

## Effect of Intellectual Capital on SME Performance: Role of Social Capital

(Kesan Modal Intelek terhadap Prestasi PKS: Peranan Modal Sosial)

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### ABSTRACT

The study examines the effect of intellectual capital (IC) on Small Medium Enterprises (SMEs) performance. It further investigates social capital's role as the moderator on the relationship between IC and SME performance. A purposive sampling strategy was utilized to develop the study's sample size. Out of 500 structured questionnaires distributed to the registered SME owners or managers in Malaysia, only 266 were usable. The Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed to analyze the research model. The components of IC namely human capital, structural capital, and social capital have been shown to improve SMEs' performance. The results further found that social capital helps to enhance the influence of human capital on SME performance. This contributes to the theoretical advancement of the Resource-Based View by studying its application in forecasting outstanding performance among SMEs through incorporating the social theory for the moderator variable. SMEs should protect their IC and promote the practice of recognizing intangible assets, particularly the skills and abilities of their personnel.

*Keywords:* Intellectual capital; social capital; human capital; SME performance; resource-based view

### ABSTRAK

Objektif penyelidikan ini adalah untuk meneroka kesukaran yang dihadapi oleh modal intelek (IC) terhadap prestasi PKS, serta mengkaji pengaruh modal sosial (SO) terhadap hubungan antara prestasi IC dan PKS. Strategi persampelan berpanduan digunakan untuk membentuk saiz sampel kajian. Dengan melakukannya, penyelidikan melibatkan pendedaran soal selidik berstruktur dan pengumpulan data daripada pemilik atau pengurus PKS berdaftar. The Partial Least Squares Structural Equation Modeling (PLS-SEM) digunakan untuk menganalisis model penyelidikan. Telah dibuktikan bahawa tiga daripada empat pemboleh ubah IC (modal insan, modal struktur dan modal sosial) telah terbukti meningkatkan prestasi PKS. Selain itu, hasil kesan pengantaraan modal sosial menunjukkan bahawa hanya aspek modal insan yang secara signifikan mempengaruhi prestasi PKS. Kajian ini dijangka memberikan sumbangan penting kepada kemajuan teori Pandangan Berasaskan Sumber (RBV) dengan mengkaji aplikasinya dalam meramalkan prestasi cemerlang di kalangan PKS disamping diperluaskan dengan memasukkan teori sosial bagi pemboleh ubah moderator. Kajian ini memberikan beberapa cadangan yang terbaik untuk PKS dengan usahawan perlu segera menangani masalah syarikat mereka serta perlu memberi perhatian yang sewajarnya terhadap syarikat mereka iaitu melindungi modal intelek (IC). Di samping itu, mereka juga perlu mempromosikan amalan mengiktiraf aset tidak ketara, terutamanya kemahiran dan kebolehan kakitangan mereka.

*Kata kunci:* Modal intelek; modal sosial; prestasi SME

JEL: D24, D21, D91, L10, M10, M13

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### INTRODUCTION

Small and medium-sized firms (SMEs) have become increasingly important to the economy of the nation in recent years. As a result, a significant amount of research has been devoted to developing models that capture

the growth pattern of SMEs. Though the Southeast Asia region comprises countries like China, India, and Pakistan among others (Bilal et al. 2016), there hasn't been much research on SMEs in this area. Globally, 26% of SMEs permanently folded between January and May 2020, with South Asia suffering the greatest losses (46%).



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Reduced sales were recorded by 61% of them (Qi 2023). To prevent the bankruptcy of SME owners, the problems of reduction of sales must be resolved. Furthermore, the financial well-being of individuals and businesses has been profoundly impacted in an adverse manner by the COVID-19 pandemic. Even though the pandemic severely affected SMEs, some companies have survived despite adversity by adopting proactive measures to protect their operations.

To date, researchers have exhibited an interest in the topic of SMEs performance through numerous studies exploring the connection between intellectual capital and company performance (Radulovich et al. 2018; Hsu & Wang 2012; Scafarto et al. 2016; Sumedrea 2013; Tsakalerou 2015; Tsao & Hung 2014). Intellectual capital comes in many different forms, including human, structural, and consumer capital. Consequently, as per Nawaz and Haniffa (2017), claimed that an organization's intellectual capital refers to its assortment of intangible assets and social networks. Thus, in gaining a competitive edge, intellectual capital is widely recognized as a crucial resource. Ignoring IC will cause issues for the company, such as ineffective staff, a lack of experience (HC), poor quality services (SC) and strained client relationships (CC). The knowledge of their professions and what is beneficial for the company is high among employees. However, this knowledge has never been shared with or made available to other employees. But once they leave the company, they will take their knowledge with them (Hashim et al. 2018). According to Meret et al. (2020), it alludes to the synthesis of information, experience, and knowledge that may be used to generate wealth. At present, several research studies have examined the impact of intellectual capital on company performance and competitive advantage. However, the role of social capital as a moderating variable has not been studied. As a result, it is critical to investigate the nature of this relationship. This situation prompts the researchers to examine social capital's function as a moderator in the relationship between intellectual capital and SME performance.

SME businesses are urged to focus on and place a high priority on intellectual capital (HC, SC, and CC) in order to perform successfully and remain viable over the long term. Nevertheless, there is another capital that has less attention in the literature while potentially being just as significant. In fact, without it, the return on other capital inputs may be significantly reduced. This kind of capital is known as social capital, and it largely consists of the level of quality of the connections that the company has made with various stakeholders. Greater social capital in a company encourages stakeholders to be more trustworthy and cooperative, which can eventually increase profitability and firm value. Therefore, by fostering trust among the company's stakeholders or the general public, investments in social capital can enhance the firm's performance (Wabwire 2023). In addition, a previous study done on snack business owners in

Padang Regency recommended that establishing a better network between employees (HC), customers (CC), and stakeholders will improve business performance and lead to higher profitability (Analia et al. 2020). Another study on measuring the career performance of financial institutions in Taiwan confirmed that human capital was transformed by social capital to obtain positive outcomes in the organizations (Lin & Huang 2005). Consequently, social capital indirectly affects the relationship between IC components and SMEs' performance. The importance of addressing the moderating influence of social capital used on the relationship between intellectual capital components and SME success has only recently been highlighted by empirical studies.

Hence, the objective of this present study is to determine the effect of intellectual capital (IC) on SME performance and the role of social capital (SO) in the relationship. Structured questionnaires were distributed to the managers and owners of SME businesses in the state of Selangor, Malaysia. The findings suggested that HC, SC and SO affect the performance of SME businesses.

The following are some contributions made by this study: First, this study concentrates on SMEs in developing nations, specifically Malaysia, to further our understanding of the role of intellectual capital in value creation in developing nations. Second, the study demonstrated that stronger networks and trust (SO) placed in employees (HC) boost SMEs' performance, which increases success and decreases failure. Thirdly, this study also builds on earlier research (Hashim et al. 2018) by suggesting intellectual capital as a crucial factor driving businesses' sustainability policies for greater results.

## LITERATURE REVIEW

### SME PERFORMANCE

Small and Medium Enterprises (SMEs) form the largest portion, representing 98.5% of the total number of business organizations in Malaysia, solidifying their dominant presence. SMEs played a critical role in assisting the nation's large corporations, contributing 37.1% of the GDP, 66% of employment, and 17.3% of all exports (SME Corp Malaysia 2018). Due to heightened rivalry and quick innovations, a business that cannot sustain operations will quickly be eliminated from the sector (Ullah et al. 2022). Subsequently, to ensure the long-term survival of the organization, maintaining business sustainability is equally imperative. However, the performance of the company is significantly influenced by intellectual capital (Gallego-Alvarez & Pucheta-Martinez 2019). There are contradicting results because Ullah et al. (2021b) found that intellectual capital has a considerable and strong impact on corporate success. The results of the relationship between the two constructs are inconsistent, which is referred to as inconsistency (Lee & Mohammed

2014; Ozkan et al. 2017). The literature mentioned above makes it abundantly evident that there is a connection between intellectual capital and company performance, but only in the setting of very large businesses. Because many academics and researchers have ignored this background, there is a void in the research on small firms. Consequently, research is being done on SMEs, particularly in developing nations like Malaysia.

In the industrial revolution 4.0 (IR4.0), the concept of sustainability poses a significant challenge for small and medium-sized enterprises (Imran et al. 2019). Generally, SMEs refer to small-scale enterprises (with fewer than 50 workers), medium-sized enterprises (with fewer than 250 employees), and micro-enterprises (with fewer than 10 employees). Additionally, according to Prasanna et al. (2019), SMEs concentrate on industries that require a lot of labour but have minimal entry barriers and fixed production costs. Today, SMEs account for the vast majority of firms worldwide. Undoubtedly, SMEs hold great importance in global economies (Yusof et al. 2019). Additionally, it is claimed that SME labour productivity is negligible. Based on SME Corp. (2019) findings, approximately 58% of SMEs were able to sustain their operations, indicating that 42% of the business establishments established in 2000 had closed down by 2005.

#### UNDERPINNING THEORY

The resource-based view (RBV) emphasizes the type of coordination inside the company, its organizational design and efficiency, as well as the function of management and the distribution of decision-making authority (Dabic et al. 2019). RBV from the intangible point of view, the fundamental focus of intangibility is toward resources such as intellectual capital employed has a competitive advantage in the performance of SMEs (Mills et al. 2003). Organizations using such resources are at the advantage of using internal competence with a view of acquiring the necessary strength and capabilities in implementing the formulated strategy for them to achieve their fundamental goals.

Intellectual capital has been argued to be a key factor in SMEs' success and to be inextricably linked to their performance by many researchers (Crema & Verbano 2014; Emmanuel et al. 2016; Khaliq et al. 2015; Shumaila & Afza 2014; Ullah et al. 2015). The scholarly discussion of the relationship between intellectual capital and performance has produced varying outcomes (Asiaei et al. 2018; Crema & Verbano 2014; Lee & Mohammed 2014; Ozkan et al. 2017). According to certain empirical studies, intellectual capital has little impact on a company's success (Lee & Mohammed 2014; Ozkan et al. 2017). As indicated, earlier research claim that the relationship between intellectual capital and performance should be tempered because of the inconsistent results and mixed findings (Bemby et al. 2015; Juma & McGee 2006; Scafarto et al. 2016; Tarus

& Sitienei 2015). According to earlier research, a number of variables can both regulate and assist the relationship between intellectual capital and performance (Bemby et al. 2015). According to certain scholars (Wabwire 2023; Ahn & Kim 2017), social capital is crucial for facilitating the linkages between intellectual capital and company performance.

Rendering to the social capital theory, individuals inside organizational contexts form networks of social interaction and exchange relationships, each of which contributes a component of their "human-embodied" knowledge (Nahapiet & Ghoshal 1998; Hsu & Sabherwal 2012). These networks are where larger knowledge is said to be embedded. The sharing and accumulating of a vast stock of explicit and tacit information is made possible by these social networks that span several organizational units and thus contribute to the production of new knowledge. In order to better understand how social capital theory influences SME company performance, this study embedded it into the RBV theory.

#### INTELLECTUAL CAPITAL

The emergence of the information economy, where knowledge plays a significant role in wealth creation, has weakened traditional ways of obtaining high levels of accomplishment. Intellectual capital (henceforth, IC) is the worth of the knowledge, abilities, business training, and other confidential information that might provide a company with a competitive edge. A valuable resource, intellectual capital is a collection of all a company's informational assets that may be used to boost sales, draw in new customers, create new products, or otherwise enhance a company's operations (Limijaya et al. 2021). Additionally, a company's human resources, operational procedures, and other intangible assets that support business success are collectively referred to as its IC. The topic of IC has undergone a number of thorough evaluations (Serenko et al. 2013; Chatterjee et al. 2021). Despite this, an extensive examination was carried out on how the three constituents of intellectual capital, namely human capital, structural capital, and customer capital affect the SME/ firm performance which will be discussed in the following.

Human capital (HC), pertains to the knowledge and skills embedded in the workforce stemming from education and work experience, thereby enhancing its value. As stated by Alay and Jeppe (2013), HC serves as a repository of knowledge and competencies possessed by the workforce, acquired through education and practical exposure, thus contributing to their overall worth. Moreover, HC forms the foundational element of IC, encompassing the assimilated knowledge, aptitudes, skills, and capabilities of individuals (Hashim et al. 2018; Ahamad et al. 2022). For better judgments that enhance organizational performance, managers should always seek to modify their intellectual capital, particularly HC (Ting et al. 2020). Prasetyo and Kistanti (2020) claimed

that HC is the most crucial factor in both direct and indirect economic growth. In addition, many academics have recognized the critical role that HC plays in boosting organizational effectiveness and corporate performance (Nhon et al. 2018; Khan & Quaddus 2018; Zin & Adnan 2016). This is because HC significantly enhances the strategic management of human resources, which promotes the company's success and competitiveness (Alomari 2019). In fact, across all industries, HC efficiency contributes favourably to firm success (Tran & Vo 2020).

Customer capital (henceforth, CC) is centered on value and knowledge that are derived through the firm's external relationships with its partners, consumers, suppliers, distributors, suppliers, local society, and all other linked parties (Kianto et al. 2014). CC, as per Soewarno and Tjahjadi (2020), represents the knowledge a company possesses about individuals external to its organization, including customers. In relation to this, establishing strong partnerships with external entities not only facilitates the long-term survival of an organization but also enables it to gain competitive edges. Besides, Sohel and Hossain (2023) mentioned that CC encompasses the financial resources invested by the company in marketing activities, including advertising, sales, distribution, and other expenses associated with external stakeholders. Through improved communication, information exchange, and consideration of win-win situations, CC can assist the organization in improving its collaboration with supply chain partners. By doing this, the organization can reduce the deadly effects of the difficulties (internal and external) that organizations encounter during the process of business transactions. Through the use of outside information, CC enhances the challenges faced by an organization and improves business performance (Mubarik et al. 2018). Previous research findings indicate that enhanced CC positively influences a firm's accounting performance, as measured by metrics such as return on assets (ROA) and return on equity (ROE), as well as market performance (Buallay et al. 2019; Nimtrakoon 2015). Nevertheless, Vishnu and Gupta (2014) discovered contrasting results when examining 22 pharmaceutical companies in India.

Structural capital (henceforth, SC) includes organizational databases, process instructions and procedures, strategies, routines, and policies and is very important to the organization's worth. The sustainable growth of businesses is significantly influenced by SC (Yusoff et al. 2019). In relation to this, several scholars have provided support for the direct correlation between SC and both business performance and enterprise value (Abdirahman & Tarique 2020; Wang & Yuan 2017; Hashim et al. 2017). Additionally, it symbolizes the information ingrained in organizational procedures, frameworks, databases, and patents (Asiaei & Bontis 2019). The organization's procedures and informational

systems allow for the acquisition of this knowledge and expertise (Hsu & Wang 2012). Employees are encouraged to try learning new information in organizations with significant structural capital. However, ineffective systems and procedures might prevent businesses from realizing their full potential. In order to execute and achieve sustainability, organizations' policies and structures are crucial (Yusliza et al. 2020). According to Astuti et al. (2023) research, structural capital is a crucial factor in forecasting sustainable competitive advantage. Sustainable competitive advantage is also significantly and positively related to organizational performance. Similarly, Dimitrakaki (2022), suggested that obtaining competitive advantage tends to be positively correlated with having a high level of learning and development of organizational knowledge.

A society's social and economic development is facilitated by its relationships, attitudes, and ideals. These factors are collectively referred to as social capital. Social capital (SO) is a term used to describe an organization's openness, corporate social responsibility (CSR), integrity, and ethics (Khalique et al. 2018). In general, SO refers to the caliber of the connections a company has made with various stakeholders. Businesses with higher levels of SO inspire a level of collaboration and trust from stakeholders, which in turn can increase profitability and company value (Wabwire 2023). Any organization's trust is equivalent to bankruptcy when the door to new prospects, represented by SO, is shut. Hassan (2014) asserts that SO is essential for facilitating adoption and overcoming barriers caused by a lack of natural, human, and financial capital. A society's foundation is made up of more than simply its institutions; it is the glue that binds them all together. Hence, SO can be viewed as a framework of horizontal connections among individuals within a community, encompassing social networks and related norms that influence productivity and well-being in that community. Considering all of the research described above, there are very few studies on how precisely social capital affects the development and performance of SMEs, and there aren't enough studies on the dimensional analysis of social capital and its connection to performance (Felcio et al. 2014).

The interaction of two additional factors is influenced by a moderating variable. Changes are made to the predictor variable's magnitude, intensity, direction, or form (Sharma et al. 1981). There are few explorations of SO's impact on Malaysian SMEs' performance in previous studies. However, a study about individualism and sociocultural adaptation among rural-to-urban migrants in China (Du et al. 2015) concluded that social capital is an efficient moderator when it comes to influencing the link between individualism and societal adaptation. In addition, the result of a study on rural residents' attitudes to tourism in Korea shows that rural residents' reaction to the growth of tourists

was influenced by social capital (Park et al. 2015). The researchers argued that communities can be established in ways that support the development of sustainable rural tourism once the negative effects of social capital are acknowledged and handled. Therefore, this study reveals the important role of SO as a moderator, demonstrating its ability to enhance the relationship between HC and firm performance in Malaysian SMEs. According to Ahn and Kim (2017), spending on employee's (HC) education and training has a big impact on how different types of SO are formed. More precisely, providing human capital (HC) with more specialized training and development improves the quality of social interactions among them and increases their drive to engage in activities (Ahn & Kim 2017). Such training exercises can be designed to help HC improve their social skills and social confidence in group situations, which will increase their willingness to address issues in groups and take part in such activities. In light of this, SO generation is encouraged (Tseng et al. 2014; Nhon et al. 2018). These findings align with previous research on IC and firm performance (Hsu & Wang 2012; Scafarto et al. 2016; Sumedrea 2013; Tsakalerou 2015; Tsao & Hung 2014). Given the increasing importance of intangible resources, including IC, in today's business landscape, SMEs should prioritize the development of such resources for improved performance.

## THEORETICAL FRAMEWORK

The theoretical framework of this study is based on the resource-based theory (RBT) and social capital theory. This study shows the direct relationship between components of IC and SMEs performance and an indirect relationship of social capital moderates the relationship between IC and SMEs performance (refer to Figure 1).

Therefore, the hypotheses for direct relationship are:

- H<sub>1</sub> The relationship between human capital and SME performance is significant.
- H<sub>2</sub> The relationship between customer capital and SME performance is significant.
- H<sub>3</sub> The relationship between structural capital and SME performance is significant.
- H<sub>4</sub> The relationship between social capital and SME performance is significant.

The hypotheses for the indirect relationship are:

- H<sub>4a</sub> The relationship between human capital and SME performance is moderated by social capital.
- H<sub>4b</sub> The relationship between customer capital and SME performance is moderated by social capital.
- H<sub>4c</sub> The relationship between structural capital and SME performance is moderated by social capital.

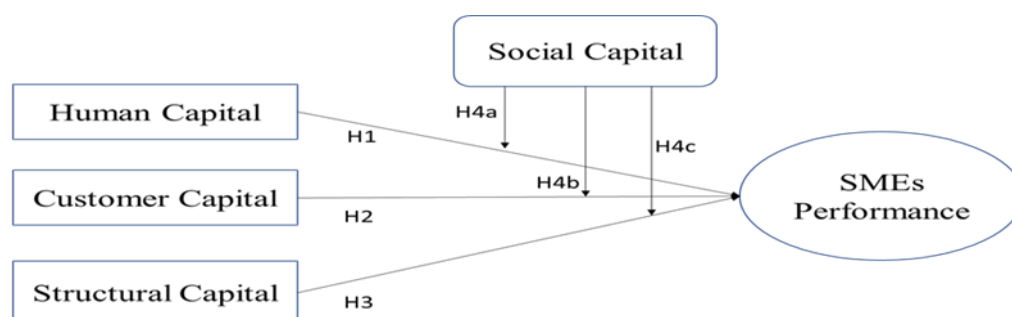


FIGURE 1. Theoretical framework

## METHODOLOGY

The target population for this study is the SMEs located in Selangor, Malaysia. This study adopted a quantitative, cross-sectional survey method, as stated by Sekaran and Bougie (2016), and SME managers had access to 42 items of self-completed questionnaires for analysis. The organization is the unit of analysis, and SME owners are the organizations' representatives. The ratings for survey replies range from 1 (strongly disagree) to 7 (strongly agree) on a 7-point Likert scale. Table 1 displays information about the items for each construct and their sources. Because the quantitative design was seen to be

excellent for exploratory studies due to its substantial dependence on literature reviews, the researcher quantitatively distributed the questionnaires in this study. A purposive sampling technique was employed for the selection of survey respondents based on a set of predetermined criteria. This strategy was recommended by scholars, especially in cases where the reliability of probability sampling is questionable. Moreover, selecting respondents based on a set of specified criteria prior to the survey may yield a sample size that accurately represents the population (Sarstedt et al. 2019). Regarding the data collection timeline, data for this study were collected between January and March 2023.

TABLE 1. Constructs, items, and sources

Constructs	Items	Sources
Human Capital (HC)	HC1 Employees are knowledgeable of organizational matters.	Khalique et al. (2015)
	HC2 Employees undergo a succession training program.	
	HC3 We recognize the importance of knowledge as a strategic asset.	
	HC4 We encourage sharing of ideas among employees.	
	HC5 Employees are generally familiar with the organization's strategic intents.	
	HC6 Employees are creative and innovative.	
	Kamaluddin and Rahman (2013)	HC7 Employees possess relevant academic qualifications and training.
		HC8 Employees are competent in handling matters pertaining to business operations.
		HC9 Employees are highly motivated self-learners.
		HC10 Employees focus on the quality of service provided.
		HC11 Employees work more effectively in a group.
		HC12 Our employees are committed to achieving our organization's vision and mission.
Customer Capital (CC)	CC1 Our organization is aware of customer complaints.	Khalique et al. (2015)
	CC2 Our customers select a broader range of our products or services.	
	CC3 Our customers show loyalty towards our organization.	
	CC4 Our organization cares about what the customer expects from us	
	Kamaluddin and Rahman (2013)	CC5 Our customers are satisfied with the delivery of our services.
		CC6 Our customers have trust in our staff's capability.
		CC7 Our products or services are market driven.
		CC8 Our organization constantly measures customers' feedback surveys.
Structural Capital (SC)	SC1 Our organization has an efficient and integrated management system to serve the customers.	Kamaluddin and Rahman (2013)
	SC2 Much of our organization's knowledge contains in manuals, databases, etc.	
	SC3 Our organization implants much of its knowledge and information in structures, systems, and processes.	
	Khalique et al. (2015)	SC4 Our organizational system and procedures support innovation.
		SC5 Our organization system supports continuous improvements including quality time in problem solving.
		SC6 IT systems and their usage are enablers of higher productive performance.
		SC7 Our organizations establish a networking system that engages customers, financial contributors, databases, etc.
		SC8 Our organization has an organizational control system and procedures (e.g. financial).
		SC9 Our organization has an effective internal communication system.
Social Capital (SO)	SO1 Organizational culture is nurtured to attain social outreach acceptance.	Khalique et al. (2015)
	SO2 Environmental health and public social benefits are considered in any planning, development, and implementation of projects.	
	SO3 Organizations establish trust with clients.	
	SO4 Clients establish a strong network among group members with the assistance of the organization.	
	SO5 Clients of the organization have a good and trustworthy relationship among the group members.	
	SO6 Our organization mobilizes resources for the low income through easy access to the SME program.	
	SO7 Organization plays a vital role in creating positive social interaction.	

*continue ...*

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SME Performance	MP1	Our organization's revenue is continuously increasing growth.	Hamoudah (2015)
	MP2	Our organization's return on assets has been increasing.	
	MP3	Our organization's return on sales has been increasing.	
	MP4	Our organization's return on capital employed/allocated grant has been increasing.	
	MP5	Our organization's product image has improved.	
	MP6	Management accomplishment/performance has been increasing.	
	MP7	Workers' productivity/performance has been increasing.	
	MP8	Shareholder value/benefits have been increasing	
	MP9	Our market share/social outreach is continuously increasing.	
	MP10	Our organization practices 'On Time Delivery' of its products and services to customers.	
	MP11	Our organization has good overall performance and success.	

Sources: Khalique (2015), Kamaluddin and Rahman (2013), Hamoudah (2015)

In accordance with the suggestion by Hair et al. (2014), the researchers utilized the G\*power tool (Faul et al. 2009), which is accessible online, to determine the necessary sample size for the current study. By employing G\*Power analysis with an effect size of 0.15, an alpha value of 0.05 (representing a 95% confidence level), and a beta value of 0.20 (ensuring 80% power to avoid errors), G\*Power calculated a minimum sample size of at least 103 respondents for this study. Among the 500 eligible respondents approached to participate in the survey, only 266 SME managers completed the questionnaire, resulting in a response rate of 53.2%, which is deemed acceptable

according to Sekaran and Bougie (2016). To expedite the data collection process, the researchers took advantage of the rapid technological advancements and employed an innovative data collection method—the online survey. By utilizing electronic and online survey techniques, participants were able to independently read and respond to questionnaires received via email, eliminating the need for a trained interviewer (Cooper 2019).

#### DEFINITIONS OF VARIABLES

Table 2 displays information about the definition of each of the variables employed in this study.

TABLE 2. Definition of variables

Variables	Definition
Intellectual capital	A set of intangible assets comprising competencies, resources, and capabilities that enhance firm performance and generate company value (Roos & Roos 1997).
Human capital	Based on intellectual agility (innovation, creativity, flexibility, and adaptability) as well as competencies (education, professional skills, know-how, and experimental knowledge) and attitudes (motivation, leadership, behavioral patterns) (Bontis et al. 2002; Tovstiga & Tulugurova 2007; Khalique et al. 2015).
Customer capital	Based on brand value, a large customer base, customer loyalty, and customer pleasure, knowledge is ingrained in connections with customers (Ismail 2005; Tovstiga & Tulugurova 2007; Khalique et al. 2015).
Structural capital	Covers all of the knowledge that is kept in non-human forms, such as systems, processes, databases, networks, process manuals, and routines (Khalique et al. 2015).
Social capital	The term is used to describe an organization's openness, corporate social responsibility (CSR), integrity, and ethics (Khalique et al. 2018).

#### DATA ANALYSIS

The analysis of the study model was conducted through the employment of the partial least square structural equation modeling approach (PLS-SEM). The analytical method considers the criteria proposed by Hair et al. (2017) enables the modulation of latent variables, the correction of measurement errors, and the estimate of parameters for whole models all at once. Smart PLS 4.0 was used as an operational tool to analyze inner and outer

models in accordance with the recommendations from Sarstedt and Cheah (2019). As a result, the analytical process is divided into two primary stages: (1) the measurement model, referred to as the outer model, and (2) the structural model, known as the inner model. The assessment of the outer model encompasses various criteria such as heterotrait-monotrait (HTMT), composite reliability (henceforth, CR), variance inflation factor (VIF), and outer loadings (Hair et al. 2021; Shmueli et al. 2019; Hair et al. 2019). In relation to the inner model,

this study explores the significance of IC components (HC, CC, SC, and SO) on SME performance through the examination of t-values, p-values, the coefficient of determination  $R^2$ , and the confidence interval (henceforth, CI).

## RESULT AND DISCUSSION

Despite 500 surveys being distributed, only 266 respondents (or 53.2 percent) sent back the forms in a usable state. Table 3 shows that 176 respondents (66%) said they were in a managerial role, whereas 90 respondents (34%) said they were the owners of the SMEs. In addition, 169 respondents (64%) were men, while the remaining respondents (36%) were women. In contrast, 86 respondents (32%) are between the ages of 26 and 35,

making up the bulk of respondents (116, or 44%), who are between the ages of 36 and 45. In addition, just 8 (3 percent) are between the ages of 20 and 25, while 47 (18 percent) are between the ages of 46 and 55, 9 are over 56, and 47 (18 percent) are between the ages of 46 and 55. In terms of educational background, 155 (58%) of the SME respondents have a degree, 55 (21%) have a diploma, 39 (15%) have a master, and only 17 (6%) have SPM credentials. The majority of responders (79, or 30%) have a minimum of 15 years of work experience. There are 77 (29%) respondents who have been employed for one to five years. Another 61 (23%) respondents have six to ten years of professional experience. The remaining 14 (5%) have worked for less than a year, while 35 (13%) have worked for between 11 and 15 years. Furthermore, 176 respondents, or 66 percent, are from urban areas, and the other 90 respondents, or 34 percent, are from rural areas.

TABLE 3. Demographic profile

Designation	Total	%
Owner	90	34
Manager	176	66
Gender		
<i>Male</i>	169	64
<i>Female</i>	97	36
Age		
<i>Below 26 years old</i>	8	3
<i>26-35 years old</i>	86	32
<i>36-45 years old</i>	116	44
<i>46 - 55 years old</i>	47	18
<i>above 55 years old</i>	9	3
Academic		
<i>SPM</i>	17	6
<i>Diploma</i>	55	21
<i>Degree</i>	155	58
<i>Master</i>	39	15
Working Experience		
<i>&lt; 1 year</i>	14	5
<i>1-5 years</i>	77	29
<i>6-10 years</i>	61	23
<i>11-15 years</i>	35	13
<i>&gt; 15 years</i>	79	30
Location		
<i>Urban</i>	176	66
<i>Rural</i>	90	34

Source: Own

Using the statistical software IBM for SPSS 29, the mean and standard deviation (SD) were calculated. Table 4 provides information on the mean and standard deviations. On a seven-item Likert scale, the mean values for all variables ranged between 5.5 and 5.7. SC was the

highest mean value (5.6842), followed by CC (5.6311), HC (5.630); SO (5.5510); and SME performance (5.5058) respectively. SD values ranged from 0.04 to 0.05 (HC-0.0399; CC-0.0480; SC-0.0513; SO-0.0508; SME performance-0.0529).



TABLE 4. Descriptive statistics

Variables	Observation	Mean	SD	Min	Max
HC	266	5.6300	0.0399	4	7
CC	266	5.6311	0.0480	3	7
SC	266	5.6842	0.0513	3	7
SO	266	5.5510	0.0508	3	7
SME Perf	266	5.5058	0.0529	3	7

All five factors in the model, as well as the moderating variables, were reflective latent constructs (refer to Table 5). It was determined whether the model's data contained any missing values. To assess the reliability of the constructs, item loadings, composite reliability (CR), and average variance extracted (AVE) were employed as indicators of construct reliability. Few items classified as human capital have values between 0.6 and 0.7, it has been discovered. To determine whether to keep or remove them from the model, their stress relevance was examined. The means of the AVE and CR of respective constructs improved above the 0.5 criteria after the problematic components were eliminated from the PLS-SEM model.

Items for human capital in Table 1 which are HC4, HC6, HC7, and HC8 were the four components that were omitted from the analysis due to low loading (refer to Table 3). Although Hulland (1999) established 0.5 as the minimum acceptable threshold for loading, the remaining indicator loadings were kept because they were over 0.7. These item loads demonstrate the acceptable indication reliability of the five reflecting structures. Additionally, the CR construct's internal consistency was examined. The CR values for the five reflecting constructs are

0.866 for HC, 0.914 for CC, 0.934 for SC, 0.903 for SO, and 0.958 for SME performance. According to Hair et al. (2014), a CR threshold between 0.60 is appropriate. AVE values greater than 0.5 are required to demonstrate the constructs' converging validity (Ramayah et al. 2018). Convergent validity at the construct level was demonstrated by the fact that all AVE values obtained were higher than the stipulated requirement. Latent construct procedural hurdles AVE is more than the quoted value of 0.511.

As Henseler et al. (2015) suggested, the HTMT has also been used in the current investigation as a discriminant criterion to assess discriminant validity. According to Henseler et al. (2015), discriminant validity is achieved when the correlation value between constructs is less than one. However, to ensure a more distinct differentiation between the constructs, a conservative threshold of 0.85, as suggested by Kline (2011), was adopted. The correlation estimates for the HTMT scores are depicted in Table 6.

#### PARTIAL LEAST SQUARE – STRUCTURAL EQUATION MODELLING (MEASUREMENT MODEL)

TABLE 5. Discriminant validity

Construct	Loading	CR	AVE
Human Capital (HC)		0.866	0.511
HC1	0.682		
HC2	0.689		
HC3	0.688		
HC5	0.669		
HC9	0.720		
HC10	0.787		
HC11	0.701		
HC12	0.772		
Customer Capital (CC)		0.914	0.618
CC1	0.727		
CC2	0.804		
CC3	0.738		
CC4	0.827		
CC5	0.827		
CC6	0.812		
CC7	0.743		
CC8	0.802		

continue ...

... continued

Structural Capital (SC)		0.934	0.652
SC1	0.764		
SC2	0.779		
SC3	0.856		
SC4	0.866		
SC5	0.787		
SC6	0.778		
SC7	0.785		
SC8	0.851		
SC9	0.794		
Social Capital (SO)		0.903	0.624
SO1	0.798		
SO2	0.798		
SO3	0.729		
SO4	0.846		
SO5	0.824		
SO6	0.787		
SO7	0.740		
SME Performance		0.958	0.691
MP1	0.794		
MP2	0.842		
MP3	0.829		
MP4	0.811		
MP5	0.856		
MP6	0.836		
MP7	0.862		
MP8	0.813		
MP9	0.815		
MP10	0.804		
MP11	0.878		

Note: Items HC4, HC6, HC7, and HC8 were deleted due to low loading.  
Average Variance Extracted (AVE), Composite reliability (CR)

TABLE 6. HTMT

Construct	CC	HC	SC	SME	SO
CC					
HC	0.818				
SC	0.822	0.710			
SME	0.699	0.644	0.751		
SO	0.809	0.692	0.813	0.719	

Source: Own source (Smart PLS)

There is no multi-collinearity problem with any of the data because all variance inflation factor values are below the cut-off of 5 (Hair et al. 2016). The questionnaire consists of 42 components that were contextually categorized under the corresponding latent dimensions

(human capital, customer capital, structural capital, social capital, and SME performance) to help SME managers provide consistent and focused responses. The variance inflation factor (VIF) is shown in Table 7.

TABLE 7. Variance inflation factor

Construct	VIF
CC	4.415
HC	2.873
SC	3.624
SO	2.882

Source: Own source (Smart PLS)

#### PARTIAL LEAST SQUARE – STRUCTURAL EQUATION MODELLING (STRUCTURAL MODEL)

By using the bootstrapping test in Smart PLS, the linkages between the latent constructs in the structural model assessment are identified by their path coefficients and t- statistics. According to Peng and Lai (2012), bootstrap scores for hypothesis testing should be higher than 1.96 (t-statistics >1.96, two-tailed). The investigation determines that three of the four structural model relationships are meaningful. The path analysis's findings, which are shown in Table 8, support the three hypotheses ( $H_1$ ,  $H_3$ , and  $H_4$ ) by demonstrating that three elements of intellectual capital have significant and favourable effects on the performance of SMEs. Based on the findings, it can be concluded that SC ( $\beta= 0.366$ ,  $p<0.01$ ), SO ( $\beta= 0.212$ ,  $p<0.01$ ), and HC ( $\beta= 0.185$ ,  $p<0.01$ ) presented the most significant positive effects on SME performance. This indicates that investing in IC provides a substantial advantage, particularly for SMEs. These results reaffirm the positive role of SC, SO, and HC in enhancing the performance of organizations (Ali et al. 2020; Wang et al. 2021; Li et al. 2019), aligning with the propositions of the RBV theory which suggests that human capital can be a valuable asset for companies, resulting in increased competitive advantages and superior performance (Barney 1991; Chabowski & Mena 2017). The rate of return on investment and assets, as well as the rate of return on sales, of the company, are better than those of its primary competitors due to the Malaysian SME's ability to explore market prospects and its main resources, which are difficult to obtain, replace, or imitate by competitors. Comparing it to its competitors has an impact on achieving bigger earnings and sales growth. Nevertheless, the third component of IC, which is CC

( $\beta= 0.065$ ,  $p>0.05$ ), does not significantly impact SME performance. These findings are consistent with previous reports, which also indicate an insignificant correlation between CC and firm performance (Darus et al. 2018; Yusoff et al. 2019; Cheng et al. 2021). Smaller businesses (SMEs) in Malaysia may have fewer clients than larger businesses, and the impact of CC on their success may be minimal. It might be more challenging to evaluate and measure customer capital. Therefore, outside factors like shifts in consumer preferences or market trends that are outside the control of SMEs could have an effect on CC and lead to lower performance.

Furthermore, the results regarding the moderating effect reveal that HC ( $\beta= 0.178$ ,  $p<0.05$ ) is the only dimension of IC that significantly influences SME performance. On the other hand, neither SC ( $p>0.05$ ) nor CC ( $p>0.05$ ) significantly affects SME performance. Due to these results, improving SO in the link between HC and SME performance may have a significant positive impact on Malaysian SME firms. The theory of social capital (Nahapiet & Ghoshal 1998; Hsu & Sabherwal 2012) claimed that individuals within organizational contexts form networks of social interaction and exchange relationships, each of which contributes a component of their "human-embodied" knowledge. This result is consistent with the social capital theory. Additionally, the Malaysian SMEs' dedication to the well-being of their workers, society, and the environment, as well as their responsible use of important resources in economic, ethical, and charitable aspects, demonstrates that the business is responsive and demonstrates high-quality development. According to the value of  $R^2$ , all independent factors together account for 59.1% of the variance in the performance of the SMEs.

TABLE 8. Path coefficient and hypothesis testing

Hypothesis	Relationship	Beta	T statistics	P values	CI LL	CI UL
Direct Effect						
H <sub>1</sub>	HC -> SME	0.185	2.601	0.009	0.054	0.330
H <sub>2</sub>	CC -> SME	0.065	0.679	0.497	-0.129	0.249
H <sub>3</sub>	SC -> SME	0.366	4.755	0.000	0.215	0.518
H <sub>4</sub>	SO -> SME	0.212	2.604	0.009	0.061	0.379
Moderating Effect						
H <sub>4a</sub>	SO x HC -> SME	0.178	1.989	0.047	0.001	0.353
H <sub>4b</sub>	SO x SC -> SME	-0.060	0.978	0.328	-0.187	0.055
H <sub>4c</sub>	SO x CC -> SME	-0.085	0.730	0.466	-0.315	0.129

Source: Own source (Smart PLS)

### CONCLUSION

In summary, this study found that three out of the four intellectual capital (IC) components, namely human capital (HC), structural capital (SC), and social capital (SO), have a significant impact on SME performance. Specifically, the moderating effect of SO was only significant in the relationship between HC and SME performance. Additionally, the study highlights the crucial role of SO in enhancing IC and the overall performance of SME businesses. It also fills previous research gaps by examining the role of SO resources in the growth of Malaysian SMEs, particularly in terms of firm performance.

Specifically, HC has been shown to significantly influence SME performance, aligning with previous studies that highlight HC as a potential source of competitive advantage for SMEs (Iqbal et al. 2023; Lang et al. 2022; Ramírez et al. 2021). These businesses usually operate with limited resources, so having a group of informed and skilled individuals on board may help them stay innovative, boost productivity, and stay one step ahead of the competition. SMEs, their owners, and managers have an obligation to give hiring, training, and retaining employee's top priority when it comes to HC (AlQershi et al. 2022). They are tasked with developing a culture at their place of business that encourages teamwork, transparent communication, and ongoing education. In addition, SMEs need to place an emphasis on providing competitive compensation and benefits packages, which should include opportunities for professional development and advancement.

The performance of SMEs is significantly impacted by SC as well. Hence, within the sphere of SMEs, SC can serve as a valuable resource that enhances the efficiency and productivity of these businesses (Beltramino et al. 2022). For instance, by putting efficient systems and procedures into place, SMEs may save waste, enhance quality, and boost productivity. This has the potential to result in reduced expenses and increased earnings over time. Innovation and creativity in SMEs may also get help from SC (Beltramino et al. 2020). SMEs may produce innovative goods and services that set them

apart from their competition if they make investments in research and development and safeguard their intellectual property (Beltramino et al. 2022). This has the potential to assist them in luring in new clients and bringing in greater money. In addition to this, the use of SC inside SMEs may help to enhance knowledge management (Lang et al. 2022). SMEs may enhance the learning and development of their employees, which can lead to higher productivity and creativity if they record and share their knowledge as well as best practices.

Additionally, the success of SMEs may be significantly impacted by social capital (Boohene et al. 2020). SMEs may have access to a broad variety of resources by using SO. These resources might include money, experience, and market information. For instance, an SME that has a significant amount of SO may be able to utilize its network in order to get funding, access new markets, and receive vital insights into the trends that are affecting its sector (Meflinda et al. 2018). As a result, giving human capital (HC) more specialized training and development enhances their ability to interact socially and raises their motivation to participate in activities, both of which will boost the performance of the SME organization. This study comes to an agreement that social capital could improve relationships between employees and other members of the organization by establishing trust and a strong network due to the moderating effect it has been shown to have on the indirect relationship between human capital and SME performance. Building a positive reputation and gaining customers' trust are other ways that SO may influence the success of SMEs (Boohene et al. 2020). Customers and business partners are more willing to put their faith in an SME that is well-connected and has a solid reputation within the community in which it operates. This may result in higher sales, chances for expansion, and collaborations with other businesses. In addition, SO may make it easier for small and medium-sized businesses to share their expertise and work together. SMEs may gain knowledge from one another and access fresh ideas and points of view if they collaborate and share information. They may be able to increase their performance over time and their ability to innovate as a result of this.

While customer capital is important for business success, it may not be strongly associated with SME performance for a variety of reasons. First, since SMEs may have a smaller client base than bigger organizations, the influence of CC on their performance may be limited. Consequently, other types of capital, such as SC or HC, could be more important to their success (Neneh 2018). Second, unlike other types of capital, CC may be more difficult to assess and quantify. While customer satisfaction and loyalty are important indicators of business success, they are not always directly related to financial performance, which makes establishing a clear link between CC and SME performance difficult. Third, external events outside the control of SMEs, such as changes in consumer tastes or market trends, may have an impact on CC. This might make it difficult for SMEs to retain and utilize their customer connections in order to promote company success. Finally, although CC may not have an immediate influence on SME financial success, it is critical for long-term company survival. Maintaining excellent client connections may assist SMEs in establishing a loyal customer base and generating repeat business, which can contribute to long-term success and development (Abrokwah-Larbi 2023).

The present study also addressed that SO played a moderating role in the relationship between HC and SME performance. In this context, SO has the potential to enhance the association between HC and SME performance by promoting the exchange of information, cooperation, and innovation (Boohene et al. 2022; Meffinda et al. 2018). When SO is strong, employees are more inclined to share information and experiences with their colleagues, which can contribute to improved performance and productivity. Furthermore, a strong social network can connect SMEs to external knowledge and resources, such as partnerships, industry expertise, and funding opportunities, which can help them grow and develop (Chowdhury et al. 2019; Easmon et al. 2019). SO, may also help SMEs recruit and keep skilled people by fostering a collaborative and innovative work environment. The results of the current study demonstrate that SO is a powerful moderator of the association between HC and SME success. When workers have a high level of SO, HC significantly improves the performance of businesses. Employees did not appear to have much of an impact on firm success, nevertheless, when they lacked substantial social capital. These results supported the hypothesis that social capital can help employees improve SMEs' performance.

Nevertheless, in the present study, SO did not influence the connection between SC, CC, and SME performance similarly. SC is often more internal-facing than CC and may not depend on external networks and connections as strongly (Lang et al. 2022). As a consequence, SO may be less useful in this environment as a moderator and other elements such as process efficiency and intellectual property protection may be more crucial for driving success. While SO can be useful in developing customer relationships and increasing customer loyalty,

the relationship between CC and SME performance may be simpler than the relationship between HC and SME performance (Boohene et al. 2020). As a consequence, SO may not have as much of an influence in this situation as a moderator.

## IMPLICATIONS

This research helps practitioners to understand the elements impacting Malaysian SMEs' success, aligning with the country's vision for 2025. Practitioners appreciate the relevance of drivers for higher performance with data on SMEs' performance variables. This research also aims to assist policymakers, government agencies, and industrial SMEs understand SMEs' struggles to compete and thrive. Understanding how human, social, and structural capital may enhance company performance can help SMEs. SME competitiveness and business results may be improved by investing in personnel, fostering strong social networks, and implementing efficient systems and procedures. Understanding how various types of capital affect SME performance may assist industry stakeholders discover success factors and build strategies to promote SME growth and development. Industry groups and chambers of commerce may provide training and mentorship to assist SMEs create human and social capital and sharing best system and process development practices. This study may help policymakers create SME-friendly programs. Policies that support training and education, research and development, and industry networks and clusters may help SMEs harness their human, social, and structural resources to enhance business results. SMEs drive economic growth and create employment, therefore understanding the link between capital types and SME performance may affect national economic development. Nations can foster innovation and long-term economic success by helping SMEs build their human, social, and structural capital.

The study includes certain limitations that might help guide future research. First, because of the small number of organizations included in the research, the study's findings have limited generalizability. The findings might be further generalized by broadening the sample frame and reaching out to more SMEs. The research may have been limited to a certain geographic location or sector, and the findings may not be relevant in other circumstances. Second, diverse kinds of capital may be difficult to quantify, and the research may have relied on self-reported measurements or proxies for specific types of capital. This may influence the results' accuracy and restrict the capacity to make clear conclusions regarding the link between various types of capital and SME success. Third, while the current study may have found correlations between different types of capital and SME performance, establishing causality may be difficult. Other factors that were not considered in the study could be influencing both the level of capital and the performance of SMEs. Finally, the current study may

have looked at the relationship between different types of capital and SME performance over a short period, and the results may not apply to longer-term business outcomes. The research may not have adequately accounted for contextual variables such as industry developments, economic situations, or regulatory regimes that may affect the association between various types of capital and SME success.

Here are some ideas for future study in the area of capital and how well SMEs do. First of all, ongoing studies can help us understand how different types of capital affect the success of SMEs over time. This can help find trends and patterns in the data and give a better idea of how capital affects business results in the long run. Some studies have looked at how capital affects the performance of SMEs in certain industries. However, cross-industry studies can give a more complete picture of how different types of capital affect business success. Comparing the data across businesses can help figure out how capital affects the success of SMEs in ways that are similar and different. Second, while quantitative studies can give useful information about how capital affects the success of SMEs, qualitative studies can give more in-depth information about how different types of capital affect business results. In the future, researchers can compare the relationship between capital and the success of SMEs in different countries or regions. This can help researchers figure out how cultural and governmental factors affect the relationship between capital and business results. Lastly, using both qualitative and quantitative methods together can help us understand the link between capital and SME success more completely. Researchers can improve the validity and dependability of their findings by combining the results in more than one way.

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