CHAPTER 4

RESEARCH METHODOLOGY

4.1 INTRODUCTION

Before starting the survey, the consent of the participants who are taking part in this study are given clear explaination that “I understand that my taking part is voluntary; I can withdraw from the study at any time and I do not have to give any reasons for why I no longer want to take part.”, thus all particiapnts have to give their consent to do this survey voluntarily. Moreover, for the assessment of results, this chapter is divided into seven main sections. Firstly, data screening which includes missing values, outliers, and suspicious response patterns. Secondly, descriptive statistics of constructs, normality test and response rate. Third and fourth section present the issues regarding the multicollinearity and common method variance. Fifth and Sixth section discuss the exploratory factor analysis and measurement model assessment. Finally, the seventh section converse about structural model assessment which contains direct and moderation hypotheses testing.

in this study, the software that is used in data analysis are namely part 1, 2, 3, 4 and 5 used the spss version 26.0, while part 6 and 7 employed structural equation modeling-variance based (sem-vb) through partial least squares (pls) method to analyze the research model using the software of smartpls 3.0 (ringle et al., 2015).

4.2 DATA SCREENING

Prior to SEM analyzes, the data has to be screened and prepared. According to Kline (2011), SEM requires certain assumptions about the distributional characteristics of the dataset used for the analyzes, and problems related to the data may contribute towards model estimation and fitting program to come up with solutions and at its worst can cause the program to crash. Thus, in order to improve the quality of the data, the approaches of preparing and screening data are adopted as follows:

4.2.1 Missing Data

Missing data are often a problem in social science research because many projects obtain data using survey research. When the amount of missing data on a questionnaire exceeds 15%, the observation is typically removed from the data file (Hair et al., 2013). The problems in a form of missing data can result firstly, in the declining ability of the statistical test to bring about a relationship in a dataset and secondly, the parameter estimates to develop biases (Hair et al., 2010).

The missing data extent was examined via SPSS, and 22 cases were deleted from subsequent analysis because the respondents did not provide answers to more than 15 percent of the questions, which meant the number of missing values per observation exceeded 15% (Hair et al., 2013) leaving 360 usable responses out of 382 total responses.

Missing value treatment procedures (e.g., mean replacement) could then be applied to these data (Hair et al., 2010). If the number of missing values per indicator

is relatively small (i.e., less than 5% missing per indicator), it recommends mean value replacement instead of casewise deletion to treat the missing values when running SEM (Hair et al., 2013). The screening results of the data via SPSS showed that there was a minimal amount of missing data (less than 5%) which was replaced by using the variable mean responses for each measurement item (Median of nerby point – all).

4.2.2 Outliers

Outliers refer to the observations that have an unusual value for a single variable (Tabachnick & Fidell, 2012). In addition, outliers can be identified by their distinct and different characteristics such as high or low values on a variable or falling at the outer ranges of the distribution (Hair et al., 2010).

For outliers detection, besides examining box-plots, each variable was examined for the standardized (z) score (Tabachnick & Fidell, 2012). Following Hair et al., (2010), a case is an outlier if its standard score is ±4.0 or beyond. Therefore any Z-score greater than 4 or less than -4 is considered to be an outlier.

The results indicated that the standardized (z) scores of 8 cases were beyond ±4 for some items. Thus these three cases were considered as outliers and hereby deleted from the analysis. Therefore the usable responses dropped from 360 to 352.

4.2.3 Suspicious Response Patterns

Suspicious response or unengaged responses or straight lining is when a respondent marks the same response for a high proportion of the questions. For

example, if a 5-point scale is used to obtain answers and the response pattern is all 4s, then that respondent in most cases should be removed from the dataset. Similarly, if a respondent selects only 4s or only 5s, then that respondent should in most cases be removed (Hair et al., 2013).

Based on the above, 4 cases out of 352 remaining cases were removed because of the suspicious response issue; 2 respondants selected only 1s, 1 respondent selected only 3s, and 1 respondants selected only 4s. Therefore, after the deletion of four cases the assessment proceeded to analyze 348 respondents.

4.3 DESCRIPTIVE ANALYSIS

Once there are no missing data, outliers and suspicious response issue in the data set, the researcher can begin the descriptive phase of data analysis. This section discusses the demographic profile of the respondents, descriptive statistics of constructs, normality test and finally the response rate.

4.3.1 Demographic Profile - Frequency Tables

The respondents' information is summarized using basic descriptive statistics such as frequencies and percentages in order to provide an overview of the data collected. Table 4.1 shows the frequency and percentage for demographic profile of respondents in the study sample. It shows that 260 (74.7%) respondents are male while the rest 88 (25.3%) are female participants.

Regarding age groups of the sample, 47.4% of them are between 30 - 39 years old, 40.8% of total respondents are between 20 and 29 which constitutes 142 respondants from the sample used, 7.5% of total respondents are between 40 and 49, 4.3% of total respondents are above 50 years old.

In terms of education, 8.6% of respondents have a diploma. Furthermore, 29% of respondents are undergraduate degree holders, 11.8.0% of respondents have a postgraduate degree, while 50.6% of respondents have a secondary school education.

Morover, the vast majority of respondents are married which represent 89.7%, whilst 8.9% of respondents are single , 1.4% of the respondents are divorced.

Table 4.1: Summary of Demographic Profile of Respondents

Demographic Item	Categories	Frequency	Percentage
Gender	1. Male	260	74.7
	2. Female	88	25.3
Age	1. 20-29 Years old	142	40.8
	2. 30-39 Years old	165	47.4
	3. 40-49 Years old	26	7.5
	4. More than 50 Years old	15	4.3
Marital Status	1. Single	31	8.9
	2. Married	312	89.7
	3. Divorced	5	1.4
Education Background	1. Secondary School	176	50.6
	2. Diploma	30	8.6
	3. Undergraduate Degree	101	29.0
	4. Postgraduate Degree	41	11.8
Total		**348**	**100**

4.3.2 Measures Of Central Tendency And Dispersion

This section provides a commentary on the outcome of the descriptive analysis. By looking individually at all the five constructs and providing its interpretation, points of discussion can be generated for a better understanding of its implications. To analyze the level of perception, the rule of thumb suggested by Pallant, (2013) is utilize which is if the rating of the instrument is on the five Likert Scale, the level of agreement by respondents can be divided into three groups whereby the mean score between 0 and 2.33 i ndicates low value or level of perception, the mean score from 2.34 to 3.66 indicates as moderate level of perception, while the mean score between 3.67 and 5.00 indicates high level of perception.

4.3.2.1 Intellectual Capital

a) Human Capital

Table 4.2 presents the frequency, percentage, mean and standard deviation of each item, which measures knowledge among respondents. Respondents are asked to indicate their opinion which is measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Generally, the results indicate the overall respondents' mean score for human capital in the current study is 4.03 with a standard deviation of 0.818, which indicate that the respondents agreed that they have suitable education to fulfill their jobs, are well trained, hold suitable work experience for accomplishing their job successfully, are well-skilled professionally to accomplish their job successfully, understand that doing this job well is a reward in itself, feel thoroughly familiar with their tasks, and mastering the job means a lot to them.

Table 4.2: Mean and standard deviation of human capital

No.	*Items*	*1*	*2*	*3*	*4*	*5*			
		n	*n*	*n*	*n*	*n*	*M*	*SD*	*Rank*
		%	*%*	*%*	*%*	*%*			
HC1	Employees have suitable education to fulfill their jobs.	0	0	78	142	128	4.14	.757	4
		0	0	22.4	40.8	36.8			
HC2	Employees are well trained.	0	0	75	148	125	4.14	0.745	5
		0	0	21.6	42.5	35.9			
HC3	Employees hold suitable work experience for accomplishing their job successfully.	0	0	79	122	147	4.20	0.783	1
		0	0	22.7	35.1	42.2			
HC4	Employees are well-skilled professionally to accomplish their job successfully.	0	4	79	126	139	4.15	0.807	3
		0	1.1	22.7	36.2	39.9			
HC5	Employees understand that doing this job well is a reward in itself.	0	2	78	122	146	4.18	0.797	2
		0	0.6	22.4	35.1	42.0			
HC6	Considering the time spent on the job, employees feel thoroughly familiar with their tasks.	1	1	84	125	137	4.14	0.809	6
		0.3	0.3	24.1	35.9	39.4			
HC7	Mastering their jobs means a lot to our employees.	13	64	126	100	45	3.29	1.029	7
		3.7	18.4	36.2	28.7	12.9			
	Total						4.03	0.818	

Source: Survey

Note: n=frequency; %=percentage; 1= strongly Disagree 2=Disagree; 3= Neutral; 4= Agree; 5= strongly Agree; M=Mean; SD=Standard Deviation.

b) Relational Capital

Table 4.3 presents the frequency, percentage, mean and standard deviation of each item, which measures relational capital among respondents. Respondents are asked to indicate their opinion which is measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Generally, the results indicate the overall respondents' mean score for skills in the current study is ٤.107 with a standard deviation of 0.803, which indicate that the respondents agreed that they have a close interaction with their stakeholders, have

mutual respect with the stakeholders, have mutual trust with the stakeholders, and have personal friendships with the stakeholders.

Table 4.3: Mean and standard deviation of relational capital

No.	*Items*	*1* *n* *%*	*2* *n* *%*	*3* *n* *%*	*4* *n* *%*	*5* *n* *%*	*M*	*SD*	*Rank*
RC1	Employees have a close interaction with their stakeholders.	2 0.6	1 0.3	69 19.8	156 44.8	120 34.5	4.12	0.770	2
RC2	Employees have mutual respect with the stakeholders.	0 0 1	4 1.1 6	77 22.1 75	133 38.2 146	134 38.5 120	4.14	0.796	1
RC3	Employees have mutual trust with the stakeholders.	0.3 3	1.7 7	21.6 70	42.0 146	34.5 122	4.09	0.806	3
RC4	Employees have mutual trust with the stakeholders.	0.9	2.0	20.1	42.0	35.1	4.08	0.840	4
	Total						4.10	0.803	

Source: Survey

Note: n=frequency; %=percentage; 1= strongly Disagree 2=Disagree; 3= Neutral; 4= Agree; 5= strongly Agree; M=Mean; SD=Standard Deviation.

c) Structural Capital

Table 4.4 presents the frequency, percentage, mean and standard deviation of each item, which measures attitude among respondents. Respondents are asked to indicate their opinion which is measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Generally, the results indicate the overall respondents' mean score for structural capital in the current study is 4.02 with a standard deviation of 0.800 which indicate that the respondents agreed that they realize the relationships among authority, responsibility, and benefit; know well about the contents of organization's culture; can

effectively share their knowledge with each other; and can conveniently access organization information.

Table 4.4: Mean and standard deviation of structural capital

No.	*Items*	*1*	*2*	*3*	*4*	*5*	*M*	*SD*	*Rank*
		n	*n*	*n*	*n*	*n*			
		%	*%*	*%*	*%*	*%*			
SC1	Employees realize the relationships	0	1	61	159	127	4.18	0.721	1
	among authority, responsibility, and	0	0.3	17.5	45.7	36.5			
	benefit.								
	Employees effectively construct an	0	0	71	165	112	4.12	0.717	6
SC2	information system.	0	0	20.4	47.4	32.2			
	Employees effectively utilize their	0	2	80	150	116	4.09	0.761	7
SC3	information system.	0	0.6	23.0	43.1	33.3			
	Employees know well about the contents	0	0	85	129	134	4.14	0.782	4
SC4	of organization's culture.	0	0	24.4	37.1	38.5			
	Employees clearly recognize the	0	0	82	132	134	4.15	0.775	2
SC5	organization's perspective.	0	0	23.6	37.9	38.5			
	Employees can operate an efficient	0	0	83	134	131	4.14	0.773	3
SC6	organization process.	0	0	23.9	38.5	37.6			
	Employees can effectively share their	0	0	80	142	126	4.13	0.759	5
SC7	knowledge with each other.	0	0	23.0	40.8	36.2			
	Employees can conveniently access	25	77	99	108	39	3.17	1.114	8
SC8	organization information.	7.2	22.1	28.4	31.0	11.2			
	Total						4.02	0.800	

Source: Survey

Note: n=frequency; %=percentage; 1= strongly Disagree 2=Disagree; 3= Neutral; 4= Agree; 5= strongly Agree; M=Mean; SD=Standard Deviation

4.3.2.2 Job Satisfaction (JS)

Table 4.5 presents the frequency, percentage, mean and standard deviation of each item, which measures power distance among respondents. Respondents are asked to indicate their opinion which is measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Generally, the results indicate the overall respondents' mean score for job satisfaction in the current study is 3.66 with a standard deviation of 1.02, which indicate that the respondents slightly agree or not sure that they feel close to the people at work, feel good about working at this public institution, feel secure about their job, believe leaders are concerned about them, their wages are good, and all their talents and skills are used at work.

Table 4.5: Mean and standard deviation of job satisfaction

No.	*Items*	*1*	*2*	*3*	*4*	*5*			
		n	*n*	*n*	*n*	*n*	*M*	*SD*	*Rank*
		%	*%*	*%*	*%*	*%*			
JS1	I receive recognition for a job well done.	11	33	93	152	59	3.62	0.978	7
		3.2	9.5	26.7	43.7	17.0			
JS2	I feel close to the people at work.	6	33	75	151	83	3.78	0.971	1
		1.7	9.5	21.6	43.4	23.9			
JS3	I feel good about working at this organization.	13	28	73	166	68	3.71	0.992	3
		3.7	8.0	21.0	47.7	19.5			
JS4	I feel secure about my job.	13	32	90	158	55	3.60	0.983	8
		3.7	9.2	25.9	45.4	15.8			
JS5	I believe management is concerned about me.	14	35	72	145	82	3.71	1.060	4
		4.0	10.1	20.7	41.7	23.6			
JS6	On the whole, I believe work is good for my physical health.	14	37	61	156	80	3.72	1.057	2
		4.0	10.6	17.5	44.8	23.0			
JS7	My wages are good.	8	47	103	110	80	3.59	1.055	9
		2.3	13.5	29.6	31.6	23.0			
JS8	All my talents and skills are used at work	11	40	104	144	49	3.52	0.977	10
		3.2	11.5	29.9	41.4	14.1			
JS9	I get along with my supervisors.	18	34	61	154	81	3.71	1.087	5
		5.2	9.8	17.5	44.3	23.3			
JS10	I feel good about my job.	17	36	69	144	82	3.68	1.091	6
		4.9	10.3	19.8	41.4	23.6			
	Total						3.66	1.025	

Source: Survey

Note: n=frequency; %=percentage; 1= strongly Disagree 2=Disagree; 3= Neutral; 4= Agree; 5= strongly Agree; M=Mean; SD=Standard Deviation

4.3.2.3 Transformational Leadership (TL)

In this study, the overall construct quality contains four dimensions namely system quality, information quality, and service quality.

1) Idealized Influence (II)

Table 4.6 presents the frequency, percentage, mean and standard deviation of each item, which measures idealized influence among respondents. Respondents are asked to indicate their opinion which is measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Generally, the results indicate the overall respondents' mean score for idealized influence in the current study is 3.05 with a standard deviation of 1.17, which indicate that the respondents agreed that leaders install pride in others for being associated with them, go beyond self-interest for the good of the group, act in ways that build others' respect for them, display a sense of power and confidence, talk about their most important values and beliefs, specify the importance of having a strong sense of purpose, consider the moral and ethical consequences of decisions, and emphasize the importance of having a collective sense of mission.

Table 4.6: Mean and standard deviation of idealized influence

No.	*Items*	*1*	*2*	*3*	*4*	*5*	*M*	*SD*	*Rank*
		n	*n*	*n*	*n*	*n*			
		%	*%*	*%*	*%*	*%*			
II1	Leaders instill pride in others for being	48	59	82	113	46	3.14	1.248	2
	associated with them.	13.8	17.0	23.6	32.5	13.2			
	Leaders go beyond self-interest for the	46	73	96	84	49	3.05	1.243	4
II2	good of the group.	13.2	21.0	27.6	24.1	14.1			
		46	73	92	86	51	3.07	1.254	3

II3	Leaders act in ways that build others' respect for them.	13.2	21.0	26.4	24.7	14.7			
	Leaders display a sense of power and	46	48	99	98	57	3.21	1.251	1
II4	confidence.	13.2	13.8	28.4	28.2	16.4			
	Leaders talk about their most important	39	59	131	84	35	3.05	1.124	5
II5	values and beliefs	11.2	17.0	37.6	24.1	10.1			
	Leaders specify the importance of	35	77	118	90	28	3.00	1.099	6
II6	having a strong sense of purpose.	10.1	22.1	33.9	25.9	8.0			
	Leaders consider the moral and ethical	34	79	135	73	27	2.94	1.067	8
II7	consequences of decisions.	9.8	22.7	38.8	21.0	7.8			
	Leaders emphasize the importance of	42	64	142	70	30	2.95	1.102	7
II8	having a collective sense of mission.	12.1	18.4	40.8	20.1	8.6			
	Total						3.05	1.17	

Source: Survey

Note: n=frequency; %=percentage; 1= strongly Disagree 2=Disagree; 3=Unsure; 4= Agree; 5= strongly Agree M=Mean; SD=Standard Deviation.

2) Inspirational Motivation (IM)

Table 4.7 presents the frequency, percentage, mean and standard deviation of each item, which measures inspirational motivation among respondents. Respondents are asked to indicate their opinion which is measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Generally, the results indicate the overall respondents' mean score for inspirational motivation in the current study is 2.95 with a standard deviation of 1.11, which indicate that the respondents are neutral that leaders talk optimistically about the future, talk enthusiastically about what needs to be accomplished, articulate a compelling vision of the future, and express confidence that goals will be achieved.

Table 4.7: Mean and standard deviation of inspirational motivation

No.	*Items*	*1*	*2*	*3*	*4*	*5*			
		n	*n*	*n*	*n*	*n*	*M*	*SD*	*Rank*
		%	*%*	*%*	*%*	*%*			
IM1	Leaders talk optimistically about	41	63	125	83	36	3.03	1.143	1
	the future.	11.8	18.1	35.9	23.9	10.3			
IM2	Leaders talk enthusiastically about	37	83	114	85	29	2.96	1.115	2
	what needs to be accomplished.	10.6	23.9	32.8	24.4	8.3			
IM3	Leaders articulate a compelling	35	88	129	66	30	2.91	1.088	4
	vision of the future.	10.1	25.3	37.1	19.0	8.6			
IM4	Leaders express confidence that	43	72	136	65	32	2.92	1.119	3
	goals will be achieved.	12.4	20.7	39.1	18.7	9.2			
	Total						2.95	1.11	

Source: Survey

Note: n=frequency; %=percentage; 1= strongly Disagree 2=Disagree; 3=Unsure; 4= Agree; 5= strongly Agree M=Mean; SD=Standard Deviation

3) Intellectual Stimulation (IS)

Table 4.8 presents the frequency, percentage, mean and standard deviation of each item, which measures intellectual stimulation among respondents. Respondents are asked to indicate their opinion which is measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Generally, the results indicate the overall respondents' mean score for intellectual stimulation in the current study is 2.93 with a standard deviation of 1.13, which indicate that the respondents agreed that leaders re-examine critical assumptions to question whether they are appropriate, seek differing perspectives when solving problems, get others to look at problems from many different angles, and suggest new ways of looking at how to complete assignments.

Table 4.8: Mean and standard deviation of intellectual stimulation

No.	*Items*	*1*	*2*	*3*	*4*	*5*			
		n	*n*	*n*	*n*	*n*	*M*	*SD*	*Rank*
		%	*%*	*%*	*%*	*%*			
IS1	Leaders re-examine critical assumptions to question whether they are appropriate.	41	78	126	81	22	2.90	1.084	3
		11.8	22.4	36.2	23.3	6.3			
IS2	Leaders seek differing perspectives when solving problems.	39	78	113	82	36	2.99	1.151	1
		11.2	22.4	32.5	23.6	10.3			
IS3	Leaders get others to look at problems from many different angles.	48	67	123	82	28	2.93	1.140	2
		13.8	19.3	35.3	23.6	8.0			
IS4	Leaders suggest new ways of looking at how to complete assignments.	48	75	122	72	31	2.89	1.150	4
		13.8	21.6	35.1	20.7	8.9			
	Total						2.93	1.131	

Source: Survey

Note: n=frequency; %=percentage; 1= strongly Disagree 2=Disagree; 3=Unsure; 4= Agree; 5= strongly Agree M=Mean; SD=Standard Deviation

4) Individual Consideration (IC)

Table 4.9 presents the frequency, percentage, mean and standard deviation of each item, which measures individual consideration among respondents. Respondents are asked to indicate their opinion which is measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Generally, the results indicate the overall respondents' mean score for individual consideration in the current study is 3.31 with a standard deviation of 1.20, which indicate that the respondents agreed that leaders treat others as individuals rather than just as a member of a group, consider an individual as having different needs, abilities,

and aspirations from others, seek a differing point of view when dealing with organizational issues, and help others to develop their strengths.

Table 4.9: Mean and standard deviation of individual consideration

No.	*Items*	*1*	*2*	*3*	*4*	*5*			
		n	*n*	*n*	*n*	*n*	*M*	*SD*	*Rank*
		%	*%*	*%*	*%*	*%*			
IC1	Leaders treat others as individuals rather than just as a member of a group.	25	60	84	107	72	3.41	1.198	1
		7.2	17.2	24.1	30.7	20.7			
IC2	Leaders consider an individual as having different needs, abilities, and aspirations from others.	26	71	79	104	68	3.34	1.214	2
		7.5	20.4	22.7	29.9	19.5			
IC3	Leaders seek a differing point of view when dealing with organizational issues.	26	76	92	83	71	3.28	1.224	3
		7.5	21.8	26.4	23.9	20.4			
IC4	Leaders help others to develop their strengths.	25	75	102	84	62	3.24	1.185	4
		7.2	21.6	29.3	24.1	17.8			
	Total						3.31	1.20	

Source: Survey

Note: n=frequency; %=percentage; 1= strongly Disagree 2=Disagree; 3=Unsure; 4= Agree; 5= strongly Agree M=Mean; SD=Standard Deviation

4.3.2.4 Innovation

Table 4.10 presents the frequency, percentage, mean and standard deviation of each item, which measures individual consideration among respondents. Respondents are asked to indicate their opinion which is measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Generally, the results indicate the overall respondents' mean score for innovation in the current study is 3.67 with a standard deviation of 1.07, which indicate that the respondents agreed that they accept demands that go beyond existing services,

invent new services, frequently refine the provision of existing services, introduce improved but existing services for the public and improve their efficiency of services.

Table 4.10: Mean and standard deviation of innovation

No.	*Items*	*1*	*2*	*3*	*4*	*5*			
		n	*n*	*n*	*n*	*n*	*M*	*SD*	*Rank*
		%	*%*	*%*	*%*	*%*			
IN1	We accept demands that go beyond existing services.	12	34	89	145	68	3.64	1.013	5
		3.4	9.8	25.6	41.7	19.5			
IN2	We invent new services.	12	33	82	124	97	3.75	1.070	1
		3.4	9.5	23.6	35.6	27.9			
IN3	We experiment with new approaches and technological methods in education	10	39	80	140	79	3.69	1.034	4
		2.9	11.2	23.0	40.2	22.7			
IN4	We frequently refine the provision of existing services.	15	36	67	148	82	3.71	1.071	2
		4.3	10.3	19.3	42.5	23.6			
IN5	We regularly implement small adaptations to existing services.	21	26	75	142	84	3.70	1.100	3
		6.0	7.5	21.6	40.8	24.1			
IN6	We introduce improved but existing services for the public.	21	29	85	140	73	3.62	1.090	6
		6.0	8.3	24.4	40.2	21.0			
IN7	We improve our provision's efficiency of services.	26	33	78	139	72	3.57	1.140	7
		7.5	9.5	22.4	39.9	20.7			
	Total						3.67	1.07	

Source: Survey

Note: n=frequency; %=percentage; 1= strongly Disagree 2=Disagree; 3=Unsure; 4= Agree; 5= strongly Agree M=Mean; SD=Standard Deviation

4.3.3 Normality Test

Although PLS does not require normal-distributed input data (Hair et al., 2017), Table 4.11 shows that the data of this study is normally-distributed. Normality is used to describe a symmetrical, bell-shaped curve, which has the greatest frequency of scores in the middle with smaller frequencies towards the extremes. Normality can be assessed by obtaining skewness and kurtosis values (Pallant, 2013).

According to George and Mallery (2013), the arithmetic mean is a good descriptor if the Skewness value obtained is within ±2.0 cut-off point. Byrne (2010) set the cut-off point For Kurtosis, which is less than 7 to be acceptable. Table 4.11 gives a summary of the skewness and kurtosis values for all 56 items which indicate the normality of the variables. The normality of the 56 items was checked and the result indicated no violation. Thus, all variables in this study were categorized as normally distributed.

Table 4.11: Assessment of Normality of All Items

	Skewness	*Std. Error of Skewness*	*Kurtosis*	*Std. Error of Kurtosis*
II1	-0.292	0.131	-0.948	0.261
II2	-0.066	0.131	-0.966	0.261
II3	-0.081	0.131	-0.996	0.261
II4	-0.299	0.131	-0.846	0.261
II5	-0.146	0.131	-0.572	0.261
II6	-0.086	0.131	-0.664	0.261
II7	0.015	0.131	-0.486	0.261
II8	-0.053	0.131	-0.489	0.261
IM1	-0.115	0.131	-0.655	0.261
IM2	-0.021	0.131	-0.715	0.261
IM3	0.116	0.131	-0.535	0.261
IM4	0.029	0.131	-0.552	0.261
IS1	-0.059	0.131	-0.619	0.261
IS2	-0.023	0.131	-0.757	0.261
IS3	-0.093	0.131	-0.707	0.261
IS4	0.015	0.131	-0.709	0.261
IC1	-0.346	0.131	-0.816	0.261
IC2	-0.259	0.131	-0.945	0.261
IC3	-0.119	0.131	-1.001	0.261
IC4	-0.084	0.131	-0.900	0.261
HC1	-0.245	0.131	-1.219	0.261
HC2	-0.239	0.131	-1.169	0.261
HC3	-0.358	0.131	-1.285	0.261

HC4	-0.411	0.131	-0.984	0.261
HC5	-0.411	0.131	-1.107	0.261
HC6	-0.421	0.131	-0.743	0.261
HC7	-0.087	0.131	-0.551	0.261
SC1	-0.338	0.131	-0.862	0.261
SC2	-0.178	0.131	-1.038	0.261
SC3	-0.235	0.131	-1.009	0.261
SC4	-0.252	0.131	-1.323	0.261
SC5	-0.265	0.131	-1.289	0.261
SC6	-0.243	0.131	-1.289	0.261
SC7	-0.226	0.131	-1.233	0.261
SC8	-0.163	0.131	-0.770	0.261
RC1	-0.558	0.131	0.241	0.261
RC2	-0.396	0.131	-0.931	0.261
RC3	-0.490	0.131	-0.299	0.261
RC4	-0.717	0.131	0.430	0.261
JS1	-0.603	0.131	0.093	0.261
JS2	-0.632	0.131	-0.052	0.261
JS3	-0.825	0.131	0.465	0.261
JS4	-0.676	0.131	0.221	0.261
JS5	-0.720	0.131	-0.017	0.261
JS6	-0.792	0.131	0.079	0.261
JS7	-0.304	0.131	-0.668	0.261
JS8	-0.478	0.131	-0.106	0.261
JS9	-0.832	0.131	0.118	0.261
JS10	-0.739	0.131	-0.061	0.261
RI1	-0.605	0.131	-0.020	0.261
RI2	-0.638	0.131	-0.209	0.261
RI3	-0.587	0.131	-0.226	0.261
IIN1	-0.753	0.131	-0.001	0.261
IIN2	-0.812	0.131	0.151	0.261
IIN3	-0.714	0.131	0.022	0.261
IIN4	-0.704	0.131	-0.171	0.261

Key: RI: radical innovation, IIN: incremental innovation, JS: job satisfaction

The result indicated that the skew and kurtosis of all 56 items were between ±2 and ±7 respectively. Therefore, it can be concluded that the data set of all items were well-modelled by a normal distribution.

4.3.4 Response Rate

Baruch & Holtom (2008) examines the response rates for surveys used in organizational research. It analyzed 1607 studies published in the years 2000 and 2005 in 17 refered academic journals and identified 490 different studies that utilized surveys. The study examined the response rates in these studies, which covered more than 100,000 organizations and 400,000 individual respondents and the result shows that mean response rates for the questionnaire (Online) is 54.7%. questionnaire distribution number should not be equal to the number of sample size because the response rate often will not be 100% in order to get the required sample size.

From the 500 questionnaires distributed, 382 sets were returned to which 348 responses were useful for analysis. The response rate for this study is 76.4%, which is considered very good (Baruch & Holtom, 2008) in comparison to other studies found in the relevant literature.

Total number of questionnaires deleted were 34 cases; 22 cases removed because of the missing data for more than 15% of the questions, 8 cases considered as outliers and 4 cases of straight lining were also deleted. Therefore, the data which was ready for the analysis were 348 cases out of 382 returned.

If distribution method is questionnaire, Roscoe (1975) mentioned that in order to avoid sample bias, the response rate should be more than 10 percent and at least a minimum of 30 percent responses must be collected for the analysis (Sekaran & Bougie, 2012). Based on that, there is no sample bias in this study because the response rate of the study is 76.4%.

In order to have confidence in the goodness of fit test, a sample size of at least 100 is recommended (Hoyle, 1995). Since the final valid sample size of the current study is 348, SEM-PLS can be used with confidence.

4.4 MULTICOLLINEARITY TEST

Multicollinearity is not desirable as i means that the variance of independent variables explained in our dependent variable are overlapping with each other and thus not each explaining unique variance in the dependent variable (O'brien, 2007).

To assess the level of multicollinearity, variance inflation factor (VIF) and tolerance are both widely used measurements of the degree of multicollinearity (O'brien, 2007). The tolerance represents the amount of variance of one construct' indicator not explained by the other indicators in the same block. A related measure of collinearity is the variance inflation factor (VIF), defined as the reciprocal of the tolerance (i.e., VIFx1 = 1/TOLx1) (Hair et al., 2013). The tolerance and VIF are both provided in the regression analysis output of most popular software packages SPSS.

There are a few guidelines that can be applied regarding VIF and tolerance:

- If the largest VIF is greater than 10 then there is cause for concern (Bowerman & O'Connell, 1990; Myers, 1990). According to (Hair et al., 2013) if the largest VIF is greater than 5 then there is cause for concern.
- Tolerance below 0.1 indicates a serious problem, and below 0.2 indicates a potential problem (Menard, 1995; Hair et al., 2011)

Table 4.12 shows multicollinearity diagnostic that indicates that there is no evidence of significant multicollinearity among the research predictor variables because all VIF values are below 5. It means that the variance our predictor variables explain in our dependent variable is not overlapping with each other.

Table 4.12: Multicollinearity test via variance inflation factor (VIF)

	Tolerance	***VIF***
TL	0.769	1.301
IC	0.934	1.071
JC	0.767	1.303

Key: IC: intellectual capital, TL: transformational leadership, JC: job satisfaction

4.5 MEASUREMENT MODEL ASSESSMENT

According to Hair et al., (2017) measurement model specifies how each construct is measured, the measurement model assessment will be evaluated by performing goodness of fit, issues related to reliability and validity for all the constructs used will be discussed in this subsection.

There are many sources of measurement error (measurement error is the difference between the true value of a variable and the value obtained by a measurement) in social sciences research, including poorly worded questions in a survey, misunderstanding of the scaling approach, and incorrect application of a statistical method, all of which lead to random and/or systematic errors (the error can have a random source, which threatens reliability, or a systematic source, which threatens validity) (Hair et al., 2017). Certainly, all measurements used in the multivariate analysis are likely to contain some measurement error. The objective, therefore, is to reduce the measurement error as much as possible. Multivariate

measurement enables researchers to more precisely identify measurement error and therefore account for it in research findings.

Figure 4.1 shows the PLS algorithm results (regression weights) for the full model. The PLS algorithm was drawn from the version PLS 3.0.

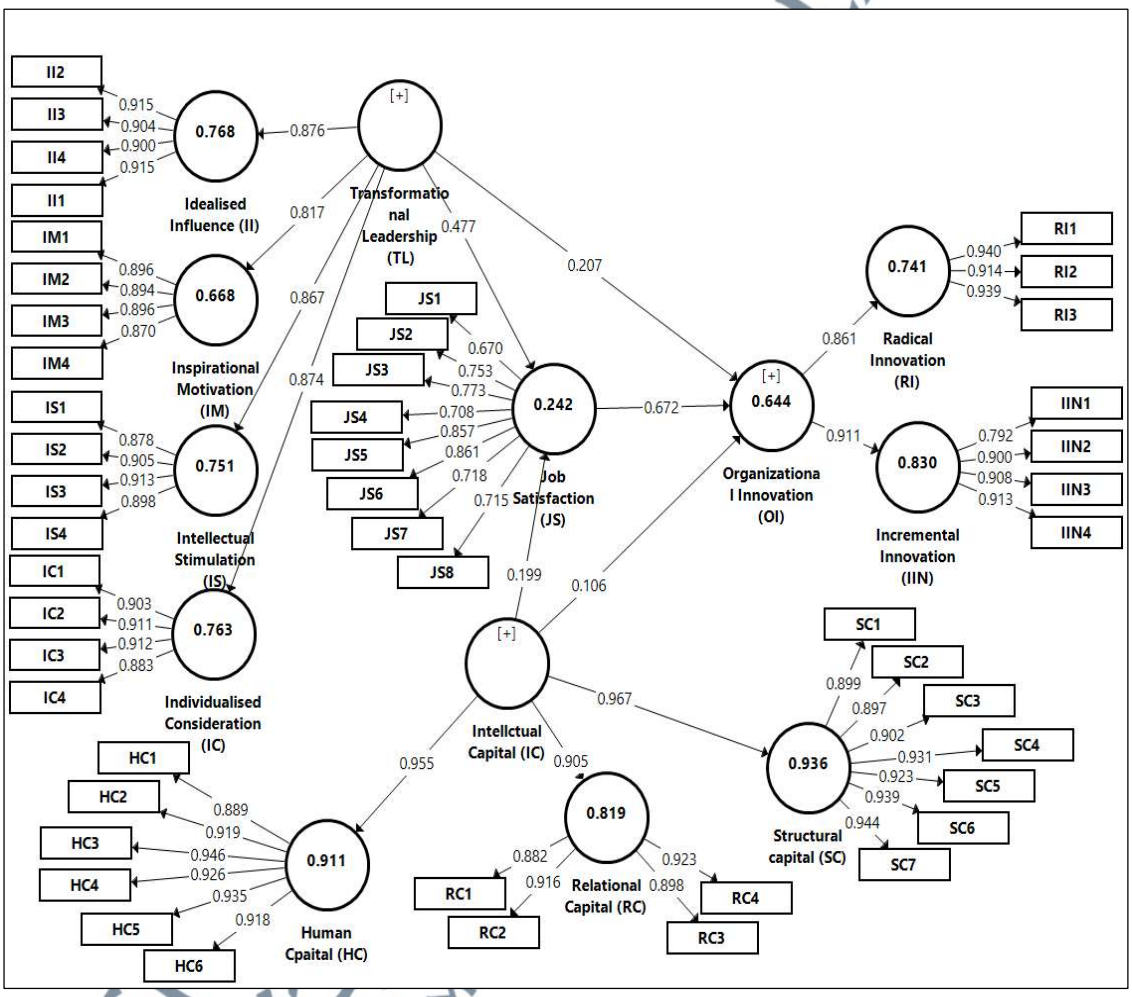

Figure 4.1: PLS algorithm results (regression weights)

4.5.1 Model Fit Indicators – Goodness Of Fit

There has been a debate over the use goodness-of-fit within PLS-SEM, according to Hair et al., (2017) PLS-SEM does not have an established global goodness-

of-fit measure, its use for theory testing and confirmation. However, some research such as (Bentler & Huang, 2014) has started developing goodness-of-fit measures within a PLS-SEM framework, and Henseler et al., (2014) introduced the standardized root mean square residual (SRMR), which measures the squared discrepancy between the observed correlations and the model-implied correlations, as a means to validate a model whereby values less than 0.08 are considered a good fit.

Consistent PLS gives fit values that can be used to assess the model fit. The standardized root mean square residual (SRMR = 0.06) is lower than 0.08 thus we can conclude that the data fits the model well.

4.5.2 Construct Reliability: Composite Reliability (Cr) And Cronbach's Alpha

The reliability of a measure is established by testing for both consistency and stability. According to Awang (2014) reliability is the extent of how reliable is the measurement model in measuring the intended latent construct. The assessment for reliability for a measurement model could be made using the following criteria:

1) Internal reliability: This reliability here is achieved when the Cronbach's Alpha value is 0.7 or higher (Nunnally & Bernstein, 1994). Cronbach's alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another. Cronbach's alpha is computed in terms of the average intercorrelations among the items measuring the concept (Sekaran & Bougie, 2012). Due to Cronbach alpha's limitations in the population, it is more appropriate to apply a different measure of internal consistency reliability, which is referred to as composite reliability (Hair et al., 2017).

2) Composite Reliability: The measure of reliability and internal consistency for a latent construct. A value of CR > 0.7 is required in order to achieve composite reliability for a construct (Kline, 2010; Gefen, Straub, & Boudreau, 2000). CR is calculated using the given formula:

CR= $(\sum K)^2 / ((\sum K)^2 + (\sum 1-K^2))$. where K= factor loading of every item.

The composite reliability varies between 0 and 1, with higher values indicating higher levels of reliability. It is generally interpreted in the same way as Cronbach's alpha. Specifically, composite reliability values of 0.60 to 0. 70 are acceptable in exploratory research, composite reliability values below 0.60 indicate a lack of internal consistency reliability (Hair et al., 2013).

Table 4.13 shows the results of composite reliability values greater than 0.7, and the Cronbach's alpha is also greater than 0.7, which indicates that the construct reliability is fulfilled, and there is both consistency and stability in the model.

Table 4.13: Cronbach's Alpha and composite reliability results

Construct	α (above 0.7)	CR (> 0.7)
Transformational Leadership (TL)	0.955	0.959
Intellectual Capital (IC)	0.980	0.981
Job Satisfaction (JS)	0.895	0.916
Organizational Innovation (OI)	0.907	0.926

Note: α= Cronbach's alpha; CR = Composite Reliability

4.5.3 Indicator Reliability: Loadings

Factor loading was used to test indicator reliability. High loadings on a construct indicate that the associated indicators seem to have much in common, which is captured by the construct (Hair et al., 2017). Factor loadings greater than 0.50 are considered to be very significant (Hair et al., 2010). The loadings for all the items exceeded the recommended value of 0.5, as shown in Table 4.14, and therefore the loadings for all the items in the model fulfilled all the requirements except the items II5, II6, II7, II8, HC7, SC8, JS9 and JS10 which are eliminated from the scale due to low loadings.

Table 4.14: Results of Loading for all Items

constructs	*Item*	*Loading (> 0.5)*
Human Capital (HC)	HC1	0.889
	HC2	0.919
	HC3	0.946
	HC4	0.926
	HC5	٠,٩٣٥
	HC6	٠,٩١٨
Relational Capital (RC)	RC1	0.882
	RC2	0.916
	RC3	0.898
	RC4	0.923
Structural Capital (SC)	SC1	0.899
	SC2	0.897
	SC3	0.902
	SC4	0.931
	SC5	0.923
	SC6	0.939
	SC7	0.944
	IC1	0.903

Intellectual Capital (IC)	IC2	0.911
	IC3	0.912
	IC4	0.883
	II1	0.915
	II2	0.915
Transformational Leadership (TL)	II3	0.904
	II4	0.900
	IM1	0.896
	IM2	0.894
	IM3	0.896
	IM4	0.870
	IS1	0.878
	IS2	0.905
	IS3	0.913
	IS4	0.898
	JS1	0.670
Job Satisfaction (JS)	JS2	0.753
	JS3	0.773
	JS4	0.708
	JS5	0.857
	JS6	0.861
	JS7	0.718
	JS8	0.715
	RI1	0.940
	RI2	0.914
Organizational Innovation (OI)	RI3	0.939
	IIN1	0.792
	IIN2	0.900
	IIN3	٠,٩٠٨
	IIN4	٠,٩١٣

Note: All the factor loadings of the individual items are statistically significant ($p < 0.01$).

4.5.4 Convergent Validity: Average Variance Extracted (AVE)

Convergent validity is the extent to which a measure correlates positively with alternative measures of the same construct. To establish convergent validity, researchers consider the average variance extracted (AVE) (Hair et al., 2017).

A common measure to establish convergent validity on the construct level is the average variance extracted (AVE). This criterion is defined as the grand mean value of the squared loadings of the indicators associated with the construct (i.e., the sum of the squared loadings divided by the number of indicators). Therefore, the AVE is equivalent to the communality of a construct. Using the same logic as that used with the individual indicators, an AVE value of 0.50 or higher indicates that, on average, the construct explains more than half of the variance of its indicators. Conversely, an AVE of less than 0.50 indicates that, on average, more error remains in the items than the variance explained by the construct (Hair et al., 2017).

AVE is calculated using the given formula:

$AVE = \sum K^2 / n$

K= factor loading of every item, and n= number of item in a model

Table 4.15 shows the result of the convergent validity via average variance extracted (AVE), which indicates that all AVE values are higher than 0.50. convergent validity of the full model construct is fulfilled.

Table 4.15: Average variance extracted (AVE) results

Construct	AVE (> 0.5)
Transformational Leadership (TL)	0.597
Intellctual Capital (IC)	0.757

Job Satisfaction (JS)	0.577
Organizational Innovation (OI)	0.642

Note: AVE = Average Variance Extracted

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4.5.5 Discriminant Validity: The Cross-Loadings, Fornell-Larcker Criterion And Htmt

The discriminant validity (the degree to which items differentiate among constructs or measure distinct concepts) of the measurement model was checked using three criteria the cross-loadings, Fornell-Larcker and heterotrait-monotrait ratio (HTMT). According to (Hair et al., 2017), the cross-loadings are typically the first approach to assess the discriminant validity of the indicators. As shown in Table 4.16 the cross loading criterion fulfills the requirements because the indicator's outer loadings on a construct were higher than all its cross-loadings with other constructs (bold values).

Table 4.16: Results of discriminant validity by the cross loading

	IC	*JS*	*OI*	*TL*
HC1	**0.828**	0.081	0.104	-0.195
HC2	**0.877**	0.126	0.139	-0.132
HC3		0.135	0.173	-0.142
HC4	**0.874**	0.099	0.123	-0.151
HC5	**0.905**	0.158	0.190	-0.111
HC6	**0.893**	0.126	0.160	-0.124
RC1	**0.789**	0.084	0.091	-0.152
RC2	**0.840**	0.155	0.155	-0.039
RC3	**0.813**	0.109	0.115	-0.066
RC4	**0.832**	0.128	0.143	-0.103
SC1	**0.870**	0.126	0.169	-0.092

SC2	**0.863**	0.082	0.120	-0.087
SC3	**0.879**	0.111	0.160	-0.100
SC4	**0.900**	0.128	0.167	-0.084
SC5	**0.901**	0.133	0.183	-0.131
SC6	**0.901**	0.086	0.131	-0.154
SC7	**0.909**	0.128	0.170	-0.104
IC1	-0.127	0.368	0.387	**0.801**
IC2	-0.101	0.382	0.427	**0.780**
IC3	-0.153	0.374	0.424	**0.797**
IC4	-0.115	0.320	0.376	**0.776**
II1	-0.094	0.388	0.412	**0.803**
II2	-0.112	0.349	0.397	**0.801**
II3	-0.102	0.374	0.430	**0.784**
II4	-0.047	0.351	0.395	**0.797**
IM1	-0.096	0.300	0.306	**0.760**
IM2	-0.100	0.308	0.325	**0.713**
IM3	-0.058	0.275	0.343	**0.725**
IM4	-0.078	0.269	0.306	**0.705**
IS1	-0.112	0.389	0.405	**0.735**
IS2	-0.112	0.355	0.363	**0.802**
IS3	-0.113	0.381	0.410	**0.795**
IS4	-0.115	0.369	0.406	**0.781**
JS1	0.081	**0.208**	0.670	0.214
JS2	0.159	**0.256**	0.753	0.293
JS3	0.117	**0.292**	0.773	0.312
JS4	0.140	**0.233**	0.708	0.251
JS5	0.059	**0.444**	0.857	0.461
JS6	0.080	**0.424**	0.861	0.452
JS7	0.061	**0.340**	0.718	0.384
JS8	0.162	**0.715**	0.633	٠.٢٨٣
RI1	0.140	0.637	**0.811**	0.307
RI2	0.183	0.617	**0.807**	0.332

RI3	0.196	0.596	**0.786**	0.338
IIN1	0.058	0.787	**0.750**	0.441
IIN2	0.175	0.531	**0.821**	0.458
IIN3	0.078	0.576	**0.816**	0.453
IIN4	0.119	0.623	**0.815**	0.451

Key: IC: intellectual capital, JS: job satisfaction, TL: transformational leadership, OI: Organizational innovation

Results of discriminant validity by Fornell-Larcker criterion are shown in Table 4.17, the square root of the AVEs on the diagonals as represented by the bolded values which were higher than the correlations between constructs (corresponding row and column values). This indicates that the constructs are strongly related to their respective indicators compared to other constructs of the model (Chin, 1998; Fornell & Larcker, 1981), thus suggesting a good discriminant validity (Hair et al., 2017). In addition, the correlation between exogenous constructs is less than 0.85 (Awang, 2014). Hence, the discriminant validity of all constructs is fulfilled.

Table 4.17: Results of discriminant validity by Fornell-Larcker criterion

	IC	***JS***	***OI***	***TL***
IC	0.870			
JS	0.135	0.760		
OI	0.169	0.779	0.801	
TL	-0.133	0.450	0.496	0.773

Key: IC: intellectual capital, JS: job satisfaction, TL: transformational leadership, OI: Organizational innovation

Recently, there are some criticism on the Fornell-Larcker criterion, Henseler, Ringle, & Sarstedt, (2015) mentioned that it does not accurately reveal the lack of discriminant validity in common research situations. They have proposed an alternative technique which is Heterotrait-Monotrait ratio (HTMT) of correlations based on the

Multitrait-Multimethod matrix. This study assesses discriminant validity through HTMT. The discriminant validity has a problem when the HTMT value is greater than HTMT0.90 value of 0.90 (Gold et al., 2001), or HTMT0.85 value of 0.85 (Kline, 2010). All values as Table 4.18 shows are lower than the recommended value of 0.85 indicating that discriminant validity has been ascertained.

Table 4.18: Results of discriminant validity by HTMT

	IC	***OI***	***JS***	***TL***
IC				
OI	0.179			
JS	0.151	0.780		
TL	0.138	0.532	0.471	

Key: IC: intellectual capital, JS: job satisfaction, TL: transformational leadership, OI: Organizational innovation

4.6 STRUCTURAL MODEL ASSESSMENT

The structural equation model is the second main process of SEM analysis. Once the measurement model is validated, representation of the structural model can be made by specifying the relationships among the constructs. According to (Hair et al., 2010; Ho, 2006) the structural model provides details on the links between the variables.

Hair, Hult, Ringle, & Sarstedt, (2017) suggested assessing the structural model by looking at the beta (β), R^2 and the corresponding t-values via a bootstrapping procedure with a resample of 5,000. Moreover, they recommend reporting the predictive relevance (Q^2). As Sullivan & Feinn, (2012) argue that the p-value determine whether the effect exists but it does not reveal the size of the effect. Figure 4.2 shows the PLS bootstrapping (T Statistics) results which were drawn on the version PLS 3.0.

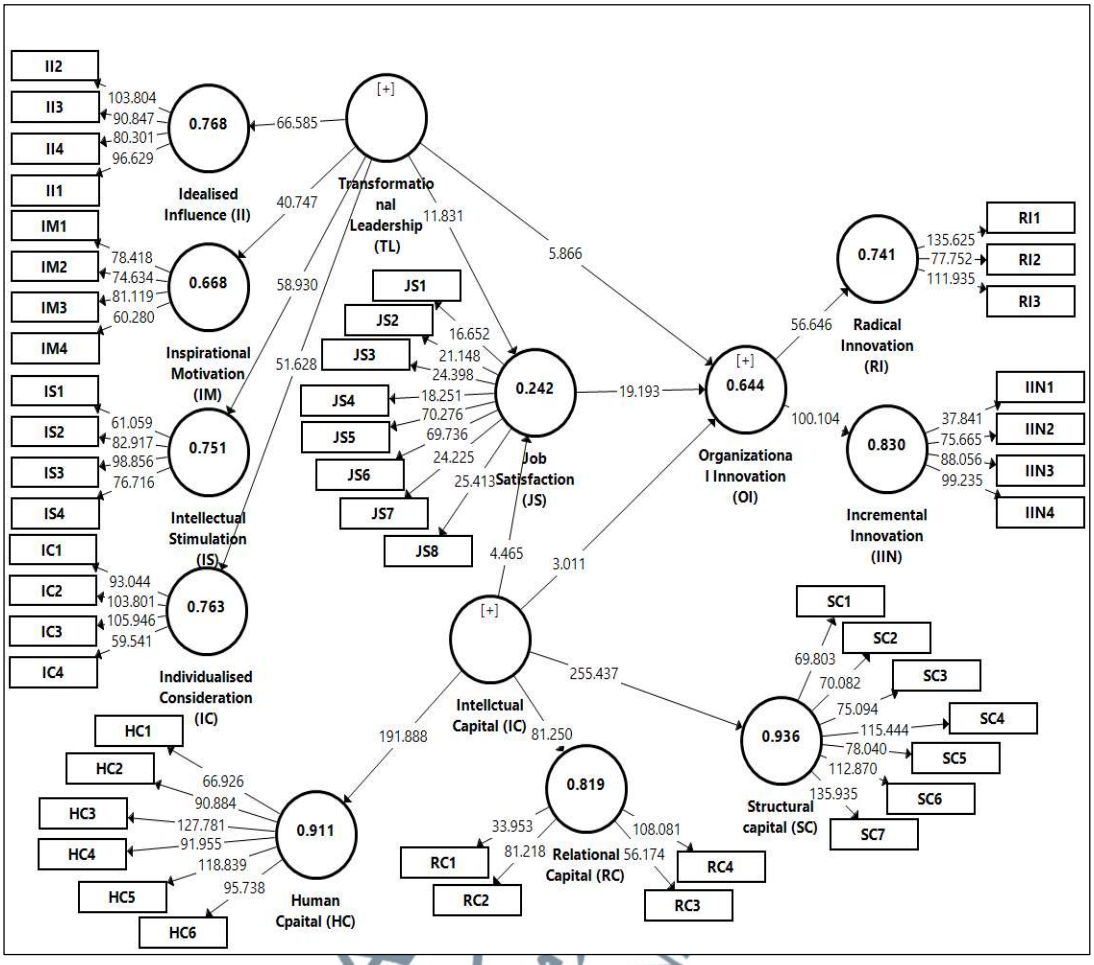


Figure 4.2: PLS bootstrapping (T Statistics)

4.6.1 Direct Hypotheses Testing

The structural model assessment as shown in Figure 4.1, Figure 4.2 and Table 4.19 provides the indication of the hypothesis tests. Intellectual capital and transformational leadership significantly predict organizational innovation. Hence, H1, H2, H3, H4 and H5 are accepted with (β = 0.104, t= 3.05, p<0.01), (β = 0.205, t= 5.95, p<0.01), (β = 0.199, t= 4.43, p<0.01), (β = 0.478, t= 11.80, p<0.01) and (β = 0.675, t= 19.61, p <0.01) respectively.

Table 4.19: Structural path analysis result

Hypo	Relationship	Std Beta	Std Error	t-value	p-value	Decision
H1	IC -> OI	0.104	0.035	3.05	0.000	Supported
H2	TL→OI	0.205	0.035	5.95	0.000	Supported
H3	IC→JS	0.199	0.045	4.43	0.000	Supported
H4	TL→JS	0.478	0.040	11.80	0.000	Supported
H5	JS→OI	0.675	0.034	19.61	0.000	Supported

Key: HC: human capital, TL: transformational leadership, OP: Organizational performance

4.6.2 Coefficient Of Determination: R^2 Value

The R^2 value indicates the amount of variance of dependent variables which is explained by the independent variables. Hence, a larger R^2 value increases the predictive ability of the structural model. It is crucial to ensure that the R^2 values should be high enough for the model to achieve a minimum level of explanatory power (Urbach & Ahlemann, 2010). In this study, SEM-SMART PLS 3.0 is used to obtain the R^2 values. Falk and Miller (1992) recommended that the R^2 values should be equal to or greater than 0.10 in order for the explained variance of a particular endogenous construct to be deemed adequate. Cohen (1988b) suggested that R^2 is substantial when it is greater than 0.26. with acceptable power above 0.02, and according to Chin (1998) R^2 is substantial when it is greater than 0.65 with acceptable power above 0.19. Conversely, Hair et al. (2013) recommended that R^2 has to be larger than 0.75 in order to be deemed substantial, with acceptable power above 0.25. Table 4.20 shows the result of R^2 from the structural model, and indicates that all the R^2 values are high enough for

the model to achieve an acceptable level of explanatory power. Note that the variance explained in endogenous construct Organizational innovation is 0.64 (64%).

Table 4.20: Coefficient of determination result R^2

exogenous construct	endogenous construct	R^2	Cohen (1988b)	Chin (1998)	Hair et al., (2013)
IC, JS, and TL	OI	0.64	Substantial	Moderate	weak

Key: IC: intellectual capital, TL: transformational leadership, JS: job satisfaction, OI: Organizational innovation

4.6.3 Predictive Relevance (Blindfolding) Q^2

By using the blindfolding procedure this study examined the power of research proposed model regarding the predictive relevance. As recommended by Hair et al., (2017) the blindfolding procedure should use only on the endogenous constructs with a reflective measurement. If the value of Q^2 is greater than 0 then the predictive relevance of the proposed model exists for a certain endogenous construct (Fornell, C., & Cha, 1994; Hair et al., 2017). As Table 4.21 shows that the value of Q^2 is greater than 0 which indicates that there is an adequate predictive relevance for the proposed model. For the Q^2 values, Hair et al., (2017) suggested values of 0.35 (large), 0.15 (medium), and 0.02 (small) as a relative measure of predictive relevance, and the result of this study shows that the exogenous have large predictive relevance.

Table 4.21: Predictive relevance (Blindfolding) Q^2

endogenous construct	Q^2
OI	0.40

Key: OI: Organizational innovation

4.6.4 Post-Hoc Statistical Power

Statistical power is the ability to distinguish signal from noise, or the likelihood that it will distinguish an effect of a certain size from pure luck, which helps the researcher to assess the power of the analysis. Statistical power affected by the observed probability level, the number of predictors, the observed R^2, and the sample size (Cohen, 1988b; Cohen, Cohen, West, & Aiken, 2003). This study used post-hoc statistical power calculator which proposed by (Sober, 2016) to determine the observed power for the study R^2. Across the social sciences, convention specifies 80 percent as the minimum acceptable power (Gefen & Rigdon, 2011). If observed statistical power is greater than 0.8 that indicates good power, the closer the results to one, the larger the power. The result of Daniel Sober calculator shows that the observed statistical power for this study is 0.99 which indicate high statistical power.

4.6.5 Importance-Performance Map Analysis (IPMA)

This study ran importance-performance matrix analysis (IPMA) as post-hoc procedure in PLS using organizational innovation as the outcome construct. The IPMA estimates the total effects represent the predecessor constructs' importance in shaping the target construct (performance impact), while their average latent variable scores represent their performance, the computation of the index values (performance scores) are accomplished by rescaling the latent constructs scores to a range of 100 (highest performance) down to 0 (lowest performance) (Hair et al., 2017). According to Ringle & Sarstedt, (2016) IPMA enriches the PLS analysis results, instead of only analyzing the path coefficients (i.e. the importance dimension), it also takes into consideration the average value of the latent constructs and their indicators (i.e. innovation dimension).

Table 4.22 shows the findings of importance (total effects) and performance (index values) used for the IPMA.

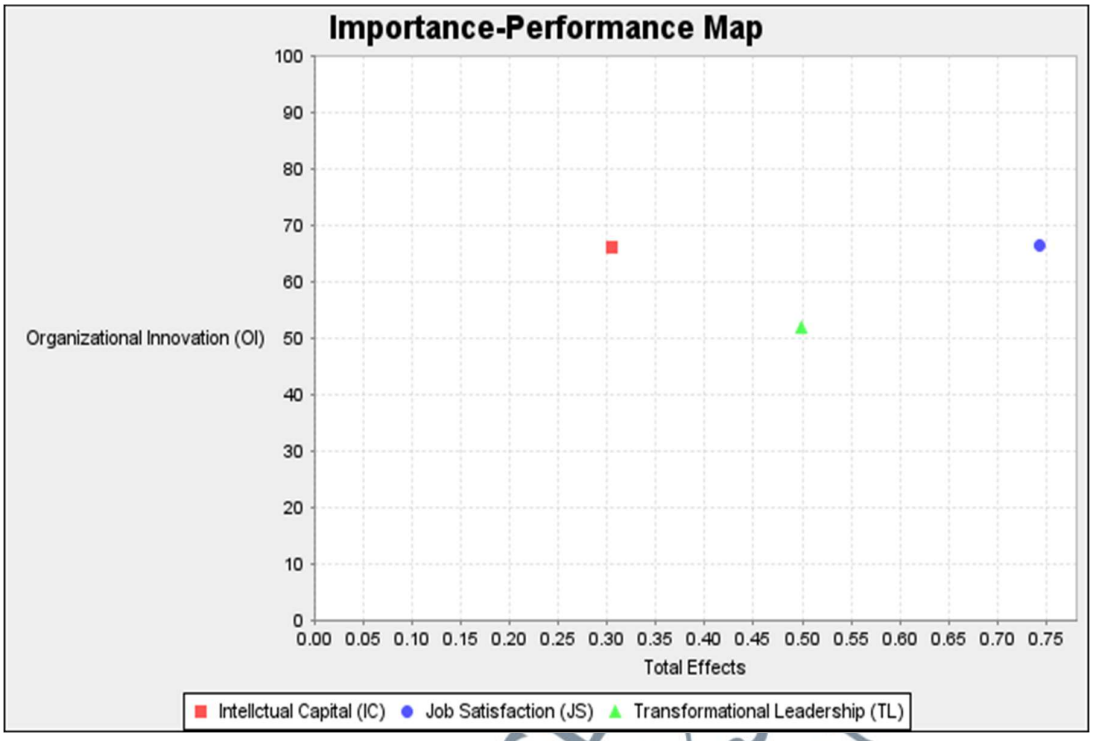
Table 4.22: IPMA for Organizational Innovation

Latent constructs	Total effect of the construct Organizational Innovation *(Importance)*	Index values (Performance)
IC	0.239	66.02
JS	0.672	66.44
TL	0.527	51.92

Key: IC: intellectual capital, TL: transformational leadership, JS: job satisfaction, OI: Organizational innovation

As shown in Figure 4.3 this study plotted the total effects scores and index values out in a priority map, it can be observed that job satisfaction is very important factor in determining the organizational innovation due to its relatively higher importance values compared to other constructs in the proposed model. Transformatiomal leadership is the second important factor in determining the organizational innovation and then comes the intellectual capital.

According to Hair et al., (2017) the goal of IPMA is to identify predecessors that have a relatively high importance for the target construct (i.e., those that have a strong total effect) but also a relatively low performance (i.e., low average latent variable scores), the aspects underlying these constructs represent potential areas of improvement that may receive high attention. In conclusion, in order to improve the organizational innovation, the managerial activities should focus on enhancing job satisfaction and transformational leadership practices.



Key: IC: intellectual capital, TL: transformational leadership, JS: job satisfaction, OI: Organizational innovation

Figure 4.3*:* IPMA (Priority Map) for Organizational innovation

4.6.6 Mediation Assessment

The structural model can also be evaluated by determining the direct and indirect relationships existing between the exogenous and endogenous latent variables (Jörg Henseler et al., 2014). Here, the researcher assessed the mediation of job satisfaction in the relationship between intellectual capital, transformational leadership and organizational innovation. Determination of the mediating effects in the structural equation models helps in assessing the relationship between the independent and dependent variables in comparison to the relationship between the independent and dependent variables with a mediation construct. Field (2013) defined mediation as a situation which describes the association between the predictor and outcome variables based on their relationship with another variable (i.e., mediator). Figure 4.4 describes

the relationship between the predictor and outcome variables (described as c). The figure also showed that all variables are related to the 3rd variable as follows: (1) The predictor variable can predict the mediator based on the path denoted as a; (2) The mediator can predict the outcome by the path denoted as b. However, the relationship between the predictor and the outcome variables could be different, so the mediator included in the proposed model is denoted as c'.

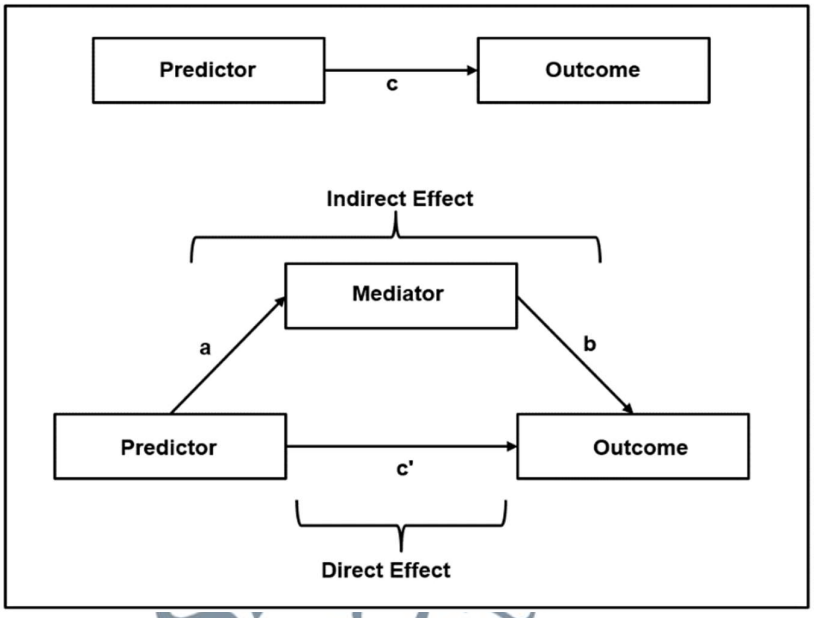


Figure 4.4: Basic Mediation Model
Source: (Field, 2013)

The variable function can be used as the mediator if it fulfils the following criteria: (1) The predictor variable should be able to forecast the outcome variable without the mediator; (2) The predictor variable should be able to predict the mediator; (3) The mediator variable should be able to predict the outcome variables; and (4) The predictor variable should not effectively predict the outcome variables when the mediator is included in the model. Hayes (2013) noted some issues existing in the Baron and Kenny approach and also proposed some solutions. They tested the mediatory

effects and determined the indirect effect with the help of the bootstrapping process. In conclusion, Hair, Hult, Ringle, & Sarstedt (2017) stated that before other researchers test the mediating effects, they have to implement the Preacher & Hayes (2004) model and then bootstrap the sample distribution for all the indirect and direct effects. This can be applied to both the simple and the mediator models. The bootstrapping technique does not presume the shapes or statistics of the variable distributions and can be confidently applied to smaller sample sizes. Furthermore, this approach displays better statistical power in comparison to the Sobel test. This report tested the mediatory effect, as stated by Preacher & Hayes (2004), using the bootstrapping process using a resample size of 5,000, which bootstraps all indirect effects. The research also applied the Preacher & Hayes (2004) method for bootstrapping all indirect effects for testing the mediation hypotheses, H6 and H7. The results showed that actual usage mediated the relationship between each of compatibility and user satisfaction on one side and performance on the other. Thus, H6 and H7 were accepted and showed the values of ($\beta = 0.134$, $t = 4.124$, $p<0.001$) and ($\beta = 0.320$, $t = 11.012$, $p<0.001$), respectively.

Table 4.23: Mediation Effect of Job Satisfaction Between Intellectual Capital, Transformational Leadership, and Organizational Innovation

Hypothesis	Relationship	Std. Beta	Std. Error	t-value	P-value	Hypothesis Result
H6	IC →JS→OI	0.134	0.032	4.124	0.000	Supported
H7	TL →JS→OI	0.320	0.029	11.012	0.000	Supported

Source: (Preacher & Hayes, 2004, 2008)

Note: IC: Intellectual Capital, JS: Job Satisfaction, TL: Transformational Leadership, OI = Organizational Innovation; $p < 0.05$

4.6.7 Hypotheses Testing Results

Table 4.24 summarize all hypotheses results in this study which include the direct and indirect hypotheses.

Table 4.24: Summary of Results

Hypo		Findings
H1	Intellectual capital has a positive effect on organizational innovation among Fujairah Police Employees in UAE.	Supported
H2	Transformational leadership has a positive effect on organizational innovation among Fujairah Police Employees in UAE.	Supported
H3	Intellectual capital has a positive effect on job satisfaction among Fujairah Police Employees in UAE.	Supported
H4	Transformational leadership has a positive effect on job satisfaction among Fujairah Police Employees in UAE.	Supported
H5	job satisfaction has a positive effect on organizational innovation among Fujairah Police Employees in UAE	Supported
H6	Intellectual capital has a positive indirect effect on organizational innovation through job satisfaction among Fujairah Police Employees in UAE	Supported
H7	Transformational leadership has a positive indirect effect on organizational innovation through job satisfaction among Fujairah Police Employees in UAE	Supported

- ***Research objective 1:*** **examining the effect of intellectual capital on organizational innovation:**

The statistical results shows that intellectual capital significantly influences organizational innovation with t-value of 3.05, and Std Beta of 0.104 which indicates that the three components of intellectual capital namely human capital, relational capital, and structural capital are important to enhance innovation at organizations.

Thus, hypothesis 1 is significantly supported. The discussion and interpretation of the objective will be dicussed in the following chapter.

- ***Research objective 2:*** **examining the effect of transformational leadership on organizational innovation:**

The statistical results shows that transformational leadership has even stronger effect than intellectual capital on organizational innovation with t-value of 5.95, and Std Beta of 0.205 which indicates that the three components of transformational leadership namely idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration are vital to enhance innovation at organizations. Thus, hypothesis 2 is significantly supported. The discussion and interpretation of the objective will be dicussed in the following chapter.

- ***Research objective 3:*** **examining the effect of intellectual capital on job satisfaction:**

The statistical results shows that intellectual capital significantly influences job satisfaction with t-value of 4.34, and Std Beta of 0.199 which indicates that having the correct and sufficient human capital, relational capital, and structural capital will be reflected on satisfaction the employees' percieve in their job. Thus hypothesis 3 is significantly supported. The discussion and interpretation of the objective will be dicussed in the following chapter.

- ***Research objective 4*****: examining the effect of transformational leadership on job satisfaction:**

The statistical results shows that transformational leadership again has stronger effect than intellectual capital on job satisfaction with t-value of 11.80, and Std Beta of 0.478 which indicates that putting more emphasis on applying transformational leadership practices in terms of idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration are key to achieving better job satisfaction among employees. Thus, hypothesis 4 is significantly supported. The discussion and interpretation of the objective will be dicussed in the following chapter.

- ***Research objective 5:*** **examining the effect of job satisfaction on organizational innovation:**

The statistical results shows that job satisfaction has even stronger effect than intellectual capital on organizational innovation with t-value of 19.61, and Std Beta of 0.675 which is relatively strong influence and indicates that having employees who are satisfied with their job will have a major impact on the enhancement of innovation within the organization. Thus hypothesis 5 is significantly supported. The discussion and interpretation of the objective will be dicussed in the following chapter.

- ***Research objective 6:*** **examining the mediation effect of job satisfaction between intellectual capital and organizational innovation:**

The statistical results shows that job satisfaction significantly mediates the relationship between intellectual capital and organizational innovation with t-value of 4.124, and Std Beta of 0.134 which indicates that job satisfaction partially explain the relationship between intellectual capital and organizational innovation. Thus, hypothesis 6 is significantly supported. The discussion and interpretation of the objective will be dicussed in the following chapter.

- ***Research objective 7:*** **examining the mediation effect of job satisfaction between transformational leadership and organizational innovation:**

The statistical results shows that transformational leadership has a significant indirect impact on organizational innovation via job satisfaction significantly with t-value of 11.012, and Std Beta of 0.320 which indicates that job satisfaction partially explain the relationship between transformational leadership and organizational innovation. Thus hypothesis 7 is significantly supported. The discussion and interpretation of the objective will be dicussed in the following chapter.

4.7 CHAPTER SUMMARY

This chapter starts by presenting data screening through missing values, outliers, and suspicious response patterns. Then, it focuses on the descriptive statistics of constructs, normality test, and response rate. After that, it discusses the multicollinearity issue and common method variance. Then, the exploratory factor analysis, assessment of the measurement models, followed by the assessment of the structural models are presented. The following chapter will examine the results reported in this chapter and present the present study's contributions to the existing field of knowledge. Key empirical findings will be evaluated to examine their implications for academics and the practitioners. The limitations of the current study will also be presented and finally, consideration for future research will be outlined.