EFFECT OF INTELLECTUAL CAPITAL ON THE PERFORMANCE OF PHARMACEUTICAL FIRMS

Solanke Abiola Abosede[1] and Mohammed Yabagi Ibrahim[2]

[1&2]Department of Accountancy, The Federal Polytechnic, Bida, Nigeria
Email: mosunmolal1974@gmail.com

ABSTRACT

The study empirically investigates the effect of intellectual capital (IC) on the financial performance (FP) of pharmaceutical firms listed on the Nigerian stock exchange. The study measure IC by Value added intellectual coefficient of a company (VAIC) model. The research sample consists of pharmaceutical companies listed on the stock exchange in Nigeria during 2010-2019. Data from the annual report of the sampled. The result shows that intellectual capital significantly and positively impacts the financial performance of the companies.

Key Words: Intellectual capital**,** Financial performance, Nigeria

1.0 INTRODUCTION

The use of information technology, innovation, and knowledge termed intellectual capital (IC) has been taken into consideration to impact the productivity and performance of the firms. The use of the "knowledge-based economy", which is principally driven by intangible resources and competencies, has led to an increased interest in IC (Mahfoudh, 2016). Its capability to innovate to its IC or its ability to utilise its knowledge resources. Al-musali Ku Nor Izah Ku Ismail (2016) stated that lack of or inadequate resources of any kind might place a firm in a vulnerable position, Apiti, Ugwoke & Chiekezie (2017) and might undermine its success because every business requires resources in the form of a physical, financial and intangible asset. Moreover, financial statements have often failed in reporting IC as a significant proportion of the total value of firms Ousama, Hammami & Abdulkarim (2019).

The study of the relevance of intangible assets has attracted much attention in the management of business literature because IC as an aspect of the intangible asset exerts the influence of adding value to a firm.   Its relative ability can facilitate the acquisition of other resources, which promote the survival and profitability of a firm Agostini, Nosella & Fillippini (2017).   IC refers to value added by the effort employees put into an entity in the form of a human, a physical and intangible asset

which includes knowledge assets, such as capital employ efficiency (CEE), human capital efficiency (HCE), and structural capital efficiency (SCE) that determines the value of competitiveness of an entity (Apiti, Ugwoke & Chiekezie, 2018). IC can also as a fundamental factor in generating value and ensuring profitability and high performance in an organisation (Popescu, 2019).

According to Horibe (2015), performance and competitiveness advantage is no longer primarily a matter of machines and tools. Though IC is according to (Nassar 2021; Isola, Adeleye & Olohunlana, 2021; Ghazzaw, Tuna & Acar, 2020; Melani, Widlastuti & Isrowiyah, 2019; Ognjanovic, 2016; Alsahhani, 2020) is of three components; namely, HCE, SCE, and CEE. In order words, it is the IC elements interaction that generates and creates values for firms. This value generation is of utmost importance, especially to the profit-maximising firms, who seek better performance in profitability, liquidity, efficiency, returns, and leverage.

However, despite the growing investment in intangibles in an organisation, they still represent an under-explored area. Several studies investigated the efficient use of IC in an organisation, such as (Ousama & Fatima, 2018; Okenwanay, Ndubuisi & Chidoziem, 2017; Ozkan, Cakan & Kayacan, 2017; Anifowose, Abdulrasheid, Annuar & Ibrahim, 2018; Nadeem, 2016) while few focused on the theory aspect of IC Popescu,(2019) and Inkinen, (2015). Prior literature has evidenced a positive and negative association between IC efficiency and financial performance (Ousama, Hammani & Abdulkarim, 2019; Agostin, Nosella & Fillippini, 2019; Apiti, Ugwoke & Chiekezie, 2018; Chowdhury, Rana & Akter & Hoque, 2018). While others, such as Vitalis, 2018; Xu & Liu, 2020; Gogan, Antene, Sarca & Darghia, 2016 Oyedokun & Saidu, 2018, found a negative relationship between the variables. It could be due to different types of analysis methods and years of the data used for the analysis. As the goals of any firm can only by using resources, such as tangible and intangible. Therefore, it is essential to examine whether the listed firms are using its IC and hence contribute to the growth of the new economy.

The observed identified gap in the listed firms is the dearth of empirical evidence on the effect of IC on performance measurement of quoted firms in Nigeria. These firms employed an appreciable number of staff in different capacities, and it was one of the sectors where financial statements often failed to report IC as a significant proportion of the firm's total value. Ousama, Hammani & Abdulkarim (2019), it is known that the public sector often relies on physical (tangible) assets to create value (Nassar, 2020). firms started shifting from physical assets to intangible ones in other to maintain competitive advantages among their competitors. Hence, this study fills this gap and attempt to establish the effect of using IC effectively vis-a-vis firm performance using six listed pharmaceutical companies on the Nigeria stock exchange from 2010-2019.

2.0 EMPIRICAL LITERATURE

Improving the use of information and technology, innovation, and knowledge known as IC has become a topic of discourse among researchers; studies has rarely examined the IC's effect on the performance measurement of Quoted firms concerning financial performance. Some researchers have attempted to carry out such relationships. However, their research has narrowed down to some specifics, for instance, a study carried out by Isola, Adeleye & Olohunlana (2019) on board room female participation, intellectual capital efficiency, and firm performance in developing countries established that IC efficiencies positively contribute to bank performance. The exact nature of the relationship between IC and corporate performance in Palestine was also established by Nassar (2020) using the Value-added intellectual coefficients model. Because the regression results indicate that VAIC established a good relationship with financial performance using the return on asset (ROA) as a proxy for profitability. Ousama, Hammami & Abdilkadir (2019) found a positive impact on the financial performance of Islamic banks using IC measurement, where findings reveal that structural capital (SC) has an insignificant impact on the financial performance of Islamic banks more than other IC components.

Agostini, Nosella & Filippini (2017) studied agreed that IC components generate increment and innovation on small and medium enterprises' financial performance (FP). At the same time, Al-musal Ku Nor Isah Ku Ismail (2016) agrees with the work of Apiti, Usoma, Ugwoke & Chiekezie (2017), where it found that IC has a significant relationship between the variables used. Using ROA to measure FP while VAIC and intellectual capital efficiency (ICE) measure IC using Pearson correlation coefficient to determine the relationship between IC and organisational FP. Chowdhury, Rana Akter & Hoque (2018) adopted the VAIC model to find out the link between IC and FP of the Bangladeshi textile sector, and the study objective was relevant because it provides information on the effect of IC on FP of the textile sector. The study was not without its limitation as it was limited to five years of data from (2013-2017) while this study will coverer the period of ten years from (2010-2019). The study finds no significant effects of IC on the FP of the textile sector in Bangladeshi.

Popescu (2019) critically examined the decisive influence on organisation performance, using IC as primary fundamental importance; the study concludes IC plays a critical role in managing accounting system concerning their financial performance than previous years. Vitalis (2018) reported a non-significant effect of IC on asset turnover (ATO). It observed that suitable components of the workforce, such as a conducive working environment, a good welfare package, reviewing performance, and engaging regular training and development programs that can

increase efficiency and productivity were not put in place by the management. The study concluded that management should note all the deficiencies and make the amendment, as most of them are the key to increasing organisation performance. At the same time, Oyedokun & Saidu (2018) and Hoche (2020) stated that listed companies boost their intellectual assets for their ultimate effect on return on an asset through maximisation of their market value, incredibly human, structural and relational capital.

Linkinen (2015) conducted a study on empirical research on IC and Financial management using a systematic review to find the link between the two variables and finds out that IC influences Firms performance mainly through interactions, combinations and mediations and further observed a significant relationship between IC and FP. However, the study was based on a review work and not empirical. Melani, Wdiastuti & Isrowiya (2019) examined the IC in polytechnic. The study objective was to determine the practice of IC disclosure at Universities, especially polytechnic in Indonesia, adopting content analysis to find the level of disclosure and findings reveal low disclosure of IC on polytechnic website. These results findings show that IC is not efficient in the polytechnic of Indonesia.

Xu & Lu (2020) explained the interconnectedness among the value-added intellectual capital model about the link between IC and FP using the value-added intellectual coefficient modified model. The regression result shows that another component has no significant effect on the profitability of the manufacturing industry in Korea. Gogan, Artene, Sarca & Dragchi (2016) emphasised the role played by IC on organisations that want to be efficient on the market and want to obtain sustainable competitive advantages. Findings reveal there is a significant relationship between IC and organisation performance generally. Anifowose, Rashid, Annuar & Ibrahim (2018) find that all the factors of intellectual capital efficiency and corporate book value play significant roles in firms' value creation.

Ozkan, Cakan & Kayacan (2017) study in Turkish where bank efficiency use of capital employee efficiency was superior in terms of profitability of the bank, an essential finding of Okenwa, Ndubuisi & Chidoziem (2017)'s study is that investment in the IC component has in the previous years accelerates value creation in the current year leading to high profitability. IC is increasing replacing physical assets; as illustrated by Onyekwelu, Lucy & Ubesie (2016) and Sardo, Serrasquero & Alies (2018), investigated the link between IC and FP SME Hotel, using panel data of 934 Portuguese SMEs hotel. Moreover, the result reveals that all the IC components are the essential key element for the success of hotels as all the component positively and significantly influence the FP of the SMEs hotels. The role of the intellectual capital

valuation method is vital for high-tech firms, especially for product innovation Wudhikarn (, 2020). The author investigated the impact of IC on FP of Turkish real estate companies before and after the crisis of 27 listed companies over the period 2004-2015. The result reveals that SCE has a significant positive correlation with return on the asset.

Kurfi, Udin & Bahamman (2017) suggest that structural capital efficiency should be used in line with other components to enhance the profitability of the food production companies listed on the stock exchange. Ognjanovic (2016)'s results support previous studies that IC should be an essential key in enhancing organisational performance profitability. Alsarhni (2021) and Forte, Matonti & Nicolo (2019) investigated the impact of intellectual capital on firms' FP and market value of Italian listed firms using annual data of 9 years from (2008-2017); the authors use VAIC as a measure of IC to investigate the relationship between the variables. The result reveals that IC exerts a positive impact on firms FP measure as a firm's profitability and growth in revenue and market value.

2.1 Theoretical Framework

previous schoolers adopt resources-based view theory. Penrose, 1995 argues that the difference in organisation profitability is due to the difference in portfolio resources of the organisation concerning how the resources used. A meaningful organisation that have a unique combination of resources and the art of articulating them are more profitable as compared to those who do not have such a combination of resources. Barney & Peteraf (2014) stated that combining resources with internal capabilities is critical to obtain a competitive advantage. Amit & Schoemaker (1998) further stated that profitability determinants depend on the magnitude kinds and nature of the organisation's capabilities and availability of resources. (Grant 1996 and Hedlund, 1991) opined that performance could only be through effective management and efficient utilisation of available resources.

Knowledge-based view theory postulate that knowledge is the only crucial intangible asset vital to organisation growth Spender & Grant (1996). The use of knowledge concerning creativity and transfer of knowledge increases the firm's successes. The human capital theory postulated that employees are assets to the organisation, as an investment in them will produce a maximum financial return. Thus, they are a powerhouse of the organisation because they are the sources of idea generations, and they also work at the grass-root to improve organisation performance financially. Moreover, they better suggest a better solution for problems arising in the organisation Brown & Kimbourgh (2011).

3.0 METHODOLOGY

The primary purpose of this study is to examine the effect of IC on the performance of pharmaceutical companies listed on the Nigerian Stock Exchange. The study uses data of 6 pharmaceutical companies listed on the stock exchange for the period 2009-2019. The data was from the company's financial statement published on the Nigerian Stock Exchange website. IC is measured using the VAIC method divided into three components (HCE, SCE, and CEE). Financial performance is proxy with ROA and Tobin Q with the following control variables; Firms size, leverage, and age. Firm leverage refers to total debt divided by the book value of the total assets; the firm's size is defined as the log of the firm's total asset, while the firm's age is the total number of years in which the firm's total asset of the company has been in existence on Nigerian Stock Exchange. HCE refers to the combined knowledge, skill, innovations, and employees' ability (Albertini & Berger-Remy, 2019). Those variables are based on human, suggesting that employees are the basis of the dimension of human capital. SCE includes all reserves of non-human knowledge, database, organisational charts and processes and operating procedures, strategies, and organisational action plans Chiziri, Merhjardi, Sadrabadi & Merhjardi (2015). CEE refers to physical and financial assets owned by the firm (Ikapel, 2015). VAIC is a newly created value calculated for an institution during a particular, fiscal year. It is the difference between inputs and outputs of the firm's operating activities (Ikapel, 2015). The independent variables for this study are the value-added intellectual coefficient, human capital efficiency, structural capita efficiency and capital employee efficiency. At the same time, the dependent variable for this study is ROA and Tobin Q.

4.0 RESULTS AND DISCUSSION

Table 1

Variable	Obs	Skewness	Kurtosis	Adj chi-square	p-value
Tbin Q	60	0.0000	0.0013	24.04	0.0610
ROA	60	0.0076	0.0605	9.11	0.0531

Source: Authors computation

Table one shows the Normality test for Tobin Q and ROA using Skewness and Kurtosis. The result revealed that the data type distributed normally.

Table: 2

Correlation matrix showing the Relationship between Tobin Q and ROA

	Tobin Q	ROA
Capital employ efficiency (CEE)	0.0659	0.6444
P-Value	0.6170	0.0001
Human capital efficiency (HCE)	-0.281	0.4777
P-Value	0.8310	0.0001
Structural capital efficiency (SCE)	-0.0667	0.5417
P-Value	0.6125	0.0001
Value-added intellectual coefficient (VAIC)	-0.0339	0.5371
P-Value	0.7972	0.0001
Firm size	-0.0515	0.6212
P-Value	0.6957	0.0001
Leverage	0.0422	0.2540
P-Value	0.7490	0.0502
Age	0.1803	-0.2502
P-Value	0.1680	0.0538

Source: Authors computation

Table two present the relationship between a firm's performance (Tobin Q and ROA) and firms characteristics (CEE, HCE, SCE, VAIC, Leverage, Firm size and Age of the firm). Regarding the CEE, the R-value is 0.0659, which indicate a positive correlation between Tobin Q and CEE, though ($P>0.05$). Concerning Tobin Q and HCE, the r-value of -0.0281 shows a negative correlation between Tobin Q and HCE. Similarly, SCE, VAIC and firm size were also negatively related. The r-value for SCEE; -0.0667 indicates a significant negative relationship; the r values for VAIC and firm size are -0.0339 and -0.0515, indicating a negative relationship. The leverage and age of the firm show a positive and significant relationship (R-value are 0.0422 and 0.0.1803).

Also presented in table two is the relationship between ROA and firms characteristics. The results revealed a significant relationship between ROA and firms' characteristics. The relationship between CEE and ROA was weak and significant ($r = 0.4777$;

P<0.005). Regarding the correlation between ROA and SCE, the r-value is (0.5417), reflecting a negative and moderate relationship. The correlation between ROA, VAIC, Firm size, leverage and age of the firm was weak and moderate (r = 0.5371; 0.6212; 0.2540; -0.2502). the relationship between HCE and ROA is positive and moderate (r = 0.4777; P<0.05).

Table 3

Regression analysis showing the relationship between Return on Asset and firms characteristics

Return on asset (ROA)	Coefficients	t	P-value
Capital employ efficiency (CEE)	-2018.701	-2.09	0.031
Human capital efficiency (HCE)	-2054.166	-2.09	0.012
Structural capital efficiency (SCE)	-2050.556	-2.09	0.043
Value-added intellectual coefficient (VAIC)	2053.766	3.19	0.044
Firm size	8.844188	2.59	0.037
Leverage	.0176063	1.43	0.041
Age	.0480066	2.35	0.001

Source: Authors computation $F (7, 52) =11.00$; P<0.005; R-squared = 0.1190

Table three present the result of multiple regressions showing the relationship between ROA and firms characteristics. The multiple regression with seven predictors (CEE, HCE, SCE, VAIC, Firm size, Leverage and Age of the firm) producer squared = 0.1190; $F = (7, 52) = 8.05$; $P < 0.005$. The value of R-squared suggests that 12% of the variability in ROA explained by CEE, HCE, SCE, firm size, leverage and age of the firm. The coefficient of CEE is -2018.701, and this implies that a unit increase in CEE will reduce ROA by -2018.701. Also, the coefficient of HCE is -2054.166, and it indicates that if HCE changes by one unit, ROA will change by -2054.166. The result also shows that a unit increase in SCE will cause -2050.556 decreases in ROA. The result shows that the coefficient of VAIC is 2053.766, which indicates that a unit increase in VAIC will lead to a 2053.766 increase in ROA. The coefficient of firm size is 8.844188, and this indicates a weak relationship between firm size and ROA. Also, the leverage coefficient shows a positive relationship with .0176063, while the coefficient of the age of the firms is .0480066 showing a weak relationship with ROA.

Regression analysis was not carried out for Tobin Q and firms characteristics simply because none of the variables of the firm's performance heard independent relationship with the outcome variable (Tobin Q). hence, regression analysis dropped for Tobin Q

4.0 DISCUSSION OF FINDINGS

This study examines the relationship between the intellectual capital component and financial performance of pharmaceutical companies listed on the stock exchange from 2009-2019. Based on our findings, the result reveals that the IC components have significant influences on a firm's financial performance in which human capital efficiency has the highest contribution in forming these influences. This study drawn the concept based on the resources-base view and intellectual capital theory to complement the limitations. Moreover, all the VAIC are also significant and play a vital role in achieving   better organisational performance. Consistent with Anifowoshe, Rahid, Annuar & Ibrahim (2018).

We find that HCE is a highly significant IC component because its p-value is hugely higher than the CEEE and SCEE. This result indicates that the value creation of Nigerian pharmaceutical firms listed on NSE mainly depends upon human capita efficiency, and it suggested that an escalation in human capital investment enhances the firm's financial performance. However, SCE and CEE are also significant indicators of IC with less weight than HCE to achieve better performance and show that firms' success depends not only on HCE but also on physical and financial capital.

This study confirms support to the firm's knowledge-based view because the theory postulates that knowledge assets have a significant positive impact on a firm's financial performance and considered the strategic asset to sustain competitive advantage. This study also supports the resource-based view theory because IC has a significant impact on the firm's financial performance. It also supports human capital employee theory as empirical values show that the variable is a highly significant component of IC that depicts that investment in personnel leads to a better performance in an organisation.

This study result further reveals that Tobin Q does not significantly correlate with the firm's financial performance, showing a negative contribution. The positive relationship reveals by ROA may indicate that pharmaceutical companies are efficient in managing their capital to create more excellent value as CEE, HCE, SCE VAIC, and firm size nearly refer to a financial asset, Public (2000). Any improvement in the efficiency of return on asset caused by proper use of financial assets will financially increase the net income and lead to higher ROA. This study also established a positive relationship between leverage, age and a firm's financial performance in Nigeria, though the link is through ROA as a performance proxy. This finding agrees with Hodo (2020), which posits that firms characteristics hold a higher percentage of the firm's value, thus contributing positively to the firm's performance; this finding could be so because human resources coordinate the other components of the intangible assets.

Besides, it has discovered that possession of the IC component will give an organisation a competitive advantage as the variable also contributes to the firm's profitability as a proxy of ROA. its in line with the study of Ognjanovic (2016) and Wudhikan (2020), where IC found to correlate with firm's performance using ROA as a measure of firm's financial performance. The IC component is crucial to achieving a sustainable competitive advantage. This study equally revealed that the SCE contributes to the firm's performance. However, by analysis, a higher SCE leads to higher ROA. This finding is in agreement with the research work of Kurfi, Udin & Baharmh (2017), which investigated the four components of IC as the interrelationship; the higher R square shows that IC components could input a more substantial influence on a firm's financial performance.

5. Conclusion and Recommendations

The study concludes that IC (VAIC, HCE, SCE, and CEE) components will give an organisation a competitive advantage. After controlling for leverage, firm size, and age, the study found out their possible effect on the overall results shows a positive effect; only Tobin Q was not significantly impacted the firm's financial performance as its shows negative and non-significant effect. All other variables are significantly and positively affect the IC of the firm's performance. The findings of this study are consistent with the previous study such as: (Kurfi, Udin & Baharma 2017; Ognjanovic 2016; Wudhkan 2020; Ozkan, Ckan & Kayacan 2017; Sola, Adeleye & Olohunlana 2017; Hodo 2018).

The study recommends that listed pharmaceutical companies in Nigeria increase the use of IC components to enhance their profitability as all the variable shows a significant effect on the firm's performance with a positive contribution. Organisation should invest more on human capital as its shows most robust prediction among all the variables. furthermore, firms should continue to use and managed well their IC component for sustainability as all the variables positively and significantly impact the firm's financial performance as a measure of ROA

REFERENCES

Alsarhani, Y. A. S (2020). The concept of intellectual capital within the banking industry in GCC.   A   paper   presented at the 3rd UMM *International Islamic Business Management   Conference,* 24-30th   September (IBM, 2020), University of Sains Islam   Malaysia

Amit, R., & Schoemaker, P. J. (1996). Strategic assets and organisational rent. *Strategic   Management Journa*l, 141, 325-335

Agostini, L., Nusella, A., Filippini, R., (2017). Does intellectual capital allow improving\innovation performance?   Quantitative analysis in the SMEs context. *Journal   of Intellectual Capital*, 18, 2, 400-418.   DOI: 10.1108/JIC-05-2016-0056

Al-Musali Ku Nor Izah Ku Ismail, M. A. (2016), "Cross-country comparison of intellectual   capital performance   and   its   impact   on   the   financial performance of commercial banks in GCC   countries", *International Journal of Islamic and Middle Eastern Finance and   Management*, 9, 4. http://dx.doi.org/10.1108/IMEFM-03-2015-0029

Apiti, C. U., Ugwoke, R. O., & Chiekezie, N. R., (2017). Intellectual capital management and   organisation   performance   in   selected   food   and beverages companies in Nigeria.   *International Journal of Advanced Scientific Research and Management*, 2, 1, 47-58.   www.ijasrm.com

Anifowose, M., Abdulrashid, H. M., Anuar, H. A., & Ibrahim, H. (2020). Intellectual capital efficiency and corporate book value: evidence from Nigeria economy. *Journal of   Intellectual Capital,* 19,   3, 644-688. DOI: 10.1108/JIC-09-2016-0091

Barney, J. B., & Peteraf, A. A (2014). Comment on hashai and bucley: transactions; cost,   capabilities and corporate advantages consideration in the theory of multinational enterprise.   *Global Strategy Journal*, 4, 1, 70-73

Chowdhury, L. A. M., Rana, T., Akter, M., & Hoque, M. (2018). Impact of intellectual capital on   financial performance: Evidence from the Bangladeshi textile sector. *Journal of   Accounting   Organisational Change*, 14, 4, 429-454. DOI: 10.1108/JAOC-11-2017-   0109

Forte, W., Matonti, G., & Nicolo, G. (2019). The impact of intellectual capital and financial   performance and market value: empirical evidence from Italian listed firm.   *African   Journal of Business Management*, 13, 5, 147-158. DOI: 10.5897/AJBM2018.8725

Gogan, L. M., Atene, A, Sacar L., & Draghici, A. (2016). The impact of intellectual capital on   organisational   performance. *Procedural   social   and behavioural science*, 221, 194-202

Hoche, M. (2020). connected intellectual capital. DOI: 10.13140/RG.2.2.15854.36167   www.researchgate.net/publication

Hedlund, G. (1994). A model of knowledge management and firm corporation. *Strategic   Management Journal,* 15, 2, 73-90

Grant, R. M. (1996). Towards a knowledge-based theory of the firm. *Strategic Management   Journal*, 17, 12, 109-112

Isola, W. A., Adeleye, B. N., & Olohunlana, A. O. (2019). Board room female participation, Intellectual   Capital efficiency and firms' performance in developing countries: Evidence from Nigeria.   *Journal of Economic, Finance and Administrative Science*, 25, 50, 413-424.

Inkinen, H. (2015). Review of empirical research on intellectual capital and financial performance. *Journal of Intellectual Capital*, 16, 3, 518-565. DOI: 10.1108/JIC-01-2015-0002

Kurfi, S. H., Udin, N. M., & Bahamman, S. M, (2017). The impact of intellectual capital on the financial performance of listed Nigeria food product companies. *Journal of   Accounting and Taxation*, 8, 11,   147-160. DOI: 10.5897/JAT2017.0246

Melani, E., Wudiastuti, R., & Isrowiyah, A. (2019). Advance in economic. *Business and Management Research*, 4, 7, 50-59,

Nasaar, S. (2018). The impact of intellectual capital on firm performance Turkish real estate   companies before and after the crisis. *European Scientific Journal*, 14, 1, 1857-7881. Doi: 10.19044/esj.2018.v14n1p29

Nadeem, M. (2016). Intellectual capital and firm performance: evidence from developed, emerging and frontier markets of the world. A thesis submitted in partial fulfilment of   Doctor of philosophy in accounting and finance at Lincoln University.

Nassar, S. (2020). The impact of intellectual capital on corporate performance: Evidence from Palestine.   *EJBMR, European Journal of Business and Management Research*, 5, 6. DOI: http://dx.doi.org/10.24018/ejbmr.2020.5.6.647

Ousama, A. A. (2019). The association between the Islamic banking industry's intellectual capital   and financial performance: an analysis of the GCC banks. *International Journal of Islamic   and   Middle   Eastern   and Financial Management,* 13, 1 79-93. DOI: 10.1108/IMEFM-05-   2016-0073

Oyedokun, G. E. & Saidu, B. (2018).impact intellectual capital on financial performance listed   Nigeria oil marketing company. *Information and Knowledge Management*, 8, 9, 13-27.   www.iiste.org

Ognjanovic, J. (2021). Intellectual capital in hotel companies. *Thematic Proceedings* 11, university of Krakugevac, faculty of hotel management and tourism in Vankajabanja. www.research gate

Ozkan, N., Cakan, S., & Kayacan, M. (2017). Intellectual capital and financial performance: A study of the Turkish banking sector. Borsa Istanbul Review, 17, 3, 190- 198.www.sciencedirect.com

Okenwa, O., Ndubisi, A. N., & Chidoziem, A. M. (2017). Effect of intellectual capital on the financial performance of quoted deposit money banks in Nigeria. *Journal of global accounting*, 5, 1, 1116-6828. www.jgaunizik.com

Onywkwelu, U.L., & Ubesie, M. C. (2016). Effect of intellectual capital on the valuation of the quoted pharmaceutical firm in Nigeria. *International Journal of Business and Management Review,* 4, 7, 50-59. www.ejournals.org

Popescu, C. R. (2019). Intellectual capital": major role, key importance and decisive influences on organizations' performance. *Journal of Human Resources Management Research*. DOI: 10.5171/2019.509857

Penrose, E. T. (1995). The theory of the growth of the firm, 1959, Cambridge

Public, A. (2000). VAIC^tm an accounting tool for IC management. International Journal of Technology Management, 20, 7, 6, 7, 8, 702-714

Sardo, F., Serrasqueiro, Z., & Alves, H. (2018). On the relationship between intellectual capital and financial performance: A panel data analysis on SME hotels. *International Journal of Hospitality Management*, 75, 67-74. www.elsevia.com

Spender, J. C., & Grant, R. M. (1996). Knowledge and the firm overview. *Strategic Management Journal,* 17, 52, 5-9

Vitalis, E. (2018). Effect of intellectual capital performance of firms listed on Nigeria stock exchange. *Research Journal of Finance and Accounting*, 9, 8 138-150. www.iiste.org

Wudhikarn, R. (2020). The hybrid intellectual capital valuation method. *Economic Research- Ekonomska Istraživanja*, doi: 10.1080/1331677X.2020.1860798

Xu, J. & Liu, F. (2020). The impact of intellectual capital on firms' performance: A modifies and extended VAIC model. *Journal of Competitiveness*, 12, 1, 161-176. https://doi.org/10.7441/joc.2020.01.10