

RELATIONSHIP BETWEEN HUMAN, STRUCTURAL, RELATIONAL, SPIRITUAL CAPITAL AND PERFORMANCE: MODERATING ROLE OF SUPPORTIVE WORK ENVIRONMENT AMONG CONSTRUCTION COMPANIES IN UAE

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Abstract: *The aim of this study is to examine the role of stated components of intellectual capital on the performance of construction industry in UAE. Additionally, this research also explores the moderating role of supportive work behavior on the relationship between exogenous and endogenous constructs. Primary data was collected through structural questionnaire based on the study items from existing literature. A valid sample of 408 respondents from the construction industry was collected and analyzed through measurement model and structural model assessment. It is observed that all the tests for measurement model assessment have confirms the validity and reliability of the constructs. Furthermore, the findings through structural equation modelling approach suggest that there is a significant and positive impact of human capital, structural capital, spiritual capital, and relational capital on the performance of construction industry. Moreover, there is a significant and moderating effect of supportive work environment on the relationship between selected components of intellectual capital and performance dynamics in construction industry of UAE. The findings of this study would be of great support for various policy makers like project managers, owners, and various stakeholders specifically in the construction industry. Besides, this study is limited in the form of quantitative analysis, consideration of construction industry, and four components of intellectual capital. Future studies are highly recommended to consider these limitations for providing some better generalization and advance implications too.*

Keywords: *Intellectual capital, firm performance, construction industry, supportive work environment, two step approach.*

Introduction and Background

The investment in both tangible and intangible assets of the organization is very important. In accordance with this idea, Elsten and Hill (2017) have stated the view that general distribution of the organizational resource contains a ratio of 16 and 84, where the former is utilized for the tangible assets and later is for the intangible assets of the organization. The significance of intangible assets is also expressed by Shakina and Barajas (2014) who claim that with the help of intangible assets, business can perform well even there is a downturn in the market. Although the title of intellectual capital along with its various components is achieving some reasonable attention, however, a big literature gap is yet to explore for determining the role of various components of IC in determining the organizational success. More specifically, the title of IC is considered as a stock of knowledge for any organization (Ragab & Arisha, 2013), it combines the various resources like intellectual property, education and skills of the employees, information technology (IT), research and development and conducted by the organization (Hasan, 2021; Stewart, 1997). However, in depth understanding for the various components of IC is required in order to examine their impact on the firm performance. In this way, Sharabati, Naji, and Bontis (2010) have expressed their view that intellectual capital in any organization covers the titles like human capital, structural capital and relational capital. More specifically, the title like human capital consists of skills, competencies of the employees, intellectual agility. Additionally, structural capital covers the non-human storehouses which are entitled as systems, databases, and programs, whereas relational capital is referred to as all knowledge which is embedded in a relationship with the various parties including suppliers, customers, and various stakeholders too as expressed by Sharabati et al. (2010). Additionally, there are some other components which are entitled as spiritual capital and social capital as well (Asiaei & Jusoh, 2015).

It is found that each of the above stated components of IC are playing their significant role in determining the organizational performance (Lu et al., 2021; Xu & Li, 2020; Xu & Liu, 2020). Meanwhile, investment in all of these components of IC in the form of employee training and development, research and development, administrative system, new technologies and relationship management can generate some meaningful output as stated by Jabbar and Afza (2014). Similar argument is shared by Zambon *et al.* (2003) who claim that higher level of firm's investment in IC comparatively to some physical assets may create more value for the organization. Although significant research has been conducted while taking into account the components of IC and their association with the business performance, however, their implication for the construction industry is found to very limited and only few research works has been found in this regard (Abudaqa et al., 2021).

In addition, as per the latest data provided by Ministry of Economy at UAE, during the year 2018 (Q3), there are 65000 building and construction entities which are registered with Ministry of Human Resource and Emiratization by Economic Sector. However, it is found that UAE's construction sector is declined by 4.8 percent during the year 2020 due to COVID-19. However, it is also expected that during 2021, the same industry will rebound with the record growth of 3.1 percent along with the approval of new Dubai Building Code in October 2020 will lead to a positive development through revised set of construction rules and standards (Business Wire, 2021). In addition, the construction industry in UAE comprises of various employment titles like planning manager, commercial manager, architect, project engineer, project manager, general manager, quantity surveyor, contracts manager, safety officer, regional director, and site engineer, respectively (Johnson & Babu, 2020). All of these individuals are playing their significant while providing their valuable services under different work settings. Meanwhile,

the stated individuals are considered as among the significant. Based on the study background, this research has considered the following research objectives.

Research Objectives

1. To examine the impact of intellectual capital component in terms of human capital on the performance of construction industry in UAE.
2. To examine the impact of intellectual capital component in terms of relational capital on the performance of construction industry in UAE.
3. To examine the impact of intellectual capital component in terms of structural capital on the performance of construction industry in UAE.
4. To examine the impact of intellectual capital component in terms of spiritual capital on the performance of construction industry in UAE.
5. To examine the impact of supportive work behavior on the performance of construction industry in UAE.
6. To examine the moderating role of supportive work behavior on the relationship between components of intellectual capital and performance of construction industry in UAE.

Literature Review

According to Abiodun and Amos (2018), it is inferred that in businesses, effective human resource management can boost performance. Nevertheless, if businesses are unable to monitor and settle employee engagement in the business, implement appropriate human capital, there is a potential of financial wastage. However, the modern market's human capital concerns, such as choosing what skills employees should have, whether managers can make individuals effective, as well as the ramifications for leaders, deserve a lot more attention (Jogaratnam, 2018). Similarly, as per the study of Khan and Quaddus (2018), it was concluded that every facet of a businessperson's human capital does have a unique impact on their ability to execute. They further stated in the same research source that businesses rely largely on human expertise and indeed the potential to create revenue, value creation, and enhance overall business performance, hence human capital is a key part of intangible assets. They claim that companies with more qualified personnel (i.e., tertiary education as well as ability) are more able to have good creative judgment, because as long as there are humans IC is improved, employees may benefit the organization and, in turn, the company's performance.

According to Gracioli Camfield, Giacomello, Sellitto (2018), and (Abudaqa et al., 2020), it was inferred that implementing the infrastructure with administration comprises implementing control measures as well as business operations in line with goals adapted to just the company requirements to improve businesses' performance. Furthermore, it was inferred from the same source that the businesses must recognize structural capital capability as well as prioritize it to support business organization's performance. Additionally, as per the study of Lin, Yu, Wu, and Cheng (2018), it was found that within the finance industry, a favorable and robust correlation between structural capital and business performance has been shown. They further concluded that comparable to the compelling findings, a considerable optimistic tendency of SC had been identified for enhancing the business performance in the business institution. In particular, another study as examined by Prawira and Setiawan (2018), it was found a high correlation between SC as well as BP in the Italian banking business. For Uganda's banking institutions, SC demonstrated as a reasonably key element of IC (Smriti & Das, 2018). Additionally, they further stated that there is a positive and statistically significant relationship

between SC as well as BP. Moreover, the same study found no evidence of a substantial correlation between SC and BP in Pakistan's banking industry.

Accordingly, the study conducted by Afshar and Fazli (2018) stated that client, vendor, as well as governmental alliances, are critical in leadership and governance, and then those relationships which were not managed for maximum business performance might lead to reduced profitability. They further stated that the usage of capital facilities by interested parties should be optimized in terms of improving business results. Furthermore, the research examined by the Baier-Fuentes, Hormiga, Amorós, and Urbano (2018), it was concluded that in businesses, customer relationships as well as government and shareholders are critical. They further stated that the businesses are connected to clients and able to create knowledge about them and particular marketplaces. Furthermore, it was inferred from the same study that the public assistance in the form of grants, pieces of training, as well as state aid to assist businesses are becoming more competitive. According to the research study of Iazzolino, Chiappetta, and Chiappetta (2018), it was determined that mostly in the financial sector, there was a considerable positive correlation across relational capital and business performance. Comparably, the same analysis revealed a favorable relationship across RC and business performance in the Italian non-financial industry. The investigations as conducted by Molodchik, Paklina, and Parshakov (2018), significant and positive relationship between RC and business performance. They further stated that the tactical partnerships influence the effect of both a key contractor's strategic importance as well as a purchaser's performance metrics, and also the interaction role is associated with positive impact mostly by the purchaser as well as major distributor's relational capital, with the larger each relational capital. According to Abdullah and Othman (2019), their findings supported the impact of creativity as well as spiritual capital over performance measurement. Similarly, the impact of technological, spiritual capital, especially continuous improvement on business performance yields similar outcomes (Ahmad & Bin Mohammad, 2019). The study further revealed that the spiritual capital must influence businesses' organizational objectives, including certain development, performance improvement, profitability. The additional investigation should look into the effectiveness of spiritual capital on other organizational performance within businesses, also including employee engagement, dialogue management, as well as hidden capabilities (Khalique & Isa, 2019). As per the study results predict by Moghadam and Makvandi (2019), there is a significant connection between spiritual capital and business performance. Furthermore, individual employee productivity has been demonstrated to be linked to corporate citizenship practices (Muda & Che Abdul Rahman, 2019; Restuti, Diyanty, & Shauki, 2019).

Framework of the Study

Based on the literature review under chapter two, Figure 1 provides the layout for the research framework of the study covering the titles like human capital, structural capital, relational capital, and spiritual capital as core components of intellectual capital which are the main exogenous or independent variables of the study. On the other side, performance of construction industry is added as main endogenous or dependent variables under present research.

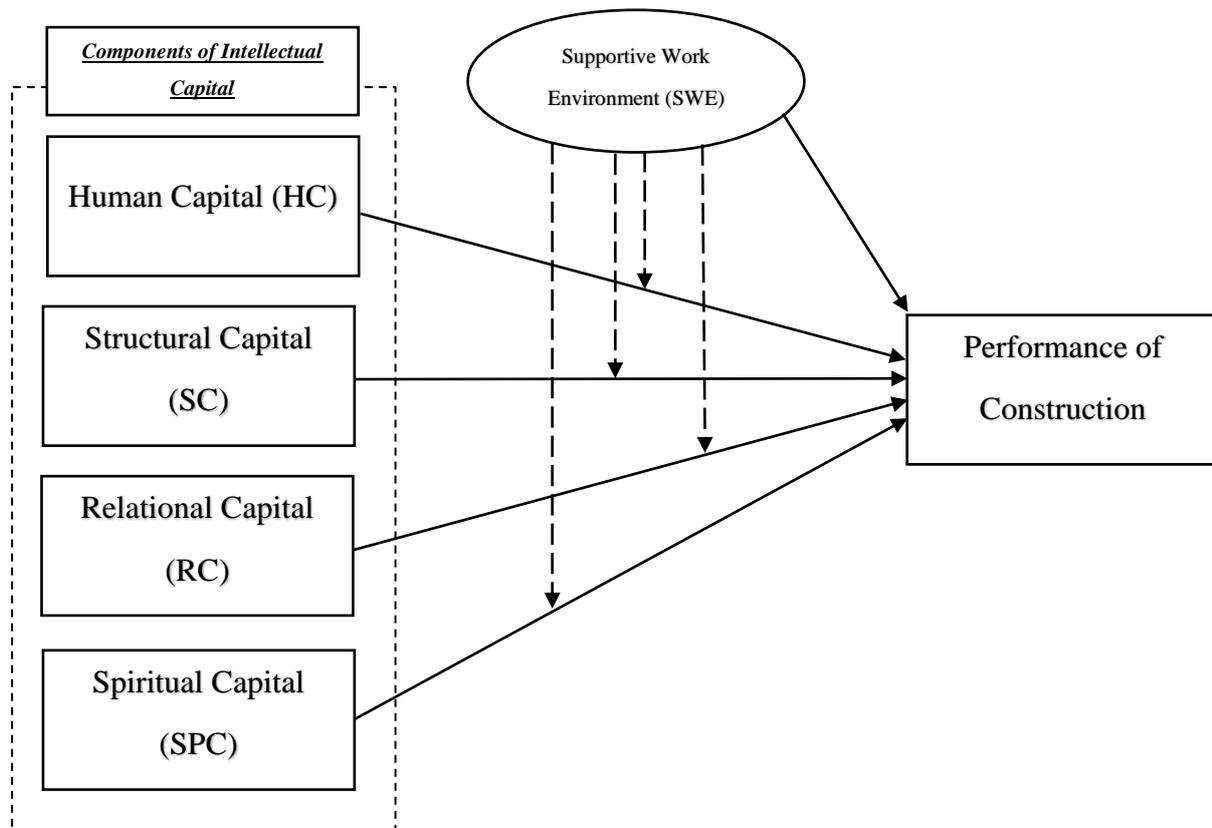


Figure 1: Research Framework of the Study

The direct impact from human capital, structural capital, relational capital, and spiritual capital is reflected through full arrow with the directions from all of these variables to performance of construction industry. Furthermore, the dotted arrows are showing the indirect or moderating effect of supportive work environment on the relationship between components of intellectual capital and performance of construction industry. Furthermore, a direct relationship is also tested between supportive work environment and performance factor as well.

Research Methodology

The word population in any research consist of total number of the people residing in a given area for a specified period of time (Pande & Kumburu, 2018). It defines the pool of individuals showing similar or different structures which allows the application of some genetic operators (Rivero & Periscal, 2009). As per latest data available from the of Government of UAE (2021), during the year 2018, total workforce in UAE was 7.384 million, which specifies a decline of 0.5% comparatively to the year 2017. However, out of the total stated workforce in the economy of UAE, 8% is engaged with the construction and building sector which specifies a total number of 560,000 (approximately) as working in the stated sector. The details for the total workforce as working in the region of UAE along with the number of employed, number of unemployed, and unemployment rate. Various individuals are currently linked with the construction industry of UAE. These individuals are entitled as construction managers, estimators, architects, supervisors, construction expeditors, construction workers, engineers, electricians, and various others. This research is based on the quantitative data analysis where data was collected through questionnaire approach developed through existing literature.

In addition, under present study, the selection of sample is based on the core suggestions as provided by Krejcie and Morgan (1970) who have given a Table for the total number of population and relevant sample size. This would indicate that if the population size in any study is known, then it is quite simple to finalize the total sample of the study. It is found that if the population in any study is up to 1000,000, then the sample size will be 384. Therefore, under present study a sample size of 384 is observed as reasonable enough. However, Salkind 's view for adjusting sample size (Bambale, 2014) have stated the fact that it is good to increase the sample size by 40-50 percent so that the possibility of loss of questionnaire and non-cooperative issues will be covered. Therefore, the sample size of 384 has been increased by 50 percent or 192 more questionnaires which has given a final number of 576 questionnaires to be distributed. However, we have got a valid response of 408 copies which were further utilized for the purpose of data analysis. For data analysis, cross tabulation technique is adopted for four demographic factors of the respondents; age, gender, qualification and working experience, whereas data is tested through measurement model and structural model.

Analysis and Discussion

Demographic details are presented through cross tabulation for the variables like age, gender, working experience, and qualification, respectively. Under Table 1 cross tabulation between working experience, age, and gender is provided where it is found that overall 99 male members from different age groups with the working experience of 0-2 years are working in the construction industry of UAE. Those having a working experience of 3-4 years are total 80 male and only 14 female members having their work life in construction industry. More specifically, out of 80, 24 are those having age group of 20-25 years, 20 having age distribution between 26-30 years, 17 are in the age range of 31-35 years, and 19 are those who are above 35 years of the age category. Additionally, those having working experience of above 4 years, but less than 6 years are total 82 males and 15 are females having all of the age ranges as well. Furthermore, it is found that total 89 male members have their working experience of above 6 years whereas total 9 females with such experience as shown in Table 4.5 of the study. Finally, there are total 80 males in the age group of 20-25 years, 90 in 26-30 years, 76 between 31-35 years, and 104 are above 35 years of age, respectively.

Table 1: Demographics through Cross Tabulation

Working Experience	Gender		Age				Total
			20-25 years	26-30 years	31-35 years	above 35 years	
0-2 Years	Gender	Male	22	26	21	30	99
		Female	1	5	8	6	20
	Total		23	31	29	36	119
3-4 Years	Gender	Male	24	20	17	19	80
		Female	1	3	7	3	14
	Total		25	23	24	22	94
above 4 Years and < 6 Years	Gender	Male	16	21	14	31	82
		Female	0	0	2	13	15
	Total		16	21	16	44	97
6 Years and above	Gender	Male	18	23	24	24	89
		Female	0	3	2	4	9
	Total		18	26	26	28	98

Total	Gender	Male	80	90	76	104	350
		Female	2	11	19	26	58
	Total		82	101	95	130	408

The second cross tabulation is presented for the working experience, gender, and qualification of the respondents. It is found that there are 40 respondents having their 12 years of less qualification which are currently working in the construction industry along with 0-2 years of experience. Additionally, those having 14 years of qualification are total 41 respondents, whereas those having 16 years plus any other diploma in their qualification list are total 38 respondents with the working experience of 0-2 years respectively.

In addition, Table 2 reports that there are 80 respondents in terms of male category having a working experience of 3-4 years and 14 are the females in the same range of working experience as well. Furthermore, those having experience of above 4 Years and < 6 Years are total 82 male and 15 females with all types of qualification ranges. Finally, the cross tabulation under Table 4.6 are 89 males out of which 31 have their qualification of 12 years, and same number of male respondents with their qualification years of 14. Furthermore, our study findings indicate that 27 male members have their experience of 6 years and above with the 16 years education along with any other diploma too.

Table 2: Cross Tabulation for Working Experience, Gender, and Qualification

Working Experience	Gender		Qualification			Total
			12 Years or Less	14 Years	16 Years+Other (Diploma etc)	
0-2 Years	Gender	Male	32	37	30	99
		Female	8	4	8	20
	Total		40	41	38	119
3-4 Years	Gender	Male	29	19	32	80
		Female	8	4	2	14
	Total		37	23	34	94
above 4 Years and < 6 Years	Gender	Male	35	23	24	82
		Female	5	6	4	15
	Total		40	29	28	97
6 Years and above	Gender	Male	31	31	27	89
		Female	1	4	4	9
	Total		32	35	31	98
Total	Gender	Male	127	110	113	350
		Female	22	18	18	58
	Total		149	128	131	408

Measurement Model Output

Various researchers have supported the utilization of cross loadings, Fornell-Larcker criterion, and Heterotrait-Monotrait ratio of correlations (HTMT) for checking the discriminant validity of the measurement model (Alarcón, Sánchez, & De Olavide, 2015; Hayes & Usami, 2020;

Henseler, 2017; Henseler, Ringle, & Sarstedt, 2015; Hilkenmeier, Bohndick, Bohndick, & Hilkenmeier, 2020; Li, Wen, Hau, Yuan, & Peng, 2020). More specifically, it is observed that the role of thumb for checking the standardized loadings of every single item, the value should be 0.70 or above (Esposito Vinzi, Chin, Henseler, & Wang, 2010). Table 3 provides the output for the loadings and cross loadings for the study items based on every single latent construct. It is found that for the human capital items ranging from HC1 to HC5, loadings are above 0.70 where the highest loading is 0.872 as reflected by HC3, and lowest is 0.727 as shown by HC1. Similarly, the loadings for the various under PCI is above 0.70 where lowest is 0.727 and highest is 0.844 as shown in Table 3 of the study. Additionally, the latent constructs entitled as RC and SC have also shown the fact that the relative loading of their items is also above the threshold level. Meanwhile, the value of loadings for the SPC items is 0.848, 0.857, 0.743, 0.827, 0.822, respectively. Lastly supportive working behavior's items are also showing the individual loadings which are above 0.70, hence no problem for the discriminant validity of the models. Besides, cross loadings against every single item is also lower than the main loadings as shown in Table 3.

Table 3: Loadings and Cross Loadings

	HC	PCI	RC	SC	SPC	SWE
HC1	0.727	0.105	0.073	0.046	-0.081	0.203
HC2	0.816	0.173	0.089	0.006	-0.027	0.229
HC3	0.872	0.248	0.115	0.026	0.021	0.272
HC4	0.823	0.225	0.051	0.059	-0.018	0.196
HC5	0.809	0.164	-0.033	0.003	0.022	0.102
PCI1	0.152	0.727	0.324	0.217	-0.147	0.565
PCI2	0.255	0.777	0.267	0.230	-0.146	0.411
PCI3	0.281	0.848	0.347	0.227	-0.120	0.493
PCI4	0.164	0.831	0.383	0.254	-0.115	0.478
PCI5	0.111	0.799	0.398	0.256	-0.131	0.463
RC1	0.168	0.427	0.823	0.028	-0.093	0.313
RC2	0.012	0.317	0.839	0.098	-0.096	0.312
RC3	-0.092	0.291	0.702	0.117	-0.121	0.344
RC4	0.105	0.299	0.773	0.069	-0.109	0.348
SC1	0.051	0.331	0.111	0.889	-0.653	0.283
SC2	0.024	0.255	0.089	0.872	-0.703	0.302
SC3	0.010	0.168	0.061	0.797	-0.678	0.263
SC4	0.023	0.239	0.047	0.934	-0.663	0.280
SPC1	-0.059	-0.191	-0.151	-0.620	0.848	-0.161
SPC2	0.017	-0.154	-0.101	-0.682	0.857	-0.200
SPC3	0.055	-0.075	-0.061	-0.554	0.743	-0.131
SPC4	-0.005	-0.090	-0.090	-0.653	0.827	-0.178
SPC5	-0.006	-0.047	-0.078	-0.637	0.822	-0.189
SWE1	0.302	0.435	0.325	0.266	-0.177	0.838
SWE2	0.307	0.523	0.443	0.237	-0.152	0.884
SWE3	0.157	0.519	0.355	0.273	-0.162	0.892
SWE4	0.141	0.615	0.327	0.337	-0.227	0.872

After dealing with the loadings and cross loadings of the study items for all of the latent constructs, next step is to examine the value of Fornell-Larcker Criterion which is suggested by Fornell and Larcker (1981). Based on the Fornell-Larcker Criterion it is inferred that every single relative latent construct of the study must shares more variance with its own indicators comparatively to other latent constructs in the model of the study as expressed by Fornell and Larcker (1981). For this purpose, the value of square root of average variance extracted have been presented which is greater than the correlation of the each of the study construct as suggested by (J. F. Hair, Hult, Ringle, & Sarstedt, 2016). The results under Table 4 shows the value of Fornell-Larcker Criterion in terms of off-diagonal series for all of the latent constructs named as HC, PCI, RC, SC, SPC, and SWI, respectively. It is found that all the values in the off-diagonal are presented where the square root of the AVE values is greater the correlation between the latent construct, hence no problem for the discriminant validity of the model.

Table 4: Fornell-Larcker Criterion

	HC	PCI	RC	SC	SPC	SWE
HC	0.811					
PCI	0.240	0.798				
RC	0.077	0.434	0.786			
SC	0.035	0.297	0.093	0.875		
SPC	-0.011	-0.164	-0.131	-0.764	0.820	
SWE	0.252	0.608	0.415	0.322	-0.208	0.872

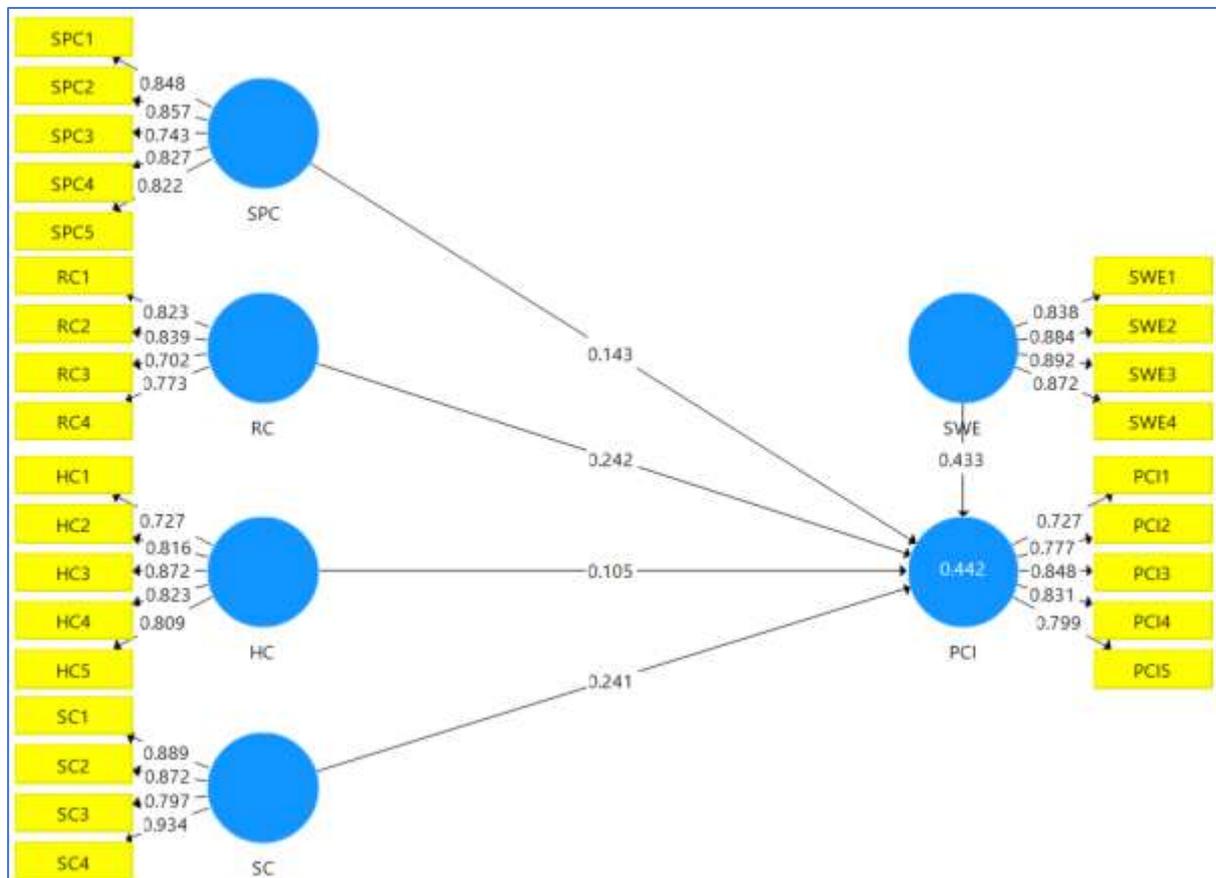


Figure 2: Measurement Model (PLS Algorithm)

Assessment of Structural Model

In its simplest context, the value of R² indicates the change in the main dependent variable due to all the independent variables of the study. It is also defined as the proportion of the variance for the dependent variable that is explained by all the independent variables in the model (Shi, 2020). In this regard, the value of R² have been explained by various researchers in terms of whether it is low, small, moderate or high etc. For example, research contribution as provided by Falk and Miller (1992) have expressed their view about the value of R² and claimed that minimum value of 0.10 for the R² is acceptable. However, on the other side, authors like Chin (1998) has expressed that value of R² like 0.19 is accepted as low, 0.33 is regarded as moderate, and 0.67 is assumed as major in order to examine the relative score of R² in any research. More specifically, Table 5 has shown the findings for the R² while considering performance of construction industry as main dependent/endogenous variable. It is found that the value of R² under present as generated under SEM approach through Smart PLS is 0.442 or 44.2% which reflects a moderate level of variation in the main dependent variable of the study.

Table 5: R² Results

Variable	R Square
PCI	0.442

After examining the explained variation in the main endogenous variable, next step is to cover the association between the study variables while considering the stated hypotheses of the study. For this purpose, firstly, direct relationship between the study variable is examined through structural equation modelling SEM approach in Smart PLS. The application of SEM is widely supported in the literature for testing the direct association and to conduct the hypotheses testing as well. Notable contribution is provided by (Gignac, 2006; Van De Schoot, Hoijtink, & Deković, 2010). In order to test the direct relationship between the variables of the study, findings are presented under Table 6. The first column is showing the path or direction of the relationship, where under second column beta coefficients are presented which are same to normal beta coefficients as expressed by Henseler et al. (2015). To examine whether the beta coefficients are significant not, a rule of thumb for the T-score is provided by the Hair, Black, Babin, and Anderson (2014) who claim that the minimum value for T-score should be 1.967 or above in order to claim that coefficient is statistically significant. The findings under Table 6 shows that all the study variables like human capital, structural capital, relational capital, and spiritual capital have their direct and significant impact on the performance of construction industry. This would indicate that these factors of IC are contributing towards higher performance of construction industry in UAE, hence beneficial in generating better position in the marketplace. Furthermore, the factor of supportive work behavior is also found to be significant determinant of PCI as shown through coefficient of 0.358 and T score of 7.62, hence showing significant output.

Table 6: Direct Relationship between the Variables

Path	Beta	STDEV	T Statistics	P Values
HC -> PCI	0.104	0.037	2.844	0.005
RC -> PCI	0.161	0.037	4.359	0.000
SC -> PCI	0.226	0.065	3.479	0.001
SPC -> PCI	0.189	0.064	2.951	0.003
SWE -> PCI	0.358	0.047	7.621	0.000

After examining the direct association between the study variables, next step is to examine the moderating role of supportive work behavior on the relationship between human capital, relational capital, spiritual capital, structural capital and performance of construction industry. Different authors have provided the justification for utilizing the moderator between exogenous and endogenous constructs of the study. For example, by Ramayah, Lee, and In (2011) have claimed that moderation test is conducted in order to know about the role of moderator between exogenous and endogenous variables. Different methods have been suggested by the researchers in order to examine the moderating effect on between independent-dependent relationship. These methods are entitled as hierarchal regression (Evans, 1985; Jia, Yan, Cai, & Liu, 2018; Tariq, Badir, & Chonglertham, 2019; Toprak & Savaş, 2020). However, while using this approach, it is required to manually calculate the interaction term with the help of each and every independent variable and moderator of the study. Meanwhile, there is another method which is known as cross products for the indicators of independent and moderator in any study (Chin et al., 2003; Dawson, 2014). In this study, researcher has utilized moderator (supportive work behavior) as an additional construct through which cross product of the predictor and moderator is crated. Therefore, such approach is known as product indicator approach (Becker, Ringle, & Sarstedt, 2018; Ramayah, Cheah, Chuah, Ting, & Memon, 2018; Sholihin & Ratmono, 2021).

Table 7 shows the findings for the moderating effect of SWE on the relationship between exogenous and endogenous construct of the study. It is found that that the moderating effect of SE on the relationship between SPC-PCI is positively significant at 5 percent (beta=0.120, standard deviation=0.059, T-score =0.024, p-value 0.044) This would justify the argument that there is a significant and positive moderating effect of SWI between spiritual capital and performance of construction industry. The direct impact of SPC on PCI is also significant and positive with the coefficient of 0.189. However, after analyzing the moderating effect, it is found that that with the presence of supportive work behavior between SPC and performance of construction industry, the relationship is more stronger as shown with the help of coefficient of 0.120. Although the spiritual capital is a positive indication in determining the higher organizational performance in the construction industry. However, when employees are provided with supportive working environment, it leads to higher productivity in the organization along with the increasing well-being of the employees. This would in return provides some positive results in the form of higher performance at organizational level along with the spiritual capital. Therefore, it is inferred that there is a significant and positive moderating effect of SWI on the relationship between spiritual capital and performance of construction industry in UAE. For the better understanding, moderation graph between SPC and PCI relationship is also presented below under Figure 3. It is found that higher SWI is leading is stringing the positive relationship between SPC and PCI comparatively to low SWI and vice versa. This would indicate those companies having more emphasize on higher SWI might gain a greater performance along with the presence of SPC.

Table 7: Moderation results

Path	Beta	STDEV	T Statistics	P Values
SPC*SWE -> PCI	0.120	0.059	2.024	0.044
RC*SWE -> PCI	0.163	0.030	5.446	0.000
HC*SWE -> PCI	0.141	0.034	4.099	0.000
SC*SWE -> PCI	0.263	0.060	4.422	0.000

In addition, the direct impact of RC on PCI is also observed as significantly positive with the coefficient of 0.161. This has provided the evidence that higher relational capital is leading towards more PCI and vice versa. However, with the interaction term between RC and SWI, the coefficient is 0.163 which shows more positive and strong effect comparatively to the direct outcomes under present study. This means that with the presence of SWI as a moderator, the relationship between RC and PCI is more stronger. More specifically, the value of coefficient for the interaction term is 0.163 which was 0.162 before the moderating effect. It means that significant benefit for relationship between RC and PCI is observed with the involvement of SWI. Furthermore, the findings under moderating effect of PWI also reveals that the coefficient of HC-SWE is showing a value of .141 which shows a positive effect. This would indicate that there is a positive moderating effect of SWI between HC-PCI where the value of T-score is 4.099. Meanwhile, the direct impact of HC on PCI is observed with the coefficient of 0.104, significant at 5 percent. However, after the involvement of moderating variable, the findings for the relationship between HC and PCI is more positive and strong with the coefficient of 0.141. This means that interaction term is strengthening the relationship between HC and performance of construction industry. Finally, the findings for the interaction effect between structural capital and performance of construction industry is 0.263 with the standard deviation of 0.060. This would provide the T-score of 4.422 and p-value of 0.000. It means that there is a significant and positive moderating effect of SWE between SC and PCI. This interaction effect is also compared with the direct relationship between SC and PCI whose coefficient is 0.226 and standard deviation of 0.065, significant at 5 percent. Although both the direct and indirect impact on the performance of construction industry are positive, however, the effect from interaction term is found to be more strong comparatively to direct impact, hence providing the evidence that moderating role of SWI is beneficial in leading towards positive and strong relationship between human capital and performance of construction industry in UAE.

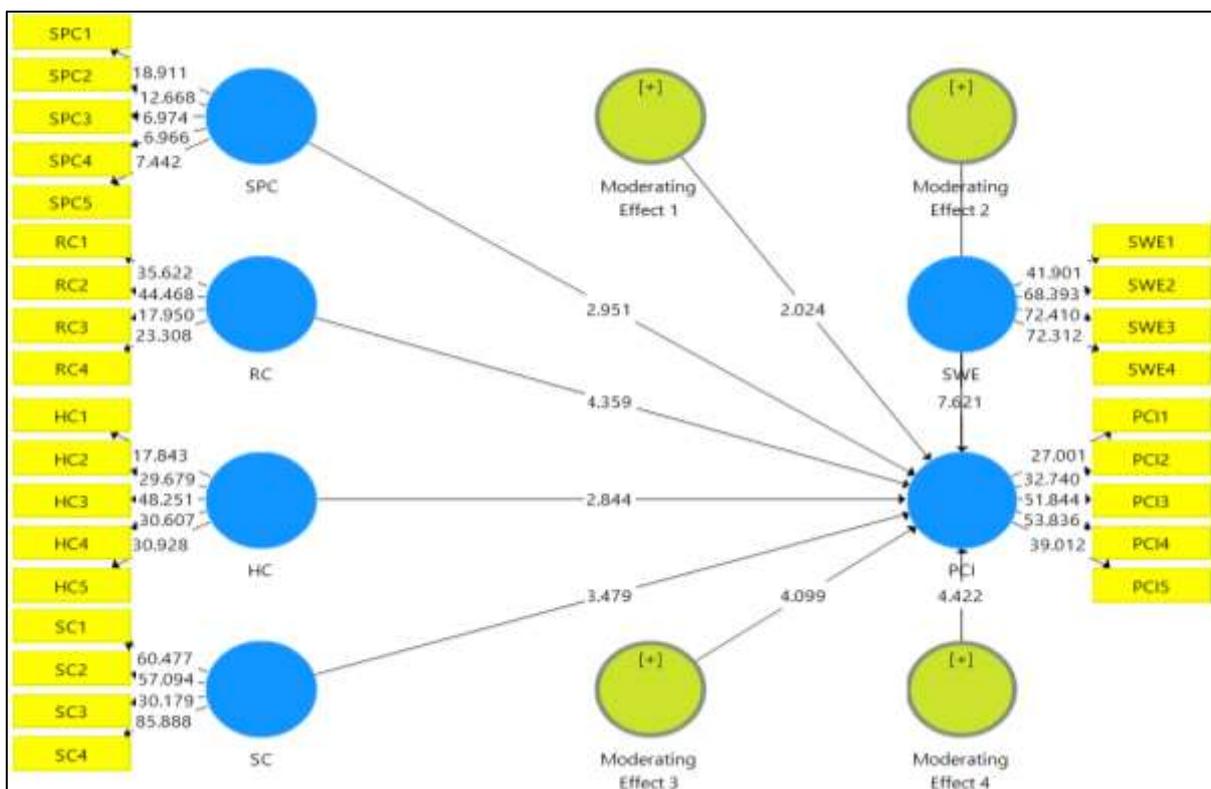


Figure 3: Structural Model (Bootstrapping Results)

Conclusion

This study has observed both direct and indirect relationship between four components of IC and performance of construction industry in UAE while talking the role of supportive work environment as a moderator. Based on the research objectives, stated framework and empirical output of the study, various contributions are provided by the current study. This study has provided several theoretical contributions in the existing literature. Firstly, the provided framework for exploring the association between components of intellectual capital and performance of construction industry along with the moderating role of supportive work behavior is a very first theoretical contribution in the literature due to the fact that none of the earlier studies have covered this gap. Secondly, the theoretical framework under present study is widely supported with the help of underpinning theory named as resource based view. This would justify the argument that the theoretical foundation is also added by the current study while exploring the dynamic association between exogenous, endogenous and moderator of the study. Thirdly, this study has provided a significant discussion about the performance outlook in the construction industry of UAE through which various upcoming studies can avail the benefits. This would indicate a good theoretical addition by this research in the literature work till date. Fourthly, the selection of study variables is entirely based on the extensive review of literature where it is found that the focus of earlier theoretical work is majorly on the manufacturing and service industries whereas little attention is paid towards the construction industry from the context of developed and developing economies. This is due to the fact that performance of construction industry is mainly investigated along with the risk factors and critical success factors where factors like intellectual capital are entirely neglected. This would specify another literature contribution under present study where the above stated gap is covered.

The theoretical discussion and empirical findings of this research can provide some significant directions for the future research. However, readers can consider the following points while getting the true understanding about future directions. Details are as follows:

- Considering the stated limitations of this study, it is found that only four components of intellectual capital were under consideration whereas other dimensions like social capital and information capital are entirely ignored. Therefore, the first recommendation indicates that future studies need to add these components too while developing their theoretical framework for the association between intellectual capital and firm performance.
- Meanwhile, this research has specified the performance of construction industry as main dependent variable, therefore, a big gap as well as limitation is also found in terms of adding other dimension of performance like market performance and customer-satisfaction as well. For this reason, future studies need to add other dimension of performance outlook in the construction industry as well.
- In addition, this research is entirely focusing on the construction industry which specifies the directions for the consideration of other sectors like manufacturing and service firms in UAE in the coming time. This would show that future implication of upcoming studies will provide some better outlook comparatively to this study.
- For the future studies, it is also recommended that both qualitative and quantitative approaches should be applied so that a bigger and extensive picture for the generalization and implications of the findings can be achieved.
- Finally, it is also recommended that coming studies should consider both first order and second order constructs. This will specify that better and more reliable findings will be generated while considering the two step or any other upgraded methodology.

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