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Abstract

Purpose – The purpose of this paper is to evaluate the links between intellectual capital sub-components and organizational performance in small and medium enterprises (SMEs) operating in the electrical and electronics manufacturing sector in Pakistan.

Design/methodology/approach – Data were collected through structured questionnaires from a sample of 247 respondents from Pakistani SMEs in Gujranwala and Gujarat. Several tests were used to examine the reliability and validity of the research instrument. Finally, multiple regression analysis was used to test the proposed research hypotheses.

Findings – The findings of this study demonstrate that the overall regression model of intellectual capital shows goodness of fit while one component of intellectual capital – namely human capital – appeared insignificant. Subsequently, six out of seven research hypotheses was accepted.

Practical implications – This study will provide a valuable framework for entrepreneurs, executives, managers and policy makers in managing intellectual capital within the Pakistani context.

Originality/value – To the best knowledge of the authors, this is the first empirical study that has been conducted on SMEs operating in the electrical and electronics manufacturing sector in Pakistan.

Keywords Pakistan, Human capital, Small- to medium-sized enterprises, Intellectual capital, Organizational performance

Paper type Research paper

1. Introduction

Much of the extant intellectual capital literature has focussed on studying organizations in the developed world in nations such as the UK, USA, Canada, Australia and Sweden. Many academic researchers have conducted their studies within these developed economies and found that effective management of intellectual capital has a strong link with the success of organizations (Youndt and Snell, 2004; Ordonez de Pablos, 2004; Montequín *et al.*, 2006; Kujansivu and Lönnqvist, 2007; Tovstiga and Tulugurova, 2007; De Castro and Sáez, 2008; St-Pierre and Audet, 2011). Due to the overwhelming acknowledgment of the positive role intellectual capital plays in the developed world, a burgeoning track of research has started to explore the concept of intellectual capital in small and medium enterprises (SMEs) operating in developing and under-developed economies. For example, Bontis *et al.* (2000) conducted their study in the Malaysian context and found that intellectual capital was a

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significant contributor to enhancing the performance of Malay organizations. This result was corroborated by other researchers as well (Daud and Yusuf, 2008; Hamzah and Isa, 2009; Ismail, 2005; Ngah and Ibrahim, 2009, 2011).

However, during a more focussed examination of developing nations, it was observed that there is a lack of empirical research within Africa and South East Asia. This is also true for Pakistan. In spite of the significant contributions researchers have made elsewhere, the concept of intellectual capital is still in its embryonic stages in this developing nation. Therefore, there is a great need to study the concept of intellectual capital in Pakistani SMEs to determine whether or not the extant measures and constructs are indeed generalizable across various developed and developing nations.

Pakistan is one of the most important developing economies in the Asian region. It has a population of more than 160 million of which 96 percent are Muslim and 4 percent are made up of Christians, Hindus, Sikhs and Buddhists. Pakistan is a multiethnic and multicultural state located in the Indo-Pak sub-continent and it covers an area of nearly 800,000 square kilometers, consisting of four provinces, Punjab, Sind, Khyber Pakhtun Khwa and Baluchistan (Mullick and Hraba, 2001; Fayyaz *et al.*, 2009; Statistic Bureau of Pakistan, 2009).

This research aims to investigate the impact of intellectual capital on the organizational performance of selected SMEs operating in the high-tech sector in Pakistan. The first section deals with the introduction of intellectual capital and its sub-components. This follows with background information on Pakistani SMEs, and highlights and proposed the research hypotheses. In the third section, the research methodology and empirical findings are presented. Finally, the conclusion outlines the limitations and potential research avenues of research emanating from this study.

2. Literature review

There is no doubt that intellectual capital is one of the key factors responsible for the success of high-tech organizations and knowledge-intensive organizations. Feiwal (1975) and Ding (2010) argue that the term "intellectual capital" was first introduced by John Kenneth Galbraith in 1969 who described it as an intellectual contribution owned by individuals. Stewart (1997) extended this definition to include education, knowledge, information, expertise, intellectual property as well as experiences that is used to create wealth in an organization. There is no doubt that the multidisciplinary nature of intelletcual capital lends itself to both a richness of perspective as well as a difficulty for valuation (Bontis *et al.*, 1999).

Intellectual capital has been comprehensively defined by other researchers and therefore does not need significant rehashing here. However, for the purposes of this study, intellectual capital represents a combination of intangible assets or resources, such as knowledge, know-how, professional skills and expertise, customer relationships, information, databases, organizational structures, innovations, social values, faith and honesty. These can be used to create organizational value and provide a competitive edge to an organization. This definition has manifold implications. First, intellectual capital contains intangible resources that encompass knowledge and information that can be used by an organization to capitalize on its profits. Second, it is the combination of intangible assets that is used to create and establish value for a firm (Chaminade and Roberts, 2003). Third, the organization cannot own the human capital assets but can utilize them on a rent basis. For example, employee knowledge can be acquired only by compensating individuals and asking for their expertise to be shared. Fourth, the presence of these resources will not bring fruitful output without effective management.

Finally, effective management at an optimal level can be used to attain competitive advantages (Cohen and Kaimenakis, 2007; Mouritsen, 2006; Khalique, 2012).

Moreover, many researchers propose different models of intellectual capital for measurement purposes. For example, Stewart (1997) introduced a model that represents intellectual capital consisting of three summative sub-components called human capital, customer capital and structural capital. Bontis *et al.* (2000) used these three sub-components of intellectual capital; in the Malaysian context, and found that it had a significant positive link with the enhancement of organizational performance. McElroy (2002) and Juani (2005) adjusted the previous framework and replaced customer capital with social capital which they argued was more all-encompassing. Ismail (2005) extended the framework even further by adding a fourth construct: spiritual capital. He also confirmed that spiritual capital was a statistically significant variable in the link between intellectual capital and the performance of an organization. Notwithstanding, Bueno *et al.* (2006) took it one step further and also added technological capital to the list given the important ascent of the digital economy.

As more and more researchers added to the discussion, it was necessary to consolidate the constructs and take stock of an integrated model. Khalique *et al.* (2011a) proposed the Integrated Intellectual Capital Model to fill this void. This model incorporates six components of intellectual capital: human capital, customer capital, structural capital, social capital, technological capital and spiritual capital.

Sub-components of intellectual capital

Human capital is generally recognized as the critical component of intellectual capital which is based on competencies (i.e. education, professional skills, know-how and experimental knowledge), attitudes (i.e. motivation, leadership, behavioral patterns) and intellectual agility (i.e. innovation, creativity, flexibility, adaptability) (Bontis, 1998; Bontis *et al.*, 1999, 2000; Tovstiga and Tulugurova, 2007). The customer capital of an organization consists of its brand value, a strong client network, customer loyalty and satisfaction all of which have a positive association with organizational performance (Ismail, 2005; Kim and Kumar, 2009). Structural capital is the skeleton of the organization and includes all the non-human storehouses of knowledge contained in systems, procedures, databases, networks, process manuals and routines (Khalique *et al.*, 2011a). Social capital is based on corporate responsibility toward fairness, transparency, honesty and ethics (Bueno *et al.*, 2004; De Castro and Sáez, 2008; Lesser and Prusak, 1999; McElroy, 2002; Nahapiet and Ghoshal, 1998; Subramaniam and Youndt, 2005). Technological capital consists of research and development (R&D) and protection rights. Spiritual capital includes religious views and ethical values.

SMEs

In Pakistan, SMEs are considered the backbone of the national economy. Nearly 3.2 million SMEs operate in the business sector. The contribution of SMEs to the country's GDP is approximately 40 percent, providing 80 percent of the total employment and 30 percent of total exports (Ahmed *et al.*, 2010; Rohra and Panhwar, 2009; SMEDA, 2005, 2010). SMEs perform a vital role for national innovation, improving social status and uplifting lifestyle (Ahmed *et al.*, 2010; Rohra and Panhwar, 2009; SMEDA, 2005, 2010). Therefore, SMEs play a significant role in the stability of the economy in Pakistan and are usually considered as shock-absorbers during times of unrest or economic uncertainty.

Despite their importance and significant contributions, Pakistani SMEs continue to face various threats and challenges such as insufficient financial resources, lack of management

skills, incompetent workers, low-technological capabilities, outdated production facilities, poor infrastructure, a complex taxation system, lack of government support, difficulties to get loans from financial institutions, most importantly, mismanagement of intangible assets. Bari *et al.* (2005) report that the SMEs in Pakistan currently perform below their potential and have low-growth performance. Ullah *et al.* (2011) point out that the failure rate of SMEs has been estimated at 90-95 percent within the initial stage. This is an alarming situation for the Pakistani economy because poor performance of SMEs will be associated with poor performance for industrial output.

If this situation continues and no steps for improvement are taken, then wider-ranging ill effects may result such as increases in unemployment, poverty, social imbalance and societal unrest. There is a great need to understand the contemporary challenges, and issues facing Pakistani SMEs and the effective management of intellectual capital is one such opportunity.

Increased competition requires SMEs to constantly change their traditional methods of conducting business and seek out updated and new technologies. SMEs need to understand and capitalize on the most critical strategic asset of a knowledge-based economy. Many researchers have argued that intellectual capital is a vital resource for the success of SMEs and that it is inextricably linked to their performance (Abdullah and Sofian, 2012; Bontis *et al.*, 2000; Chen *et al.*, 2006; Daud and Yusuf, 2008; Hamzah and Isa, 2009; Hormiga *et al.*, 2011; Khalique *et al.*, 2011b). However, in Pakistan, there exists a lack of understanding about the concept of intellectual capital and a shortage of knowledge workers which endangers the long-term viability of many SMEs. Academic exploration of intellectual capital in Pakistani SMEs is still in its embryonic stages.

3. Theoretical framework and research hypotheses

According to Intellectual Capital Theory, the main function of intellectual capital is to create value added products and services through proactive management of intangible resources which positively influence organizational performance (Khalique *et al.*, 2013). This perspective posits that there is a direct and positive relationship between intellectual capital's sub-components and organizational performance. Figure 1 outlines the conceptual framework of this study.

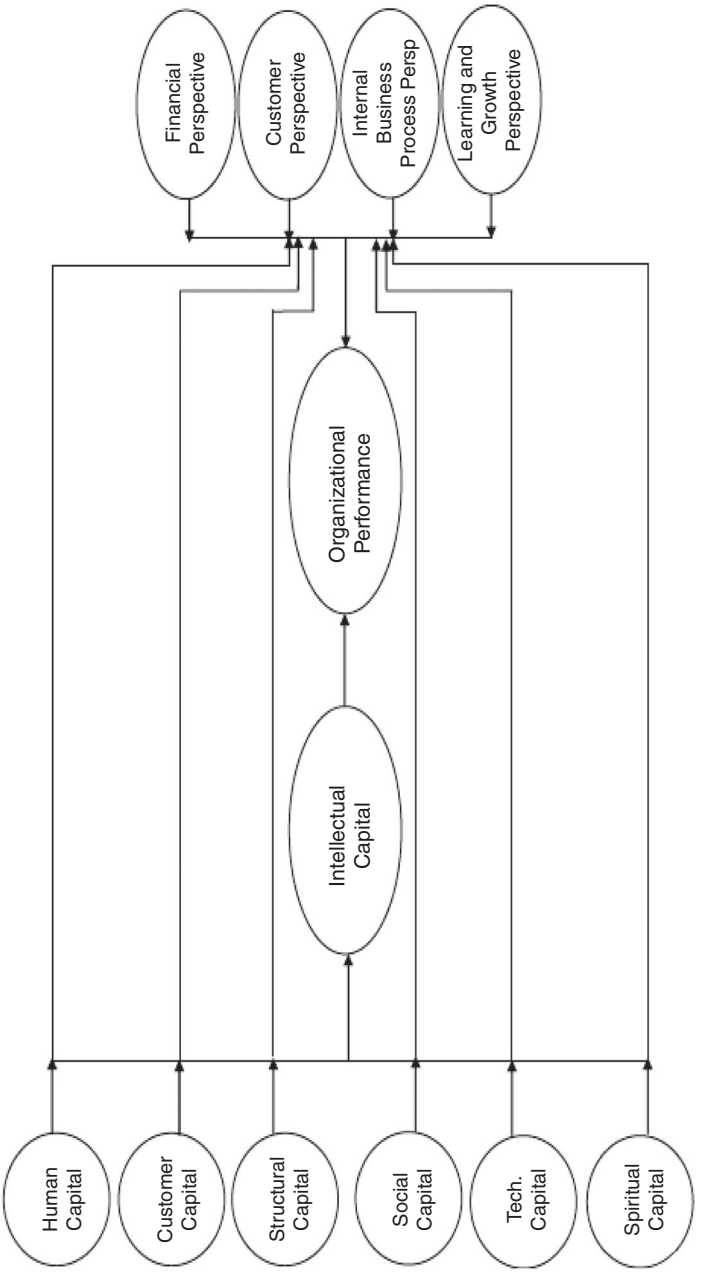
The conceptual framework shows the various relationships between sub-components of intellectual capital and the performance of SMEs in Pakistan. Based on the above conceptual framework the following seven research hypotheses are proposed to address the research questions and fulfill the objectives of the study. These hypotheses are consistent with the positive relationships tested in much of the extant academic literature in the field:

H1. Intellectual capital has a positive influence on the organizational performance of SMEs in Pakistan.

H2. Human capital has a positive influence on the organizational performance of SMEs in Pakistan.

H3. Customer capital has a positive influence on the organizational performance of SMEs in Pakistan.

H4. Structural capital has a positive influence on the organizational performance of SMEs in Pakistan.



Sources: Bontis (1998); Stewart (1997); Bueno *et al.* (2006); Edvinsson and Malone (1997); Guthrie and Petty (2000); Ismail (2005); Kaplan and Norton (1992, 1996); Tovstiga and Tulugurova (2007)

Figure 1.
Conceptual framework

H5. Social Capital has a positive influence on the organizational performance of SMEs in Pakistan.

H6. Technological capital has a positive influence on the organizational performance of SMEs in Pakistan.

H7. Spiritual capital has a positive influence on the organizational performance of SMEs in Pakistan.

4. Research methodology

This study used multiple regression analysis for the purposes of testing the hypotheses. Six predictor variables namely, human capital (HUC), customer capital (CUC), structural capital (STC), social capital (SOC), and technological capital (TEC) and spiritual capital (SPC) were entered in a single step. These variables were selected on the basis of the literature review. A five-point Likert-type scale 1 (strongly disagree) to 5 (strongly agree) was used to measure the constructs of the employed variables. A total of 90 items were constructed on the basis of extensive literature review to grasp the perception of participants about the importance of intellectual capital and organizational performance in Pakistani SMEs. The main motivation of the proposed constructs was to initiate the management and employees of selected SMEs to express their views and opinions regarding the importance of intellectual capital in their organization to enhance the organizational performance.

Human capital was measured with survey items related to skills, knowledge and expertise, attitude and intellectual agility (Edvinsson and Malone, 1997; Tovstiga and Tulugurova, 2007; Joshi and Cahill, 2010). Three dimensions of customer capital were measured: customer satisfaction, loyalty and networking (Ismail, 2005; Kim and Kumar, 2009). Structural capital encompasses infrastructure and systems, as well as policies and procedures (Roos *et al.*, 1997; Cohen and Kaimenakis, 2007; Tovstiga and Tulugurova, 2007). Social capital was measured by using three dimensions namely, culture, exchange and relationships (Cohen and Prusak, 2001; Subramaniam and Youndt, 2005; Nahapiet and Ghoshal, 1998; Bueno *et al.*, 2004). Information and technology (IT) knowledge, R&D and protection rights were used as variables to measure technological capital (Nicholls and Woo, 2003; Wang *et al.*, 2004; Bueno *et al.*, 2006; Egbu *et al.*, 2001; García-Muiña and Barahona, 2008). Finally, spiritual capital was measured by using religious and ethical values (Zohar and Marshall, 2004; Ismail, 2005; Gillett, 2002). The dependent variable (organizational performance) was measured by using variables related to the Balanced Scorecard Method. The Balanced Scorecard Method has been widely used to measure organizational performance by using Likert-type scales (Namvar *et al.*, 2010). Four dimensions of organizational performance were addressed: financial perspective, customer perspective, internal business process perspective and learning and growth perspective (Kaplan and Norton, 1992; Ismail, 2005; Tovstiga and Tulugurova, 2007).

Sampling

Kureshi *et al.* (2010) and Fayyaz *et al.* (2009) reported that in Pakistan there is no complete list of SMEs or any publication that contains a complete record of the manufacturing sector of SMEs. Therefore, a directory of SMEs was created using the Pakistan Electric Fans Manufacturers Association(2009) and the Gujranwala Chamber of Commerce and Industry (GCC, 2010). These directories have been shows to be valid

and reliable in previous studies (Khalique *et al.*, 2011b). Gujranwala and Gujarat are the main pillars of the Golden Triangle of SMEs in Pakistan. The city of Gujranwala is well known for manufacturing electrical and electronics products (SMEDA, 2008-2009). The sample for this research was drawn randomly from the above listed directories.

Moreover, SMEs that range from 1 to 250 employees were selected for this study. The CEO, Managing Director, General Managers, Owner, Managers, Assistant Manager, Technicians and Senior Staff were the targeted units of inquiry. Olawale and Smit (2010) and Kamukama *et al.* (2010) suggest that at least two respondents from the above list were appropriate to represent data from each enterprise. The survey instrument was based on 90 items, which were expected to measure the respondents' perceptions regarding the predictor variables and the predicted variable. A total of 550 questionnaires were distributed to the targeted respondents through surface mail and personal administration to get the minimum required sample of 250 from 150 SMEs (Krejcie and Morgan, 1970). In total, 106 SMEs with 247 respondents were involved in this study. The response rate was 41 percent which is considered satisfactory. A copy of the survey items is available by request from the corresponding author.

5. Results

There were a variety of tests used to psychometrically evaluate the survey data. Skewness and Kurtosis were used to check for normality. Results showed that the data was normally distributed. Cronbach's α was used to check the reliability of the items. Cronbach's α results ranged between 0.738 and 0.899 for each construct which is acceptable and above the expected threshold of 0.7. Table I depicts the results for Cronbach's α test for reliability.

Exploratory factor analysis is used when the relationships between the observed and latent variables are unknown and uncertain (Sureshchandar *et al.*, 2002; Pallant, 2007). According to Stevens (2002), factor loading thresholds are based on sample sizes as follows: 0.722, 0.512, 0.364, 0.298, 0.210 and 0.162, for a sample size of 50, 100, 200, 300, 600 and 1,000, respectively. In this study, the accepted level of loading was 0.3999 based on the corresponding sample size (Field, 2009).

In this study, exploratory factor analysis was carried out independently on the 13 items of human capital, ten items of customer capital, 13 items of structural capital, 12 items of social capital, 12 items of technological capital, 11 items of spiritual capital and 19 items of organizational performance. Two items of structural capital were dropped because of poor factor loading values. The remaining variable items were above the threshold of 0.3999.

In addition, exploratory factor analysis proposed three sub-components of human capital, with KMO 0.864, χ^2 737.08 ($p = 0.001$). Customer capital appeared to have two

Table I.
Cronbach's α

Measure	No. of items	α-value
Human capital	13	0.830
Customer capital	10	0.738
Structural capital	13	0.783
Social capital	12	0.778
Technological capital	12	0.850
Spiritual capital	11	0.739
Organizational performance	19	0.889

sub-components with KMO 0.800, χ^2 348.628 ($p = 0.001$). Three sub-components of structural capital were evident with KMO 0.831, χ^2 530.927 ($p = 0.001$). Social capital, technological capital, spiritual capital and organizational performance appeared with three sub-components, two sub-components, four sub-components and four sub-components with KMO 0.828,0.890, 0.685 and 0.903 and χ^2 529.898, 802.270, 445.671 and 1,382.276 ($p = 0.001$), respectively. These findings show that these constructs have satisfied the criteria for factor analysis. Castro and Delgado-Verde (2012) argue that once the underlying factors were identified through exploratory factor analysis then confirmatory factor analysis (CFA) needs to be carried out in order to refine and validate the constructs.

To confirm the constructs and their measures, CFA was performed. Byrne (2001) argued that CFA is more vigorous when the researcher has some knowledge of the underlying latent variable structure, based on knowledge of theory, empirical research or both. The goodness of fit of CFA can be measured and assessed in several ways. If the fit indices meet a poor fitting of model then it needs to be modified through re-specifications, until the acceptable fit levels are achieved. However, to assess the goodness of fit, absolute, relative and parsimonious methods are suitable (Sing, 2008; Hair *et al.*, 1998; Jaccard and Wan, 1996). The best supported system of categorizing these fit indexes is their classification into three categories namely absolute, relative and parsimonious (Meyers *et al.*, 2006). A brief description of absolute, relative and parsimonious fit measures is depicted in Table II.

The findings of the CFA are reported in Table III. The results showed that the employed items of constructs fulfilled the goodness of fit standards as suggested by De Run *et al.* (2008), Sing (2008) and Meyers *et al.* (2006). However, two items for structural capital were dropped because of poor factor loadings.

In general, the aforementioned results show that the measurement model has strong validity given the selected items. Since CFA was successfully completed, multiple regression analysis was used to test the proposed hypotheses.

Regression analysis

The hypotheses of this study were examined using multiple regression analysis. Table IV presents the findings of this analysis.

The relatively high R^2 valued shows that explanatory power of the model is quite strong. Specifically, the independent variables of human capital, customer capital,

Goodness of fit indices	Label	Acceptable level
χ^2/degree of freedom	CMIN/DF	Value <5 indicates a good fit
Goodness of fit	GFI	Value close to 0.90 indicates a good model fit
Adjusted goodness of fit	AGFI	Value close to 0.80 indicates a good model fit
Bentler-Bonett normed fit index	TLI	Value close to 0.90 indicates a good model fit
Comparative fit index	CFI	Value close to 0.90 indicates a good model fit
Incremental fit index	IFI	Value close to 0.90 indicates a good model fit
Parsimony comparative fit index	PCFI	Value > 0.50 indicates a good model fit
Parsimony normed fit index	PNFI	Value > 0.50 indicates a good model fit
Root mean square error of approximation	RMSEA	Value <0.1 indicates a good model fit

Sources: De Run *et al.* (2008); Sing (2008) and Meyers *et al.* (2006)

Table II.
Fit indices

Measure	Items	χ^2(df)	GFI	AGFI	TLI	PCFI	RMSEA
Human capital	13	109.8 (52)	0.93	0.90	0.91	0.73	0.056
Skills knowledge and expertise	3						
Attitude	5						
Intellectual agility	5						
Customer capital	10	57.55 (34)	0.95	0.94	0.92	0.71	0.053
Customer satisfaction and loyalty	5						
Network	5						
Structural capital	11	56.33 (41)	0.96	0.94	0.94	0.71	0.039
Infrastructure and system	6						
Policies and procedure	5						
Social capital	12	76.21 (51)	0.95	0.93	0.93	0.73	0.043
Structural	4						
Relational	4						
Cognitive	4						
Tech. capital	12	73.36 (53)	0.95	0.93	0.96	0.78	0.041
IT Knowledge	7						
Research budget and protection rights	5						
Spiritual capital	11	53.97 (36)	0.96	0.94	0.94	0.66	0.041
Religious	6						
Ethic values	5						
Org. performance	19	266.80 (146)	0.92	0.89	0.92	0.79	0.047
Financial	5						
Customer perspective	5						
Internal business process	4						
Learning and growth perspective	5						

Table III.
Measurement model

Variables	Organizational performance Unstand. coefficients (β)	t-value	Sig. level
Constant (β)	0.085	0.405	0.685
Human capital	0.034	0.529	0.598
Customer capital	0.232	3.728	0.001
Structural capital	0.203	3.111	0.002
Social capital	0.232	3.641	0.001
Technological capital	0.151	2.854	0.005
Spiritual capital	0.134	2.171	0.031
$R^2 = 0.546$			0.001
F-statistic = 48.199			0.001

Table IV.
Multiple regression

Note: Unstandardized coefficients are reported along with t-statistics at $= p < 0.05$

structural capital, social capital, technological capital and spiritual capital collectively explain 54.6 percent of the variation in the dependent variable (organizational performance of SMEs). The F-stat value was also statistically significant with a value of 48.199 ($p < 0.001$).

The unstandardized beta coefficient (β) of customer capital (0.232, t-value = 3.728, $p < 0.05$), structural capital (0.203, t-value = 3.111, $p < 0.05$), social capital (0.232, t-value = 3.641, $p < 0.05$), technological capital (0.151, t-value = 2.854, $p < 0.05$) and

spiritual capital (0.134, t-value = 2.171, $p < 0.05$) showing that these five predictors have a statistically significant contribution to the model. In other words, these variables have a positive association with the performance of SMEs in Pakistan as expected.

However, one construct in particular, human capital ($\beta = 0.034$, t-value = 0.529, $p < 0.05$) was found to be insignificant. This is a surprising result given the extant literature. In total, all the hypotheses tested were validated except *H2* which related to human capital and performance.

6. Discussion

The findings of this study are quite novel. Five components of intellectual capital were found to play a significant positive role in enhancing the performance of SMEs in Pakistan while one variable namely; human capital appeared to be insignificant. This result was unexpected and requires further discussion.

There is no doubt that human capital is considered one of the critical sub-components of intellectual capital and one of the key drivers of organizational performance (Bontis, 1998). So, why was this not evident in this particular study? One potential explanation is that Pakistan has not fully developed its knowledge economy. Pakistan does not rank highly among the world's knowledge-intensive nations (e.g. Sweden, Finland) (Bontis, 2004).

Miller and Wurzburg (1995) and Chen *et al.* (2006) point out that almost all previous intellectual capital studies highlight the important of human capital. In fact, human capital is generally understood to be critical and the most important antecedent variable. It is also recognized that human capital can be further increased through training and development. However, formalized investment in training and development among Pakistani SME's is woefully underrepresented.

SMEs in Pakistan face a scarcity of skilled and qualified workers. It remains a major constraint for the development of organizations. Even if there was adequate supply of educated and technically skilled labor, most individuals would not be sufficiently compensated and rewarded by employers. The lack of coordination and absence of strong linkages between SMEs and government supporting agencies and technical training institutions continues to exacerbate the situation (Fayyaz *et al.*, 2009; Memon *et al.*, 2010). Ahmed *et al.* (2010) argued that in Pakistan, SMEs were struggling to find well-trained and skilled employees to run their businesses. Even if there were training centers nearby, there was a lack of professional competency to run them. Therefore, it is indispensible for SMEs to revisit their strategies and policies related to attracting, developing and retaining adequately skilled workforce.

7. Conclusions

The findings of this study support the assertion that selected components of intellectual capital can have a positive association with SMEs performance in Pakistan. However, the link between human capital and performance is tenuous at best and does not seem to be realized within the Pakistani context. SMEs managers must take special care in highlighting particular investment related to human capital as there seems to be a unique anomaly within the Pakistani context that requires further investigation. Perhaps this anomaly is also evident in other developing nations that do not have relatively high literacy rates, investments in education, or fully developed tertiary university systems?

Moreover, the findings of this study reveal that customer capital, structural capital, social capital, technological capital and spiritual capital have a significant and positive

relationship with the organizational performance of SMEs operating in the electrical and electronics manufacturing sector in Pakistan. These findings match those observed in earlier studies. There is no doubt that this study has made a significant contribution toward theory development, methodology and policy development regarding the concept and application of intellectual capital in SMEs. This is especially true within the novel environment of Pakistan. However, there indeed some limitations to this study. First, the concept of intellectual capital is a complex phenomenon and therefore, the subjectivity of the perception of participants may have led to the misinterpretation of results. Second, this study is exploratory in nature and it represents merely an initial attempt to examine the impact of all the major components of intellectual capital within a specific sector of Pakistan ad thus, its generalizability is limited. Finally, this study is not longitudinal in nature and like other cross-sectional studies, can only be interpreted at one static point in time.

Future research studies may wish to focus on determining the potential minimum investment for training and development required for SMEs in Pakistan to thrive. For example, the average dollar investment per full-time equivalent in a Pakistani SME may need to be three or even four times higher than the average SMEs in Sweden or Finland to make the same type of impact. The IC academic literature would also benefit from qualitative research in Pakistani organizations that have embraced the intellectual capital language and perhaps even started measuring it in their firms. Publishing these types of IC best practices would help accelerate the adoption of intellectual capital initiatives elsewhere in the developing world.

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