

Empirical Analysis of Intellectual Capital and Firm's Performance: Evidence from Nigeria

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ABSTRACT

One of the most significant challenges of firms in a matured industry is to remain competitive, increase market shares and growth. Many firms often deploy their available resources to relevant quarters to achieve a competitive edge over its rivals, but little attention has been paid to intellectual capital as a non-material resource of attaining a competitive edge. This study seeks to explore the effect of human, structural and relational capital on operational performance of hospitality firms. The study adopted a survey research design whereby questionnaires were administered to a sample of two hundred and forty (240) respondents. Multiple regression analysis was employed to test the three (3) hypotheses formulated. The study found that human, structural and relational capital have a significant and positive effect on operational performance. The study concludes that intellectual capital is an important and necessary factor to be considered by firms in terms of achieving competitive advantage. The study recommends intensive and well-structured training for staff, the creation of corporate memory as well as the improved relationship with stakeholders.

Keywords: Human Capital, Intellectual Capital, Operational Performance, Relational Capital, Structural Capital.

1. INTRODUCTION

The adage that “knowledge is power” has witnessed a rise in its level of relevance and importance especially as the competitive nature of the business world is rapidly growing (Rechberg & Syed, 2013). A critical challenge for the most enterprise is how to achieve and sustain competitive advantage. Intangible resources in the form of knowledge possessed by organisations have over the years become indispensable in their quest for survival. According to the resource and capabilities theory of the firm, resources and capabilities that are unique, rare, difficult to imitate and non-substitutable create competitive power and above average performance (Barney, 2006). This makes intellectual capital a silent weapon that smart managers deploy for the improved performance of their organisation. The ability to attract the best of employees with the right skill and retain them is the foundation for modern day businesses survival. Businesses are now in the know that the depth of intellectual capital sometimes explains the best of innovation and creativity in the organisation (Roos, 2017; Sharma & Dharni, 2017). Thus, the push for most business to adopt a dual approach to ensuring that requisite knowledge is acquired and they are transformed to meet the compelling need of the organisation at the time (Mahesh, Daryll, Jasvinder & Monika 2013; Salleh et al. 2018).

The rise in global technological advancement has characterized the dynamic nature of the twenty-first century business world, increased business connections, expansionary network relationships as well as shortened or decreased product life cycle, which has created a complex environment for organizations to flourish or fail (Cardinal, 2001; Hayes, Pisano, Upton &

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Wheelwright, 2005). Critical is the fact that the business world today despite the declaration of tremendous financial assets by firms, there is still evident poor performance that has led to the closure of some business both locally and globally (Sumedrea, 2013; Ozkan, Cakan & kayacan, 2017). This development implies that the outward possession of substantial capital and physical assets is not just sufficient to sustain an organisation to gain competitive advantage and stay competitive in its industry and beyond even in the face of threat. Hence, the increased attention towards a deliberate approach to acquire, develop and maintain a high degree of following, scarce and organised resources by firms in order to remain competitive in the business world (Firer & Williams, 2003; Riahi-Belkaoui, 2003).

The hospitality industry is mainly service oriented, and there have been questions on how organisations apply intellectual capital in the service industry and on whether it can improve their performance most especially in areas where their performance is bad (Sardo, Serrasqueiro, & Alves, 2018; Mahesh et al., 2013). However, in the views of Wang and Chang (2005), the service industry requires high depth of innovation, experience, skills and expertise and it bemuses so much on them to develop and acquire increased depth of intellectual capital so as to be able to meet increasing consumers taste and changing demands in today's market.

There are studies have tried to establish the link between intellectual capital and firm's performance (Nassar, 2018; Girma, 2017; Smriti & Das, 2017; Ahmed, Ahmed, Luqman & Arshad, 2016). However, the studies were based on developed economies context, which may not be applicable in developing economies context considering their inherent disposition to issues. This study seeks to close this gap. There appears to be limited literature that has assessed intellectual capital and performance using the hospitality industry in emerging economies. Emerging economies that are yet to use the hospitality industry to their advantage actively, this paper is useful to them. It is on this merit that this study sought to examine intellectual capital and its effect on the performance of hospitality firms.

2. LITERATURE REVIEW

2.1 Theoretical Framework

The theoretical framework of this study is mainly underpinned by the resource-based view (RBV) theory. Based on the central premise of RBV, organisations would be able to outperform other organisations and gain an edge over competitors if they possess valuable, rare, inimitable, and non-substitutable resources and capabilities (Barney, 1991).

The resource-based view (RBV) of the firm argues that sustained competitive advantage derives from the firm's resources and capabilities – bundles of tangible and intangible assets, including management skill, organisational operations and activities, and the depth of knowledge and information that they control (Barney, 2001). Nowadays, organisations should be held accountable for their performance for a broad range of clients, from the board of managers to staff, and investors to market regulators (Tayles et al., 2007).

Thus, companies should assure clients that their performance exceeds all known expectations. Many scholars asserted that investment in intellectual capital leads to an improvement in economic performance (Bollen, Vergauwen and Schnieders, 2005; Bontis, 1998; Sharabati, Jawad & Bontis, 2010). This performance is defined by the profitability of operations, which represents a surplus or a margin that is captured due to the difference between the cost of income or production. Along the same lines, several researchers observed that intellectual capital significantly affects a firm's financial performance (Chen, Cheng & Hwang, 2005; Clarke, Seng & Whiting, 2011). Profitability, which expresses the ability of invested capital in profiteering, is reflective of this financial performance.

In this paper, this theory is used as a foundation to assess intellectual capital and performance theoretically. The underlying assumption of this theory is the basis for our study that intellectual capital can influence firm performance. As the RBV theory provides that performance improvement is only possible when a firm has a comparative advantage over its competitors, and this competitive advantage is gained through intellectual capital acquisition. The theory supports that having intellectual capital provides an advantage for improved performance.

2.2 Conceptual Clarifications

Khan (2014) opined that intellectual capital (IC) as a shift from having knowledge and skills to using the knowledge and skills, which implies that relationships (social capital) and process (structural capital) are necessary to convert acquired knowledge (which is owned by individuals) into a marketable product or service, which will create value to the firm and its stakeholders. Lee, Wu and Chao (2015), defined intellectual wealth as the knowledge that is transferable and easily converted to distinct relevant values that are useful for gaining competitive advantage. They indicated that the values are practical experiences, technological advancement, excellent customer relationships, and professional skills for achieving competitive advantages.

Lin, (2015), thought that intellectual capital involves merely the entirety of processes and properties that are typically not included in the balance sheet. It is what Lee et al. (2015) referred to as organisational value that may not be easily measured in monetary terms but forms a critical component that influences the existence and sustenance of the organisation. Intellectual capital is defined as the total capabilities, knowledge, culture, strategy, process, intellectual property, and relational networks of a company that create value or competitive advantages and support an organisation in order to achieve its expected goals and objectives.

2.3 Intellectual Capital Dimensions

In the view of Petrash (1996) and Martín-de-Castro et al., (2011) the basis of intellectual capital is the foundation on which the components are identified. They hold that intellectual capital is a framework that combines the intangible assets of the balance sheet to achieve a competitive advantage. And further it encompasses three (3) basic components otherwise referred to as dimensions which include structural, human and relational capital. Thus, this study followed same to operationalise intellectual capital as structural, human and relational.

2.4 Structural Capital (SC)

Structural capital (SC), is sometimes used in place of organisational capital in existing intellectual capital literature. It includes all non-human reserves of knowledge in a firm for better innovativeness and performance (Bontis 1998; Youndt, Subramaniam & Snell 2004). Structural capital provides for efficient processes of communication and operation, which facilitate knowledge related activities and eventually contribute to values and profits (Karagiannis, Waldner, Stoeger & Nemetz, 2008). It is referred to as the knowledge that is left at work when employees' close from work.

Structural capital is within the control of an organisation as they possess and manage it to the benefit of the organisation most especially when combined with other capitals (Edvinsson & Malone 1997). It involves the assets; hardware, organisational culture and practices, intellectual property rights, software, repository, research and development activities, and whatever supports increased efficiency and effectiveness (Steenkamp, & Kashyap, 2010).

2.5 Human Capital (HC)

Human capital (HC) is critical to organisations survival and connotes the human resources that make up the entirety of the organisation (Bontis 1998). It is the centrepiece of intellectual capital as it is viewed as the combined skill, innovation, knowledge and ability of employees (Bontis, Keow & Richardson, 2000). HC is one of the underlying strategic resources, which is both supportive and necessary for success in any organisation since human resource knowledge and skill is vital in today's fast-paced, changing competitive climate (Subramaniam & Youndt, 2005). It is the knowledge organisations possesses which is embedded in its employees. Edvinsson and Malone (1997) opined that human capital forms the generality of a person's skills to carry out a task and the shared experiences and information and acquired knowledge that the organisations including its managers and the entire staff. However, human capital can be lost, as the departure of an employee could be the end of that capital (Ahmadi et al., 2012).

2.6 Relational Capital (RC)

Relational capital (RC) is defined as an organisation's implicit set of available resources and ongoing relationships implemented through interactions among individuals or organisations (Kostova & Roth, 2003; Shipilov & Danis, 2006). It is considered very relevant owing to its significance in enhancing information sharing as well as facilitation of interactions between organisations and its external stakeholders such as customers, suppliers, government. Relational capital is customer capital. Relational capital is a salient vital component that makes the underlying structural existence of the organisation. Customers are the essence of any business. It is made up of some intangible values. It is a function of the organisation's customer relationships, which indirectly creates values that, ensures the success of the organisation (Chang & Tseng 2006).

It is an organisations process of creating customer capital, which is formed from their existing knowledge and skills either from already existing employees or through its structures towards providing better services (Cegarro-Navarro & Dewhurst, 2010). Ahmadi et al. (2012) opined that relational capital is the shared relationship that exists between an organisation and its stakeholders. The stakeholders form not just its external customers or partners but also its internal clients its employees.

2.7 Performance

According to Nwaiwu and Aliyu (2018), performance relates to the realisation of organisational goals and objectives with minimum resources. An appropriate firm performance assessment affords its manager the understanding of the status of the organisation. Lee, Chen and Lee (2013) operationalised the firm's performance as an indicator of the overall entity competitiveness, and also the degree of the achievement level of an enterprise's strategic objectives.

Performance according to Gharakhani and Mousakhani (2012), referred to the ability of an organisation to create outcomes and actions at a desired and acceptable level. Additionally, Ramayah, Samat and Lo (2011), opined that organisational performance directly points to the degree that an organisation attain its own needs and that of its stakeholder to survive.

2.8 The Relationship Between Human Capital and Firm Performance

Rahim, Atan and Kamaluddin (2016) examined human capital efficiency and firm performance: an empirical study on Malaysian technology industry using accounting data gotten from annual reports of all the 93 technology companies listed under main market and ace market of Bursa Malaysia in year 2009. The study applied Value Added Intellectual Coefficient (VAICTM) methodology developed by Pulic to measure human capital efficiency. The results revealed that

from the correlation analysis, human capital efficiency has significant and positive relationship with firm's performance. The research relied solely on accounting data for the purpose of analysis.

Girma (2017), analysed the effect of intellectual capital on the profitability and productivity of firms using data for Ethiopian commercial banks for five years from 2009-2014. The study adopted the Public model of IC which was used to measure the intellectual capital efficiency. Regression analysis revealed that generally, the value-added intellectual capital coefficient has a significant and positive effect in all measures of financial performances. Specifically, the study revealed that human capital efficiency has no significant effect on the profitability and productivity measure and also structural capital, on the other hand, revealed a positive effect on the profitability, but it has no significant effect on productivity. Capital employed efficiency have a significant effect on both financial measures return on equity and return on asset, and productivity measures asset turn over. This study also ignored measures of performance other than finance such as quick service delivery and innovation. Thus, this paper proposed that:

H₀₁: Human capital has no significant effect on a firm's performance.

H₁: Human capital has significant effect on a firm's performance.

2.9 Structural Capital and Firm Performance

Khan (2016), explored the strategic links between structural capital and organisational innovation in Australian SMEs. The study used the Confidentialised Unit Record File (CURF) database from the Australian Bureau of Statistics (ABS), Business Longitudinal Database (BLD) (2013) to investigate 2,154 SMEs. The result revealed that structural capital was a necessary ingredient for achieving organisational innovation but however the study indicated that the relationship declines over time. This study ignored larger enterprises as though it only considered enterprises employing less than 200 employees.

Aramburu, Sáenz and Blanco (2015) analyzed the impact of structural capital on innovation capability and innovation performance, from an "intellectual capital" (IC) perspective. Questionnaire was employed to obtain data from managers of sampled 69 technology-based companies in Colombia and using structural equation modelling (partial least squares approach), the study revealed that structural capital explains to a great extent both the effectiveness of the new idea generation process and of innovation project management. The study also concluded that, structural capital significantly affect company's performance. The study also suffers generalization problem.

Aramburu and Sáenz (2011) examined the impact of structural capital on the ideation stage of innovation processes from an 'intellectual capital' (IC) perspective with the moderating role of company size. Data were collected with the aid of a questionnaire administered to a sample of 142 CEOs Spanish manufacturing firms with more than 50 employees and which carry out R&D activities. Structural equation modelling (SEM) based on partial least squares (PLS) was employed to test the hypotheses of which the findings revealed that structural capital has significant effect on innovation process and also, exert the greatest impact on the ideation phase and, hence, the priority aspects to hammer on, in order to promote the dimension of the innovation capability. The study suffers the problem of generalization. The study ignored the resource-based perspective of the organisation and failed to see intellectual capital as a resource that supports performance. Thus, this paper proposed that:

H₀₂: Structural capital has no significant effect on a firm's performance.

H₁: Structural capital has significant effect on a firm's performance.

2.10 Relational Capital and Firm Performance

Cai, Liu, Huang, Liang and Shen (2014), examined the effect of relational capital on firms' performance with a mediating role of supply chain agility and the moderating role of environmental contexts in China. Questionnaires were employed to obtain data from a sample of 155 respondents which was analyzed using structural equation modeling (SEM) with the aid of Smart-PLS. The study revealed a strong positive effect of relational capital on firms' performance with a full mediating role of supply agility. The study adopted "key informants" during data collection exercise which could increase the chances of bias and inaccurate information.

Gogan, Duran and Draghici (2014), investigated the impact of relational capital on competitiveness of the organization using a sample of 150 companies in Romania. Questionnaires were distributed and retrieved for analysis using the multiple regression analysis. The findings revealed and concluded that relational capital is an authentic source of sustainable competitive advantage in the long-run. The study only covered industries within the western region which makes it difficult to generalize the findings.

Ogundipe (2012), examined the effect of relational capital components on firms' performance of selected small scale enterprises clusters in Abeokuta and Osogbo, southwestern geo-political zone of Nigeria using questionnaire to obtained data from a sample of 94 respondents. Correlation matrix and multiple regression models were employed to determine the relationship among variables and the effect of relational capital on firms' performance respectively. The study found that the relationship with suppliers, customers and internal networks among the employees were found to be positively and significantly related to and predictor of the clusters' firm performance. The result from the regression analysis indicated a strong, positive and significant effect of relational capital on firms, performance. The findings of the study may not be applicable to other zones of the country due to the differences in culture. Thus, this paper proposed that:

H₀₃: Relational capital has no significant effect on a firm's performance.

H₁: Relational capital has significant effect on a firm's performance.

3. METHODS

The study adopted a descriptive survey research design. The choice of this research design is because of the nature of the research problem and objective of the study that seeks to provide empirical evidence of intellectual and performance in the hospitality industry. The population of the study are CEO's of Hotels in Selected states in the six geopolitical zones in Nigeria. The choice of the sample is to cover a broader sample and have an inclusive result that is applicable beyond a geopolitical zone. The study sample is 240 and was determined using Taro Yamane (1973) formula. The study adopts a simple random and stratified sampling technique for sample selection. The study adopted content validity. The instrument was distributed to four experts in management. They were required to assess the research instrument and rate it. Rankman rho test of the rank indicates a .70, which is high and thus valid for the study. The study adopted the internal consistency method of reliability. Multiple regression analysis was employed with the aid of SPSSv23 on responses from the primary data collected through well-structured closed-ended questionnaires of 5-points Likert Scale format, which was administered to the Chief Executives of the sampled hotels.

3.1 Model Specification

The model for the multiple regression analysis is specified thus:

$$OP = \beta_0 + \beta_1HC + \beta_2SC + \beta_3RC + e \quad (1)$$

Where:

OP = Operational Performance, HC = Human Capital, SC = Structural Capital, RC = Relational Capital, β_0 = Intercept, β_1 = Coefficient of Independent Variable, e = error term.

4. RESULTS AND DISCUSSIONS

The reliability was ensured by testing the instruments for the reliability of values (Alpha values) as recommended by Cronbach, (1946). According to Sekaran (2001), Alpha values for each variable under study should not be less than 0.6 for the statements in the instruments to be deemed reliable. All the variables recorded Alpha values above 0.6. From the two hundred and eighty (280) questionnaires administered, two hundred and forty (240) were adequately filled and returned for analysis, thus giving a response rate of 86% further analysis was carried out using 240 samples collected.

Table 1 Demographic variables of respondents

Variables	Frequency	Percentages
Gender:		
Male	160	67
Female	80	33
Total	240	100
Age:		
20 – 30 years	92	38
31 – 40 years	61	25
41 – 50 years	47	20
50 years and Above	40	17
Total	240	100
Marital Status:		
Single	69	29
Married	171	71
Total	240	100
Work Experience:		
5 – 10 years	77	32
11 – 20 years	103	43
20 years and above	60	25
Total	240	

Source: SPSSv25 Result

The above indicates that the male that participated in the study are 160(67%) and the female is 80(33%). The age brackets of the respondents indicate 20 – 30 years are 92(38%), 31 – 40 years are 61(25%), 41 – 50 years 47(20%) and 50 years and above are 40(17%). The marital status is 69(29%) are single, 171(71%) are married. The experience of the participants indicates that 77(32%) are between 5 – 10 years, 11 – 20 years are 103(43%) and 20 years and above are 60(25%).

Table 2 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
HC	240	3	5	4.70	.528	1.546	.302	1.565	.595
SC	240	3	5	4.60	.636	1.373	.302	.767	.595
RC	240	3	5	4.43	.640	.676	.302	-.498	.595
OP	240	3	5	4.56	.562	.789	.302	-.393	.595
Valid N (listwise)	240								

Source: SPSSv25 Result

The table above shows the descriptive statistics of the variables used in the study. HC had a mean of 4.7 and a standard deviation value of 0.528. SC showed an average of 4.6 and a standard deviation value of 0.636. RC showed an average value of 4.43 and a standard deviation of 0.640. OP had an average of 4.56 and a standard deviation of 0.562. The high values of the mean indicate that the participants agree that the study variables are relevant to the study. The normality test for justification of the use of parametric test using the skewness and kurtosis result indicates that the data is normally distributed since it meets the criteria suggested by Creswell, (2013). Thus, it indicates that multiple regression can be carried out.

Table 3 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.520 ^a	.670	.633	.492

a. Predictors: (Constant), RC, HC, SC
 b. Dependent Variable: OP

Source: SPSSv25 Result.

Table 4 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.289	3	1.763	7.290	.000 ^b
	Residual	14.267	237	.242		
	Total	19.556	240			

a. Dependent Variable: OP
 b. Predictors: (Constant), RC, HC, SC

Source: SPSSv25 Result.

Table 5 Coefficients

Model		Unstandardized Coefficients		Standardised Coefficients Beta	T	Sig.	Collinearity Statistics	
		B	Std. Error				Tolerance	VIF
1	(Constant)	2.115	.642		3.292	.002		
	HC	.299	.133	.281	2.254	.028	.793	1.260
	SC	.198	.127	.225	1.558	.015	.595	1.680
	RC	.440	.116	.501	3.786	.000	.705	1.418

a. Dependent Variable: OP

Source: SPSSv25 Result.

The result, as shown in the table above displays that the value of R-Square is .670, meaning that OP could be explained by 67%. The remaining 33% could be due to another variable that could explain OP that was not included. The result shows that when all variables are zero, OP increases by 2.115 as indicated by the constant value. The Variance Inflation Factor (VIF) values indicate that the explanatory variables are not highly correlated which, therefore, indicate the absence of multicollinearity among the independent variables since multicollinearity exists only when the VIF Value is greater than 10. The probability of the f-statistics was found to be significant at 5% level of significance ($p = 0.000$) which indicates that the model is fit.

The regression line $OP = 2.115 + .299HC$ indicates that a unit increase in the value of HC causes an increase of 0.299 in the OP with statistical significance. The p-value (0.028) was found to be significant at 5% as such, the study rejects the null hypothesis and accepts alternative hypothesis which states that human capital has a significant effect on the operational performance of selected hospitality firms.

The regression line $OP = 2.115 + .198SC$ indicates that a unit increase in the value of SC causes an increase of 0.198 in OP. The p-value (0.015) was found to be significant at 5% as such, the study rejects the null hypothesis and accepts the alternative hypothesis which states that structural capital has a significant effect on the operational performance of selected hospitality firms.

The regression line $OP = 2.115 + .440RC$ indicates that a unit increase in the value of RC causes an increase of 0.440 in the OP with statistical significance. The p-value (0.000) was found to be significant at 5% as such, the study rejects the null hypothesis and accepts alternative hypothesis which states that relational capital has a significant effect on the operational performance of selected hospitality firms.

The study found from the first hypothesis that human capital has a significant effect on the operational performance of selected hospitality firms. This implies that the higher the level of human capital a firm has, the higher the level of operational performance as confirmed by the positive Beta value. The second hypothesis revealed that structural capital has a significant and positive effect on operational performance. This implies that the higher the amount of non-human knowledge presented in an organisation, the more the level of efficiency and effectiveness which transforms to operational excellence.

The third hypothesis revealed that relational capital has a significant effect on a firm's performance implying that any increase in the level of relational capital, will lead to an increase in operational performance of selected firms. This conforms to the findings of Kaveh and Ruzita, (2015) who concluded that investment in intellectual capital brings about improved organisational performance. Of all the hypotheses tested, relational capital indicated the highest level of effect on the operational performance which implies that the knowledge

organisations possess about its customers as well as suppliers go a long way in determining how better they could be in terms of performance.

The study validates and upholds the resource-based view theory as it confirms that it the resources that an organisation holds is adequate to the improved performance of the organisation. The study thus indicates that resource-based view theory can be used to explain intellectual capital and performance of an organisation. The study thus provides empirical support that the resource-based view theory can be used towards explaining intellectual capital and performance in the hospitality industry. This is a contribution and a novelty that this study makes to the body of empirical and theoretical literature on intellectual capital and performance.

5. CONCLUSIONS

From the findings above, the study concludes that intellectual capital has a significant effect on the firm's operational performance. Firms that take and treat intellectual capital with full commitment and seriousness are very likely to have the most skilled human resources, retained knowledge and superior knowledge emanating from a relationship with relevant stakeholders, which will translate into competitive advantage and increment in market share against rival companies.

The following recommendations were put forward based on the findings:

- i. Firms should provide for adequate and well-equipped on-the-job training programmes for their staff to keep them acquainted with relevant skills.
- ii. Firms should create a sustained corporate memory, which is flexible and adaptive, which is best accomplished by a robust organisational culture, which emphasises knowledge storage.
- iii. Firms should build, develop and sustain a strong relationship with relevant stakeholders, which include customers, society, suppliers, and governments.

5.1 Suggestion for Future Research

This study was conducted on the effect of intellectual capital on firms' performance in the Nigerian hospitality sector which the result may not be of general applicability. Further studies could be conducted using manufacturing firms which make use of more knowledge in creating and maintaining competitiveness of products.

REFERENCES

- Ahmadi, S. A. A., Jalilian, H., Salamzadeh, Y., Saeidpour, B. & Daraei, M. (2012). Intellectual capital and new product development performance in production firms: A case study of kermanshah production firms. *Global Business and Management Research*, 4(1), 15-27.
- Ahmed, M., Ahmed, N., Luqman, M. & Arshad, A. (2016). Intellectual Capital Efficiency and the Performance of Mutual Funds: A Panel Data Analyses. *Science International Journal*. 28(5), 4867-4872, ISSN 1013-5316.
- Aramburu, N. & Sáenz, J. (2011). Structural capital, innovation capability, and size effect: An empirical study. *Journal of Management and Organization*. 17, 307-325.
- Aramburu, N., Sáenz, J. & Blanco, C.E. (2015). Structural capital, innovation capability, and company performance in technology-based Colombian firms. *Cuadernos de Gestión*, 15 - Nº 1. 39-60. ISSN: 1131-6837.
- Barney, J. (2006). *Gaining and Sustaining Competitive Advantage*, Prentice Hall, New Jersey.

- Bollen, L., Vergauwen, P. & Schnieders, S. (2005). Linking intellectual capital and intellectual property to company performance" *Management Decision*, 43(9), 1161-1185.
- Bonner, J. M. & Walker, O.C. (2004). 'Selecting influential business-to-business customers in new product development relational embeddedness and knowledge heterogeneity considerations', *Journal of Innovation Management*, 21, 155-169.
- Bontis, N., Keow, W. C. C., & Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capital*. 1(1), 85-100.
- Cai, Z., Liu, H., Huang, Q., Liang, L. & Shen, X. (2014). Relational Capital and Performance: Assessing the Mediating Role of Supply Chain Agility and the Moderating Role of Environmental Contexts. *47th Hawaii International Conference on System Science*.
- Cardinal, L. B. (2001). "Technological innovation in the pharmaceutical industry: the use of organizational control in managing research and development. *Journal of Organization Science*, 12(1), 19-36.
- Cegarra-Navarro, J. G., & Sanchez-Polo, M. T. (2010). Linking national contexts with intellectual capital: A comparison between Spain and Morocco. *The Spanish Journal of Psychology*, 13(1), 329-342.
- Chang, A. & Tseng, C. (2006). Building customer capital through relationship marketing activities: The case of taiwanese multilevel marketing companies. *Journal of Intellectual Capital*, 6(2), 253-266.
- Chen, M.-C., Cheng, S.-J. & Hwang, Y. (2005). "An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance. *Journal of Intellectual Capital*, 6(2), 159-176.
- Duffy, J. (2000). 'Measuring customer capital'. *Strategy and Leadership*, 28, 10-14.
- Dumay, J. & Garanina, T. (2013). "Intellectual capital research: a critical examination of the third stage", *Journal of Intellectual Capital*, 14(1), 10-25.
- Edvinsson, L. & Malone, M. S. (1997). *Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Brainpower*. New York: Harper Business.
- Firer, S. & Williams, S. M. (2003). Intellectual capital and traditional measures of corporate performance. *Journal of Intellectual Capital*, 4(3), 348-360.
- Girma, B. (2017). Intellectual Capital Efficiency and Its Impact on Financial Performances of Ethiopian Commercial Banks. *Research Journal of Finance and Accounting*. www.iiste.org ISSN 2222-2847 (Online), 8(8).
- Gogan, M. L., Duran, D. C. & Draghici, A. (2014). Impact of relational capital on competitiveness of the organization. *Network Intelligence Studies*, 2(4).
- Guthrie, J. (2001). The management, measurement and reporting of intellectual capital, *J. Intellect. Cap.*, 2(1) 27-41.
- Guthrie, J., Ricceri, F. & Dumay, J. (2012), "Reflections and projections: a decade of intellectual capital accounting research", *British Accounting Review*, 44(2), 70.
- Hayes, R., Pisano, G., Upton, D. & Wheelwright, S. (2005). *Operations, Strategy, and Technology: Pursuing the Competitive Edge*. Wiley, Hoboken, NJ.
- Itami, H. (1987). *Mobilizing Invisible Assets*. Harvard University Press, Boston.
- Kamath, G. B. (2007). The intellectual capital performance of the Indian banking sector. *Journal of Intellectual Capital*, 8(1), 96-123.
- Karagiannis, D., Waldner, F., Stoeger, A. & Nemetz, M. (2008). "A Knowledge Management Approach for Structural Capital," in: *Practical Aspects of Knowledge Management, Proceedings*, T. Yamaguchi (ed.). 135-146. Massachusetts Institute of Technology, Massachusetts.
- Kaveh, A. & Ruzita, J. (2015). "A multidimensional view of intellectual capital: the impact on organizational performance", *Management Decision*, 53(3) 668 - 697.
- Khan M. W. J. (2014). A critical review of empirical studies in intellectual capital literature. *International Journal of Academic Research in Business and Social Sciences*, 4(11), 159-176.
- Khan, Y. K. (2016). Impact of Structural Capital on Innovation in Australian SMEs. *The european proceedings of social and behavioral sciences*. 3rd International Conference on Business and Economics.

- Kostova, T. & Roth, K. (2003). Social capital in multinational corporations and a micro-macro model of its formation. *Academy of management review*, 28(2), 297-317.
- Lee, Y., Wu, M. & Chao, C. (2015). The effects of the accumulation of intellectual capital on organizational performance: Using productivity as the moderator. *International Journal of Information Technology and Business Management*. 39(1), 68-83.
- Lin Y. (2015). How does intellectual capital affect organizational performance? *International Journal of Business and Social Science*, 6(7), 115-120.
- López López, A. & Salazar-Elena, J. C. (2013). The Role of Intellectual Capital Management On Innovation Process: Does One Size Fit All? Edited by: UAM-Accenture Chair on the Economics and Management of Innovation, Autonomous University of Madrid, Faculty of Economics.
- Mahesh, J., Daryll, C., Jasvinder S. & Monika K. (2013). Intellectual capital and financial performance: an evaluation of the Australian financial sector, *Journal of Intellectual Capital*, 14(2), 264-285.
- Martín-de-Castro, G., Delgado-Verde, M., López-Sáez, P. & Navas-López, J. (2011). Towards 'an intellectual capital-based view of the firm': Origins and nature. *Journal of Business Ethic*.
- Mavridis, D. G., & Kyrmizoglou, P. (2005). Intellectual capital performance drivers in the Greek banking sector. *Management Research News*, 28(5), 43-62. s 98(4), 649-662.
- Mouritsen, J. (2006), "Problematising intellectual capital research: ostensive versus performative IC", *Accounting, Auditing & Accountability Journal*, 19(6), 820-41.
- Nassar, S. (2018). The Impact of Intellectual Capital on Firm Performance of the Turkish Real Estate Companies before and After the Crisis. *European Scientific Journal January 2018 edition*. Vol.14, No.1 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431.
- Nonaka, I. & Takeuchi, H. (1995). *The Knowledge Creating Company*. Oxford University Press, New York.
- Ogundipe, S. E. (2012). Business Relational Capital and Firm Performance in South Western Nigerian Small Scale Enterprise Clusters. *European Journal of Business and Management*. 4, (17), ISSN 2222-2839.
- Ozkan, N., Cakan, S., & kayacan, M. (2017). Intellectual capital and financial performance: A study of the Turkish Banking Sector. *Borsa Istanbul Review*, Pages 190-198,
- Rahim, A., Atan, R. & Kamaluddin, A. (2016). Human Capital Efficiency and Firm Performance: An Empirical Study on Malaysian Technology Industry. *SHS Web of Conferences*, 00026.
- Rechberg, I. & Syed, J. (2013). "Ethical issues in knowledge management: conflict of knowledge ownership", *Journal of Knowledge Management*, 17(6), 828-847.
- Riahi-Belkaoui, A. (2003). Intellectual capital and firm performance of US multinational firms: a study of the resource-based and stakeholder views. *Journal of Intellectual Capital*, 4(2), 215-226.
- Roos, G. (2017). Knowledge management, intellectual capital, structural holes, economic complexity and national prosperity.
- Salleh, M. F. M., W. S. Yusoff, N. Basnan, and T. S. T. Yaacob. 2018. Knowledge assets and bilateral-trade flows in ASEAN-5 countries: An extension of gravity panel data model. *Jurnal Ekonomi Malaysia* 52(2), 19-26.
- 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*, 67-74.
- Sharabati, A. A. A., Jawad, S. N. & Bontis, N. (2010). "Intellectual capital and business performance in the pharmaceutical sector of Jordan", *Management Decision*, 48(1), 105-131.
- Sharma, S., & Dharni, K. (2017). Intellectual capital disclosures in an emerging economy: status and trends. *Journal of Intellectual Capital*, 18(4), 868-883.
- Shipilov, A. & Danis, W. (2006). TMG social capital, strategic choice and firm performance. *European Management journal Elsevier*, 24(1), 16-27.
- Siegel, L. R. (2004). Measuring and Managing Intellectual Capital in the US Aerospace Industry.

- Silvia Sumedrea, S. (2013). Intellectual Capital and Firm Performance: A Dynamic Relationship in Crisis Time, International Economic Conference of Sibiu 2013 Post Crisis Economy: Challenges and Opportunities, *IECS, Procedia Economics and Finance*, 6, 137 – 144.
- Smriti N., & Das N. (2017). Impact of intellectual capital on business performance: evidence from Indian pharmaceutical sector. *Polish Journal of Management Studies*, 15, 1
- Steenkamp, N. & Kashyap, V. (2010). Importance and contribution of intangible assets: SME managers' perceptions. *Journal of Intellectual Capital*, 11(3), 368-390.
- Teece, D. J. (1986). 'Profiting from technological innovation: implications for integration, collaboration, licensing and public policy', *Research Policy*, 15, 285–305.
- Teece, D. J. (2007). "Explicating dynamic capabilities: the nature and micro foundations of (sustainable) enterprise performance", *Strategic Management Journal*, 28(13).
- Wang, W., & Chang, C. (2005). Intellectual capital and performance in causal models. *Journal of Intellectual Capital*, 6(2), 222–236.
- Yalama, A. & Coskun, M. (2007). Intellectual capital performance of quoted banks on the Istanbul stock exchange market. *Journal of Intellectual Capital*, 8(2), 256. 1319-1350.
- Youndt, M. A., Subramaniam, M., & Snell, S. A. (2004). "Intellectual Capital Profiles: An Examination of Investments and Returns," *Journal of Management Studies* (41:2), Mar, 335-361.
- Zangouinezhad, A. & Moshabaki, A. (2009b). "The Role of Structural Capital on Competitive Intelligence," *Industrial Management & Data Systems*, 109(1-2), 262-280.
- Zhining, W. & Jinwei, C. (2015). Impact of Intellectual Capital on Firm Performance: the Influence of Innovation Capability and Environmental Dynamism. *Twenty-first Americas Conference on Information Systems, Puerto Rico*.
- Zhou, A. Z. & Fink, D. (2003). The intellectual capital web, *J. Intellect. Cap.* 4 (1) (2003) 34–48. Australia. *Journal of Intellectual Capital*, 12(4), 505-530.

APPENDIX

Research Questionnaire

Key: SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree, SD = Strongly Disagree

S/N	Human Capital (HC)	SA	A	U	D	SD
HC1	Staff are highly talented and skilled in their approach					
HC2	Staff are very creative					
HC3	Staff maintain a high sense of hygiene					
HC4	Staff are the best in the industry					
	Structural Capital (SC)					
SC1	High organizational structure in place					
SC2	Customers make order via website					
SC3	Menus are simple and self-explanatory					
SC4	Payment system is flexible					
	Relational Capital (RC)					
RC1	Your outlet offers discounts to customers regularly					
RC2	Maintained mutual relationship with customers					
RC3	Customer's needs are well known					
RC4	Provision of services such as car wash & others to customers at subsidized rate					
	Operational Performance (OP)					
OP1	Increased number of customers overtime					
OP2	Increased number of orders in recent time					
OP3	Increased number of referrals					
OP4	Improved service speed					

