

THE MEDIATING EFFECT OF HUMAN CAPITAL ON THE RELATIONSHIP BETWEEN STRATEGIC INNOVATION AND THE PERFORMANCE OF MANUFACTURING SMES IN YEMEN

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Abstract. *The purpose of this paper is to fill gaps in the human capital literature, first, by providing insights into the relationship between human capital and strategic innovation and the performance of Small and Medium Enterprises (SMEs), and second, by exploring the role of human capital as a mediating variable. Although SMEs perform a vital role in the economic development of countries worldwide, developing countries tend to lag behind developed countries in this sector; hence, there is a need to investigate the peculiar nature of SMEs and their performance in the context of developing countries. Additionally, understanding an organization's human capital requires the articulation of a system of variables that helps to uncover and manage the visible wealth. The contribution of SMEs can be measured through performance. This study is a conceptual discussion of manufacturing SME performance in Yemen and the effect of human capital and strategic innovation. The performance is considered to be very low, and the country is ranked by the Global Innovation Index as one of the lowest in terms of innovation. This paper describes the development of a framework which is a clear manifestation of the knowledge gap addressed by this study.*

Keywords: *strategic innovation (SI), human capital (HC), SME performance.*

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Introduction

Small and Medium Enterprises (SMEs) are no longer only a source of raw materials and components, but increasingly serve as sources of new ideas (Hilmola, Lorentz, Hilletoft & Malmsten, 2015). For this reason, the SME sector performs an important function in the Yemeni economy (OECD, 2017; World Bank, 2015; Yemeni Ministry of Industry & Trade, 2017). SMEs are key employers and create opportunities for the millions of people coming into the labor market each year (OCED, 2017; Aga, Francis & Rodriguez-Meza, 2015).

Given the extent of their economic activities, SMEs are major participants in economic development, constituting the majority of enterprises in many countries (Pathak & Ahmad, 2016; Giaoutzi, Nijkamp & Storey, 2016; Etuk, Etuk & Michael, 2014). It is frequently stated that governments should support SMEs for their greater economic advantages compared to large enterprises in the area of employment creation (Graafland & Smid, 2017; Doh & Kim, 2014; Banno, Piscitello & Amorim Varum, 2014).

In addition, Yemen is an Arab country in the Middle East, with one of the highest populations in the region, estimated at 27.5 million by the World Bank (2016). This makes it an important country in the region. Given its large population, there is a need to focus on SMEs since these enterprises overall have been widely acknowledged as significant contributors to job creation and GDP growth (World Bank, 2015; Yemeni Ministry of Industry & Trade, 2017). However, the focus of this study is on the performance of manufacturing SMEs in Yemen. Although the importance of SMEs to economic development has been emphasized, it is not enough just to establish SMEs; it is their performance that actually contributes to economic development.

Yemen is still considered as a developing country and among the poorest in the world, with a GDP per capita of USD 2,820.8 (World Bank, 2016). The country largely relies on international aid, assistance from its oil-rich neighbors, and the remittances sent by expatriates. The manufacturing facilities for major sectors have been shown to be on the decline. Based on reported statistics, the problems faced by the Yemeni economy include lack of interest in industrial facilities, underdeveloped industries that cannot compete with neighboring countries, and the low level of the national economy; the annual GDP of manufacturing industries is 4%, due to the low performance of Yemeni products as well as the high inflation rate of 11% (World Bank, 2016).

Moreover, the value of imports accounts for a significant proportion of Yemen's annual budget: 41% (World Bank, 2016). The statistics also show that the total budget of the Yemeni economy hinges largely on oil, accounting for up to 93% of the GDP. Industrial exports are estimated to be at a low 0.07 %, indicating the extent of the problem. The national unemployment rate is 54%, and 70% in rural areas, because of the inefficient industrial sector (Al Jazeera, 2012).

Moreover, Yemeni SMEs face numerous challenges, such as poor infrastructure, problems of sourcing raw materials, inadequate technical support, problems in secur-

ing and adopting new technologies, an inadequate supply of skilled workers, and lack of opportunities for financing (Yemeni Ministry of Industry and Trade, 2016; World Bank, 2015; Sky News, 2012). Other problems include numerous licensing procedures by bureaucratic and non-transparent government authorities, and excessive taxation. The lack of entrepreneurial skills is a particular problem for new SMEs. Some may have good business plans, but not have the competency to use such plans to build a profitable enterprise (Yemeni Ministry of Technical Education and Vocational Training, 2016). Some kind of monitoring of expertise and skills is necessary; face-to-face monitoring is expensive but ensures good outcomes (Fararah, Al-Swidi & Yusoff, 2014; Al Jazeera, 2012; Yemen Today, 2014).

In another scenario, strategic innovation is regarded as the most important factor that has a relative impact on a firm's sustainable competitive advantage (Lee & Olson, 2016). It is a situation whereby companies succeed in attacking a big market leader, which ultimately leads to an increase in profits (Yang, Jayashree & Marthandan, 2012). In fact, Yemen has a clear problem in innovation activities, and reports recommend investigating why Yemeni firms are not implementing the latest innovations into their operations to enhance their performance; in 2015, Yemen was ranked 137 globally for innovation capability, in 2016, 128 and in 2017, 127 (Global Innovation Index, 2015, 2016, 2017).

In addition, human capital is also recognized as one of the critical sources for an organization to gain competitive advantage (Delery & Roumpi, 2017; Alkhateeb, Yao, Kie & Shaban, 2016; Prajogo & Oke, 2016). Over the past ten years, there has been increasing recognition of the importance that human capital plays in managing organizations and in measuring their performance in various ways (Taie, 2014). Management is faced with the challenges of managing intangible resources in the form of human capital, along with physical resources. Human capital assets refer to the knowledge, information, intellectual property and experience that can be combined for wealth creation (Chahal & Bakshi, 2015).

Human capital encapsulates the competencies of employees with the inclusion of their knowledge, skills, talents, experience, qualifications and education (Edvinsson & Malone, 1997; Roos & Roos, 1997; Chen, Shih & Yang, 2009; Hsu & Sabherwal, 2012). It is stored within the minds of employees (Bontis, 1998), relating to their tacit and explicit knowledge (Martin-de-Castro, Emilio Navas-Lopez, Lopez-Saez & Alama-Salazar, 2006). This type of knowledge may be obtained through renting/borrowing as it is created from genetic inheritance and learning factors (Bontis, 1998; Chen et al., 2009). As a consequence, the major issue lies in the way firms can obtain human capital in order to extend their goals in competitive and risky environments. In general, the literature indicates that SMEs in Yemen have yet to be investigated, presenting a theoretical gap that needs to be addressed. The literature treats human capital as an independent variable linked to performance or "moderator & mediator" variable with other independent variables and dependent variables "not with strategic innovation

and SME performance". The framework of this study situates it as a mediator between other independent variables and performance, promising to contribute to knowledge in this field of study.

1. Literature Review

1.1. Link between Strategic Innovation and Human Capital

Strategic innovation is the disclosure of a generally extraordinary strategy (or a way for contending) in a current industry (Lee & Olson, 2016; Sriboonlue, Ussahawanitchakit & Raksong, 2016; Murimbika & Urban, 2014). Several studies have stressed the ties between innovation and human capital (Dakhli & De Clercq, 2004; Marvel & Lumpkin, 2007; Kato, Okamuro & Honjo, 2015; Cinnirella & Streb, 2017). From another view, human capital is the heart of innovation (Dzisah & Etzkowitz, 2008). It relates to employees' innovation, knowledge, skill, competence and capability; employees generate human capital through their competence, attitude and intellectual agility. Competence includes skills and education; attitude covers the behavioural dimensions of the employee's work, while intellectual agility is based on innovativeness and solutions to business problems (Debrah, Oseghale & Adams, 2018; Danquah & Amankwah-Amoah, 2017; Bornay-Barrachina Lopez-Cabrales & Valle-Cabrera, 2017).

According to Subramaniam and Youndt (2005), human capital by itself is negatively associated with innovative capability, although other studies have reported that human capital has a positive effect on innovation (De Winne & Sels, 2010; Marvel & Lumpkin, 2007). Many scholars believe that one way for organizations to constantly innovative, win in competitive markets and sustain their growth is through investment in human capital (Bartelsman, Dobbelaere & Peters, 2014; D'Este, Rentocchini & Vega-Jurado, 2014; Sun, Li & Ghosal, 2017).

The current marketplaces, technological advances in manufacturing and production methods are overtaking market demands, making the market very dynamic and unstable for businesses (Veerendrakumar & Narasalagi, 2015; Glisson, 2015; Nootboom, 2000; Tidd, Bessant & Pavitt, 2005). Within the context of SMEs, Farace & Mazzotta (2015) demonstrated that efforts devoted to innovation should benefit from human capital implementation. Many scholars contend that human capital through continuous training can promote incremental innovations (Sabadie, 2014).

Moreover, Zerenler, Hasiloglu & Sezgin (2008) explored the relationship between human capital and innovation performance, and found human capital has a significant role in improving the features of existing services and products. Further, innovation involves all functional and operational activities that assist in reducing production costs, enhance quality and delivery methods, gain market share and attain superior performance (Gunday, Ulusoy, Kilic & Alpan, 2011; O'Sullivan & Dooley, 2008).

The World Bank (2015) stated that the quality of the labour force in Yemen is poor due to the poor quality of training in the country's education system. This implies that

the labour force does not have adequate skills. This could affect how well it can utilize strategic innovation in influencing SME performance. Based on this and the report of the World Bank (2015), which states that human capital is low in Yemen, and considering the above, the following hypothesis is suggested:

H1: Strategic innovation has a positive relationship with human capital.

1.2. Strategic Innovation and Performance

A review of the literature on strategic innovation covers different academic disciplines and economic sectors, and various types of innovation. According to Yang (2014), when strategic types of innovation were identified in the 1990s, organizations increasingly associated innovation with performance and viewed it as a key factor in maintaining long-term competitive advantage. Although several studies have shown a significant and direct link between strategic innovation and performance (Lilly & Juma 2014; Kalay & Lynn 2015), the relevance of strategic innovation in generating real economic gains and/or improvements in performance has come into question (Derrick & Sorren, 2007). However, despite stories about innovation failures (Heunks, 1998; McGee, Dowling, & Megginson, 1995), most literature tends to support the notion that innovation significantly contributes to a firm's performance (Atalay, Anafarta & Sarvan, 2013; Camison & Villar-Lopez, 2014; Gunday, Ulusoy, Kilic & Alpkan, 2011).

Furthermore, the relationship between innovation and performance has been examined in several studies in the business innovation field, and considerable positive evidence has been gathered. For example, the strength of the innovation and performance link has been proven in a variety of contexts, including industrial and manufacturing firms (Rosenbusch, Brinckmann & Bausch, 2011; Bayraktar, Hancerliogullari, Cetinguc & Calisir, 2017; Hervas-Oliver, Sempere-Ripoll & Boronat-Moll, 2014; Soto-Acosta, Popa & Palacios-Marques, 2016; Yamin, Gunasekaran & Mavondo, 1999; Kastalli & Van Looy, 2013; Oke, 2013; Yamin, Mavondo, Gunasekaran & Sarros, 1997; Ramanathan, Black, Nath & Muyltermans, 2010; Atalay et al., 2013).

Strategic innovation is regarded as the most important factor that has a relative impact on a firm's sustainable competitive advantage and high performance (Kalay & Lynn 2015; Afuah, 2009). Firms should depend on featured and innovative ideas to survive and compete in the rapidly changing and aggressive markets (Gonzalez-Benito, Munoz-Gallego & Garcia-Zamora, 2015; Weerawardena, Mort, Salunke, Knight & Liesch, 2015; Reguia, 2014). According to Lewin and Stuart (2016), and Hobday (2005), many sectors in developing countries must depend on innovation to stay and compete.

However, according to Rosenbusch, Brinckmann and Bausch (2011), several studies have reported that innovation does not affect performance (Birley & Westhead, 1990), while others have identified negative performance implications in innovation (McGee, Dowling & Megginson, 1995). Many other researchers believe that enterpris-

es can only survive and develop through continuous innovation (Wu, Wang, Hong, Piperopoulos & Zhuo, 2016; Hill & Rothaermel, 2003; Soderquist, Chanaron & Motwani, 1997).

In the Yemeni context, the performance of manufacturing firms is very low (World Bank, 2015; Abdulmalek & Mohd, 2016), partly as a result of very low innovation in the country. According to the Global Innovation Index (2014, 2015, 2016, 2017), Yemen was ranked 141, 137, 128 and 127 globally in successive years, indicating very little innovation activity. Based on previous studies that found significant relationship between strategic innovation and performance (Kalay & Lynn 2015; Lilly & Juma, 2014) and in line with the Global Innovation Index and the fact that previous studies in Yemen have not investigated the influence of strategic innovation on performance, this study hypothesizes as follows:

H2: Strategic innovation has a positive relationship with SME performance.

1.3. The Mediating Effect of Human Capital

Human capital (HC) can be defined as the knowledge, skills, and abilities of employees (Bhartesh & Bandyopadhyay, 2005). It can be seen as the set of attitudes, values and aptitude of employees that result in competitive advantage and creation of organizational value (F-Jardon & Martos, 2009). In other words, it is the experience, know-how and employees' talent in the organization (Bontis, 1988; St-Pierre & Audet, 2011). Human capital refers to the individual's capability, skills, knowledge and experience (Hitt, Bierman, Shimizu & Kochhar, 2001; Khan, Humayun & Sajjad 2015).

Human capital also plays a critical role in transforming inputs (i.e., innovation) into outputs (i.e., performance) (Teixeira & Fortuna, 2004; De Winne & Sels, 2010). Guan and Ma (2003) also emphasized that the possession of innovation alone cannot lead to sustainable growth, competitive advantage or superior performance. Consequently, the impact of innovation on organizational performance can be both direct and indirect, transmitted through the firm's internal processes and routines, i.e., its human capital.

Human capital refers to the set of knowledge, skills and abilities embedded in the organization's human resources (Nieves & Quintana, 2018; Onkelinx, Manolova & Edelman, 2016; Bhartesh & Bandyopadhyay, 2005). The link between human capital and organizational performance is evident from the literature (Rahim, Atan & Kamaluddin, 2017; Samagaio & Rodrigues, 2016; Huo, Ye, Zhao & Shou, 2016; Vargas, Lloria, & Roig-Dobon, 2016; Crook, Todd, Combs, Woehr & Ketchen, 2011; Stiles & Kulvisachana, 2003). It can be seen as the set of attitudes, values and aptitude of employees that result in competitive advantage and creation of organizational value (F-Jardon & Martos, 2009).

Although in competitive and knowledge-based economies human capital is generally considered to create value improved performance (Marr, Gray & Neely, 2003; Bollen, Vergauwen & Schnieders, 2005), researchers have found that some aspects of

human capital influence performance more than others (Asiaei & Jusoh, 2015; Inkinen, 2015; Chen, Cheng & Hwang, 2005; Hang, 2009). Some studies have reported a positive relationship between human capital and firm performance (Khaliq, Bontis, Shaari, Yaacob & Ngah, 2018; Mehralian, Rajabzadeh, Reza Sadeh & Reza Rasekh, 2012; Clarke, Seng & Whiting, 2011) and others, according to Vishnu and Kumar Gupta (2014), a weak or negative relationship (Abdulsalam, Al-Qaheri & Al-Khayyat, 2011; Firer & Williams, 2003; Zeghal & Maaloul, 2010).

In addition, human capital assets were revealed to positively affect SMEs' innovation performance (Agostini, Nosella & Filippini, 2017), and this is supported by Cabello-Medina, Carmona-Lavado, Perez-Luno and Cuevas-Rodriguez (2011) and Delgado (2011), indicating that human capital plays a key role in improving different facets of innovative performance.

In the context of Serbia, Janosevic, Dzenopoljac and Bontis (2013) examined 100 firms in 2010 and revealed a positive and significant relationship among their ROE and capital efficiency, and between ROE and human capital. However, no direct relationship was found between human capital and the firm's ability to develop innovations (radical and incremental) in the study by Subramaniam and Youndt (2005).

In determining when assets are complementary, Hess and Rothaermel (2011) conducted an analysis of 108 global pharmaceutical firms over the thirty years 1974-2003, and found that recruitment and retention of top scientists (human capital) and their strategic alliances are required assets for innovative performance. Also, human capital was found to positively impact organizational innovation in Tseng and Goo's (2005) study, and human capital was noted to have a positive and significant direct influence on business performance in Sharabati et al. (2010) research. This finding is supported by Cabrita & Bontis (2008). Based on the results of previous studies, the present study hypothesizes as follows:

H3: Human capital mediates the relationship between strategic innovation and SME performance.

2. Theoretical Framework

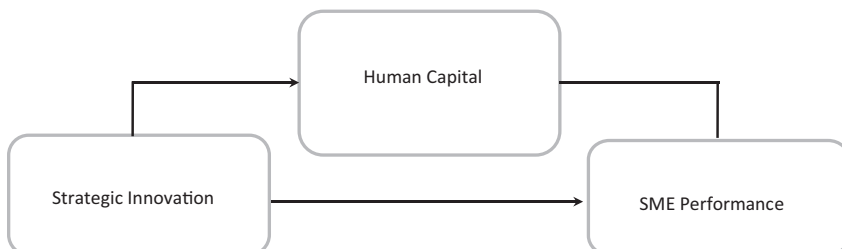


FIGURE 1. Theoretical framework showing the relationship between strategic innovation and SME performance, mediated by human capital

3. Methodology

3.1. Data Collection, Data Collection Procedures and Sampling Size

A cross-sectional and quantitative research design was adopted to test the proposed hypotheses, employing a sampling method to obtain data and make inferences from it on the whole population. The study's target population is Yemeni manufacturing SMEs, identified from the current Directory of Small and Medium Manufacturing Companies (Yemeni Ministry of Trade & Industry, 2017) that lists 494 manufacturers. Primary data was collected through a questionnaire distributed to general managers of Yemeni manufacturing SMEs.

The study population was selected from two regions, the number being obtained from Krejcie and Morgan's (1970) formula. It should be noted that as the population increases, the sample size increases at a diminishing rate and remains constant at 214 when the population is between 480 and 500. More specifically, this study employed simple random sampling, where firms' names were picked without replacement from a box until the number reached 214. The unit of analysis is the SME firm, while senior members of staff were the units of inquiry. Of the 214 questionnaires distributed, 164 were retrieved.

In addition, of several methods proposed to collect data, this study obtained primary data through the questionnaire distributed to general managers in Yemeni manufacturing SMEs. The administration of the questionnaire must be effective as it will impact the rate of response from the respondents (Dillman, 1991). A self-administered questionnaire was therefore employed in this study, with responses recorded on a numerical scale. According to Cooper, Schindler and Sun (2006), a quantitative study is helpful in translating data from the questionnaire survey into significant outcomes that are crucial for research development. The researcher distributed the questionnaire to the respondents by hand as hard copies, and later retrieved them from the respondents.

3.2. Sampling Technique

This study uses proportionate stratified sampling to select the number of firms from each category (small and medium), as stratification provides more information for a given sample size (Sekaran & Bougie, 2016). This simple random sampling technique is popular as each member of the population has an equal and independent chance of being selected (Norman & Fraenkel, 2000). The present study uses proportionate stratified sampling to select the number of firms from each category of SME; the random sampling technique is then used to choose the final sample according to firm size.

3.3. Research Measurement

The measurement of the three study variables, i.e., strategic innovation, human capital and performance, used a five-point Likert scale to rate the responses from the survey, an efficient way to assess the judgment of the participants (Franklin & Foa, 2002). The

performance measures comprise eight items suggested by Gupta and Govindarajan (1984), Mokhtar, Yusoff and Ahmad, (2014) and Kaplan and Norton (1992). The strategic innovation measure of six items was adopted from Yang (2014) and the eight items for human capital from Sharabati, Jawad and Bontis (2010).

3.4. Data Analysis Technique

This study used PLS-SEM for data analysis and validation. Specifically, PLS path modelling (Henseler & Chin, 2010; Wold, 1985) was utilized in Smart PLS software (Ringle, Wende & Will, 2005) as the most suitable method to test the theoretical model. PLS path modelling estimates the interactions between constructs (structural model) and the relationship between indicators and constructs (measurement model) in a concurrent manner, similar to the conventional regression method (Chin, Marcolin, & Newsted, 2003; Duarte & Raposo, 2010; Gerlach, Kowalski & Wold, 1979). Smart PLS software was suitable for its user-friendly graphical user interface that assists in the creation of a moderating and mediating effect of path models of the constructs relationship effects (Henseler & Chin, 2010).

3.5. Assessment of PLS-SEM Path Model Results

Hair, Sarstedt, Ringle and Mena (2012) established a rule of thumb for reliability in that items with loadings that fall between 0.40 and 0.70 are acceptable; the item loadings in our study ranged from 0.577 and 0.858 (see Table 1). Bagozzi and Yi (1988) and Hair, Hult, Ringle and Sarstedt (2016) established a rule of thumb for the threshold value, acceptable at 0.70 or more. The composite reliability coefficients of the current study's constructs are presented in Table 1, and they range from 0.866 to 0.917, indicating that the measures have satisfactory internal consistency reliability. Finally, Hair et al. (2012) explained that the Average Variance Extracted (AVE) for each construct must be 0.50 or above; and the values in Table 1 indicate acceptable convergent validity.

TABLE 1. Indicator loading, internal consistency reliability and convergent validity

Latent Construct & Indicators	Standardized Loading	Composite Reliability	Cronbach's Alpha	Average Variance Extracted (AVE)
Firm Performance		0.916	0.895	0.581
PEF1	0.772			
PEF2	0.763			
PEF3	0.858			
PEF4	0.799			
PEF5	0.702			
PEF6	0.772			
PEF7	0.813			
PEF8	0.824			

Latent Construct & Indicators	Standardized Loading	Composite Reliability	Cronbach's Alpha	Average Variance Extracted (AVE)
Strategic Innovation		0.866	0.813	0.522
SI1	0.721			
SI2	0.781			
SI3	0.791			
SI4	0.577			
SI5	0.665			
SI6	0.776			
Human Capital		0.917	0.895	0.581
HC1	0.707			
HC2	0.770			
HC3	0.740			
HC4	0.769			
HC5	0.843			
HC6	0.825			
HC7	0.815			
HC8	0.604			

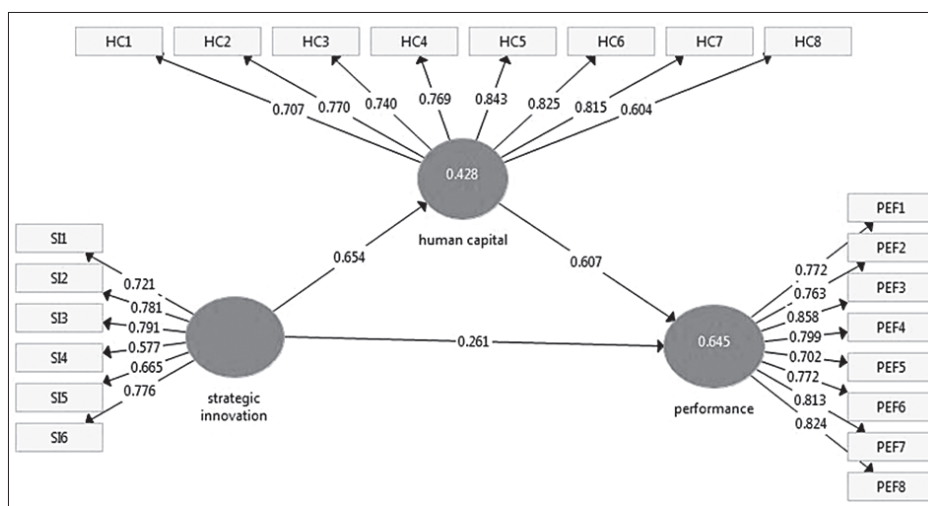


FIGURE 1. PLS algorithm of measurement model

3.6. Assessment of Significance of the Structural Model

The bootstrapping method was used with 500 bootstrap samples for the assessment of the path coefficients' significance, as suggested by Hair et al. (2012) and Henseler & Chin (2010). The estimates of the full structural model are tabulated in Table 3 and depicted in Figure 2.

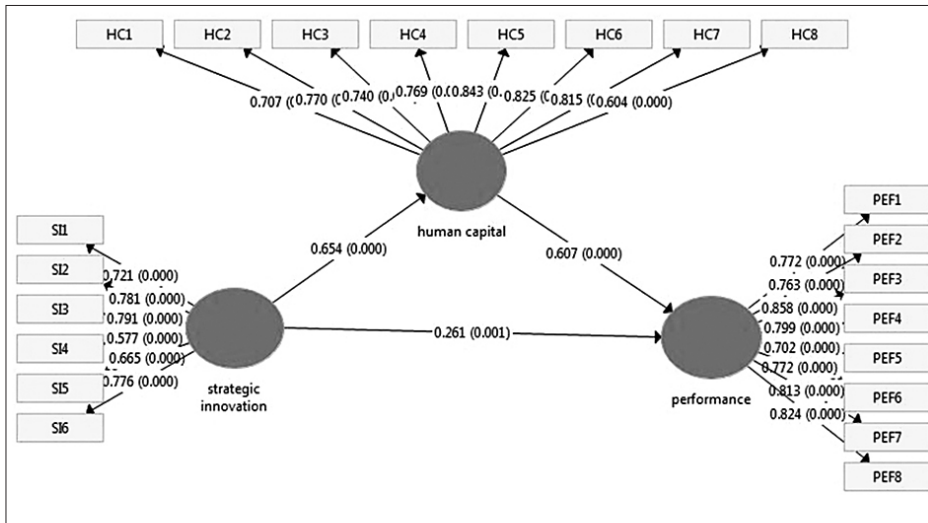


FIGURE 2. Bootstrapping Model

3.7. Hypothesis Testing

The result of testing Hypothesis 1 revealed a significant positive relationship between strategic innovation and human capital ($B = 0.654$, $t = 11.812$, $p < 0.000$), supporting H1. For Hypothesis 2 it was found that strategic innovation was significantly related to performance ($B = 0.261$, $t = 3.488$, $p < 0.01$). Hence, H2 was also supported. These results are shown in Table 2 and Figure 2.

TABLE 2. Structural model assessment

Relationship	Beta	SE	T-value	p-value
strategic innovation -> human capital (H1)	0.654	0.055	11.812	0.000
strategic innovation -> performance (H2)	0.261	0.075	3.488	0.001

The R square values of the endogenous variables are presented in Table 3. It is evident that the research model managed to explain 42% of the variance of human capital and 64% of the variance in firm performance.

TABLE 3. Variance explained in the endogenous latent variables

Latent Variables	Variance Explained (R^2)	Adjusted R^2
Human Capital	0.428	0.424
Performance	0.645	0.640

3.8. Mediation Test

The test for mediation was performed to establish whether the conditions suggested by Baron and Kenny (1986) are met. Besides the MedGraph program, a modified version of the Sobel test was used to compute the z-value and the significance of the mediation effect of human capital on the association between strategic innovation and SME performance. The PLS path analysis treats the direct and indirect effects in a similar manner and is the only method that is appropriate for mediation studies (Hair, Black, Babin, Anderson & Tatham, 2006; Zhao, Lynch & Chen, 2010).

Based on the results, there is a statistical and significant mediating effect of human capital ($B = 398$; $t = 6.675$, $p < .000$). This assessment is aligned with the procedure proposed by Zhao et al. (2010) with regard to mediation testing, as it discloses complementary mediation. This shows a significant mediating effect “supporting” H3.

TABLE 4. Mediation results

Hypothesis	Relationship	Beta	SE	T	Sig.	Decision
H3	SI -> HC -> performance	0.398	0.060	6.675	0.000	Supported

In addition, this study also conducted an assessment of the indirect effect size with the help of Variance Accounted for (VAF) through the following formula:

$$VAF(SN) = (0.654 \times 0.607) / (0.654 \times 0.607 + 0.658) = 0.376$$

The result suggests that a VAF of 37.6% of the influence of strategic innovation on firm performance can be explained by the indirect influence of human capital (partial mediation).

4. Limitations and Future Research

This study has several limitations. The varied results arise from the methodology used to measure strategic innovation, human capital and SME performance. Although the constructs have been defined as precisely as possible from the measurements used in previous studies, this work takes into consideration questions that are closely linked to organizations which appropriately represent every variable.

Future research with a larger sample size could use multiple respondents. The empirical findings are based on Yemeni SME performance data, and hence country-specific factors may limit the external validity of these findings. A simple generalization of this study might not apply to other countries. As a follow-up of this study, a comparison between Yemen and other countries could further develop the understanding of strategic innovation, human capital and SME performance. Second, future research may benefit from using a longitudinal approach, analyzing the evolution of strategic innovation over time, as well as its impact on human capital. Third, this study focuses on human capital

as the mediator between strategic innovation and SME performance. Future research could address other dimensions of intellectual capital, e.g., relational capital, structural capital and innovation capital.

5. Discussion and Conclusion

This research investigated and tested the mediating effect of human capital on the association between strategic innovation and SME performance in Yemen. The findings indicate that each of the constructs is significantly correlated to the others. Based upon the results of the PLS-SEM, H1 is supported, indicating a significant positive relationship between SI and SME performance. This finding is consistent with previous studies (e.g., Lilly & Juma, 2014; Kalay & Lynn, 2015) which reported a positive relationship between SI and performance.

In addition to the significant effect of strategic innovation on performance, human capital was investigated concurrently, indicating that human capital partially mediates the relationship between strategic innovation and SME performance (Baron & Kenny, 1986), which supports the research hypothesis. This finding is similar to those obtained by D'Este et al. (2014) and Sun et al. (2017) that innovation needs to be complemented by an appropriate organizational learning process. Therefore, in line with these authors, it is concluded that innovation helps firms to adapt if they have distinct competencies through human capital.

The presence of both strategic innovation and human capital significantly affects SME performance. This is an indication that human capital mediates the relationship between strategic innovation and performance (Baron & Kenny, 1986), supporting H3. Notwithstanding the above mediating effect, SME performance has a direct significant relationship with all the factors of strategic innovation, confirming that strategic innovation has an association with performance beyond the mediated effects. This is true because the uniqueness of the human assets that reside within an organization can put that organization in a better competitive position. Furthermore, the mediating effect of human capital on the relationship between strategic innovation and SME performance is further confirmed by this significant relationship.

Human capital and its effect on performance similarly suffer from some ambiguity. Little attention has been devoted to examining this relationship in countries with unique cultural practices, such as those of the Middle East, so this has become an interesting topic for further investigation. Also, the concept of human capital has gained importance as a critical determinant of firm performance, although its mediating effect on the relationship between strategic innovation practices and performance is still unclear. A thorough review of the literature revealed that this relationship may be very much affected by human capital in culture-driven countries like Yemen. Therefore, this study contributes to the body of knowledge by examining the mediating effects of human capital on the relationship between strategic innovation and SME performance.

The above discussions have also revealed both theoretical gaps and practical issues which are pertinent to this study. The domestic manufacturing firms of Yemen still have trouble in acquiring a strong competitive advantage in the marketplace. No previous studies have addressed human capital as mediator in the relationship between strategic innovation and performance, and few studies are available on the level of innovation activities in manufacturing industries in Yemen, another important gap explored in this study. Therefore, based on these theoretical and practical gaps, the problem that this research succeeded in addressing is the relationship between strategic innovation and performance in manufacturing SMEs in Yemen, with the mediating effect of human capital.

In conclusion, the study will be of benefit to both practitioners and academics in increasing the body of knowledge regarding strategic innovation and performance relationships, through the mediating effect of human capital. In addition, the study is significant because it demonstrates the relevance of human capital and the use of strategic innovation in the growth of the national economy in terms of increasing the quality of products and taking advantage of gaps in the local market. Likewise, it demonstrates the relevance of the important customer relationship in raising the level of awareness among local customers and gaining their trust, to increase their confidence in local products. The human capital and strategic innovation approach will increase firm performance for the top management of the firms. Therefore, firms who pay more attention to the relationship between strategic innovation and performance with the mediating role of human capital will be more successful in the long term.

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