Achieving innovative firm performance through human capital and the effect of social capital

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Abstract. *For the past decade, human capital has been recognized as one of the crucial assets of any firm's overall performance. Previous studies widely advocated a linear link between human capital and innovative firm performance, arguing that there are a variety of factors to examine if the relationship between human capital and innovative firm performance is to be properly understood. The focus of this study was to examine the effect of social capital on the relationship between human capital and innovative firm performance. Specifically, it examined the relationship between human capital and social capital and between human capital and innovative firm performance. It also examined the relationship between social capital and innovative firm performance. A total of 294 questionnaires were obtained from managerial staff in automotive companies in Malaysia and the data was analysed using the Partial Least Squares (PLS) test. The results indicated a direct effect between human capital and innovative performance. It was found that human capital is significantly related to social capital and that there is a significant relationship between social capital and innovative firm performance, indicating the ability of social capital to improve innovative firm performance. Finally, it revealed that innovative firm performance could be achieved by human capital through the role of valuable social capital and that good innovative firm performance leads to more prudent and sustainable organisations. The results provide pertinent implications for academia, policymakers and market players while also contributing to the research fields of strategic management, human capital, social capital and performance.*

Keywords: Human capital, social capital, innovative firm performance, the automotive industry.

Please cite the article as follows: Samad, S., (2020), "Achieving innovative firm performance through human capital and the effect of social capital", *Management & Marketing. Challenges for the Knowledge Society*, Vol. 15, No. 2, pp. 326-344, DOI: 10.2478/mmcks-2020-0019.

Introduction

Massive economic change is always accompanied by the advent of new technologies, new challenges from globalisation, turbulent business environments and new market orientations. All of these factors, in addition to changing political and socio-cultural factors, have the effect of causing most firms to become more proactive and innovative. Innovation in organisations is, in fact, the fundamental instrument for ensuring that firms are able to enter new markets, expand their market share and gain a competitive advantage. To be innovative in terms of their growth strategies, companies must have production processes, better performance, a good reputation and must gain some kind of competitive advantage

(Samad et al., 2015). Also, innovative firms provide strategic orientations which will assist them in the struggle to face environmental challenges (Kuratko et al., 2005). The OECD (2005) defines an innovative firm in terms of its execution of new business practices, its workplace management and its relationship with external stakeholders. Not only should innovative firms be able to improve their own performance through efficiency and reductions in administrative and transaction costs but also by increasing the level of their staff satisfaction and by recruiting and maintaining a high level of qualified and experienced staff in order to gain a crucial competitive advantage. Indeed, innovative firms require high-quality human capital (Samad, 2018). Additionally, personal characteristics and the ability to network socially are becoming vital for managers and entrepreneurs. Previous studies have emphasised how human capital (Crook et al., 2011) and social capital (Chadwick, 2017) are both essential for triggering innovative firm performance. This suggests human capital and social capital are two profound assets for innovative firm performance.

Studies have highlighted how human capital is an important asset that coordinates and creates a sustainable competitive advantage, in addition to providing capabilities within organisations (Chadwick, 2017). An increasingly complex marketplace, driven in part by new technologies, means that managers need to perform multiple tasks in order to achieve higher performance for their companies. Such tasks typically include obtaining information, securing alternative strategies and finding solutions through effective and informed searches (Kaish and Gilad, 1991). Acquiring skilled human capital in terms of a firm's top level of management is, therefore, essential, as highly skilled managers are necessary for the effective implementation of business strategies (Augier and Teece, 2009). Moreover, managers provide a role model of effective behaviour and attitude for all employees (Avolio et al., 2004), as well as being ultimately responsible for the execution of regulations and outcomes (Morgeson et al., 2010) and for the overall success of firms (Waldman et al., 2001).

Nowhere is the question of human capital more important in Malaysia than in the Malaysian manufacturing and automobile industry, which remains one of the most important sectors for Malaysian Gross Net Product (GNP). It provides employment opportunities and a promising overall landscape of development and innovation in Malaysia. However, some automotive companies continue to face problems related to the lack of hands-on knowledge and workplace experience, particularly in the area of production and the need to meet international standards (Wad and Govindaraju, 2011). There is also a clear need for this industry to be more innovative through research and development in order to remain competitive (Sultana and Ibrahim, 2014). Highly skilled human capital is clearly required to boost the industry and ensure sustainability, in order to avoid disruptions in production and to ensure meeting the mission and goals of such companies.

Even though the Malaysian automotive industry has generally recorded remarkable successes, a number of challenges have appeared along the way, which include globalisation, establishing a relatively sound market export and market share opportunities, and competitor offerings. Naturally, any positive measures for reform in this industry require a high calibre of personnel and quality human capital. Novelty and value creation for any economy, which both require high-quality human capital, are the main concerns for any industry and for the promotion of entrepreneurship generally (Davidsson and Wiklund, 2001). Past studies have shown the positive influence of human capital and social capital on innovative firm performance (Liao and Welsch, 2005). However, to date, the effect of human capital on the performance of automobile companies in Malaysia remains relatively

unexplored, both empirically and theoretically. Additionally, little attention has been paid to knowledge, skills, and competency; the three important dimensions of human capital.

Furthermore, only a limited number of studies have been carried out to investigate the mediating effect of social capital on the relationship between human capital and innovative firm performance in the Malaysian automotive industry. These effects certainly call for further investigations, according to Colombo and Grilli (2005) and Widén-Wulff and Ginman (2004). This call is also supported by Davidsson and Honig (2003), Myint et al. (2005), and Liao and Welsch (2005), who stated that inadequate studies have generally been conducted on the impacts of human capital and social capital on innovative firm performance. It has also been remarked that the influence of human capital and social aspect on innovative firm performance remain questionable (Glaeser et al., 2002). However, given the widespread perceptions of the importance of human capital and social capital on innovative firm performance, it is undeniable that this topic needs to be studied in a variety of contexts and settings. Hence this study unravels the questions; whether human capital is related to innovative firm performance and the extent its relationship is mediated by social capital.

Following this introduction, a literature review lays out and discusses the empirical research on the main concepts of this study, namely human capital, social capital, and innovative firm performance. The Questions posited in this study along with the hypotheses developed in the study are then related to the conceptual model of this study to explain the relationship between human capital and innovative firm performance and the extent to which social capital mediates the relationship between human capital and innovative firm performance. Then follows the methodology, discussion, conclusion, and recommendations for further research.

Literature review

Human capital

Human capital has been a concern of many scholars and practitioners for a long time. Managers who possess greater human capital resources are better equipped to be able to discover new opportunities and create new business ventures, as they have the ability to face challenges and risks (Shane and Venkataraman, 2000). Firms which fail to prioritise human capital capabilities typically do not internationalise and gain any competitive advantage (Hitt et al., 2006). This is because human capital is the most important determinant for individual productivity (Minh et al., 2017) and firm competitiveness (Lew and Sinkovics, 2013). Ting and Lean (2009) suggested that the rapidly developing current marketplace and intensifying global competition demand knowledgeable workers in order to ensure a firm's sustainability. Drucker (1999) also argued that only knowledgeable firms are able to be market leaders, suggesting that organisations and firms that prioritise intellectual capital; human capital and social capital are capable of gaining a competitive advantage and of improving their own performance.

A myriad of definitions for human capital has been suggested by scholars. Generally that human capital is an accumulation of abilities, knowledge and skill sets of an individual, all of which are important to perform any tasks in his/her organisation (Unger et al., 2011). Human capital has also been described as the skills, experiences, abilities and tacit knowledge of an individual (Edvinsson and Malone, 1997). Hudson (1993) defined human capital as an integration of an inherited value, value and qualification and generic outlook on human work and life, while Wright et al. (1995) argued that education, experience and knowledge are the

main characteristics of human capital. Knowledge and expertise of employees are also attributed as aspects of human capital which are pertinent to firm performance (Dzinkowski, 2000). Hsu and Fang (2009) concluded that knowledge, skills, attitude and competence are all important dimensions of human capital.

Some characteristics of human capital are considered to be foundational and need to be given priority if firms are to achieve their innovative potential. Such characteristics have been described as non-tradable, measurable quantitatively and qualitatively, specific rather than general, difficult to be managed especially by non-experienced personnel, and observably developing in an individual personality (Laroche et al., 1999). Knowledge, skills, and competency are the essential characteristics of human capital (Shih et al. 2010), while for Becker and Woessmann (2009) unique knowledge is the essential ingredient, as it is crucial for gaining a competitive advantage. More broadly still, any skills that are shaped by the ability of an individual are required to perform tasks and increase innovation capability (Ge et al., 2016). It could be said that the knowledge, skills, and abilities that are needed to perform critical functions in a workplace are actually characteristics of competency. Competency is, of course, at least an important aspect of human capital as it forms the basis for skills standards; the basic level of knowledge, skills, and abilities required to perform tasks in a workplace (Shih et al., 2010).

Considering the above, this study defines human capital in terms of knowledge, skills, and competencies, all of which are expected to be possessed by managerial staff in Malaysian automotive companies. Resource-based view (RBV) postulated that human assets; human capital and social capital are important internal resources to gain competitive advantage (Barney, 1991). Human assets with criteria of rareness, valuable, and inimitable will help firms execute strategies to improve efficiency, effectiveness and gain competitive advantage. Underpinned by resource-based view (RBV) by Barney (1991) and Barney et al. (2011), this study assumes that human capital (knowledge, skills, and abilities) and social capital (communication and teamwork) will give a competitive advantage to companies and enable innovate firm performance to take place.

Human capital and innovative firm performance

Not least because performance naturally indicates the extent to which a firm's objectives are achieved (Venkatraman and Ramanujam, 1986), attaining innovative firm performance is a priority for many firms. Firm performance also signifies any firm's ability to formulate its strategy, assess strategy execution, as well as to diversify and expand decisions (Marr et al., 2003). Firm performance is, indeed, the key indicator of the value of any organisation in terms of its endeavours to gain a competitive advantage across industries through innovation (Samad et al., 2015). Innovative performance has been defined variously in terms of new products, new services and new systems of management. Khalili et al. (2013) see innovative performance in the presence of high-quality new products and projects that will determine the ability of the resulting products and services to adapt to the existing organisational structure, in line with competitive environmental needs. Through decades of applying and refining the framework of firm performance, a number of factors have been found to result in innovative firm performance, including the motivation to perform well, the impact of performance and the influence of firm performance.

The biggest challenge for any firm is to survive the turbulence of the business environment. While most companies may prioritise short-term operation costs, there is, of

course, no guarantee that their plans will endure. This makes differentiation and innovation in new products, services and processes profoundly needed. Hite (2005) suggested that organisations are highly dependent on the personal characteristics of their entrepreneurs and managers, implying that the human capital acquired by managers is one of the important influences on innovative firm performance. Studies have revealed that large amounts of investment in human capital by firms have been made due to the potential of gaining valuable assets for advancing firm productivity. More importantly, according to Chadwick (2017), the accumulation of human capital capabilities are not easily obtained within a short period of time to help firms gain competitive advantage compared to other tangible factors (Maritan and Peteraf, 2011). Middle and top-level managers with higher levels of knowledge, skills and competencies are more self-confident and better risk-takers. Such qualities encourage them to be innovative, creative, proactive and capable of initiating new businesses (Shane and Venkataraman, 2000). Accordingly, the ability of individuals to secure the required resources; tangible and intangible for their firms is important to ensure that their firms gain competitive advantage.

The importance of human capital to amass and acquire value and wealth is, therefore, a priority, since businesses ultimately help develop societies and business communities (Hansemark, 1998). This is consistent with the human capital theory, which suggests that greater cognitive skills are attained by having the necessary knowledge to drive productivity and efficiency to create business activities (Becker, 1964; Mincer, 1974). Previous studies revealed that individuals will be more productive with an abundance of experience (Cho and Arthurs, 2018). Stiles and Kulvisaechana (2003) highlighted how studies have indicated the importance of skills and competencies for firm performance. A study by Yang and An (2002) found that education and experience have contributed to returns on investment from human capital. Perhaps unsurprisingly, Watson et al. (2003) found that staff with better qualifications and experience tend to be more successful than those with lower qualifications and experience. Subramony et al. (2018) also discovered a relationship between human capital and firm productivity, while Estrin et al. (2016) found that skills and abilities are related to successful firm performance through innovation shown by entrepreneurs. Furthermore, research carried out on firms in China indicated that human capital influences performance in terms of higher production output, higher overall productivity, and faster growth (Fleisher et al., 2008). Study by Samad and Alsolami (2018) also posit that infrastructure is a less crucial factor than human capital in terms of achieving innovative firm performance. Also, the contribution of human capital towards innovative firm performance is more prevalent in developing countries rather than in developed countries. Based on the preceding arguments, it is, therefore, hypothesised that:

H1: Human capital is significantly related to innovative firm performance

Human capital and social capital

Human capital is one of the most important aspects of intellectual capital (Moon and Kym, 2006). In most business models, human capital is prioritised due to its substantial role as a strategic asset in the production of high-quality work. This is not to say that the role of other aspects of intellectual capital such as social capital on innovative firm performance and productivity in different industries is unimportant. Therefore, this paper attempts to relate human capital to social capital in the Malaysian automotive industry. This study is based on the basic assumption of RBV by Barney et al. (2011) who suggested that social networking

forms the basis of social capital that helps firms to gain a competitive advantage and achieve a high level of performance.

Namvar et al. (2010) defined social capital as the main channel for transferring knowledge to entities of firms such as workforces, levels in organisations and stakeholders both within and outside firms. Social capital is measured based on community elements in which knowledge and experience are nurtured (Boudreau, 2002). Moon and Kym (2006) proposed three dimensions of social capital in firms: relationships with customers, partners, and communities. However, Boudreau (2002) suggested that in relationships between staff the movement of knowledge about the firm should be considered first. Studies have highlighted that implicit or tacit knowledge is more influential in new business ventures and that dependence on human capital alone is inadequate for a firm to be successful. Davidsson and Honig (2003) suggested that human capital is able to uncover new business ventures and excellent business results if it is properly applied through a systematic and proper social system. This suggests that social relationships are important in facilitating the running of a business. The relationship-based premise of social capital involves family, colleagues, and stakeholders providing a myriad of important information for positive behaviours and actions (Adler and Kwon, 2002). In social capital, trust and norms, which are important in entrepreneurial endeavours, are built for knowledge sharing (Anklam, 2002). The level of trust relationship among members both within and outside of firms sparks the discovery of new opportunities in business. Managerial decisions from inputs secured through social relationships have a potentially great impact on the business performance of firms (Bennett and Robson, 1999). Widén-Wulff and Ginman (2004) further argued that knowledge sharing involves cognitive and communication skills and is an essential strategic behaviour necessary for the success of firms. Shane and Venkataraman (2000) also added that the emotional bonds which emerge from social activities in groups and reciprocal relationships lead to efficiency. Social capital could also be drawn upon via affectionate relationships through a variety of relationships that can close the gap among agents and stakeholders. Previous empirical studies have indicated a strong relationship between human capital and social capital (Estrin et al., 2016). This study, therefore, hypothesises that:

H2: Human capital is significantly related to and social capital

Social capital and innovative firm performance

Another important aspect of intellectual capital is social capital, which has unique entrepreneurship characteristics including: (i) structural, relational and cognitive elements (Nahapiet and Ghoshal, 1998), (ii) context, stock of relationships interpersonal trust and norms (Anklam, 2002), (iii) trust built through communication (Groggins and Ryan, 2013), and (iv) teamwork (Dotun and Kehoe, 2001). This suggests that social capital is multidimensional, which according to Widén-Wulff and Ginman (2004) is a property which affects cognitive ability and communication aptitude. New knowledge that helps innovative firm performance can be conceptualised, for example, through reciprocal process and relationship among members within firms. Also, Roy and Sarkar (2016) suggested that novel ideas could be created through the combination of knowledge connections over time. The unique nature of social capital involves interrelationships that unite individuals and teams with a variety of social interconnections, interrelationships which are important for innovative firm performance (Putnam, 2000; Reagans and Zuckerman, 2001). Although

varieties of work culture around the world must be taken into account, many empirical studies have indicated that social capital, frequent social interactions and social games will ensure successful entrepreneurship and firm performance. Several studies certainly affirmed a positive link between social capital and innovative firm performance (Ahn and Kim, 2017). (Groggins and Ryan, 2013) also confirmed that communication among groups would affect the ability of individuals to work hard for greater firm performance. Collaboration through teamwork serves to improve individual skills and experience in order to achieve the goals of a firm (Betty and Kleiner, 1997). This study explores how social capital facilitates or enhances innovative firm performance and formulates the following hypothesis:

H3: Social capital is significantly related to innovative firm performance

The mediating effect of social capital

This study assumes an indirect relationship between human capital and innovative firm performance by positing that human capital by itself may not support innovative firm performance. Innovative firm performance is not easily be achieved even with adequate investment in training, education and by hiring great minds or expertise. Indeed, innovative firm performance can only be realised when human capital exerts a significant impact on social capital. This study, therefore, proposes social capital as a mediating factor on the relationship between human capital and innovative firm performance. This argument is supported by the premise of the resource exchange view postulated by Rousseau and Ling (2007), who explained that efficiency might be achieved through the coordinated use of resources from positive relationships among the members of a firm. Subramony et al. (2018) also suggested the positive impacts of social capital on a firm's performance in terms of sales growth, productivity and innovation. Maurer et al. (2011) also found a positive relationship between social capital and growth as well as between social capital and organisational innovation. This indicates that social capital triggers knowledge transfer in firms. While a number of previous empirical studies indicated the existence of a relationship between human capital and social capital (Estrin et al., 2016; Noorderhaven and Harzing, 2009; Rowley and Redding, 2012; Suseno and Pinnington, 2018; Tseng et al., 2014), other studies argued for a relationship between social capital and innovative firm performance (Chen and Tseng, 2012; Cuevas-Rodríguez et al., 2014; Groggins and Ryan, 2013; Hsu et al., 2015; Yang et al., 2014). It is, therefore, expected that social capital can serve as mediator in the relationship between human capital and innovative firm performance. This study hypothesises that:

H4: The relationship between human capital and innovative firm performance is mediated by social capital.

Research framework

Figure 1 presents the research model of the study derived from the literature review. The model suggests the relationship between human capital and the innovative firm performance in the automobile industry and social capital as the mediating variable. The research attempted to examine the extent social capital enhances the relationship between human capital and innovative firm performance. The proposed model consists of three variables; human capital is the independent variable, innovative variable is the dependent variable, and social capital is the mediating variable.

Figure 1: The proposed research model

Methodology

Sample and procedure

A quantitative methodology was employed in this study. To collect the data and for testing the hypotheses of study a self-administered questionnaire was carried out. The unit of analysis was the managerial staff representing the automotive industry in Malaysia. As suggested by Randall and Gibson (1990), this study used a subject to item ratio of 10:1, with a minimum of 230 respondents. A random sample of 400 managerial staff were obtained from the directory of automotive companies in Malaysia, from which 294 useable questionnaires were received and analysed. The response rate was 73.5%, well above the average of 35.7% commonly applied in quantitative organisational research (Baruch and Holtom, 2008). A set of questionnaires was used to obtain data from the respondents. The questionnaire used in this study was based on the adapted instrument developed by previous researchers which was divided into four sections. The first section consisted of respondent profiles. The second section measured human capital (HCK) based on three dimensions; knowledge (8 items), skills (9 items) and competency (3 items), adapted from Blanks (2005); Brungardt (2009); Lee et al.(2005). The third section concerned social capital (SCC) and was based on two dimensions; communication (4 items) and teamwork (5 items) from the instrument developed by Knapp and Mujtaba (2010). Innovative firm performance (IFP), was measured based on two dimensions; six (6) items using the instrument developed by Bulut and Yilmaz (2008) to measure innovative performance, and three (3) items using the instrument adapted from Narver and Slater (1990) to measure market performance. The measurement of the items was based on five-point Likert scale from 1 (disagree) to 5 (strongly agree).

Respondent profiles

The majority of the respondents were male (70%), while 30% were female. Top managerial positions represented the highest number (60%), followed by middle management staff (40%). About 45% of the respondents were between 35 to 45 years old, 40% between > 45 to 55 years old and 10% between 25 to 35 years old. Only 5% were > 55 years old. In terms of qualifications, 70% of the respondents possessed a Bachelor's degree, 24% a Master's degree, and 6% were PhD holders. In terms of experience, 50% of respondents had between 10 to 20 years, 25% between 5 to 10 years, 15% had > 20 years of experience and 10% of the respondents had between 1 to 5 years of working experience.

Data analysis and results

The study employed the partial least squares (PLS-SEM) technique to evaluate the research model. Hence this study employed the software SmartPLS 3.0 (Hair et al.;2014; Ringle et al., 2015); Two analytical procedures were performed in this study both for the assessment of measurement and for the structural model. The assessment of measurement model was carried out to measure reliability and validity, while the structural model was assessed to test the hypotheses of the study.

Measurement model assessment

Convergent validity (CV) and discriminant validity (DV) tests were carried out to assess the measurement model. A discriminant validity (DV) test measures the extent to which indicators of a specific construct converge or share a high proportion of variance in common (Fornell and Larcker, 1981). The assessment for DV was based on the square root of AVE. A CV was performed to ensure that the degree of two measures of constructs were theoretically related. Accordingly, the factor loadings, the AVE) and the CR were evaluated. Cronbach alpha was also performed to ensure the construct-level reliability. The AVE, CR, and Cronbach alpha threshold value according to Hair et al. (2014) should be > 0.50 , > 0.70 and > 0.70 respectively. Reliability and validity tests were performed in the first-order constructs of the model. The test of the model criterion in the first-order construct is depicted in Table 1. The results in Table 1 shows that all of the items in factors loading are exceeded the threshold of 0.5 (Hair et al., 2014). Similarly, for this study, the AVE, CR and Cronbach alpha values were above the recommended threshold value as suggested by Hair et al. (2014).

In the next step, the dimensions of each independent variable construct were then converted into the indicators variables in the second-order construct. The second-order process was to simplify the complex model as tabulated in Table 2. In the second-order construct, the convergent validity was conducted to assess the factor loading, CR and AVE, as well as Cronbach alpha tests. The purpose was to assess the measurement model of the study. The first-order model assessment was based on a reflective measurement model, while in the second-order the assessment was based on a formative measurement model. The convergent validity revealed that all of the factor loading items in the three constructs were above the threshold of 0.50 (Hair et al., 2014). The composite reliability (CR) of all the three constructs were also more than the recommended value of 0.70 (Hair et al., 2014). The average variance extracted (AVE) which ranged from 0.769 to 0.867 was above the rule of thumb value of 0.50; indicating the convergent validity of the second-order of the formative measurement model is accepted. In testing for discriminant validity (DV), this study evaluated the extent to which the items were differentiated among the constructs or to measure the distinction between each concept using the criterion suggested by Fornell and Larcker (1981). In this analysis, the AVE value was compared with the correlation of latent variables to ensure that the square root of AVE for each construct should be more than correlation values with any other constructs. The study indicated that the measures were discriminant since the square root values of the AVE were greater than the values in the row and columns on the particular constructs (See Table 3). In the next step of the study was to ensure the hypotheses that were generated in the research were tested.

Table 1. First-Order Measurement Model

First-order construct	Item	Loadings	AVE	CR	Cronbach's Alpha
Human Capital (HCK):					
Knowledge	HK1	0.902	0.954	0.874	0.967
	HK2	0.913			
	HK3	0.881			
	HK4	0.891			
	HK5	0.912			
	HK6	0.853			
	HK7	0.884			
	HK8	0.895			
Skills	HS1	0.915	0.909	0.891	0.970
	HS2	0.892			
	HS3	0.877			
	HS4	0.838			
	HS5	0.845			
	HS6	0.882			
	HS7	0.902			
	HS8	0.898			
	HS9	0.846			
Competency	HC1	0.861	0.934	0.881	0.921
	HC2	0.908			
	HC3	0.884			
Social capital (SCC):					
Communication (SC)	SC1	0.809	0.853	0.918	0.907
	SC2	0.953			
	SC3	0.873			
	SC4	0.855			
Teamwork (ST)	ST1	0.863	0.888	0.899	0.933
	ST2	0.911			
	ST3	0.902			
	ST4	0.857			
	ST5	0.834			
Innovative Firm Performance (IFP)					
Innovative Performance	IP1	0.924	0.829	0.926	0.972
	IP2	0.933			
	IP3	0.914			
	IP4	0.893			
	IP5	0.933			
	IP6	0.912			
Market Performance	MP1	0.814	0.775	0.931	0.912
	MP2	0.878			
	MP3	0.924			

*Note: HK=knowledge; HS= skills; HC= competency; SC=communication; ST= teamwork;
IP=innovative performance; MP=market performance*

Source: Author's own source

Table 2. Second-Order Result of Measurement Model

Second -order construct	Item	Loadings	AVE	CR	Cronbach's Alpha
Human capital (HCK)	HK	0.872	0.847	0.942	0.913
	HS	0.939			
	HC	0.866			
Social capital (SCC)	SC	0.912	0.867	0.928	0.879
	ST	0.907			
Innovative firm performance (IFP)	IP	0.924	0.769	0.916	0.842
	MP				

Note: HCK= human capital; SCC= social capital; IFP= innovative firm performance

Source: Author's own source

Table 3. Discriminant Validity Result

Construct	HC	SC	IFP
HCK	0.920		
SCC	0.506	0.931	
IFP	0.602	0.625	0.877

Note: The values in bold are square root of the AVE. The off-diagonals are correlations

Source: Author's own source

Structural model

To test the hypothesis in this study a structural model was formulated to describe the link between variables of exogenous and endogenous. Using PLS, this study performed bootstrapping on a sample size of 5000 to construct the structural model (Preacher and Hayes, 2008). The path coefficient and coefficient of determination (R^2 value) were used as the basis for examination. The path coefficient indicates the strength of the relationship of the paths. The predictive accuracy of the model and the variance explained on endogenous variable were measured by R^2 . As shown in Table 4, the results indicate that human capital ($\beta = 0.261$, $p < 0.05$) was positively related to innovative firm performance. Consequently, the results reveal that human capital was related significantly with social capital ($\beta = 0.420$, $p < 0.05$), and social capital was significantly related to innovative firm performance ($\beta = 0.304$, $p < 0.05$). The R^2 value contributed by human capital and social capital for innovative firm performance in this study was 0.703. This indicates that 70.3% of variations in innovative firm performance could be explained by the exogenous variables of human capital and social capital, respectively. The results suggest that human capital and social capital significantly affect innovative firm performance. The R^2 values of 0.703 which is above the threshold value of 0.26, indicate a substantial model (Cohen, 1988). Cohen (1988)

suggested the following R^2 values: 0.26 (strong), 0.13 (moderate), and 0.02 (low). It can be concluded, then, that hypotheses H1, H2 and H3 are supported.

This study also used the f^2 effect size (substantive effect) to examine the effect of predictors on endogenous latent variables. This analysis was used to ascertain the importance of the relationship between exogenous latent and endogenous latent variables. The effect size is based on the rule of thumb of the effect value of 0.02 as weak, 0.15 (moderate), and 0.35 (strong). Hence, the value of $f^2 < 0.02$ indicates that the variable is not important even though the relationship is significant (Sullivan and Feinn, 2012). The analysis for this study revealed that the f^2 effect values for human capital and social capital on innovative firm performance were strong (0.397), while the f^2 effect value for human capital on social capital was moderate (0.183). This result, therefore, shows the importance of the effect of human capital and social capital on innovative firm performance and the importance of the effect of human capital on social capital. Thus the hypotheses of study are supported.

Mediation effect

In order to answer hypothesis H4, mediation analysis was conducted. For the mediation analysis, bootstrapping with a sample size of 5000, as suggested by Preacher and Hayes (2008), was performed on the indirect effect of human capital on innovative firm performance. The extent to which human capital and innovative firm performance relationship is mediated by social capital was then analysed. The mediation effect in this study proposed that the significant relationship effect between human capital and firm innovative performance could be achieved through the mediating effect of social capital. The bootstrapping analysis revealed a significant mediation effect of social capital on the relationship between human capital and innovative firm performance, with a value of $\beta=0.289$, indicating that there is a mediation effect, supporting the hypothesis H4 of this study that social capital mediates a human capital–innovative firm performance relationship (See Table 4).

Table 4. Structural Model Result

Hypotheses	Casual path	Std. Beta	SE	t-value	Decision
H1	HCK → IFP	0.261	0.060	3.734**	Supported
H2	HCK → SCC	0.420	0.061	6.777**	Supported
H3	SCC → IFP	0.304	0.071	4.218**	Supported
H4:	HCK → SCC → IFP	0.289	0.082	3.464**	Supported

*** $p < 0.01$*

Source: Author's own source

Discussion, conclusion and recommendation

From the literature, several factors were identified as influencing the survival and performance of firms but the pivotal role of human capital is a clear feature of past studies. This paper focused on the mediation effect of social capital on human capital and on innovative firm performance. Hence, it attempted to examine the extent social capital enhances the relationship between human capital and innovative firm performance. The

structural model provides support for the view that human capital, social capital, and innovative firm performance are positively and significantly related. Indeed, the results indicate the substantial contribution and impact of exogenous variables on innovative firm performance. In addition, this research confirmed the importance of social capital for facilitating the relationship between human capital and innovative firm performance. These findings suggest that, despite the existence of a significant direct relationship between social capital and innovative firm performance, social capital serves as an important mediator in the relationship between human capital and innovative firm performance. These results are supported by various empirical studies, which found that the higher the level of human capital the better the innovative firm performance will be (Samad, 2012, Samad, 2013; Yusoff et al., 2019). In addition, Resource Based View (RBV) explains that firm resources such as human capital would be able to foster and propel the soft skills among employees, e.g. social capital and firm performance (Barney, 2001; Sirmon et al., 2007). This is consistent with the idea that a focus on human capital will help employees acquire soft skills that are pertinent and vital for firm performance (Felićio et al., 2014). More generally, the results of this study also confirm that human capital theory is a vital consideration for innovative businesses, as it prioritises the human asset as the repository of knowledge (Bucholtz et al., 2003).

Derived from the proposed structural model, it can be concluded that human capital and social capital are two pivotal factors that need to be attained in order for the Malaysian automotive industry to achieve innovative firm performance. The role of social capital as a mediating factor between exogenous variables and endogenous variables provides significant empirical evidence for the Malaysian automotive industry. The key finding of this study was that innovative firm performance could be achieved by prioritising the asset of human capital via the role of social capital. Additionally, to improve social capital, organisations should pay attention to and optimise the use of human capital. The results suggest that innovative firm performance in the Malaysian automotive industry critically depends on both human capital and social capital. Social capital has been a popular concept due to its wide application for unravelling management issues, including organisational performance (Kim et al., 2013). This is in tandem with social capital theory which emphasises the characteristics of social structure and relations among actors (Coleman, 1988). It is also in tandem with the progressive relationship between professionals and clients and stakeholders. Undeniably, the implications from the findings in this study will help managers in their managerial decision making and add value to the existing body of knowledge. Nevertheless, this study is not without limitations. Since this study is confined within a specific industry and setting, future studies may explore different environments. Further, interesting results could be obtained should the research be based on a longitudinal approach instead of the cross-sectional approach of the present study. This study was also limited to a quantitative approach, which means that a qualitative approach or mixed mode approach might be conducted.

Acknowledgement:

This research was funded by the Deanship of Scientific Research at Princess Nourah bint Abdulrahman University through the Fast-track Research Funding Program.

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