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Intellectual Capital and Performance of Small and Medium Enterprise: A Systematic Review

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Abstract

There are evidence that Small and Medium Enterprises (SMEs) in developing economies are facing constraints due to failure at the early stage as well as lack of awareness about Intellectual Capital (IC) by SMEs owners. The research provides an in-depth analysis of intellectual capital and its impact on the performance of small and medium enterprises (SMEs). The study carried out a systematic literature review based on paper published on intellectual capital and SMEs between 2000 and 2024. 45 papers were downloaded from Web of Science (WoS) and others in the years under review. Out of it 20 papers were critically analyzed because those not reviewed were conducted in large enterprises such as banking industries, listed companies among others. The researcher findings showed that research using Nano businesses and family businesses that are closer to the populace were not examined. Also, research undertaking comparisons between IC in developed and developing economies and SMEs were underexplored. The findings indicate that intellectual capital positively affects SME performance, with human capital playing a significant role in fostering innovation and productivity. The study offers insight to researchers, policy makers as well as practitioners to assist as well as educate SMEs and sub sectors to place emphasis on intellectual capital that is driven by knowledge as well as information to enhance better performance of enterprises. The study thereby recommended that Ministry of Commerce and Industry, SMEDAN should create awareness on the need for SMEs owners to utilize IC for business growth, expansion and sustainability. The study further recommended for SMEs and policymakers to leverage intellectual capital effectively.

Keywords: *Intellectual capital, small and medium enterprises, systematic review, performance*

1.0 Introduction

Globally, intellectual capital (IC) is an evolving field of study in today's modern economy contributing significantly to innovation and sustainable competitive advantage of firms (Abdullah & Othman, 2019). It has been recognized and attracted researchers' attention due to the new economy powered by information and knowledge (Ojo & Adeyemo, 2024). Information is seen as an intangible and the value rested in the skills as well as the knowledge of people which are the intellectual capital of the enterprises (Ajike et al., 2016) while knowledge has become a key focus in corporate management,

as enterprises recognize that value can be created through intangible assets, which are often not entirely reflected in financial statements (Adigizey et al., 2024). Ling et al. (2012) and Li et al (2020) maintained that enterprises with preeminent levels of intellectual capital emerged to gain a greater competitive advantage and organizational success. The vital determinants of sustainable growth and internal capability of an enterprises rested on its intellectual capital (Arshad et al., 2023). Hejase et al (2016) emphasized that intellectual capital is a contemporary human resources concept that has influenced business processes and plans. Bontis (1998) suggested that intellectual capital represents the collective knowledge embedded in individuals, organizational routines, and the network relationships within an organization. Stewart (1997) described intellectual capital as intellectual material, including knowledge, information, intellectual property, and experience, that can be used to generate wealth in an enterprises.

Small and Medium enterprises (SMEs) has been recognized as the driving force of nations' economic growth, job creation and development (Abdulganiyu & Gumi, 2021). Despite this importance, SMEs encountered challenges of failure at the early stages which has been attributed to the improper understanding as well as management of intangible assets (Muda et al., 2020; Aremu & Adeyemi, 2011). Bontis et al (2000) reported that enterprises only use 20% of the knowledge accessible to them. Available report also revealed that few SMEs are aware of knowledge based industries by optimizing their intellectual capital (Hariyono et al., 2024). Nabaz et al (2019) are of the opinion that SMEs problems are associated to lack of knowledge about intellectual capital by the business owners as well as people associated with the enterprises. Moreover, Hariyono et al (2024) emphasized that SMEs success depend not solely on skills acquisition and experience but also on knowledge management in enterprises where knowledge is the intellectual capital. Since, intellectual capital is now known as an element influencing organizational progress and sustainability then integrating it into business practices is believed to enhance SME performance, drive long term success and support government objectives. For sustained success, SMEs must leverage both tangible and intangible resources. IC furnishes SMEs with the ability to compete against larger firms, innovate and mitigate financial challenges. It is therefore germane for enterprises to recognize, manage as well as invest in intellectual capital in other to achieve long term success and maintain high performance which is needed for national growth. It has been considered that competitive advantage is germane for the growth as well as performance of an enterprises (Jardon et al., 2015) and that to build sustainable advantage, intellectual capital must be put into practice by small and medium enterprises. The study adopted systematic literature review (SLR) in order to offer a comprehensive overview of the current state of knowledge of intellectual capital on the performance of SMEs and provide insights into its usage.

2.0 Literature review

2.1 Intellectual capital

Intellectual capital is vital for sustaining the performance of SMEs, which are recognized as key contributors to national economic growth and GDP. Enhancing SME growth

requires leveraging intellectual capital, as it represents the cognitive abilities of individual workers to uphold work systems by equipping them with essential skills, knowledge, and competencies to thrive in a competitive market. It can be referred to the intangible assets possessed by SMEs. As a result, it plays a crucial role in value creation, making it a key strategic asset for SMEs businesses. Nahapiet & Ghoshal, (1998) defined intellectual capital as the knowledge and capabilities of a social collective. Mukoro et al (2023) emphasized that intellectual capital comprises skills, abilities, and knowledge necessary for performing tasks that create economic value for the organization. Penrose (1959) recognized intellectual capital as a crucial factor in achieving competitive advantage for enterprises. Teece (2014) noted that intellectual capital also known as knowledge assets, business intelligence, or intellectual property is an infinite resource inherent in individuals, enabling manufacturing firms to gain a competitive edge and improve performance (Zott et al., 2011). According to Adigizey et al (2024), intellectual capital comprises the combined skills and experiences of an organization's members, integrated with information and resources to guide its growth and development. It has been considered that competitive advantage is germane for the growth as well as performance of an enterprises (Jardon et al, 2015) and that to build sustainable and competitive advantage, intellectual capital must be put into practice by small and medium enterprises. Moreover, it plays a crucial role in value creation, making it a key strategic asset for SMEs businesses.

2.2 Performance

The low performance of Nigerian firms despite investment in intellectual capital is a major concern (Adegbayibi, 2022). Performance serves as both a quantitative and qualitative measure to assess the extent to which an organization achieves its set goals. Performance is a key indicator of success. In essence, an organization's performance determines whether its goals are achieved or fall short. Evaluating a firm's performance requires both financial/non-financial and organizational perspectives. It is measured through various factors, including productivity, profitability, firm growth, customer satisfaction, retention, sales volume, internal business process, loyalty among others. According to Anindya et al (2021), financial performance reflects the efforts of the workforce in generating profits, which are essential for informed decision-making and thereby attracts investors to support enterprises. On the other hand, non-financial performance offers valuable insights into a business's long-term sustainability and overall health. Therefore, managing intellectual capital in small and medium enterprises can enhance both financial and non-financial performance which will lead to business success.

2.3 Intellectual Capital and SME Performance

It has been reported that SMEs perform a crucial role in the stability of the economy and national innovation (Bontis et al., 2015). Human expertise, organizational processes and innovation all encompasses in intellectual capital which driven business growth. Therefore, it is essential for decision-makers to recognize the strategic significance of intellectual capital to maximize its potential and improve performance within SMEs. Several studies highlight the positive correlation between intellectual capital and SME

performance (e,g Adegbayibi, 2022; Ojo & Adeyemi, 2024; Abdulganiyu & Gumi, 2021; Hariyono & Narsa, 2024; Anik et al., 2021). It has been identified that IC components such as human capital serves as a critical driver of innovation and efficiency, structural capital enhances operational effectiveness, while relational capital strengthens market positioning and customer loyalty. SMEs that invest in IC will create a long term business growth through knowledge development that will further enhance better outcomes.

3.0 Methodology

A systematic review approach was employed to analyze the relationship between intellectual capital and SME performance. The methodology involved:

3.1 Research Design

This study adopted a quantitative method. It involves collection of data from literature search, analysis of secondary data from scholarly published paper and systematic literature review on intellectual capital and SMEs. Martins et al (2022) recognized that the usage of SLR allows literature review to be conducted systematically. Since intellectual capital in SMEs is a contemporary phenomenon, it is believe that a procedure that best deliver an assessment on the subject matter in an existing literature is through SLR.

3.2 Search Approach

Systematic literature review differs from traditional literature review in that it increases the transparency as well as the scientific process of literature review (Tranfield et al., 2003). Martins et al (2022) guidelines was inculcated to ensure the quality of the work. Electronic literature search was conducted using Web of Science (WoS) and other data base. Key words that reflected in the literature were identified. Search was limited to publications in English. The search period was set to 2000-2024.

3.3 Criteria procedure

To ensure appropriate paper selection, the following criteria were applied:

3.3.1 Inclusion Criteria procedure:

- Papers published from 2000-2024
- Study papers in English
- Research papers published in journals
- Research papers related to IC and SMEs

3.3.2 Exclusion Criteria procedure:

- Papers published before 2000 and after 2024
- Research papers in other languages
- Books, chapters as well as dissertation
- Research papers unrelated to the IC and SMEs (banking industry, oil and gas, listed companies)

3.4 Method of data collection

This study data collection involved retrieving relevant as well as original research papers. The study considered scholarly papers for review which were conducted across different nations.

3.5 Data Analysis

Data were analyzed using descriptive statistics such as table, bar chart, percentage and pie chart

4.0 Findings and Discussion

The study reviewed 20 papers that critically analyzed intellectual capital and performance of SMEs. The study revealed the crucial role that Intellectual capital play in order to improve the performance of enterprises. Information gathered from intellectual capital showed that the research were conducted across different locations both in developed and developing countries. It was discovered that most studies examined SMEs using different names and studies were carried out in different kinds of industries. This study findings identified that IC in SMEs is shaped by the interaction of the dimensions such rational, structural, human and technological. The research revealed a variation in IC and SMES performance with the highest study been carried out in Pakistan. Findings further showed that published articles on the study have not been carried out on cogent SMEs such as Nano, family businesses which could be risky when compared to the future needs of both developed and developing economies. Also, research undertaking comparisons between IC in developed and developing economies and SMEs were underexplored Finally, the study is limited to SMEs while banking industry, oil and gas, listed companies were excluded. The result cannot be generalized, there is need for further study in such areas excluded. Further, some results were presented based on number of author publications per countries, numbers of journals in each countries as well as the percentage which is shown in table 2. That is, the list of countries with their publications. It was revealed that out of 20 journals 4 were carried out in Pakistan which represents 20 percent, 3 journals in China and Malaysia, which represents 15 percent each, Nigeria as well as USA has 2 each which represent 10 percent for both countries while the other 6 countries has one each which represent 5 percent. Information extracted were sub divided as illustrated below:

Table 1: Some of the scholarly papers on intellectual capital and performance on SMEs are shown below with the intentions and references

Author	Year	Title	Place	Methodology	Outcomes
Arshad, Arshad, Lamsali, Alshuaibi, Alshuaibi, Albashar, Shakoor & Chuah	2023	Strategic resources alignment for sustainability: the impact of innovation capability and intellectual capital on SME's performance: moderating role of external environment.	Pakistan	Cross-sectional survey method & PLS-SEM (Smart- PLS 4.0)	The results show that the performance of SMEs is greatly influenced by their ability to innovate and the strength of their intellectual capital.
Liu, Zhang, Xu & Wang	2022	Intellectual Capital & Financial performance of Chinese Manufacturing Small and Medium Enterprises: An analysis from the perspective of different industry types	China	Panel data regression models analysis	The results indicate that intellectual capital enhances the financial performance of SMEs, with physical and human capital being the primary contributors.
Ahmad, Wu & Khattak	2022	Intellectual capital, corporate social responsibility and sustainable competitive performance of small and medium-sized enterprises: mediating effects of organizational innovation.	Pakistan	Survey research design & Structural equation modelling (SEM)	The study finds that intellectual capital and CSR positively impact SMEs' sustainable competitive performance, with organizational innovation acting as a mediator.
McDowell, Peake, Coder & Harris	2018	Building small firm performance through Intellectual capital development: Exploring innovation as the “black box’	USA	Survey research design & Pearson correlation coefficient.	Results indicate a positive relationship between two components of intellectual capital, human capital and organizational capital, and organizational performance.
Hashim, Osman & Alhabshi	2015	Effect of intellectual capital on organizational performance.	Malaysia	Pearson correlation and Multiple Regression	The results revealed that intellectual capital significantly influences organizational

				Analysis	performance in Malaysia.
Ajike, Nnorom, Kwarbai & Egwuonwu	2016	Intellectual Capital and Performance Sustainability of SMEs in Lagos Nigeria.	Nigeria	Descriptive survey design & Simple linear regression analysis	Findings revealed a significant relationship between intellectual capital and the performance sustainability of small and medium-sized enterprises.
Muturi, Ombaka & Muchiri	2019	Relationship between intellectual capital & performance of small and medium manufacturing enterprises in Kenya.	Kenya	Descriptive survey and explanatory research design & descriptive statistics and inferential analysis.	The study findings show that intellectual capital had no significant impact on the performance of small and medium enterprises in Kenya.
Coder, Peake & Spiller	2017	Do High Performance Work Systems Pay for Small Firms? An Intellectual Capital Building Perspective.	USA	Survey research design and Descriptive statistics	The results showed that HPWS, through the development of intellectual capital, facilitates growth of both the top and bottom lines for small businesses.
Sharabati, Jawaal & Bontis	2010	Intellectual Capital & Business Performance in the Pharmaceutical sector.	Jordan	Survey research design & Pearson's bi-variate correlation	The results showed that the three sub-constructs of intellectual capital together have a positive and substantive association with business performance.
Zhang & Li	2024	CEO Intellectual capital, Dual innovation & Sustainable growth of small & medium sized	China	Qualitative research design	The findings reveal a significant positive relationship between CEO intellectual

		enterprises: Evidence from China			capital and sustainable growth of SMEs
Khalique, Bontis, AbdulNassir bin & Hassan Md Isa	2015	Intellectual capital in Small & medium enterprises in Pakistan.	Pakistan	Structured questionnaire and multiple regression analysis	The study's findings show that the overall regression model for intellectual capital demonstrates a good fit, while one component, human capital, was found to be insignificant.
Mukaro, Deka & Rukani	2023	The influence of intellectual capital on original performance.	Turkey	The research uses the Phillips Peron (PP), together with the Augmented Dickey–Fuller (ADF) techniques	This study highlights the role of debt and equity financing in boosting organizational performance while noting that long-term liabilities and intellectual capital reduce profitability.
Omotayo & Omiunu	2019	Intellectual Capital management & organizational performance of small and medium enterprises in Oyo state, Nigeria.	Nigeria	Survey research design &partial least squares-structural equation modelling (PLS-SEM)	The study found no significant relationship between the IC components (human capital, structural capital and relational capital) and performance of the SMEs.
Jianqiu	2022	A study of intellectual capital & innovation performance of small and medium sized technological enterprises in Guangdong province.	China	Survey research design	The intellectual capital of small and medium-sized technological enterprises in Guangdong Province has a significant role in promoting innovation performance.

Bontis, Chua & Richardson	2000	Intellectual capital and Business Performance in Malaysian industries	Malaysia	Survey research design & Partial Least Squares (PLS)	Findings reveals that human capital has a greater influence on how a business should be structured in non-service industries compared to service industries; customer capital and structural capital has a positive relationship with business performance regardless of industry
Tonial, Cassol, Selig & Giuglians	2018	Intellectual capital management & Sustainability activities in Brazilian organizations: A case study	Brazil	Qualitative and exploratory research design &Data were analyzed using the content analysis technique with the aid of Atlas.ti, version 8, qualitative software	The results showed that ICM-supporting routines foster new capabilities, enhancing all aspects of intellectual capital—human, structural, and relational.
Jardon & Catalina	2015	Intellectual capital as a source of growth in Subsistence Small Businesses in Latin America.	Latin America	Qualitative research design & Partial least squares(PLS)	The findings suggest that Subsistence small businesses can leverage intellectual capital dimensions for growth, though the effect is indirect.
Absah, Muchtar & Qamariah	2018	The effect of intellectual capital on Business Performance in Micro, Small and Medium	Medan	Quantitative, explanatory	The results indicate that intellectual capital positively and significantly impacts

		enterprise (MSME) in Medan city.		research design & Multiple regression analysis	business performance, with human, technological, and social capital also having a partial but significant positive effect.
Qurashi, Khalique, Ramayah, Buntis & Yaacob	2020	Impact of intellectual capital on innovation in pharmaceutical manufacturing SMEs in Pakistan.	Pakistan	Multiple regression analysis	Findings show that intellectual capital positively influences innovation in pharmaceutical SMEs in Karachi.
Shamsuddin, Khalit, AbdLatib, Abdulrahman & Raub	2015	The relationship between intellectual capital and firms' performance in the trading and service sectors in Malaysia.	Malaysia	Quantitative, explanatory research design & Spearman Rho statistical test	The results showed human capital efficiency and capital employed had a significant positive impact on performance, while structural capital efficiency showed no effect.

Table 2 Number of Countries per Publication

Authors	Country/Region	Percentage	Numbers
Arshad et al, Ahmad et al, Khalique et al & Qurashi et al Zhang et al, Liu et al &	Pakistan	20%	4
Jianqin H.	China	15%	3
Hashim et al, Bontis et al & Shamsuddin et al	Malaysia	15%	3
Ajike et al & Omotayo et al	Nigeria	10%	2
Mcdowell et al & Coder et al	USA	10%	2
Sharabati et al	Jordan	5%	1
Mukaro et al	Turkey	5%	1
Muturi et al	Kenya	5%	1
Tonial et al	Brazil	5%	1
Jardon et al	Latin America	5%	1

	Medan	5%	1

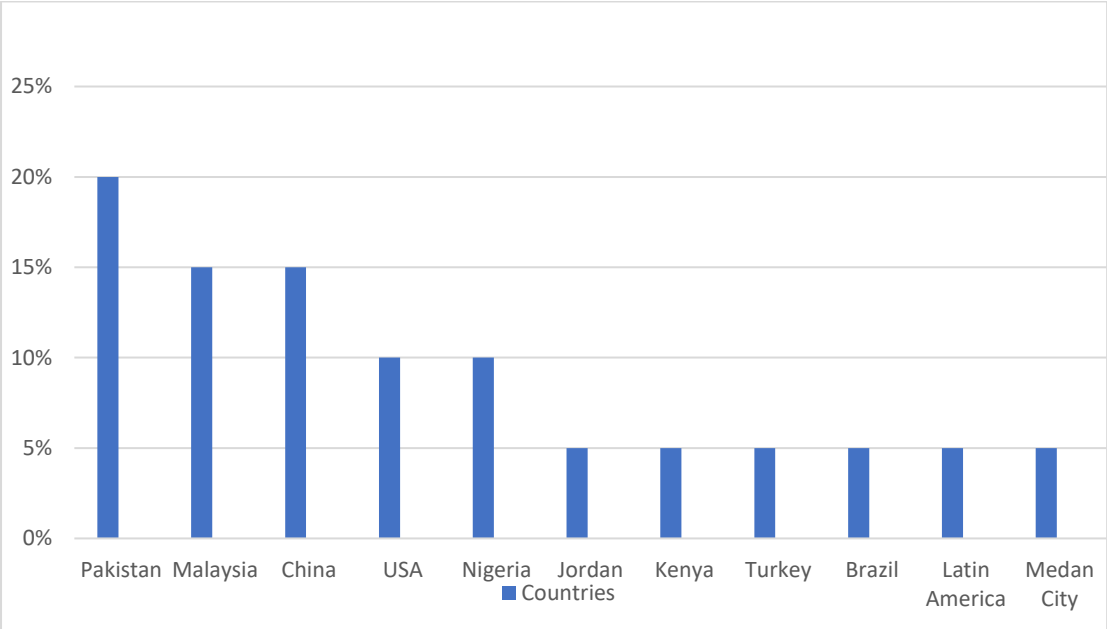

Figure 1: A chart showing the number of countries per publications and their percentages

The location of the selected journals by country is shown above. The country with most (20%) of the reviewed journals were in Pakistan. Also, 15 percent of the reviewed journal were carried out in China and Malaysia. In addition, 10 percent were conducted in USA and Nigeria. The least were 5 percent were carried out in Jordan, Kenyan, Turkey, Brazil, Latin America as well as Medan City countries respectively.

Table 3: Number of Organization Types

Organization types	Percentage	Numbers
SMEs	45%	9
Manufacturing	25%	5
Business	10%	2
Textile	5%	1
Trading and service	5%	1
Industries	5%	1
Subsistence Small Businesses	5%	1

Table 3 above presents the lists of organization with more publication as well as their percentage. SMEs lead the table with 9 publications, manufacturing is next with 5 papers, business with 2 papers while textile, trading and service, industries and SSB has one paper each. It was observed that 45 percent were SMEs, 25 percent were manufacturing and 10 percent were business while textile, trading and service and industries has 5 percent each.

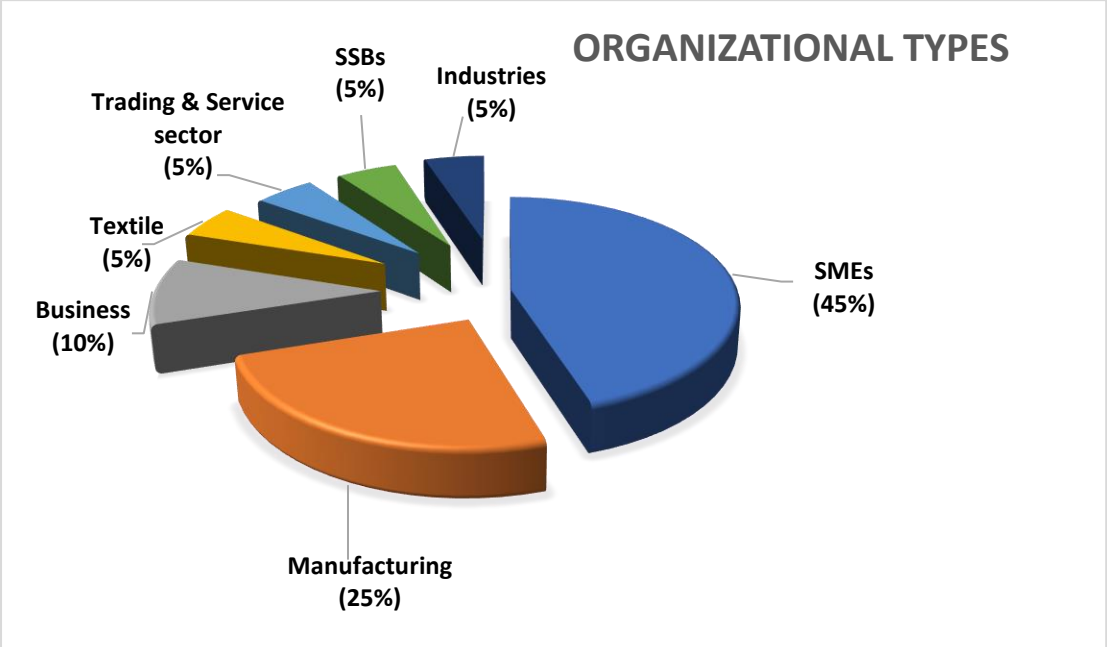

Figure 2: Chart showing the organizational types and their percentages

The figure depicts the types of enterprises reviewed in the study. The majority of the research papers focused on SMEs (45%) . 25 percent focused on manufacturing, 10 percent on Business while 5 percent were conducted among textile, trading and service, SSBs and Industries.

5.0 Conclusion and Recommendations

A lot of studies have investigated and confirmed that intellectual capital significantly influences SMEs performance. Organizations that recognize, manage, and invest in their intellectual capital can achieve long-term success, enhanced market positioning, and greater value creation. In spite of this, published articles on the study have not been carried out on cogent SMEs such as Nano, family businesses which could be risky when compared to the future needs of both developed and developing economies. It offers a comprehensive examination on factors influencing the performance of SMEs. Therefore, it is vital for business owners to leverage IC for enterprises growth However, challenges such as inadequate knowledge management practices and difficulty in measuring intellectual capital remain barriers to optimization. The study recommends that future research should explore industry specific strategies for enhancing intellectual capital utilization in SMEs. Organizations should invest in employee training, develop knowledge management systems, and strengthen relationships with stakeholders. SMEs

can harness intellectual capital more effectively, leading to sustained growth and competitive advantage in the modern business landscape. Ministry of Commerce and Industry, SMEDAN should create awareness on the need for SMES owners to utilize IC for business growth, expansion and sustainability. The study further recommended that SMEs and policymakers to leverage intellectual capital effectively.

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