunications sector, higher level of AI capability is known to promote the operations and maintenance of telecom networks and services (Macleish, 1988; Muller et al., 1993). Moreover, the emergence of the complex 5G network - with its complex and distributed nodes, and dense small cells spectrum – has brought about the need for telecom organisations to embrace AI in order to manage and maintain such a complex network (Xu, 2011; Xu, & Duan, 2018). How to use the powerful analysis, judgment, prediction and other capabilities provided by AI algorithms has become an important topic for the telecom industry.

Chen (2019) identified vendor partnership, managerial support and competitive pressure as variables that could influence the ability of a firm to orchestrate organizational resources and apply computer systems able to engage in human-like processes such as learning, reasoning, and selfcorrection towards business tasks.

Vendor partnership is a long term strategic coalition between a firm and its vendor(s) that creates core value through activities such as research, product development, manufacturing, marketing, sales, and distribution, with the objective of increasing benefits to all partners by reducing total cost of acquisition, possession, and disposal of goods and services (Maheshwari et al., 2006, Li et al., 2006). Healthy partnership is built on mutual trust and provides added value not only to both partners but also to end customers. It reduces inventory levels, and enhances supply chain as well as firm's performance.

Thus, AI capability in firms is usually associated with IT vendors and collaborative partners because many firms are unfamiliar with AI technologies. Furthermore, vendor involvement can significantly contribute to the rate of adoption of new technology, diffusion of new products and innovation (Assael, 1984; Sulaiman, & Wickramasinghe, 2014).

Managerial support occurs when managers treat employees fairly, build trust and consult employees regarding work matters so they can build a relationship of mutual respect, where employees perceive that their needs are considered and are acted on appropriately (Eisenberger, Stinglhamber, Vandenberghe, Sucharski & Rhoades, 2002). Such support can also facilitate the communication and implementation of strategic decisions (Dasgupta, 2015). Managerial support influences the general attitude towards change (Svimez, 2003).

Moreover, the adoption of AI in an organization depends on the general receptivity towards change held by the organization's members (Dewar & Dutton 1986). Common logic, therefore, suggests that support from managers on the adoption of AI is a critical component of AI capability. Such support is reflected by the general policies and strategies of an organization toward its environments, like technology sensitivity, resistance to change, attitude toward risk and openness to external information (Stonehouse & Pemberton, 2002). Furthermore, managerial support is a critical factor of commitment from managers that guides the allocation of resources and the integration of services (Müller & Jugdev, 2012). It facilitates effective implementation of technology and project success (Elbanna, 2013).

Furthermore, competitive pressure is a driving force for process, product and technological innovation or efficiency (Liebenstein, 1966; Vives, 2008), which is a strategic necessity to compete in the marketplace (Lippert & Govindarajulu, 2006). Moreover, Mansfield et al. (1977) and Gibbs and Kraemer (2004) find that fierce competition stimulates the rapid diffusion of IT innovations. In the same vein, Oliveira and Martins (2008) submit that firms feel pressure if their competitors adopt certain new technologies. They tend to adopt these technologies to immediately improve their capabilities and maintain their competitiveness. Thus, common logic suggests that competitive pressures will make companies adopt new AI technologies or improve existing capabilities to improve their products and services in the competitive business environment. Competitive pressure could make firm's to spend more resources toward developing new technology and then deterring new entrants.

Some research has been conducted on AI as new wave of technological advancement, which serves as both a catalyst of and a tool for transformation, providing firm with significant opportunities to learn from, and adapt to, their external environment in order to remain competitive. Specifically, studies in AI have been conducted in engineering (Pham, et al.1999), science (Cartwright, 1997), education (Lajoie & Vivet, 2002), medicine (Ramesh, et al. 2004), business, accounting, finance, marketing, economics, and law (Rauch-Hindin, 1986). It is already being applied to such endeavours as the self-driving car, healthcare, and new media (Bollier, 2017). However, while there have been significant reports of AI in the literature (e.g., Fernald & Jones, 2014; Purdy & Daugherty, 2016; Aghion, et al., 2017) this has not been the case for enhancers of AI capabilities in telecommunications sector of developing countries such as Nigeria.

Moreover, the few empirical studies on AI that are closely related to AI capability bother only on AI adoption (e.g., Aboelmaged, 2014; Chen, 2019). This paper argues that the adoption of AI itself does not reveal the ability of the organisation to catch up with exogenous market demands through sensing, comprehension, learning, acting and adaption, in order to remain competitive. Thus, this study bridges the gap in literature by investigation the influence of two organisational variables (vendor partnership and managerial support) and one external factor (competitive pressure) on AI capabilities of telecommunication companies in Nigeria.

Problem Statement

The Nigerian telecommunications sector was liberalized when the Nigerian Communication Commission (NCC) granted licenses to five Global System for Mobile Communication (GSM) service providers - Econet, MTN, MTel, Globacom and Etisalat- between 1999 and 2008.

In terms of growth, statistics show that Nigeria has experienced phenomenal Compound growth annual rate (CAGR) in the telecommunications sector at 31.8% between 2000 and 2019. Moreover, from a negligible 0.1% contribution to GDP in 1999, prior to the adoption of GSM, the sector's contribution to GDP has risen to 10.9% in Q_1 of 2020, with nominal GDP rising from N26.3bn to N7.4tn. Interestingly, the sector has been the fastest growing at a normalized average (excluding 2000 - 2001) of 34.9% between 2000 and 2010 before moderating to an average growth of 4.6% from 2011 to 2019. The sector has also been one of the most resilient, with growth averaging 6.9% between 2017 and 2019 while also being one of the most important, with an outsized contribution to the economy's growth since the 2016 recession. As at Q_1 of 2020, the telecommunication sector has a GDP larger than that of the oil sector (9.5%).

Apart from promoting and enhancing trade between Nigeria and her international partners, the sector also plays an important role in connecting various sectors of the nation's economy, such as insurance, IT, banking, consultancies, shipping, Small and Medium Scale Enterprises, in order to achieve mutual goals. Furthermore, mobile internet subscribers in Nigeria have increased from 2.3 million in January 2002 to 128.4 million in January 2020.

Notwithstanding the remarkable credentials of the telecommunication industry in Nigeria, there is widespread dissatisfaction among consumers with respect to the endemic poor services of the telecommunication companies (Sylva, & Akpan, 2016; Ibekwe, *et al.*, 2019). There are intolerably frequent incidences of multiple call attempts, call completion before the communicating parties are ready to end the call; there are also glitches with financial services that relied on interconnection such as cash withdrawal from Automated Teller Machines and making payments using electronic point of sale machines. It is no news that there are insufficient interconnection circuits amongst the operators. Also, operators have insufficient capacities and persistently experience "major systems failure" and find it difficult to integrate signals between the different network components supplied by different vendors for a particular mobile company. Operators continued to fall short of the published Key Performance Indicators (KPIs) contained in draft regulations.

With the expansion of the network scale, the development of business types and the emergence of the digital transformation, the telecom industry constantly face new challenges. On the one hand, the demand for speedier data connectivity, higher resolution, quicker video streaming, and ample multimedia applications keeps growing (Castro, Richart, Baliosian, & Grampín, 2018; Akpan, Ibekwe, Worgu, & Nwangwu, 2018). On the other hand, threats from fast and highly efficient web-scale companies are getting stronger. These challenges push telecom operators to grow their subscriber bases by offering improved services and new features.

Brooks, Gherhes and Vorley (2020) argue that AI is an innovative technology that holds the promise of transforming services sectors. Following this, one of the key trends that could make the telecoms industry to meet their challenges is the deployment of the transformative power of artificial intelligence (AI). Beyond this, telecom firms may need to improve the capability of their AI infrastructure to catch up with exogenous market demands through sensing, comprehension, learning, acting and adaption, in order to remain competitive.

Given the importance of AI, it is crucial to understand the interactive relationship between AI capability and its determinants as perceived by those working in the sector. This is particularly important for telecommunication companies which operate in a highly competitive business environment. In this regard, Chen (2019), identified compatibility, relative complexity, advantage. managerial support. government involvement, and vendor partnership as factors that influence the adoption of artificial intelligence in Chinese firms. Moreover. Aboelmaged (2014) submit that competitive pressure makes firms to adopt new technologies geared toward improving capabilities and mitigating threats.

Based on the foregoing, this study investigates the hypothesized relationship between AI and three exogenous variables, namely: vendor partnership, managerial support and competitive pressure. The Nigerian telecommunication industry is the subject of investigation.

Conceptual Framework of the Study

Based on the foregoing, a conceptual framework is developed as shown below:



Figure 1: Conceptual framework

Source: Vendor partnership and Managerial support as predictors; Artificial Intelligence Capability as criterion variable; Competitive pressure as moderator (Aboelmaged ,2014; Chen , 2019).

Figure 1.1 indicates that vendor partnership and managerial support are the exogenous variables; artificial intelligence capability is the endogenous variable; while competitive pressure is the moderator. The following hypotheses are hereby formulated for

the study:

- H₀₁: There is no significant relationship between vendor partnership and artificial intelligence capability.
- H₀₂: There is no significant relationship between managerial support and artificial intelligence capability.
- H_{3a}: There is no significant relationship between competitive pressure and artificial intelligence capability.
- H_{3b} : Variation in artificial intelligence capability due to vendor partnership is not significantly a function of competitive pressure.
- H_{3c}: Variation in artificial intelligence capability due to managerial support is not significantly a function of competitive pressure.

2. LITERATURE REVIEW 2.1. Baseline Theory 2.1.1Technology-Organization-Environment (TOE) Framework

Popularly referred to as Tornatzky and Fleischer's (1990) framework, the Technology-Organization-Environment model (DePietro et al., 1990) comprehensively explains the likelihood of a particular firm adopting and utilizing innovations technological. organizational, based on environmental, and socio-cultural factors. The TOE framework suggests that these three factors influence the choice of organisations to embrace technological innovation, thereby collectively dictation the manner in which companies adopt new technology or improve their technological capabilities (Baker, 2012). The technological context includes the characteristics and the usefulness of the innovative technology, the organization context contains the internal issues within the company such as management, employees, products and services; and the environmental context involves the issues exist in the business related field, such as the *competitors* and (Chatterjee, Grewal, business partners & Sambamurthy, 2002).

The inclusion of technological, organizational and environmental variables has made TOE advantageous over other adoption models in studying technology adoption, technology capability and value creation from technology innovation (Hossain & Quaddus, 2011; Ramdani et al., 2009; Zhu & Kraemer, 2005). Also, it is free from industry- and firm-size restrictions (Wen & Chen, 2010). Hence, it provides a holistic picture for users of technology, foreseeing challenges, factors influencing business innovation-adoption decisions and to develop better organizational capabilities using the technology (Wang et al., 2010).

Finally, the TOE Model is considered appropriate as a baseline theory because AI capability is an offshoot of the adoption of innovative technology. Moreover, the organisational context involving management and employees underscores the need for top managers to provide support for employees in the allocation resources, the integration of services, and the re-engineering of processes to enhance AI capabilities (Hsu & Yeh, 2016). Furthermore, the environmental factor "competitors" suggests that firms opt for improvement in technological capabilities when they experience competitive pressure (Rosas et al., 2017). Thus, an organization that fails to grow its capabilities will be less competitive and cascade towards extinction (Taneja et al., 2016).

2.2 Conceptual Review 2.2.1 Artificial Intelligence

Artificial Intelligence (AI), as a term, was introduced into scholarly literature in 1956 by Marvin Minsky and John McCarthy (a computer scientist at Stanford), who hosted the approximately two-month Dartmouth Summer Research Project on Artificial Intelligence (DSRPAI) at Dartmouth College in New Hampshire. According to Minsky, "AI is the science of making machines capable of performing tasks that would require intelligence if done by humans" (p. 6). Similarly, AI is defined as "the science and engineering of making intelligent machines, especially intelligent computer programs" (McCarthy, 2007, p.2). AI is also viewed as "a system's ability to interpret external data correctly, to learn from such data, and to use those learning to achieve specific goals and tasks through flexible adaptation" (Kaplan & Haenlein, 2019, p. 15).

Thus, AI has to do with the use of autonomous thinking machines that are free of human control in organisations. In order words, it is a set of technologies that simulate human cognitive processes, including reasoning, learning, and selfcorrection. It is the application of knowledge, thought, and learning, to computer systems to aid humans. AI technology is built into machines that work with their own developed programming language, which manipulate knowledge more effectively.

Unlike conventional programming, artificial intelligence programs manipulate predominantly qualitative rather than numeric information. These programs use declarative knowledge, i.e. assertions whose truth-value is independent of the algorithmic context. In addition, AI programs can induce, deduct and sometimes guess data, as well as reconsider decisions by employing back tracking for solutions. Thus, AI is an expert system that uses natural language processing mechanism and vision, geared toward heuristic problem solving. Essentially, AI is an enabling technology or general-purpose technology which is increasingly prompting companies to identify new ways of creating,

delivering and capturing value from their business activities.

Qi, Wu, Li and Shu (2007) submit that AI comprises Expert Systems (ES), Natural language understanding (NLU), Machine learning (ML), Distributed artificial intelligence (DAI) and Robotics. An ES is a computer program that encodes human expertise. Natural language understanding (NLU) includes natural language processing, speech recognition and speech synthesis. The intent of natural language processing is to develop a language interface for computer systems to process inputs and outputs in different languages. Speech recognition is the processing and interpretation of human voice. Speech synthesis is the computer generation of humanlike speech.

Machine learning (ML) involves the use of neural networks and genetic algorithms to make changes in work methods so that the same work can be done more efficiently than previously. Distributed Artificial Intelligence (DAI) attempts to solve problems in a distributed manner. A DAI system consists of a society of agents; each agent is in charge of a subpart of the problem. Different levels of communication, cooperation and control among the agents might be necessary in order to achieve a coherent global solution (Tang et al., 2001). Robotics focuses on using devices for controlled motion. Robotics is the art of controlling machine movements with computers (Xu, 2000).

2.2.1Artificial Intelligence and the Telecommunication Industry

Following the pressures of globalisation and the need to adopt new technologies to create better socio-economic value, the government of Nigeria fully liberalised the telecommunication industry in 1999. GSM licenses were given to ECONET WIRELESS and MTN in 2001. NITEL, which had licence the same year, could not provide services mainly due to its poor strategic fit. Moreover, the surge in dealership and subscription prompted the Nigerian Communications Commission to issue another licence to GLOBACOM in 2002, while ETISALAT was launched in 2008. Due to political shenanigans, mismanagement and lack of dynamic capabilities, ECONET WIRELESS changed its name several times - from Vodacom, Vmobile, Celtel and Zain, to present AIRTEL. Also ETISALAT has changed to 9MOBILE. Currently, the telecoms market is mainly oligopolistic, dominated by MTNN, AIRTEL, GLOBACOM and 9MOBILE.

Since the introduction of GSM, the Nigerian telecom industry has gone through a series of innovation driven by incremental artificial component intelligence. The AI in expert telecommunication operations involves systems (Macleish, 1988; Qi, et al., 2007) that diagnose complex equipment in an off-line mode. Moreover, AI platforms are deployed to improve the operations and maintenance of telecom networks and services (Seshadri, 1996). Since these early applications, more and more AI techniques have been applied to telecommunications. Expert systems of AI are suitable for fault detection, network monitoring, diagnosing, controlling and resource configuration. They are used as intelligent controllers for multiple access mobile cellular telecommunications systems and design optical fibre communication links (Dabke et al., 1995).

Furthermore, AI-statistical tree growing algorithm is used to identify the operations area where improvements are expected to affect the customer most. Through a Distributed Artificial Intelligence (DAI), agent-oriented middleware architectures are introduced for network and service management in telecommunications. Also, AI helps telecommunication firms to provide the requested services using the allocated equipment. Agent-based routing algorithms are provided to realize adaptive and efficient utilization of network resources in response to changes in the network catering for load balancing and fault management (Wedde & Farooq, 2006).

According to Qi, Wu, Li and Shu (2007), the principal functions of AI in the telecommunication industry are: fault- and fraud detection, performance analysis and network monitoring, network controlling (e.g., root-tracing of alarm), network resource configuration, multi-services management and deployment suggestion, network resource management and optimization, and automatic correction. Telecommunication firms also use AI and machine learning to extract meaningful business insights from customer data, so they can make faster and better business decisions. This crunching of the data by AI helps with customer segmentation, customer churn prevention, prediction of the lifetime value of the customer, product development, improving margins, price optimization, and more. Telecom services such as voice assistant, smart speaker and chatbots are products of AI.

Currently, China Mobile uses NovoNet, an AI platform for Intelligent Quality Inspection System; AT&T deploys Threat Intellect platform for network security and AI chatbot for contract center; Verizone uses Network stability surveillance in the fiber optic broadband service; Orange uses AI research project to predict demand patterns in 5G networks, among other global telecom companies that deploy AI.

In addition, the significance of AI in the telecommunications industry is underscored by the fact that the telecommunications environment has continuous distribution and expansion in network size, with strict fault-tolerance requirements. Artificial systems in telecommunications have to cope with a great variety of telecommunication protocols, and numerous hardware platforms and network architectures (Csele'nyi et al., 1998). Nowadays, factors such as globalization and technology innovation offer further challenges to telecommunication operations, and the industry must become more and more competitive in order to

survive in a global market (Zhang et al., 2004; Wang & Archer, 2007), with many more competitors and pressures for increased customer choice, lower price and improved service quality.

The Internet of Things (IoT) and 5G networks are important roadmaps for the development of current telecom networks, and the implementation of each technology will bring about major changes to the current network architecture and technology (Zhang & Lorenz, 2018). At the same time, there will be huge challenges in the design, operation, and maintenance of the telecom network.

The key issue for telecom operators in Nigeria is how to manage and operate the dizzyingly complex next generation 5G/Internet of Things (IoT) networks. The 5G network is rather complex because it consists of various distributed nodes, dense small cells, millimeter waves, unlicensed spectrum, shared spectrum, and 3G/4G derivative technologies (Xu, 2011; Xu, & Duan, 2018).

Only AI can manage and maintain such a complex network. AI with robust data analysis and information extraction capabilities brings new opportunities to telecom networks. As the infrastructure of information communication, telecom networks have enormous space and potential for applying AI technology. How to use the powerful analysis, judgment, prediction and other capabilities provided by AI algorithms to enhance the application of network elements and business systems, and combine AI with the design, construction, operation and optimization maintenance. of telecommunication networks has become an important topic for the telecom industry (Xinhua, 2016)

2.2.3 Artificial Intelligence Capability

Artificial Intelligence Capability comprises the structures, strategies and processes put in place by organisations to effectively utilize the AI infrastructure through design, construction, maintenance, operation, judgement, prediction and optimization (Xinhua, 2016). According to Bataller and Harris (2018), AI capability is the ability to sense, comprehend, act, and learn in the process of operating in an AI environment.

Particularly, a firm that has acquired capability in AI easily perceives its environment by acquiring data like images, speech, and text; can easily recognise, interpret and contextualise patterns to derive their true meanings; take actions based on their comprehension of the physical or digital world; and continuously optimize its performance by learning from the success or failure of those actions Adadi et al. 2019).

It is the AI capabilities that gives meaning to any AI artefact is the organisation (Bowen & Morosan 2018). Scholars (e.g., Ghahramani 2015; Huang & Rust, 2018) argue that in an AI-enhanced system, the input is enhanced by sense, processing by comprehend, output by act, and feedback by learn. Therefore, organizing AI research is based on how organisations build and unleash these key capabilities as they pass through various stages of digital transformation and "interpret external data correctly, learn from such data, and exhibit flexible adaptation" (Kaplan & Haenlein, 2019, p. 17) in order to remain competitive.

2.2.2 Vendor Partnership

Vendor partnership is the a long term collaboration between two or more firms in a supply chain which facilitates the creating of mutual benefits or value through research, product development, manufacturing, marketing, sales, and distribution (Li et al., 2006). Partnerships are forged to promote operational capabilities of participating organizations and to help them achieve significant on-going benefits (Stuart, 1997). Moreover, strong partnership with vendors facilitates open communications and helps organisations to have deeper understanding of changing technologies in order to stay abreast of industry trends. Moreover, vendors can also mount pressure on their partners to implement and adopt a new technology. Support from vendors ensures effective implementation, market acceptance and value maximization of technologies (Teo, et al., 2009).

In the deployment of AI, business (trading) partners relate to the AI infrastructure vendors. Organizations, regardless of size, rely on the experience and skills of business partners or vendors when looking to adopt AI services. Vendors' previous history on IT projects affects the decision of whether to adopt a new technology or improve on existing technological capabilities. Vendors in the telecom sector (e.g., Proxim, Radwin, Ubiquity, Cambium, Ligowave, Cisco, D-Link, MikroTik, Netgear), build scalable networking software/ hardware, broadband wireless networking systems for communities, enterprises, governments, and service providers. They offer wireless LAN, point-tomultipoint and point-to-point products through a channel network and other high-technology services.

Organizations that utilize AI are concerned about the ability of service vendors to readily replace resources, provide complementary technologies and ensure the availability of data when needed. To ensure the desired level of availability, service level agreements and a combination of precautionary measures can be used. Keeping in mind the complex architecture of AI, and considering the fact that telecommunication firms do not have all the technical and transformational skills in-house for managing innovations, such as AI, the development of their AI capabilities may require tighter integration of business partners and suppliers (Wang et al., 2010).

2.2.3 Managerial Support

Managerial support reflects, in many ways, the importance top management place on AI-enabled systems (Byrd & Davidson, 2003). Support and commitment from managers is a critical factor in any major organizational change because it guides the allocation of resources and the integration of services (Co et al., 1998). Managers that understand company culture and values, and what is good and promote the growth of technological capabilities (Martin Rojas et al. 2011) by observing and talking to employees, recognising obstacles, problems and success, and encouraging teams and cross-functional cooperation and communication in the use of AI-enabled platforms (Garcia Rodriguez et al. 2008).

Managerial support also involves economic investment in acquiring new AI domains, as well as greater involvement in the learning of these AI technologies (Bolivar Ramos et al. 2012; Martin Rojas et al. 2011). Management support for technologies enables the organisation to access, transmit, and use information regarding the technology (Carlsson & El Sawy 2008; Lin 2007; Martin Rojas et al. 2011) by nurturing an environment more favourable to the acceptance and use of the technology. Furthermore, the employees of firms that implement a technology-supportive culture are likely to have more precise knowledge of the organisational objectives for innovation and will make a greater effort to achieve these objectives more efficiently (Martin Rojas et al. 2011).

2.2.4 Competitive Pressure

Competitive pressure is the extent of coercion that the company feels from competitors within the industry (Zhu & Kraemer, 2005). Competitive pressure is viewed in economics in terms of its effect on a firm's incentives to undertake product and process innovations. The result of product innovation is the introduction of a new product or technology into the market. Hence the incentive for the introduction of a new technology is determined by the profit level associated with it, which leads to a reduction in a firm's cost level (Boone, 2000).

Moreover, the main reason telecommunication firms adopt technologies, such as AI-enabled systems, is to enhance their profits and competitiveness (Pollard & Hayne, 1998). Therefore, telecommunication firms may feel the pressure when they see more and more companies in the industry adopting the integration technologies to solve the technical difficulties caused by the incompatibility of systems, especially if it is their business partners, competitors or larger trading partners. Thus, telecommunication firms will feel under pressure to adapt to the AI integrated environment to remain competitive (Dasgupta & Gupta, 2009; Ramdani et al., 2009). In this regard, Sumner, (2000) argue that competitive pressure is a driving force for technology innovation, and the adoption of new technology, or enhancement of existing one, is often a strategic necessity to compete in the marketplace.

2.3 Empirical Review

Chen (2019) investigated success factors of Artificial Intelligence Adoption of the Chinese Telecom Industry. Using the TOE framework, the study hypothesized that compatibility, relative advantage, complexity, managerial support, technical capability, government involvement, market uncertainty, competitive pressure and vendor partnership influence AI adoption. Using a sample of 255 managers and engineers from major four telecom firms, the Structural equation modelling was deployed to analyze the data. It was found that compatibility ($\beta = 0.417$, p < .001), relative advantage ($\beta = 0.157$, p < .001), managerial support ($\beta = 0.206$, p = 0.002) and vendor partnership ($\beta =$ 0.113, p = .004) are significantly related to AI adoption; while market uncertainty ($\beta = 0.036$, p = .519) are not significantly related to AI adoption.

Awa, Ukoha and Emecheta (2016) used the T-O-E theoretical framework to study the adoption of ERP solution of SMEs Port Harcourt, Nigeria. Purposive and snow ball sampling was adopted to arrive at a sampling frame of 373 owners and executives. Model was tested using logistic regression. The hypothesized relationships were supported as results reported Nagelkerke R^2 of 0.456, -2 Logistic likelihood = 99.400, and p < 0.01 or 0.05. Specifically, external support ($\beta = -0.480$, p = 0.041**) and competitive pressure ($\beta = -0.495$, p = 0.067*) had moderate, non-significant negative relationship with adoption of ERP solution.

Savoury (2019) investigated the relationship between relative advantage, complexity, compatibility, technology readiness, top management pressure, and support, firm size, competitive regulatory support and IT leaders' intent to adopt Internet of Things in U.S. manufacturing organizations. A sample of 168 information technology (IT) leaders participated in the study. Multiple regression analysis indicated significant relationships between the intent to adopt Internet of Things and technology readiness ($\beta = .41$, p < .004), top management support ($\beta = .29$, p < .034) and competitive pressure ($\beta = .33$, p < .016). The model was able to predict approximately 44% of the variation of IT leaders' intent to adopt Internet of Things.

Achieng and Jagero (2014) empirically investigated the role of management support in adoption of computer integrated model in financial forecasting of Small and Medium enterprises in Kisumu East District of Kenya. Using a sample of 310 from 1,564 SMEs, data were analyzed with the Pearson's (r) product moment correlation coefficient, via the Statistical Package for Social Sciences (SPSS) version 22. It was found that Managerial Support readiness is positively correlated (p < 0.05) with adoption of computer integrated model.

3. METHODOLOGY 3.1. Population and Data Collection Method

The population comprises four dominant mobile telecommunications firms, namely: MTN, AIRTEL, GLOBACOM and 9MOBILE. The researcher contacted a key informant of The Association of Telecommunications Companies of Nigeria (ATCON) at Plot 1, Block 99, Olori Muyibat Oyefusi Street, Lekki, Lagos, to get the total number of target respondents from the selected telecos. A total of 1,638 representatives were declared by the telecos, comprising managers (administration/operations/project

managers/marketing), network engineers, heads of IT customer experience and data analysts in selected firms. Thus, the instrument was administered through survey monkey (Waclawski, 2012) via email addresses made available by the telecommunication firms. At the end of the survey, 141 responses were obtained and the information was downloaded into an Excel .csv file, and exported to the Statistical Package for Social Sciences and SmartPLs 3.2.9 software.

3.2. Questionnaire Design and Operational Measures

The questionnaire has three sections. Section A contains seven items concerning demographic information of the respondents (e.g., gender, age, marital status). Section B has 6 indicators on Artificial Intelligence Capability, which were developed from the extant work of Qi et al., (2007), Bataller and Harris, (2018) and Kaplan & Haenlein (2019). Sample item is: "Our systems are continuously self-organizing and perform optimally by learning from network success and failure".

Section C has five items for Vendor Partnership (Han et al, 2008; Zhu et al., 2003), five items for Managerial Support (Garrison et al., 2015) and three items for Competitive pressure (Chang et al., 2006).

An indicator of Vendor Partnership is "We have had no difficulty in obtaining assistance or reliable services from our vendors/partners"; one of the items of Managerial Support is "the managers explicitly demonstrate support for the adoption of AI through budgetary provisions"; while a sample indicator for Competitive pressure is "Competition due to price war is tough in our industry". Apart from the demographic variables, all other items in the survey instrument were anchored on a five-point Likert scale of 1=Strongly Disagree to 5=Strongly Agree.

3.3. Data analysis Techniques

Demographic data were analysed and reported in frequencies and percent. Mean and standard deviation were observed to ascertain the prevalence of the study phenomena. Skewness and kurtosis were also computed to check normality. All the above aspects were analysed with the aid of the Statistical Package for Social Science (SPSS) version 22. Moreover, the Partial Least Square- Structural Equation Modeling was used to test the psychometric properties of the instrument, as well as the hypotheses. Partial Least Square- Structural Equation Modeling is widely used across several disciplines such as information systems research (Marcoulides & Saunders, 2006), strategic management and marketing (Hair et al., 2012), and beyond. Its ability to model both factors and composites is appreciated by researchers, and makes it a promising method particularly for new technology research and information systems research. Specifically, it has the advantage of placing minimal demand on sample size or normality of data (Fornell & Bookstein, 1982). Moreover, PLS-SEM can estimate multiple hypothesized effects (Sarkar, Echambadi, & Harrison, 2001) and maintains robustness even when data are ordinal in nature (Hair Jr., Babin & Krey, 2017).

4. DATA ANALYSIS, RESULTS AND DISCUSSION4.1 Demographic Characteristics of respondents

At the end of the survey, 141 responses (from managers, network engineers, unit heads and data analysts) were obtained and the information was downloaded into an Excel .csv file, and exported to the Statistical Package for Social Sciences and SmartPLs 3.2.9 software. Table 4.1 below shows the demographic characteristics of the respondents.

		Frequency	Percent	Valid	Cumulative
				Percent	Percent
	Male	116	82.3	82.3	82.3
GENDER	Female	25	17.7	17.7	100.0
	Total	141	100.0	100.0	
	20-35	42	29.8	29.8	29.8
AGE	36-50	89	63.1	63.1	92.9
	51 – Above	10	7.1	7.1	100.0
	Total	141	100.0	100.0	
	Single	19	13.5	13.5	13.5
	Married	98	69.5	69.5	83.0
MARITAL	Separated	20	14.2	14.2	97.2
STATUS	Divorced	4	2.8	2.8	2.8
	Total	141	100.0	100.0	
	WAEC-OND	6	4.3	4.3	4.3
EDUCATIONAL	HND/B.SC	85	60.2	60.2	64.5
LEVEL	Masters	50	35.5	35.5	100.0
	Above				
	Total	141	100.0	100.0	
	Managers	16	11.3	11.3	11.3
	Network	63	44.7	44.7	56.0
	Engineers				
POSITION	Unit Heads	35	24.8	24.8	80.8.
	Data	27	19.2	19.2	100.0
	Analysts				
	Total	141	100.0	100.0	

Fabla 1 1.	Domogra	abic char	octorictice (of Docno	ndonte
able 4.1;	Demogra	JIIIC CIIAI a		u nespu	nuents

Source: Research Data (SPSS Output), 2020.

Table 4.1 indicates the demographic details of the 141 respondents that participated in the study. For gender distribution, result shows that 116 respondents (82.3%) were males while 25 (17.7%) were females. Thus, the industry has more than three quarters of its employees as males. For age distribution, respondents within 36-50 age brackets were in majority with 89 respondents (63.1%), while those who are 51 years and above were the minority recording 10 (7.1%), and those who are between the age bracket of 20-35 were 42 which represent 29.8% of the total number of respondents. Hence, more than three fifths of the employees in the industry are within the age bracket of 36-50. For marital status, 98 respondents (69.5%) were married, 19 (13.5%) were single, 20 (14.2%) were separated, while 4 (2.8%) were divorced. This implies that about two thirds of employees in the telecom industry are married. On highest level of educational attainment, 85 respondents (60.2%) have Higher National Diploma and Bachelor Degree, 50 respondents (35.5%) have Master Degree and above, while 6 respondents (4.3%) have The West African School Certificate and Ordinary National Diploma. Thus, nearly all employees in the industry have diploma and above. Moreover, with respect to position in the organisation, there are 63 network managers, representing 44.7% of the total number of respondents, 35 (24.8%) unit heads, 27 (17.2%) data Analysts and 16 (11.3%) managers. It means that over three fifths of the employees in the telecommunication industry are network engineers and technical staff.

4.2: Univariate Analysis

The preponderance of the variables in the industry is observed by their means, while normality and kurtosis are used to establish normality of the data distribution. On a five-point scale, mean values (M) between 1.0 - 2.4.0 = 100, 2.5 - 3.4 =moderate,

3.5 - 4.4 = high; and 4.5 = very high (Asawo, 2009). Moreover, values for skewness (S_k) and kurtosis (Ku) between -2 and +2 are considered acceptable in order to prove normal univariate distribution (George & Mallery, 2010; Gravetter & Wallnau, 2014). Results for mean, kurtosis and skewness of the data are shown in Table 4.2.

		Min	Mov	Moon	Ctd	Chorum	and (C.)	Vurtoo	ic (Vu)
		MIIII	Max	Mean	Stu.	SKewin	255 (3KJ	Kurtos	is (Ku)
Variable					Deviation				
	Stat.	Stat.	Stat.	Stat.	Stat.	Stat.	Std.	Stat.	Std.
							Error		Error
VP	141	1	4	2.57	.813	1.159	.132	1.721	.533
MS	141	1	4	2.38	.588	-	1.59	1.471	.492
						1.024			
СР	141	1	4	2.11	.837	1.280	.198	.953	.418
AIC	141	1	4	2.52	.694	982	.223	.1543	.279
VP = Ve	VP = Vendor Partnership, MS = Managerial Support, CP = Competitive Pressure, AIC = Artificial								
	Intelligence Capability.								

Source: Research Data (SPSS Output), 2020.

Table 4.2 shows that vendor partnership manifests moderately in the industry (M = 2.57, SD = 0.813), managerial support is low (M = 2.38, SD = 0.588), competitive pressure is low (M = 2.11, SD = 0.837), while artificial intelligence capability is moderate (M = 3.89, SD = 0.71).

Moreover, all the latent variables fall within the threshold for normality (± 2.00). The highest score for asymmetry was recorded on Competitive Pressure (S_k = 1.280, Std. Error = 0.198), while Vendor Partnership recorded the highest kurtosis score (Ku = 1.721, Std. Error = 0.533).

Furthermore, there is no need to do more tests on normality since PLS-SEM can substitute for nonparametric approaches as it poses fewer restrictions, especially on data distribution and sample size (Esposito Vinzi, Trinchera & Amato, 2010).

4.3: Multivariate Analysis

4.3.1: Model Specification

The PLS model has two layers. The outer model shows how the indicators measure their underlying constructs, while the inner model shows how the variables interact among themselves. This study has three exogenous variables (vendor partnership, managerial support and competitive pressure) and one endogenous variable (artificial intelligence capability). Specifically, this section contains the analysis of how variation in artificial intelligence capability is explained by the combined effect of vendor partnership, managerial support, in the presence of competitive pressure.

Moreover, on sample size criterion, Barclay, Higgins & Thompson (1995) gave a "10-times rule" that PLS-SEM analysis can be run if the number of cases is not less than 10 times the largest number of structural paths directed at a particular construct in the model. In this study, there are is a maximum of 2 structural paths pointing at the endogenous artificial intelligence capability, which requires a minimum sample size of 52. Since this study has a sample size of 141, it is suitable to deploy the PLS-SEM.

4.3.2: Measurement Model

The data was exported from the SPSS software to SmartPLS 3.2.9 to assess the measurement model. The measurement model output for item reliability, convergent validity (indicated by Average Variance Extracted) and construct reliability is shown in table 4.1:

		Conv	vergent valid	lity	Internal consistency reliability		
Latent		Loadings	Indicator	AVE	Composite	Reliability	Cronbach's
Variabl			reliabilit		reliability (<i>pc</i>) or	Coefficient	alpha (CA)
е	Indicator		у		RhoA	ρΑ	or ∝
	S	>0.70	>0.50	>0.50	>0.70	>0.70	0.70 - 0.90
	VP_1	0.783	0.613				
	VP_2	0.824	0.679				
	VP_3	0.777	0.604	0.625	0.901	0.864	0.859
VP	VP_4	0.810	0.656				
	VP_5	0.756	0.572				
	MS_1	0.764	0.584				
	MS_2	0.802	0.643				
	MS_3	0.833	0.694	0.599	0.868	0.841	0.837
MS	MS_4	0.746	0.557				
	MS_5	0.719	0.517				
	CP_1	0.822	0.676				
СР	CP_2	0.775	0.601				
	CP_3	0.765	0.585	0.621	0.875	0.803	0.798
	AIC_1	0.827	0.684				
	AIC_2	0.747	0.558				
	AIC_3	0.859	0.738	0.636	0.905	0.893	0.888
AIC	AIC_4	0.807	0.651				
	AIC_5	0.734	0.539				
	AIC_6	0.803	0.645				
Note: VP	= Vendor P	artnership,	MS = Manag	gerial Supp	port, CP= Competitiv	e Pressure, Al	IC = Artificial
			Intell	ligence Ca	pability.		

Table 4.1: Measurement Model Output

Source: SmartPLS 3.2.9 output on research data, 2020.

Table 4.1 reveals that all the factor loadings of the overall model scored above the 0.7 cut-off, ranging from 0.719 (MS_5) to 0.859 (AIC_3).The reliability values of the indicators are also above the acceptable 0.50 threshold (MS_5 = 0.517 to AIC_3 = 0.738). Thus all the latent variables accounted for more than half of the explained variance in each indicator.

Moreover, the model also satisfied the homogeneity threshold (J[°]oreskog's *rhoA* or Dillon-Goldstein's $\rho c > 0.7$) threshold Next is the evaluation of Dillon-Goldstein's ρc (or J[°]oreskog's *rhoA*) (Wertzetal.1974). This proves composite reliability of the model, with the lowest being 0.868 (Managerial Support), while the highest is 0.905 (Artificial Intelligence Capability). Thus the composite model estimates the true score variance by more than 70% (Wang & Stanley, 1970).

Also, the latent constructs scored reliability coefficient (Dijkstra–Henseler's ρ_A) and Cronbach's (1951)alpha (\propto) values above the 0.7 threshold (Nunnally & Bernstein, 994). Thus, all the blocks are considered homogenous and the indicators are consistently reasonable in explaining the variances within the model.

4.3.2.1: Construct Validity

The next step is the measurement of factors to ascertain if they are free from systematic measurement error. This is simply the quest for validity. Validity comprises convergent and discriminant validity. It is a measure of the average inter-correlations among the indicators that describe a particular construct or LV (Taylor & Hunter, 2003). An AVE threshold level of 0.5 is an evidence of communality or convergent validity (Fornell & Larcker, 1981; Bagozzi & Yi, 1988; Taylor & Hunter, 2003).

Discriminant validity is proven when each measurement item correlates weakly with all other constructs except for the one to which it is theoretically associated." (Gefen & Straub, 2005, p.92). This study adopts the Heterotrait-Monotrait (HTMT) ratio of correlations (Wong, 2019) to evaluate discriminant validity. The HTMT is the mean value of the item correlations across constructs relative to the (geometric) mean of the average correlations for the items measuring the same construct (Henseler et al., 2015). HTMT value above 0.85 would suggest that discriminant validity problem is present (Franke & Sarstedt, 2019). In addition, the HTMT inference is also conducted through bootstrapping. In this case, discriminant validity is established if the confidence interval does not show a value of 1 on any of the constructs (Henseler et al., 2015).

Results for test of convergent and discriminant validity are shown in Table 4.2.

INDICATORS	AVE	VP	MS	СР	AIC	
VP	0.625					
MS	0.599	0.492 CI [0.258:0.507]				
СР	0.621	0.481 CI [0.526;0.731]	0.497 CI [0.235;0.484]			
AIC	0.636	0.303 CI [0.310;0.527]	0.444 CI [0.084;0.177]	0.518 CI [0.391;0.630]		
Note: VP = Vendor Partnership, MS = Managerial Support, CP= Competitive Pressure, AIC = Artificial Intelligence Capability.						

Table 4.2: AVE and Heterotrait-Monotrait ratio (HTMT) of the correlations

Source: SmartPLS 3.2.6 output on research data, 2020.

Following Table 4.2, that all the latent constructs have AVE values higher than the 50% cut off, ranging from Managerial Support (59.9%) to Artificial Intelligence Capability (63.6%). Thus, the model has evidence of convergent validity.

Furthermore, the HTMT values fall below 0.85 thereby fulfilling the criterion of $HTMT_{.85}$ (Kline, 2011). Besides, the result of statistical $HTMT_{inference}$ test on the 85% normal bootstrap confidence interval, with a Bonferroni adjustment, does not include the value one on any of the constructs (Henseler et al., 2015). This reflects a sufficient and adequate discriminability of the four constructs.

4.3.2.2: Test of Goodness of Fit (GoF)

Essentially, GoF reveals whether there is a deviation between the "observed" or "approximated" values of the dependent variable and the values

predicted by the PLS model (Dijkstra & Henseler, 2014). A well-fitted model is one that does not have a misspecification of measurement (Wong, 2019). Fit indices are the Maximum Likelihood discrepancy, the Geodesic discrepancy d_G, the Unweighted Least Squares discrepancy d_ULS, and the Standardized Root Mean Squared Residual (SRMR) approach (Dijkstra & Henseler, 2015; Henseler, Hubona & Ray, 2016). This study uses the SRMR which measures the mean absolute correlation residual - the overall difference between the observed and predicted correlations. A Standardized Root Mean Squared Residual (SRMR) not greater than 0.08 signifies acceptable model fit Henseler et al. (2016).

Table 4.3 shows the goodness of fit summary of the hypothesized model.

Tuble 1.5: Model ne Summary							
	Saturated Model	Estimated Model					
SRMR	0.051	0.051					
d_ULS	0.688	0.688					
d_G	0.324	0.324					
Chi-Square	620.342	620.342					
NFI	0.731	0.731					

Table 4.3: Model fit summary

Source: SmartPLS 3.2.6 output on research data, 2020.

The "Estimated Model" in table 4.3 shows an SRMR value of 0.051, which is favourable based on the 0.08 threshold. This suggests a good theoretical model fit.

From the assessment of measurement model, it is clear that both reliability and validity have been established for the constructs. Since the measurement model is of sufficient quality, analysis can now graduate to the structural model (Müller, Schuberth & Henseler, 2018). It is after evaluating the structural model that any conclusion can be drawn.

4.3.3: Evaluation of the Structural (Inner) Model

This stage is about the testing of hypotheses. It involves the assessment of path coefficients (β) and their significance values; evaluation of predictive

accuracy (coefficient of determination) denoted by R^2 ; test of predictive relevance or Stone-Geisser's (Geisser 1975; Stone 1974) test, denoted by (Q^2); evaluation of Cohen's (1988) effect size indicated by f; and the test of moderating effect (Becker, Ringle, & Sarstedt, 2018).

4.3.3.1: Tests of Hypotheses and significance of Structural Path

Test of hypotheses involves the evaluating the path coefficients (β values), which are essentially standardized regression coefficients assessed in terms of sign, magnitude, and significance. Beta values range from -1 to +1. Weights closest to absolute 1 reflect the strongest paths. Weights closest to 0 reflect the weakest paths.

Cohen (1988) specified β thresholds of .10 to 0.29, .30 to .49 and .50 to 1.0 as weak, moderate and strong correlations, respectively. Moreover, for a two tailed test, *t* values that exceed 1.96 are significant (i.e. unlikely to purely result from sampling error), while *t* values below 1.96 are non-significant (Hair et al., 2014).

This study bootstrapped 500 samples from the primary sample of 323 using random replacement method. The path coefficients and corresponding *t*-values were observed, thus providing evidence for accepting or rejecting the null hypotheses. Table 4.4 shows the β - and *t*- values of the two main hypotheses (H₀₁-H₀₂), while hypotheses H_{3a}and H_{3a} are tested in subsequent section.

Null	Path	Path	Standard	t-Statistic	P Values	Decision			
Hypothesis	(Relationship)	Coefficient	Deviation						
		(β)							
H ₀₁ :	VP -> AIC	0.487	0.072	2.104	0.000	Rejected			
H ₀₂ :	MS-> AIC	0.415	0.06I	1.976	0.023	Rejected			
H ₀₃ a:	CP -> AIC	0.251	0.057	1.872	0.000	Accepted			
Note: VP = Vendor Partnership, MS = Managerial Support, CP= Competitive Pressure, AIC = Artificial									
Inte	Intelligence Capability. T-statistic greater than 1.96 at 0.05% level of significance.								

Table 4.4: Results of Hypotheses Testing

Source: SmartPLS 3.2.6 output on research data, 2020.

Table 4.4 reveals a moderate, positive and significant path coefficient between VP and AIC ($\beta = 0.487$, t = 2.104); a moderate, positive and significant path coefficient between MS and AIC ($\beta = 0.415$, t = 1.976); and a weak, positive and non-significant path coefficient between CP and AIC ($\beta = 0.251$, t = 1.872). H_{O1}, H_{O2} were rejected, while H_{O3a} was confirmed.

Thus, there is a partial proof that vendor partnership and managerial support have positive influence on artificial intelligence capability, whereas competitive pressure does not. Going by the β values, the model partially suggests that "Vendor Partnership" is the most important driver for artificial intelligence capability while the least important is "Competitive Pressure"

4.3.3.2: Assessment of Predictive Accuracy (*R*²)

The R-squared (R^2) is assessed to ascertain the predictive (practical) accuracy of the exogenous variables in the model. It indicates the combined percent of variability accounted for by the precursor exogenous constructs in the model (Hair et al., 2014). Moreover, the R^2 a predictive tool which ranges from 0 to 1, with 1 representing perfect predictive accuracy (ibid). As a very rough guide, R^2 values of 0.25, 0.50, and 0.75 represent weak, moderate, and substantial levels (Hair et al., 2017). However, Falk and Miller (1992) suggest that R^2 that is greater than 0.1 should be accepted. Furthermore, an adjusted R^2 is observed as a check to the exuberance of the R^2 in overestimating models that have inconsequential variables. As a more conservative measure, the value of R^2 -adjusted is less than (or not more than) the original R^2 .

Table 4.4 show the PLS-SEM output from the bootstrapping procedures to determine the R^2 Adjusted R^2 values of the endogenous latent variable.

Table 4.4: Results of Predictive Accuracy (R²)

Endogenous Latent Variable	Predictive Accuracy (<i>R</i> ²)	Adjusted R ²	Standard Deviation	<i>t</i> -Statistic	P Value
AIC	0.403	0.412	0.057	2.445	0.015
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	1 1				

Source: SmartPLS 3.2.6 output on research data, 2020.

Table 4.4 reported model's predictivity (R^2) of 0.403 for artificial intelligence capability. Following the threshold conditions by Chin (1988), the model suggests a weak combined predictability, reaching an explained variance of 40.3%. Despite this weakness, the explained variation of the endogenous constructs meets Falk and Miller's (1992) rule of 0.1(10%).

This implies that a little higher than two-fifths of artificial intelligence capability level score variance is jointly explained by *Vendor Partnership* and *Managerial Support*, while other unidentified variables are responsible for about three-fifths of the variance in *artificial intelligence capability*. Thus, it is obvious that more variables have to be considered to increase the explanatory power of the model, after establishing a theoretical basis. Next is the assessment of the predictive relevance (Q^2) of the model.

4.3.3.3: Assessment of Predictive Relevance (Q^2)

Predictive relevance (Q^2) , otherwise called Stone-Geisser test, is an assessment of model fit that indicates how much the model approaches what was expected of it. Q-squared is computed via the sample re-use procedure known as "blindfolding" (Tenenhaus et al. 2005), to arrive at estimates of residual variances, with omission distance set between 5 and 10, where the number of observations divided by the omission distance is not an integer

(Hair et al. 2014). A model with perfect predictive relevance is that which has Q² value of 1, suggesting it has no errors or perfectly reflects reality. As criteria of evaluation, a model exhibits predictive relevance if Q² value greater than zero is obtained (Hair et al., 2014). Table 4.5 shows the output for a crossvalidated predictive relevance through blindfolding with an omission distance of 7.

Table 4.5: Construct Cross-validated Redundance (Total Q^2)							
Endogenous Latent Variable	SSO	SSE	Q ² =1-SSE/SSO				
5			,				
VP	1549.000	1549.000					
MS	1549.000	1549.000					
СР	1549.000	1278.629	0.175				
Q ² = Predictive Relevance; SSE= sum of	f squares of prediction e	errors; SSO = s	sum of squares of				

$Table T_{i}$, construct of 055-variated requiredite i Totar O

observations. Reference values: $Q^2 > 0$ = satisfactory predictive relevance, Hair et al., 2011.

Source: SmartPLS 3.2.6 output on research data, 2020.

Following table 4.5, the bundle of exogenous latent variables present an acceptable cross-validated redundancy index ($Q^2 = 0.175 > 0$). This means that the path model predicts the originally observed values very well.

4.3.3.4: Test of Moderating Effect

This section is dedicated to the test of hypotheses H_{O3b} and H_{O3c}.

Test for moderating effect involves: (i) the identification of the relationship between vendor partnership (VP) and artificial intelligence capability (AIC) in the presence of competitive pressure (CP), and (ii) the identification of the relationship between managerial support (MS) and artificial intelligence capability (AIC) in the presence of competitive

pressure (CP). The effect size criterion was deployed to test for moderation.

The formula for effect size of the moderator is given as:

$$f^{2} = \frac{R_{moderator present}^{2} - R_{moderator absent}^{2}}{1 - R_{moderator present}^{2}}$$

Where moderating effects with effect sizes (f^2) of 0.02, 0.15, or above 0.35 can be regarded as low, medium, or high. Less than 0.02 means no effect (Cohen, 1988).

Table 4.7 indicates the effect size of CP in the $VP \rightarrow AIC$ in the model.

Exogenous Variable	Endogenous Variable	<i>R</i> ² with moderator	<i>R</i> ² without moderator	f ² -effect size	Remark on Effect Size
VP	AIC	0.409	0.401	0.014	No effect

Table 4.7: Effect Size of the moderator (CP) in $VP \rightarrow AIC \ model$ (H_{03b})

Source: Manual Calculation based on output from SmartPLS 3.2.9, 2020.

Table 4.7 suggests that competitive pressure has no effect ($f^2 = 0.014$) on the relationship between vendor partnership and artificial intelligence capability. Therefore, the hypothesis four (H₀: 3b) which states that "Variation in artificial intelligence capability due to vendor partnership is not significantly a function of competitive pressure." is confirmed.

Next is the test for the moderating effect of competitive pressure on the relationship between managerial support and artificial intelligence capability. Table 4.8 indicates the effect size of CP in the $MS \rightarrow AIC$ in the model.

Table 4.8: Effect Size of the moderator (CP) in $MS \rightarrow AIC \mod l$ (H_{03b})

Exogenous Variable	Endogenous Variable	R ² with moderator	R ² without moderator	f ² -effect size	Remark on Effect Size
MS	AIC	0.404	0.397	0.012	No effect

Source: Manual Calculation based on output from SmartPLS 3.2.9, 2020.

Table 4.8 suggests that competitive pressure has no effect ($f^2 = 0.012$) on the relationship between managerial support and artificial intelligence capability. Therefore, the hypothesis four (H₀:3c) which states that "Variation in artificial intelligence capability due to managerial support is not significantly a function of competitive pressure" is confirmed.

4.4: Discussion

This study empirically investigated the influence of vendor partnership (VP) and managerial support (MS) on Artificial Intelligence Capability (AIC), in the presence of Competitive Pressure (CP). The study was domiciled in the Nigerian telecommunication industry.

The univariate aspect of the analysis reveals that the telecom sector in Nigeria manifests low levels of managerial support and competitive pressure; and moderate levels of vendor partnership and artificial intelligence capability. This suggests that internal processes are below average but the external collaboration is just sufficient. Thus, the result is a pointer that the moderate level of artificial intelligence capability in the industry is, perhaps, traceable more to the synergistic relationship between the firms and vendors, than to the internal support from managers. Moreover, the low level of competitive pressure confirms the oligopolistic climate of the industry.

At the multivariate level of analysis, the first hypothesis was rejected on the grounds that there is a positive and significant relationship between vendor partnership and Artificial Intelligence Capability. This means that higher levels of vendor participation will trigger Artificial Intelligence Capability in the Nigerian telecommunication industry. Thus, when firms step up their collaboration with trustworthy, reliable and knowledgeable vendors in AI-enabled technologies, they stand to harvest organisational benefits evidenced by a surge in the way AI-enabled systems sense, learn, act and self-organize, for effective utilization of network resources. This finding is in harmony with Chen (2019) who concluded that a close relationship between firms and vendors not only fosters the adoption of new technology, but also aids firms to innovate and improve their existing capabilities. The finding also supports the submission made by Stuart (1997) that partnerships promote operational capabilities of participating organizations and to help them achieve significant on-going benefits.

The second hypothesis was rejected since the structural model revealed a positive and significant relationship between managerial support and Artificial Intelligence Capability. This means that if managers provide more support to members, with respect to the deployment of AI-enabled systems, there will be improvement in Artificial Intelligence Capability. Therefore, a culture that creates favourable internal environment for AI-enabled systems through adequate funding, training and cross-functional cooperation and communication will accelerate the extent to which AI-enabled systems easily perceive the business environment, correctly recognize, interpret and contextualize signals, and easily identify the operations area where improvements are expected to affect the customer most. This finding aligns with the separate submissions of Co et al., (1998) and Chen (2019) that Support and commitment from managers is critical in guiding the allocation of resources to activities which improves capabilities (Co et al., 1998). Also, this finding resonates with Savoury's (2019) finding that top management support enhances the IT leaders' intent to orchestrate Internet of Things (IoT), a variant of AI-technology. Moreover, Teo et al. (2009) also found that support from vendors ensures effective implementation, market acceptance and value maximization of technologies.

HypothesisH_{0.3a} which states that "there is no</sub> significant relationship between competitive pressure and Artificial Intelligence Capability" was supported by the data. Similarly, data supported H_{0:3b} which states that "variation in artificial intelligence capability due to vendor partnership is not significantly a function of competitive pressure". Also, H_{0:3c} which states that "variation in artificial intelligence capability due to managerial support is not significantly a function of competitive pressure" was accepted, as data indicated non-significance. This indicates that the artificial intelligence capability benefits of vendor collaboration and managerial support have nothing to do (at least, statistically) with competitive forces. Chen (2019) empirically demonstrated that competitive pressure does not have bearing on AI processes. Moreover, the findings on these three hypotheses are in tandem with Awa, Ukoha and Emecheta's (2016) finding that the effective deployment of technological solutions in enterprises is not influenced by pressures from competitors. A possible explanation to these findings is that the major telecom firms in Nigeria are oligopolistic. Hence, there is no much of competitive pressure among them that warrant increase in vendor partnership and managerial support, in order to harvest higher benefits of artificial intelligence capability.

5. CONCLUSIONS AND RECOMMENDATIONS

Numerous studies have established clear and predictable patterns of relationship between internal and external factors, and IT adoption. However, there is scanty literature on that investigated Artificial Intelligence Capability through the lens of environmental and organisational determinants factors. Moreover, this study appears to be first to empirically investigate the dynamic interaction of these constructs in telecommunication firms in a developing country. In addition, this study empirically extends the T-O-E framework (Tornatzky & Fleischer, 1990) to the domain of artificial intelligence in organisations.

The study deployed positivist approach and concludes that vendor partnership and managerial support amplify artificial intelligence capability of telecos in Nigeria; whereas competitive pressure does not buffer the hypothesized relationships.

This implies that managers ought to be aware of the positive effect of the collaboration they have with vendors on the ability to leverage AI artefacts, for greater organisational outcomes. Specifically, there is the need for telecommunication firms to understand that rule of the game lies in the ability to enlist the services of trustworthy, reliable and knowledgeable vendors, in order to orchestrate dynamic and organic AI-enabled systems that easily sense, learn, act and self-organize, for effective utilization of network resources. Moreover, managers should be cognizant of the fact that the capabilities of AI-enabled systems can be accentuated if they create favourable internal environment through adequate funding, training and cross-functional cooperation and communication.

Based on the foregoing, the study recommends that:

(i) Telecommunication companies Nigeria should improve the quality of partnership with their vendors. Specifically, they should only select partners who are trusted, reliable and knowledgeable in the emerging AI- enabled technologies. Moreover, only partners that share risks and benefits, and support the development of innovative products and processes should be selected. The companies should emphasize lasting, strong and extensive social, economic, commercial and technical ties. Shared commitment contacts should percolate at different and departments such as: marketing, operations, quality control, logistics and finance. Provision, in multiple contexts, should be made to integrate information flow and to have direct and continuous interaction between the firms and their vendors.

(ii) Managers should ensure interrupted support for the improvement of AI-enabled platforms. Specifically, they should nurture a culture in their organisations to enable members adapt to new technologies. Managers should channel resources in such a way that AI-initiatives are adequately funded. They should also design appropriate ways for members to learn the technology. Managers should also managers encourage teams and cross-functional cooperation and communication in the use of AIenabled platforms.

5.1: Limitations and Suggestions for Future Research Directions

This study is not inoculated from limitations. The first limitation borders on the cross-sectional nature of the study, whereby the instrument was administered at "one shot". It is possible that participants would respond differently if the same set of questionnaire were administered at various time intervals. Future studies should be longitudinal to capture the dynamic interaction among the variables.

Moreover, the study adopted two variables from the T-O-E framework as promoters of artificial intelligence capability, whereas there are other factors suggested in literature. Thus, future research should test the role of the entire T-O-E framework in the advancement of artificial intelligence capability.

Corporate leaders in other sectors should be cautious of generalizing the findings as this study was restricted telecommunication firms in Nigeria. Thus, researchers may extent the model to other sectors such as manufacturing and banking industry.

Also this study is susceptible to common method bias since self-reported measures were used. Further studies should include some measures, such as test of Common Method Variance, to ascertain the integrity of responses.

Finally, this study is purely positivist and hypotheco-deductive nature. Thus the study did not allow for the collection of qualitative data that gives the researcher the benefit of tapping into the richness and depth of the relationships between the variables. Future studies can collect and simultaneously analyse quantitative and qualitative data, so that the epistemological deficiencies of one method can be compensated by the other, in order to achieve a greater level of ontological integrity.

Despite the aforementioned encumbrances, this study offers a window of understanding for managers, scholars, information technology pundits, governments and industry giants on the interaction between vendor partnership, managerial support, competitive pressure and artificial intelligence capability. The study successfully extends the research frontiers on AI in organisations of developing countries through the lens of Technology-Organisation-Environment (T-O-E) framework.

REFERENCES

- 1. Akpan, E. E., Ibekwe, U., Worgu, S. C. & Nwangwu, C. E. (2018). Social media usage and firm performance: Reflections from the Nigerian telecommunication sector. *International Journal of Management Science and Business Administration*, 4(6), 7-16.
- Asawo, S. P. (2009). Spiritual leadership and workers' commitment in the Nigerian manufacturing industry. (A PhD thesis submitted in the Department of Management, Faculty of Management Sciences, Rivers State University of Science And Technology, Nkpolu, Oroworukwo, Port Harcourt).
- Barclay, D., Higgins, C., & Thompson, R. (1995). The partial least squares (PLS) approach to causal modeling: Personal computer adoption and use as an illustration. *Technology Studies*, 2(2), 285-309.
- Baron, R. M., & Kenny, D. A. (1986). Moderator-mediator variables distinction in social psychological research: Conceptual,

strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-82.

- Becker, J-M., Ringle, C, M., & Sarstedt, M. (2018). Estimating moderating effects in PLS-SEM and PLSc-SEM: Interaction term generation data treatment. *Journal of Applied Structural Equation Modeling*, 2(2), 1-21.
- Chin, W. W. (1998). The partial least squares approach for structural equation modeling. In G. A. Marcoulides (Ed). *Modern methods for business research.* 295-336. Lawrence Erlbaum Associates.
- 7. Cohen, J. (1988). *Statistical power analysis for the behavioural sciences.* Lawrence Erlbaum.
- Eisenberger R, Huntington R, Hutchison S, et al. (1986) Perceived organizational support. Journal of Applied Psychology 71(3): 500– 507.
- Esposito Vinzi, V., Trinchera, L., & Amato, S. (2010). PLS path modelling: From foundations to recent developments and open issues for model assessment and improvement. In V. Esposito Vinzi, W. W. Chin, J. Henseler, & H. Wang (Eds.), Handbook of partial least squares: Concepts, methods and applications (pp. 47-82). Berlin, Germany: Springer-Verlag.
- 10. Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling.* University of Akron Press.
- 11. Fornell, C. & Bookstein, F. L. (1982). Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. Journal of Marketing Research, 19, 440-452.
- Fornell, C. & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18 (1), 39-50.
- Garci 'a-Sa 'nchez E, Garci 'a-Morales VJ, Boli 'var-Ramos MT (2017) The influence of top management support for ICTs on organisational performance through knowledge acquisition, transfer, and utilisation. Rev Manag Sci 11(1):19–51
- Gefen, D., Straub, D. W. & Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems*, 4(7), 1-70.
- 15. Geisser, S. (1975). The predictive sample reuse method with applications. *Journal of the American Statistical Association*, *70*(350) 320-328.
- Hair, J. F., Babin, B. J. & Krey, N. (2017). Covariance-based structural equation modelling in the journal of advertising: Review and recommendations. Journal of Advertising, 46(1), 163-177.
- 17. Hair, J. F., Hult, G. T. M., Ringle, C. M. & Sarstedt, M. (2014). A Primer on partial least squares structural equation modelling. Thousand Oaks, CA: Sage.

- Hair, J. F., Hult, G. T. M., Ringle, C. M. & Sarstedt, M. (2017). A primer on partial least squares structural equation modelling (PLS-SEM) (2nd Ed). Thousands Oak, CA: Sage Publications.
- Hair, J. F., Ringle, C. M. & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. Journal of Marketing Theory and Practice, 19(2), 139-151.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24.
- Henseler, J., Ringle, C. M. & Sinkovics, R. R. (2009). The use of partial least squares path modelling in international marketing. Advances in International Marketing, 20, 277-320.
- 22. Ibekwe, U. J., Agbaeze, E. K., Nwakoby, N. P., Abner, I. P., Kelvin-Iloafu, L. E., Akpan, E. E. (2019). Social media adoption and performance of telecommunication firms in Nigeria: From innovation diffussion theory to technology acceptance model. *International Journal of Mechanical Engineering and Technology*, 10(12), 100-114.
- 23. Lohmoller, J. B. (1989). *Latent variable path modeling with partial least squares.* Heidelberg: Physica.
- 24. Nunnally, J. C.,& Bernstein, J. H. (1994). *Psychometric theory(3rd Ed.).*McGraw-Hill.
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Partial least squares structural equation modeling. In C. Homburg, M. Klarmann, & A. Vomberg (Eds.). *Handbook* of market research. 1-40. Heidelberg: Springer.
- Stone, M. (1974). Cross valedictory choice and assessment of statistical predictions. *Journal of the Royal Statistical Society, 36*(2), 111-147.
- 27. Streukens, S., & Leroi-Werelds, S. (2016). Bootstrapping and PLS-SEM: A step-by-step guide to get more out of your bootstrap results. *European Management Journal, 34*(6), 618-632.
- Sylva, W. & Akpan, E. E. (2016). The impact of structure on strategy implementation among telecommunication firms in Nigeria. *European Journal of Business and Management*, 8(14), 59-68.
- 29. Taylor, S. A., & Hunter, G. L. (2003). The impact of loyalty with e-CRM software and e-services. *International Journal of Service Industry Management*, *13*(5).452-74.
- Tenenhaus, M., Vinzi, V. E., Chatelin, Y. M. & Lauro, C. (2005). PLS path modelling. Computational Statistics and Data Analysis, 48(1), 159-205.
- Tornatzky L, Fleischer M (1990) The process of technology innovation. Lexington Books, Lexington, MA

- 32. Wang, M.,& Stanley, J. (1970). Differential weighting: A review of methods and empirical studies. *Review of Educational Research, 40,* 663-705.
- 33. Wold, H. (1982). Soft modeling: The basic design and some extensions. In, Jöreskog,

K.G., Wold, H. (Eds.), *Systems under indirect observations: Causality, structure, prediction, Part 2.* 1-54. North-Holland, Amsterdam.

APPENDIX 1

A Questionnaire on Determinants of Artificial Intelligence Capability in the Nigerian Telecommunications Industry

Section A

Personal Data:

1.	Name of organization
2.	Gender: Male Female
3.	Age: 20-35 36-50 51 Above
4.	Marital status: Single Married Separated Divorced
5.	Educational Qualification: WAEC-OND HND/B.Sc MSc and above
6.	Position in the organization
7.	Years of experience in the organization: 0-5 6-10 11-Above

Section B Artificial Intelligence Capability

Kindly, indicate the extent to which you agree or disagree that the statement reflects the situation in your organization.

(1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree)

S/N	AI Capability (Qi et al., 2007; Bataller & Harris, 2018; Kaplan & Haenlein, 2019)	1	2	3	4	5
1	Our systems easily perceive the business environment and acquire data like images, speech, and text.					
2	Our systems correctly recognize, interpret and contextualize signals.					
2	Routing is adaptive and provided efficient utilization of network resources in response to changes in the network.					
3	AI application provides security and privacy, detects fraud and fault, and monitor, diagnose and control network effectively.					
4	Our AI systems take prompt and accurate actions based on their comprehension of the physical or digital world					
5	Our systems are continuously self-organizing and perform optimally by learning from network success and failure					
6	Systems easily identify the operations area where improvements are expected to affect the customer most					

Section C **Determinants of Artificial Intelligence Capability**

Kindly, indicate the extent to which you agree or disagree that the statement reflects the situation in your organization. (1 = strongly disagree, 2 = disa)

S/N	Vendor Partnership (Han et al, 2008; Zhu et al., 2003)	1	2	3	4	5
1	We have had no difficulty in obtaining assistance or reliable					
	services from our vendors/partners.					
2	Our vendors/partners are trustworthy.					
3	Vendor makes decisions beneficial to my organization.					
4	We have very close relationships with vendors/partners.					
5	Our vendors/partners are knowledgeable for AI technologies					
	Managerial Support (Garrison et al., 2015)	1	2	3	4	5
1	The managers explicitly demonstrate support for the adoption					
	of Al through budgetary provisions					
2	Managers emphasize a culture that nurtures and creates					
	favourable environment to accept and use latest Al-enabled					
2	systems.					
3	Our managers provide training for technical staff to exploit					
4	new technologies before our competitors.					
4	Our managers have the ability to leverage new AI technologies					
5	as a strategic core competence					
5	Our managers encourage teams and cross-functional					
	cooperation and communication in the use of Al-enabled					
	plationis	1	2	2	4	_
1	Competitive pressure (Chang et al., 2006)	1	2	3	4	3
1	The rate of innovation of new operating processes and new					
	products or services in our principal industry has increased					
	dramatically.					
2	Competition due to price war is tough in our industry					
3	There is high competition on product/service quality					

2 - undecided 1 - agree 5 - strongly . .



Research Paper

EPRA International Journal of Economic and Business Review-Peer Reviewed Journal Volume - 8, Issue -10, October 2020 |e-ISSN: 2347 - 9671| p- ISSN: 2349 - 0187

SJIF Impact Factor (2020): 8.107|| ISI Value: 1.433|| Journal DOI URL: https://doi.org/10.36713/epra2012

PAROLE AND PROBATION AS REMEDY FOR NIGERIA'S PRISON CONGESTION PROBLEM

¹Gbenemene kpae (Ph.D)

¹University of Port Harcourt, Nigeria

ABSTRACT

Article DOI URL: https://doi.org/10.36713/epra5446

The Nigeria criminal justice system, particularly the penitentiary has been plaque with a lot of problems especially the issue of overcrowding and the poor living condition of inmates. Majority of the inmates are those awaiting trial, or ATP. The poor condition of the prison makes many prisoners to develop mental problems. Over the years, various reforms have been introduced by Comptroller General of prisons, but these reforms have failed to address the issue of prison congestion. Instead of the prisons to serve their fundamental purpose, which is reformation and rehabilitation of criminal offenders they have become a breeding place for hardened criminals. Many incarcerated offenders become recidivist immediately they are released from prison custody. This paper examines the problem of prison congestion in Nigeria. The Marxian class analysis is used as a theoretical framework to understand Nigeria's prison congestion problem. Marxist theorists will contend that recidivism is prevalent among the people of lower class than the privileged and affluent class because they do not have the financial resources to secure early release on bail from prison or prosecute any criminal charges leveled against them. It recommends the adoption of community-based corrections such probation and parole as alternative to incarceration as solution to Nigeria's prison overcrowding.

KEYWORDS: Probation, parole, community corrections, prison congestion

INTRODUCTION

The prison condition in Nigeria is dehumanizing. Many inmates develop mental problems as a result of serving time in prison custody. The poor state of the prison is either due to inadequate funding and overcrowding. According to a senate committee on Interior who embarked on a tour of prisons in the country recently, they were shocked by the dilapidating condition of most prisons they visited and that they were no longer fit for human habitation. In their annual report the Senate committee noted that majority of the cells leak during the rains and the perimeter walls and some cells have, in some cases collapsed. The report signed by the Chairman of the committee, Senator Olalekan Mustapha stated that the committee was moved by the plight of the inmates because many cells meant to accommodate about 50 inmates accommodate about 150 inmates all cramped together (Olaolu, Olusina et al, 2014).

One of the fundamental causes of Nigeria's prison congestion is due to the type of judicial system that the country operates. Overwhelming majority of the inmates in custody in the nation's penitentiary are those awaiting trial. Many have spent time in prison far exceeding the time; they would have spent if convicted. The situation of Nigerian prison and the plight of

prisoners were made quite clearer during the visit of Captain Emmanuel Iheanacho, a former Minister for Interior to Kuje prison Abuja last year. During the former Minister's visit, he discovered that some inmates had been awaiting trial for over 10 years, and many blamed their woes on the judicial system and the tough condition required for bail (Olaolu Olusina et al. 2014). The emphasis of the Nigerian criminal justice is punishment and deterrence, not rehabilitation of criminal offenders. The system does not take into cognizance those who are accused of misdemeanor offenses. Since the goal is to punish suspected criminal offenders, any person accused of having committed a crime is sent to prison. However, since the judiciary is already clogged with so many cases, many suspects are sent to prison pending when their cases will be charged to court. The conditions of most prisons and detention centers are so deplorable that they are unsuitable for human habitation. Our argument in this paper is that the Nigerian criminal justice system should adopt an alternative form of punishment such as probation, and parole rather than incarceration which have failed to reform the criminals but has turn many of them into becoming hardened criminals and recidivist.

CONCEPTUAL CLARIFICATION Prison

Prisons are long-time government-sanctioned facilities designed for the long-term confinement of adults as punishment for serious offences (Rubin & Deflem, 2019). A prison is also a place for the confinement of persons who have been remanded or held in custody by a judicial authority or who have been deprived of their liberty following a conviction for a crime (Coyle,

History of Prison

Prisons are government-sanctioned facilities designed for The earliest records of prisons come from the ancient civilizations of Mesopotamia and Egypt. During those times, prisons were almost always stationed in the underground dungeons where guilty or suspected criminals spent their life either awaiting death sentence, or a command to become slaves (often working as galley slaves. Except in Greece where prisoners were held in poorly isolated buildings where they could be visited by family members and friends. The primary source of their detention was not dungeons, high walls or bars, but simple wooden blocks attached to their feet. Ancient Roman Empire however continued to use harsher methods. Their prisons were built almost exclusively underground, with tight and claustrophobic passageways and cells. Prisoners themselves were held either in simple cells or chained to the walls, for life or for time. As slavery was accepted norm then, majority of prisoners that were not sentenced to death were sold as slaves or used by the Roman government as workforce, while some were used as gladiators. In 1166 Henry II commissioned the construction of the first prison and the drafting of the English legal system and the introduction of the concept of a jury. In 1215, King John signed the Magna Carta which stated that no man could be imprisoned without trial.

Rubin (2018) believes that the concept of prison as is now known today played little role in western criminal jurisprudence until the 19th century. The concept of incarceration or long prison sentence that served as punishment was none existent. Rather criminal offenders were subjected to public capital and corporal punishment. Many jurisdictions in Europe employed jails but were not primary places of punishment. They were sometimes referred to as "gaol" or county prison in colonial America or early modern Europe that contained vagrants, beggars, debtors, witnesses, those confined for execution and petty criminals until they paid their fines. Other forms of punishment emerged in the 17th and 18th centuries that became forerunner to the modern prison system, but they involved restriction of the freedom of the inmates including forced labour. Mediterranean countries set convicts to rowing in large ships, a punishment called 'galley slavery,' while in France convicts were sent to labour camps near decommissioned ships. In England, convicts were sent to the New World for twelve or fourteen years for hard labour through a system known as "convict transportation". When the American Revolution halted the practice in 1776, prisoners were sent to the hulks, or moored ships that held the overflow of prisoners from local jails or bridewells, but were eventually shipped to Australia when transportation resumed. The most important forerunner of the modern prison is the workhouse. Workhouses existed throughout the western world during the 16th and 18th centuries usually used as a place where people of low status were subjected to forced labour. In the Dutch Republic, workhouses were used to subject vagrant and beggars to hard labours with the intention of reforming them from their life of idleness.

The concept of the modern prison came from the works of Cesare Baccaria and John Howard that influenced the establishment of prisons in American states of Connecticut, Massachusetts and Pennsylvania between 1785 and 1794. But in the end, the Walnut Street Prison in Philadelphia became the most influential, where most American states would model their prison from. But the idea of solitary confinement of hardened criminals was introduced in New York's Auburn State Prison in 1816.

The emergence of the concept of penitentiary, that is, a place of confinement and reform came with the works of Jeremy Bentham, an English Jurist and Philosopher and John Howard, who after visit to several prisons in England and Wales wrote a book titled "the state of prisons in England and Wales" in 1777, and "An Account of Principal Lazarettos in Europe" in 1789 (Coyle, 2020).

Purpose of Imprisonment

Imprisonment was introduced for two main purposes, first is to deter those that would contemplate criminal behavior (general deterrence) and to make it less likely that those after serving prison term will commit crimes after release from prison (individual deterrence). Second, to obtain retribution from those who have committed crimes. Third, to reform those who are sent to prison. Finally, to protect the public from those who commit crimes, especially repeat offenders. However, the increasing use of reform rather than punishment has led to prison systems to be called 'correctional institutions' Coyle, 2020). This description of imprisonment only applies to Europe and North America. Most African countries had the idea of modern prison through European colonialism. In Nigeria, for instance, prisons were introduced after the British colonization in 1865. Before the introduction of prison system in Nigeria, most native people used restitution, retribution and banishment to deal with criminal behavior, while some criminals were sold into slavery.

Tuble 1.1 Hold Authority Type of Imprisonment (2010 2010)								
:	2013	2014	2015	2016				
Remanding/Awaiting	93,849	84,259	78,791	89,404				
Trail								
Short Term	40,215	31,650	28,141	32,126				
Long Term	24,352	22,816	16,762	17,616				
Condemned	100	48	642	904				
Lifers	-	-	449	119				
Detainees	361	60	-	1,409				
Others	19	9	-	1,270				
Total	158,896	138,842	124,787	142,848				

Table 1: Prison	Admission	by Type	of Imprison	ment (2013-20)16)
------------------------	-----------	---------	-------------	---------------	------

Source: National Bureau of Statistics

Prison Trend in Nigeria

According to the data available on the National Bureau of Statistics (NBS) official website for crime statistics, it shows that 2013 had the highest total prison admission rate of 158,896 followed by 2016 with 142,848 admission figure. The data also shows that 2013 had the highest remanding/awaiting trail inmates, which fell slightly to 84,259 in 2014 and 78,791 in 2015, but rose again to 89,404 in 2016. Thus compared to other categories of inmates admitted into the prison system in Nigeria in 2013 to 2016, those on remanding/awaiting trial were the highest.

The data from the NBS also shows that the Nigerian prison had an overcrowding rate of 15,068 in 2015 and 17,886 in 2016. That is, it has a prison capacity of 0.28% in 2015 and 1.68% in 2016, and prison population of 16.01% in 2015 and 5, 62% in 2016. When the data was broken down by age, it shows that those that fall within 26-50 years were the highest number of those incarcerated, 82,350 in 2015 and 76,220 in 2016.

Community-Based Corrections As Alternative to Incarceration

Community-based corrections are an approach to punishment. That emphasizes reintegration of the offender into the community through the use of local facilities. It is an alternative to incarceration because It allows the offender to be placed in the community on probation or, in conjunction with imprisonment, in programmes such as parole, furlough, work release, foster homes, or halfway houses (Iwarimie-Jaja, 2007). Community based corrections are used as alternative form of punishment so as to decongest the prison system. Community based corrections is adopted on the philosophy that the criminal needs to be reformed and not punished.

Most community-based correctional services such as probation and other diversion programmes are adopted as intermediate sanction programmes which are strategies aimed at rehabilitating 'situational offenders' or persons who are noncriminal offenders but are forced into unlawful acts due to circumstances beyond their control. Thus instead of sending them to prisons where they are exposed to the subculture of crime and hardened criminals which will debase their sense of respect for the law and order, and make them lose their liberty and their sense of self-esteem, community-based corrections will help 10 make them become law abiding citizens.

Community-based corrections have two key concepts that require clarification. The concepts are 'diversion' and 'reintegration'. Diversion is a process of removing offenders by direct or indirect means from the criminal justice systems and enhancing them into other agencies such as the social welfare. It also means the process of handling juveniles in a system separate from adult criminal offenders and sentencing of offenders to community-based correctional facilities rather than to prison. Another important concept in community-based corrections is reintegration. It is a philosophy of punishment that focuses on returning the offender to the community with restored education, employment and family ties. Reid also believes that reintegration is the process of preparing both the community and offender for the latter's return as a productive and accepted citizen. The emphasis is on creating the circumstances around him that will enable him to lead a satisfying and law-abiding life (Iwarimie-Jaja, 2007).

Probation and Suspended Sentence

Probation is a type of criminal sentencing that permits the offender to remain in the community setting in lieu of serving time in a jail environment. The defendant remains free so long as the terms of the probation are not violated. The conditions of probation might include reporting to the probation officer on a regular schedule, refraining from tin use or abuse of alcohol and/or drugs, maintaining regular employment or continuing schooling, not changing a residence without advanced notice and permission, and not committing i criminal offence while on probation. The particular conditions of probation may vary widely from one defendant to another depending on the offence committed, the offender's criminal history, the presence of victims and how they're heard, and other specific facts and circumstances.

Parole

According to Wikipedia the World Encyclopedia (2014) parole is the early supervised release of an inmate from a jail sentence. The prisoner is released from jail into the community before the natural conclusion of the original jail term as sentenced. The conditions of parole are similar to those imposed under probation, including regular reporting to a parole officer. The defendant also remains free provided he does not violate the condition of parole.

THEORETICAL FRAMEWORK Marxist- Conflict perspective

The materialist view of history starts from the premise that the most important determinant of social life is the labour people engaged, especially work that results in the provision of basic necessities of life such as food, clothing and shelter. Marx believes that the way work is socially organized and the impact of technology on the production process have a tremendous impact on every other aspect of society. Marx maintained that everything of value in society results from human labour, that is, it is working men and women that creates the conditions for their own existence (Marx, 1971: 20).

Marx summarized the key elements of this materialist view of history as follows: In the social production of their existence, men inevitably enter into definite relations, which are independent of their will, namely relationship of production appropriate to a given state in the development of their material means of production. Marx divided history into several stages, conforming to broad patterns in the economic structure of society. The most important stages for Marx's argument were feudalism, capitalism, and socialism. For Marx, the central institution of capitalist society is private property, the system by which capital, that is, money, machines, tools, factories, and other materials objects used in production is controlled by a small group of the population. This arrangement leads to two opposing classes, the owners of capital (the bourgeoisie and he workers (proletariat), whose only property is their labour time, which they have to sell to the capitalists. The owners make profits by paying workers less than their desert and, thus, lead to the exploitation of their proletariats and their labour. In Marxist terminology, material forces of production, or means of production, include capital, land, labour, whereas social relations of production refers to the division of labour, and implies class relations.

Economic exploitation leads to oppression, as owners make use of their economic power to gain control of the state, and turn it into a servant of bourgeoisie economic interests. Police power, for instance, is used to enforce property rights and guarantee unfair contracts between the capitalist and the workers. Further, Marx contend that because the dominant or ruling class (bourgeoisie) controls the social relations of production, the dominant ideology in capitalist society is that of the ruling class. Ideology and social institutions, in turn, serve to reproduce and perpetuate the economic class structure. Thus Marx views the exploitative economic arrangements of capitalism as the real foundation upon which the superstructure of social, political, and intellectual consciousness is built .-

According to Marx, the class relations of capitalism embody a contradiction: capitalist need workers, and vice versa, but the economic interest of the two groups are fundamentally opposed to each other. Such contradictions mean inherent conflict and instability, the class struggle. Adding to the instability of the capitalist systems are the inescapable need for ever-wider markets and ever-greater investments in capital to maintain the profits of capitalists. Marx expects that the resulting economic cycles of expansion and contradiction together with tensions that would build as the working class gains greater understanding of its exploited position (by attaining class consciousness) will eventually culminate in a socialist revolution.

The Marxist-conflict perspective sees prison overcrowding in Nigeria as a consequence of the class struggle between the poor and the dominating class. The ruling class controls and monopolizes the resources and uses them to exploit the poor. Conflict theorists also views crime as a consequence of the class structure of the Nigerian society. It is the structure of society that breeds crime. The structure of the society also divides people into the rich and the poor. The wealthy people, who are mostly politicians, own the most expensive houses in society, while the poor live in squalor. Such situation leaves the poor with no option than to steal from the rich. Majority of those serving time in various correctional institutions in Nigeria including those awaiting trail are people from lower socio-economic background. Many cannot afford the huge amount of money required by experienced private attorneys to prosecute their bails or fight their cases on appeal. They are left in the hands of lawyers from legal aid council, whom many cases, lack the experience and might not be willing to put in the amount of time put in by private attorneys. Many rich people defendants hire Senior Advocates (SAN) to defend their cases. They use their money and influence to secure early release from prison or jails, while the poor do not have such privileges. The poor are also more likely to be arrested for minor crimes than the rich. When arrested, they are also less likely to afford the amount of money required by the police to secure bail. When the cases have been charged to court, they cannot afford huge sums demanded by private attorneys to secure their early release from incarceration. This put them in a precarious situation, as such the poor and people of lower-socio-economic background overpopulate our correctional system. The Nigerian criminal justice system, therefore, favours the rich (bourgeoisie) than the poor (proletariat) because they are arrested more than the rich and also more likely to remain incarcerated for a longtime without being granted bail.

Prisons as Correction Centers

The penitentiary is set up by law to provide restraint and custody of individuals accused of or convicted for crimes either felony or misdemeanors. The Niger kin prison system dates back to the colonial era and is modeled after the British correction system.

The Nigerian Prison Service derive its operational powers from CAP 366 Laws of the Federation of Nigeria 1990 that charges the prisons; among other things, to take into custody all those certified to be so kept by a court of competent jurisdiction; produce suspects in courts as and when due, identify the causes of antisocial behavior, set in motion mechanisms for their treatment; train inmates for eventual reintegration into society as normal law abiding citizens on discharge; administer prisons farms and industries for the government.

Prison Overcrowding

Despite all the reforms made by previous Comptroller General of Prisons, the Nigerian penitentiary has failed to reform inmates because of lack of finding and overcrowding. Prison congestion in Nigeria is due largely to the large number of inmates awaiting trial (ATP), otherwise known as remand prisoners. For instance, during the Controller Generals visit to Kaduna prisons after the attempt on jail break found that out of 797 inmates at the prison, 539 were awaiting trail, while 159 were convicted robbers awaiting execution (Oziegbe, 2010).

According to Amnesty International (2008), the Nigerian judicial system is responsible for the problems within the prisons because of the longtime that it takes the courts to grant bail to indigent defendants. Many inmates are kept in detention for a longer time because they cannot meet the bail conditions set by the courts, and also because their bail application has not been heard. In its research, Amnesty International found that lkoyi prison was the most overcrowded prison because 94 percent of all inmates were awaiting trial. Amnesty International also found that 30,000 persons representing over 65 percent of the estimated prisoners population of 46,000 in Nigeria are those awaiting ti id. The problem of congestion has led to many prison facilities to be overstretched and also responsible for many breaks. Similarly, Agomoh et al (2001) identified several factors as being responsible for Nigerian prison congestion. This include high remand/awaiting trial population, congestion and lack of speedy trial; overuse of imprisonment by the courts; abuse of arrest powers and bail conditions by the police; inadequate legal aid facilities, logistics problem relating to transportation of defendants to court; inadequate prison structures; inadequate utilization of non-custodial disposition measure; arid corruption. Orakwe (2008) believes that the increase in the number of ATP or remand prisoners as opposed to those in custody was due to low rate of criminal prosecution in Nigeria. He also points out that congestion is a problem common to urban prisons particularly those of lkoyi, Port-Harcourt, and Owerri. However, Orakwe)O08) believes that the number of persons awaiting trial in custody is becoming relatively stable because the Chief Judges in some States go around periodically freeing those accused of minor offences.

CONCLUSION AND RECOMMENDATION

The Nigerian criminal justice system, especially the correction facilities are inadequate to accommodate the number of prisoners or detainees sent in from the courts. These prisoners are held in very crowded and appalling conditions. Majority of the inmates are those awaiting trial, many of them have been incarcerated far
beyond the time they would have spent if convicted. Many that were jailed for misdemeanor offences have become hardened criminals as a result of spending several years associating with repeat violent offenders. Consequently, there is increase in the rate of recidivism. The Chief Justice of most states when on visit to prisons do release inmates detained for minor offenses and those awaiting trials, but this magnanimity has not been able to reduce the problem of prison congestion in Nigeria. The best solution to Nigeria's prison overcrowding problem is to adopt an alternative form of punishment that emphasizes the use of community corrections such as probation and parole. The alternative form of punishment can also take the form of restorative justice, transformative justice, or the abolition of incarceration entirely. The restorative and transformative justice - approaches will require first time offenders receive intervention that would help them not to commit crime again. Such intervention can be in the form of providing the person with useful employment that would help the ex-convict maintain a meaningful life after release from prison or detention. Useful employment after release from prison will also facilitates the process of reintegration for the prison inmate. Another alternative is to provide families of inmates with group counseling. This is significant because it builds a strong -closely connected support group that helps to decrease the chances of the exconvict committing crime again. Lastly, the judges should adopt alternative form of punishment whereby they have the option of sending those with misdemeanor or felonies to transformative programs instead of giving them a sentence. As part of alternative form of punishment, Judges could ask inmates to perform community service such as sweeping the streets or picking up trash from the refuse dumps. If these approaches and recommendations are adhered to strictly, it will help to reduce the problem of Nigerian prison overcrowding.

REFERENCES

- Agomoh, U. Adeyemi A. and Oghbor V. (2001) "The Prison Service and Penal Reform in Nigeria: A Synthesis Study, Security and Access to Justice Proramme of the Department for International Development (DFID)", PRAWA
- 2. Coyle, A.G. (2020) Prison. Britannica. www.britannica.com Accessed 19/10/2020
- 3. Iwarimie-Jaja, D. (2007) Law and its Administration in Nigeria: A Sociological Approach. 5th Edition. Port-Harcourt: Celwill.
- 4. Marx, K. and F. Engels (2071) Manifesto of the Communist Party. Moscow: Progress Publishers.
- 5. National Bureau of Statistics (2017). The Nigerian Prison Service.
- 6. Olaolu, O., Davidson, I. and Chiemele E. "Nigerian Prisons: Death Traps or Reform Centres?" (2014) This Day, January, 07.

- Orakwe, I. W. (2008). "The Politics of Prison Congestion." A paper Presented at Inter-Ministerial Meeting on Human Rights Council at the Federal Ministry of Foreign Affairs, Abuja, 28th February, 2008.
- Oziegbe, J. (2010). "The Politics of Tackling Prison Congestion in Nigeria. Law and Justice Rights. <u>www.sthash.ql.qkm2bu.dpuf</u>.
- 9. Rubin, A. & Deflem, M. (2019). History of the Prison.
- Rubin, A.T. (2018). The Pre-history of Innovation: A longer view of penal change. Punishment & Society, 20(2): 192-216
- 11. Wikipedia, (2014). Alternatives to incarceration". www.wikipediaworld.com

Research Paper



EPRA International Journal of Economic and Business Review-Peer Reviewed Journal Volume - 8, Issue -10, October 2020 |e-ISSN: 2347 - 9671| p- ISSN: 2349 - 0187

SJIF Impact Factor (2020): 8.107|| ISI Value: 1.433|| Journal DOI URL: https://doi.org/10.36713/epra2012

AN OVERVIEW OF INDIA-BAHRAIN TRADE RELATIONS

¹Dr. Abdul Vajid

¹Post-Doctoral Fellow, Indian Council of Social Science Research, New Delhi

ABSTRACT

Article DOI URL: https://doi.org/10.36713/epra5538

Indian-Bahrain relations go back centuries and both are close allies. The Monarchy, along with its GCC allies, is one of the world's most influential advocates of India's candidacy for a permanent seat on the United Nations Security Council, according to Indian officials. In 2019-20, trade between India and Bahrain was USD 980.59 million. The wide Indian Diaspora in Bahrain is also the focus of debate as it is the foundation of India-Bahrain relationship.

An effort has been made in this paper to examine the India's trade relationship with Bahrain between 2011-2020. The study shows that India and Bahrain both have tremendous cooperation potential and therefore need to improve their trade diplomacy in order to establish a favourable trade facilitation climate.

KEYWORDS: Indo-Bahrain relations, Trade relations, Foreign Trade, International Relations, Foreign Relations, International Trade

JEL Classification: F10, F13

INTRODUCTION

For more than several centuries, India and Bahrain have had economic and trade relations; these relations received new impetus from the oil boom of the early seventies. Relative prosperity and higher living standards in Bahrain boosted global imports of goods and services, including from India. The industrial diversification policy of the Bahrain government also played an important role in improving the economy. Bahrain, because of its location, serves as the gateway to the GCC market. Mineral fuels, mineral oils, inorganic chemicals, organic or inorganic compounds of rare earth precious metals, elam / radii / isotopes, cereals, nuts, fruit, apparel and clothing accessories, etc. are the main exports of India to Bahrain, while crude oils, mineral fuels, their bituminous substance, distillation, aluminum, fertilisers, ores / slag, etc., are the main imports from Bahrain.

With the largest financial institutions in the Gulf, Bahrain is the most mature and well-established business hub. With a track record of nearly 40 years and the highest number of financial institutions

licenced, Bahrain continues to be the region's leader in financial services. Bahrain provides businesses with a free, open and transparent environment and has a globally competitive business environment focusing on sustainability, skills and good governance. In the Middle East, Bahrain 's financial regulator is widely considered to be the best. Therefore, the reduction of trade barriers creates competitive pressures and the potential for technology transfer in order to give the economy a comparative advantage in terms of productivity gains and restructuring. A series of economic reforms to open up the economy were undertaken by Bahrain and India in the eighties and nineties, respectively. The extensive effort to liberalise its international trade has been noteworthy among these.

REVIEW OF LITERATURE

Kadira Pethiyagoda (2017) advocated about the Gulf's Indian Diaspora's contribution and suggested some ideas that can upgrade their situations in Gulf. The author raise the voice against injustice and human rights issues in Gulf and also told that how to overcome with it. The author emphasis on Indian government's intervention to improve the working and living conditions of Indian workers in Gulf. Pouria Mohajeri (2015) analyzed the Trade between India and Persian Gulf Countries in his paper "Trends of India Trade with Persian Gulf Countries". Author used the Trade Intensity Index to calculate the trade intensity with PGCs and found that the highest volume of Indian

Table 1. India's Trade with Bahrain	(Million
USD)	

Trade among PGCs is with United Arab Emirates. The analysis is based upon the growth evaluation of Indian trade with PGCs. Persian Gulf Countries (Saudi Arabia, Kuwait, Bahrain, Iraq, Iran, UAE, Qatar and Oman) are the big suppliers of Energy in the world market.**P.R. Kumaraswamy (2013)** in his study "Persian Gulf 2013: India's Relations with the Region" studied the India's bilateral relations in 2012 with nine Persian Gulf countries, namely, Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia. Author also highlighted the Persian Gulf countries importance for India.

OBJECTIVES OF THE STUDY

- To Analyse India's Trade with Bahrain
- To Examine Composition of Trade between India and Bahrain

INDIA-BAHRAIN TRADE

India and Bahrain enjoy excellent bilateral relations characterised by cordial political, economic and cultural ties. India-Bahrain bilateral trade date back to around 5,000 years ago, tracing their origins from the Dilmun Civilization period in Bahrain to the Indus Valley Civilization era in India. Ancient Bahraini traders are believed to have engaged in thriving trade in Bahraini pearls with Indian spices. The presence of some 350,000 Indian nationals, who make up a third of Bahrain's total population of 1.4 million, is an important anchor of our bilateral relations with Bahrain.

S.No.	Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	EXPORT	651.83	439.99	603.47	639.36	472.98	654.1	471.32	556.82	742.32	559.09
2	%Growth		-32.50	37.16	5.95	-26.02	38.29	-27.94	18.14	33.31	-24.68
3	IMPORT	641.25	905.98	664.66	563.24	446.25	356.9	290.69	431.12	539.63	421.5
4	%Growth		41.28	-26.64	-15.26	-20.77	-20.02	-18.55	48.31	25.17	-21.89
5	TOTAL TRADE	1293.08	1345.97	1268.13	1202.6	919.23	1011	762.01	987.94	1281.95	980.59
6	Trade Balance	10.58	-465.99	-61.19	76.12	26.73	297.2	180.63	125.7	202.69	137.59

Source: Director General of Commercial Intelligence and Statistics

Table 1 shows that the export trade of India with Bahrain has declined in recent years, it was USD 651.83 Million in 2011, which now in 2020 has reduced to the USD 559.09 Million. On the other hand, import of India from Bahrain has also decreased. In 2011 USD 641.25 Million of goods were imported from Bahrain but in 2020 it was amounted USD 421.5 Million. Total trade between India and Bahrain was around USD 1 Billion in 2019-20.

INDIA-BAHRAIN TRADE COMPOSITION

India's main items of export to Bahrain for the last ten years are depicted in Table 2. Mineral Fuels (27), especially High-Speed Diesel (27101930) and other petroleum products like Tar, Light Diesel, etc. are the major items in this category. In cereal (10) category, rice is the biggest exporting item to Bahrain by India. Significant amount of Meat (02), Apparel Non Knitted (62) are also exporting by India to Bahrain. Furthermore, some items export to Oman have been increased in recent years like Plastic (39), Electric

Machinery (85), Vehicle other than railway (87)

Table 2. Major Commodities export to Bahrain from India (Million USD)											
HSN	Commodity	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
02	Meat and Edible Meat Offal	8.26	9.51	8.21	12.76	13.99	21.37	21.99	19.68	24.68	23.04
10	Cereals	7.54	19.89	29.21	37.01	38.75	32.88	6.95	6.46	48.94	40.54
27	Mineral Fuels/Oil	7.80	22.22	83.78	229.33	5.69	4.36	3.93	15.63	65.82	45.49
39	Plastic	6.88	9.84	9.61	13.19	31.88	56.80	38.70-	30.38	51.60	48.10
62	Apparel Non Knitted	6.44	10.82	10.95	9.81	13.62	11.07	13.78	15.93	14.26	9.18
69	Ceramic Powder	2.22	2.91	2.52	3.14	7.00	8.94	10.03	11.98	13.05	13.26
71	Natural Pearls	10.27	34.41	16.22	28.81	68.40	108.11	18.64	20.01	42.75	35.66
73	Article of Iron and Steel	18.29	19.86	22.93	27.75	25.35	32.59	20.27	25.25	28.17	24.60
84	Nuclear Reactor	34.17	37.16	63.71	34.76	39.23	35.21	43.33	45.37	75.11	44.17
85	Electrical Machinery	24.56	29.84	32.81	29.41	25.33	23.72	22.90	37.08	34.10	27.28
87	other than Railway	2.92	16.33	27.93	11.99	15.24	17.51	19.10	24.60	37.95	21.97
89	Ships and Boat	116.33	38.35	0.00	8.48	0.02	122.62	45.81	0.00	63.63	9.25

Source: Director General of Commercial Intelligence and Statistics

Import from Bahrain by India includes mainly Mineral Fuels (27), Fertiliser (31), Iron (72) and Almunium (76).

	Table 3. Major Commodities import from Bahrain to India (Million USD)												
HSN	Commodity	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		
26	Ores, Slag Ash	139.18	24.77	89.44	10.46	0.05	11.29	22.19	78.20	96.51	0.15		
27	Mineral Fuels/Oil	219.19	605.89	329.85	359.23	215.82	94.07	46.94	69.12	118.94	113.42		
31	Fertilisers	43.87	20.24	0.00	0.00	0.00	0.00	16.84	31.59	53.41	96.99		
39	Plastic	0.97	0.31	0.28	1.23	3.29	7.85	43.23	3.54	10.42	8.54		
72	Iron and Steel	44.46	60.66	50.29	35.19	47.83	23.42	16.52	25.23	35.17	30.04		
76	Aluminum	97.92	103.10	121.89	92.91	129.31	91.83	106.44	150.59	115.96	75.38		

Source: Director General of Commercial Intelligence and Statistics

INDIAN DIASPORA IN BAHRAIN

While Bahrain is both geographically (only 765 sq. kms.) and population-wise (1.4 million) a small country, it has been a favourite destination for Indian nationals working as expatriates. Although in 2000 there were only 90,000 Indian nationals working in Bahrain, the number has since risen to approximately 350,000-comprising 200,000 from Kerala, 50,000 from Tamil Nadu, 40,000 from Andhra Pradesh & Telangana, 25,000 from Karnataka and the rest from Punjab, Rajasthan, UP, Maharashtra, Goa and Gujarat. In terms of professions, the vast majority are in the category of unskilled labour, i.e. 70 percent of our nationals. There are a considerable number of doctors, engineers, chartered accountants, bankers, managers and other professionals who play a vital role in the socio-economic development of Bahrain, in addition to the predominant blue-collar labour force.

Bahraini authorities and employers alike enjoy great goodwill from the Indian expatriate community. It is no secret that Indians from the subcontinent are preferred over other expatriates. The main reasons for

this include the confidence factor, strong work ethics and Indian expatriates' "apolitical" orientation.

In November 2015, Bahrain launched the 'Little India in Bahrain' project to recognise and mark the contribution of the Indian community to Bahrain's history and progress. Under the project, different buildings were restored and renovated outside, as well as a small public space was created to hold regular markets, fashion shows, Indian food stalls, and cultural performances, etc., to give visitors a sense of being in India.

Indian investment in Bahrain: There are 23 branches registered in Bahrain by leading Indian banks / companies and 3,181 Indian joint venture companies are registered in Bahrain. Between January 2003 and March 2018. India's total capital investment in Bahrain was estimated to be approximately US\$ 1.69 billion. Financial services, followed by the real estate and hospitality sectors, have the highest investment value (40 percent of total projects).

Financial Year		March 2015	March 2016	March 2017	March 2018	March 2019	Sept 2019
Cumulative inflows from India	FDI equ Bahrain i	uity into 48.93	64.65	144.92	164.60	173.38	174.73

Bahraini Investments in India: (Amount in US\$ Million)

Source: DIPP/RBI

BILATERAL INSTITUTIONAL MECHANISM

Four rounds of Foreign Office Consultation (FOC) were held between India and Bahrain. The first round was held in Delhi in November 2004; the second round was held in Bahrain on 23 October 2011 and the third round was held in New Delhi on 20 October 2014. The 4th round of the FOC was held on 14 November 2016 in Manama, where the Indian delegation was led by the Joint Secretary (Gulf) and the Bahraini delegation was led by Dr Rana bint Isa bin Duaij Al Khalifa, Assistant Undersecretary for Arab & Afro-Asian Affairs and Organizations, Ministry of Foreign Affairs. During the meeting, both sides discussed bilateral relations and discussed a variety of issues of mutual interest.

India and Bahrain signed an Economic and Technical Cooperation Agreement in April 1981 during the visit of Amir to New Delhi. India-Bahrain Joint Committee on Economic and Technical Cooperation (JCETC) established pursuant to this Agreement met four times (1986-New Delhi, 1991-Bahrain, 1998-New Delhi and 2007-Bahrain). MOS (EA) Ch. E. Ahamed led the Indian delegation to the 4th JCETC meeting in Bahrain on 14-15 November 2007. This mechanism has since been replaced by the High Joint Commission and upgraded to the EAM level, following the signing of the MOU on the establishment of the HJC during King Hamad's visit to India on 18-20 February 2014.

CONCLUSION

After examining the various aspects of Indo-Bahrain trade, it can be said that it has been concentrated in just few items. Volume of trade is also very low in comparison with other gulf state. Just oil, fertilisers and aluminum like items are being imported from Bahrain. Whereas export to Bahrain by India includes items like Cereals, Diesel, Chemicals etc. So the other side of coin is that there are some great opportunities for both the countries to work on trade and also other areas of concerns such as counter terrorism, renewable energy etc. In August 2019, India's Prime Minister Narendra Modi visited Bahrain. Many new agreements were signed in field of space technology, cultural exchange program etc. This types of high official visits may provide an opportunity to further cement mutually beneficial ties between India and Bahrain. India has also advantage in trade with Bahrain and Balance of Trade is in favour of India.

REFERENCES

- 1 Kadira Pethiyagoda (2017) "Supporting Indian Workers in the Gulf : What Delhi can do", Policy Breif, Brookings Doha Centre, Nov. 2017
- 2 K.A. Goyal & A. Vajid 2017, "The role of Diaspora in strengthening relations between Host and Home Country. (A case study of Indian Diaspora in UAE) Pacific Business Review International, Vol 10, Issue 1, July 2017 PP 114-120.
- 3 K.A. Goyal & A. Vajid 2017 "Revealed Comparative Advantage of India's Rice Export with Selected Countries (A Case Study) Pacific Business Review International, Vol 9, Issue 9, March 2017 PP 51-56
- 4 K.A. Goyal & A. Vajid 2016, "An Analysis of Bilateral Trade between India and UAE", Pacific Business Review International, Vol 1, Issue 2, July 2016 PP 94-100.
- 5 Pouria Mohajeri (2015), "Trends of India's Trade with Persian Gulf Countries", Indian Journal of Applied Research, Volume: 5, Issue 9, Sep. 2015. PP 199 to 207.
- 6 P. R. Kumaraswamy (2013). Persian Gulf 2013: India's Relations with the Region. Sage Publication India.
- 7 https://eoi.gov.in/bahrain/