CHAPTER 4

RESULTS AND DATA ANALYSIS

This chapter discusses the finding and the results of the research conducted. This portion is where all the research propositions and the hypotheses are answered based on findings of the analysis.

4.1   Summary statistics

Overall, from the total of about 300 questionnaires distributed, only 123 respondents responded to the survey resulting in a response rate 41%. About 60% of total respondents returned the survey by e-mail and the rest by hardcopy. This sample size is still adequate to arrive at the desired and expected achievement of the research. A sample size of more than 30 could be considered sufficient for most research (Sekaran, 2000).

Demographic Analysis of Respondents

Table 4.1 Summary of Demographic Characteristic

Demographic Characteristic	Frequency (n)	Percentage (%)
Gender		
Male	69	56.1
Female	54	43.9
Ethnicity		
Malay	58	47.2
Chinese	37	30.0
Indian	28	22.8
Marital Status		
Single	57	46.3
Married	66	53.7
Education Level		
STPM/HSC	1	0.8
Certificate/Diploma	26	21.2
Degree/Professional	77	62.6
Certificate	19	15.4
Postgraduate		
E-Business Implementation		
Yes	110	89.4
No	13	10.6
Years at the Organization		
< 1 Year	13	10.6
1 to 3 Years	42	34.1
4 to 10 Years	52	42.3
> 10 Years	16	13.0
Employee at the Organization		
1 to 100	4	3.3
101 to 500	8	6.5
501 to 1000	55	44.7
> 1000	56	45.5
Major Business of Organization		
Food Industry	10	8.1
Property Management	23	18.7
Civil Service	3	2.4
Hospitality/Tourism	3	2.4
Education & Training	14	11.4
Telecommunication	15	12.2
Engineering Service	1	0.8
Manufacturing	2	1.6
Warehousing/Logistics	4	3.3
Financial Services	30	24.4
Others	18	14.6

Table 4.1 refers to characteristic of overall respondents. Male respondents was represented 56% and the another 44% by female respondents. The respondents are categorized to three ethnic. Based on ethnicity, Malay contributed 47.2%, Chinese respondents 30.1% and the rest are Indian with total of 22.8% from the total respondents. In term of marital status, 53.7% respondents were married and 46.3% respondents were single. The respondents were categorized into four groups of educational level. The majority respondents have Degree / Professional Certificate which 62.6% of them, 21.1% has Diploma or Certificate, 15.4% has Postgraduate Certificate and only 0.08% has STPM/HSC.

From total of 123 respondents, 89.43% had experienced in e-business implementation and 10.57% of them don't have any experience at all. In term of breakdown of respondents' years in the organizations, 13% of respondents had more than 10 years experience in the organizations, 42.3% respondents has experienced between 4 to 10 years in the company, 34.1% respondents has experienced between 1 to 3 years in the company and 10.6% respondents less than 1 year.

Number of employees in the organizations consists of 45.53% were in the organizations with more than 1000 employees, 44.72% were in the group of 501 to 1000 employees, 6.5 % were in the group of 101 to 500 employees and 3.25% in the group of less than 100 employees. The respondents are categorized into major business of organization. The largest group was in financial institution which accumulated 24.39% from total respondents. The financial institutions

contributed to this study are Maybank, CIMB and EPF and followed by Property Management which total 18.7%, other industries which total up to 14.63%.

4.2   Perceptions on E-business Implementation Success

The respondents respond toward E-business Implementation Success are illustrated using mean values. Table 4.2 below shows the mean and standard deviation for each variable, the mean values are greater than standard deviation which shows the variables are significant. The mean value such as Knowledge Acquisition (3.72) and Knowledge Application scored the higher mean value shows that Knowledge Management is the main contributor to the successful e-business implementation success in Malaysia. The other factors are also considered the important to support e-business implementation success.

Table 4.2: Mean and Standard Deviation of Variables

Variables	Mean	Standard Deviation
Training Availability	3.39	0.83
Technical Expertise	3.56	0.51
Knowledge Level	3.31	0.65
Knowledge Acquisition	3.72	0.39
Knowledge Application	3.68	0.50
Knowledge Sharing	3.51	0.59

Measure reliability and validity

SPSS software was used to test the measurement scales reliability, examine the validity of the theoretical framework and test the hypothesized relationships. Cronbach's alpha coefficient was applied to evaluate the internal consistency of the Independent Variable. The findings indicate that all the questionnaire scales score has adequate internal consistency reliability.

Table 4.3: Reliability Analysis

Variables	Cronbach's Alpha	Item (n)
Training Availability	0.763	2
Technical Expertise	0.745	2
Knowledge Level	0.781	3
Knowledge Acquisition	0.679	4
Knowledge Application	0.783	5
Knowledge Sharing	0.800	4
Impact on Commerce	0.719	3
Impact on Internal Efficacy	0.836	2
Impact on Coordination	0.685	2

From the above table, the cut-off point for the reliability analysis is 0.700. If the Cronbach's Alpha is more than 0.700, the variables have met the reliability analysis. Knowledge acquisition and Impact on Coordination have a value less than 0.7. The higher the Alpha is, the more reliable the test is. There isn't a generally agreed cut-off. Usually 0.7 and above is acceptable (Nunnally, 1978). It is a common misconception that if the Alpha is low, it must be a bad test.

4.3 Testing of Hypotheses

Correlation analysis was carried out to test the significant relationship between organizational capabilities and knowledge management towards e-business implementation success. Guildford's rule of thumb mentioned that Pearson correlation coefficient (r) is able to construct the degree, size magnitude and strength of the relationship (Fadhil, M.H., et al 2007). Therefore it was used to determine the strength of the association between Dependent Variable and Independent Variable. The table of Guildford Rule of Thumb as shown below:-

Table 4.4: Guildford Rule of Thumb Table

Value (range)	Association (strength)
< 0.2	Negligible Relationship
0.2 to 0.4	Low Relationship
0.4 to 0.7	Moderate Relationship
0.7 to 0.9	High Relationship
> 0.9	Very High Relationship

Summary of the result as illustrated in Table 4.5 below:-

Table 4.5: Hypotheses Testing

Hypotheses	Pearson Correlation	Sig	Accept/Reject
H1	0.374	0.000	Accept
H2	0.132	0.073	Reject
H3	0.342	0.000	Accept
H4	0.542	0.000	Accept
H5	0.390	0.000	Accept
H6	0.588	0.000	Accept

** Correlation is significant at level 0.01

ANOVA or analysis of variance was used to examine the variability of the sample value. Summary of ANOVA result are shown as table below:-

Table 4.6: ANOVA Table

Hypothesis	Mean Square	F-value	Sig
H1	3.206	19.706	0.00
H2	0.397	2.136	0.146
H3	2.683	16.065	0.00
H4	6.730	50.381	0.00
H5	3.478	21.673	0.00
H6	7.907	63.837	0.00

** Significant level at 0.05

H1: Training Availability is positively associated with e-business implementation success

Direction of the Relationship – The correlation is positive (0.374), indicating a positive correlation between Training Availability and E-business implementation success.

Strength of the Relationship – There is low relationship between the two variable (0.374), suggesting that a low relationship between Training Availability and E-business implementation success.

Table 4.6 shows that the F-value is 19.706. Since sig-F (0.00) is lower than α (0.05), there is a significant contribution between training availability and e-business implementation is at 0.05 level of significant.

H2: Technical Expertise is not associated with e-business implementation success

Direction of the Relationship – The correlation is positive (0.132), indicating a positive correlation between technical expertise and E-business Implementation Success.

Strength of the Relationship – There is negligible relationship between the two variables (0.132), suggesting that Technical Expertise is not associated with E-business implementation success.

From the ANOVA table, the F-value is 2.136. Since sig-F (0.146) is higher than α (0.05), there is no significant contribution between technical expertise and e-business implementation at 0.05 level of significant.

H3: Knowledge Level is positively associated with e-business implementation success

Direction of the Relationship – The correlation is positive (0.342), indicating a positive correlation between Knowledge Level and E-business Implementation success.

Strength of the Relationship – There is low relationship between the two variable (0.342), suggesting that a low relationship between Knowledge Level and E-business implementation success.

From Table 4.6, value from ANOVA table, the F-value is 16.065 and since sig-F (0.00) is lower than α (0.05), there is a significant contribution between knowledge level and e-business implementation at 0.05 level of significant.

H4: Knowledge Acquisition is positively associated with e-business implementation success

Direction of the Relationship – The correlation is positive (0.542), indicating a positive correlation between Knowledge Acquisition and E-business Implementation success.

Strength of the Relationship – There is moderate relationship between the two variable (0.542), suggesting that a moderate relationship between Knowledge Acquisition and E-business implementation success.

From Table 4.6, the F-value is 50.381. Since sig-F (0.00) is lower than α (0.05), there is a significant contribution between knowledge acquisition and e-business implementation at 0.05 level of significant.

H5: Knowledge Application is positively associated with e-business implementation success

Direction of the Relationship – The correlation is positive (0.390), indicating a positive correlation between Knowledge Application and E-business Implementation success.

Strength of the Relationship – There is low relationship between the two variable (0.390), suggesting that a low relationship between Knowledge Application and E-business implementation success.

From ANOVA table, the F-value is 21.673. Since sig-F (0.00) is lower than α (0.05), there is a significant contribution between knowledge application and e-business implementation at 0.05 level of significant.

H6: Knowledge Sharing is positively associated with e-business implementation success

Direction of the Relationship – The correlation is positive (0.588), indicating a positive correlation between Knowledge Sharing and E-business Implementation success.

Strength of the Relationship – There is moderate relationship between the two variable (0.588), suggesting that a moderate relationship between Knowledge Sharing and E-business implementation success.

From Table 4.6, the F-value is 63.837. Since sig-F (0.00) is lower than α (0.05), there is a significant contribution between knowledge sharing and e-business implementation at 0.05 level of significant.

Factor Analysis

Factor analysis was conducted to identify the underlying constructs factors that influence organizational capabilities and knowledge management towards e-business implementation success. Principal axis factoring was used for the questions on factor that influenced e-business implementation success.

The main objective of factor analysis is to analyze the structure comprising a large number of variables and group them into a set of factors, thus achieving the purposes of data reduction and summarization. Factor analysis is suitable for both confirmatory as well as exploratory studies (Hair et al., 1998).

Table 4.7: Factor Analysis

	Component							
	1	2	3	4	5	6	7	8
Knowledge Application 3	,821							
Knowledge Application 5	,790							
Knowledge Application 4	,776							
Knowledge Sharing 3	,706							
Knowledge Level 2	,694							
Knowledge Level 1	,658							
Knowledge Application 2	,632							
Knowledge Sharing 1	,518							
Impact on Internal Efficacy 2		,859						
Impact on Internal Efficacy 1		,791						
Impact on E-Commerce 2		,730						
Impact on E-Commerce 3		,567						
Technical Expertise 2			,873					
Knowledge Acquisition 3			,812					
Techincal Expertise 1			,682					
Knowledge Acquisition 4			,624					
Knowledge Application 1				,858				
Knowledge Level 3				,672				
Knowledge Sharing 4				,584				
Impact on E-Commerce 1					,732			
Knowledge Acquisition 1					,720			
Knowledge Acquisition 2					,680			
Training Availability 1						,882		
Training Availability 2						,641		
Impact on Coordination 1							,908	
Impact on Coordination 2							,708	
Knowledge Sharing 2								,742

	Component							
	1	2	3	4	5	6	7	8
% of Variance	32.718	11.140	9.970	6.754	6.411	5.818	5.159	3.843
Cumulative Variance	32.718	43.858	53.858	60.582	66.993	72.811	77.970	81.813

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 12 iterations

Kaiser's Criterion

This is to select those factors which have an eigenvalue of greater than one. Based on Total Variance Explained table, Factor 1 up to Factor 8 was selected as they have an eigenvalue of more than 1. From the result, we can derive that 81.813% explain the relevance in the data while the rest is considered to be unexplained data.

Table 4.14 showed the factor extracted. Factor 1 is combination of items in Knowledge Sharing, Knowledge Application and Knowledge Level. It accumulated of 32.718% total variance and is defined by eight items. Factor 2 represents Impact of Efficacy and Impact of E-commerce. It accounts for 11.140% of total variance and is defined by four variables. Factor 3 represents items in Technical Expertise and Knowledge Acquisition and it accounts 9.970% and is defined by four variables.

Factor 4 represents items in Knowledge Level, Knowledge Sharing and Knowledge Level and it accounts 6.754% of variance and is defined by three variables. Factor 5 represents items in Knowledge Application, Knowledge Level Sharing. It accounts 6.411% of variance and is defined by three variables. Factor 6 represents items in Training Availability and it accounts 5.818% of variance and it defined by two variables.

Factor 7 represents items in Impact of Coordination and it accounts of 5.159 of variance and it defined by two variables. Factor 8 represents items in Knowledge Sharing and it accounts of 3.843 of variance and defined by one variables.

Regression

Regression refers to techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. More specifically, regression analysis helps us understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed. (http://en.wikipedia.org)

Table 4.8: Multiple regression

R	R-Square	F-Ratio	Sig.
0.657	0.432	14.697	.000

Value of R

The result shows that the value of R is 0.657, which means 65.7% of relationships exist between multiple independent variables and dependent variable.

Value of R-Square

Measures the proportion of the variation in the dependent variables(E-business Implementation Success) that was explained by variations in the independent variables. In this case, the 'R-Square' tell us that 43.2% of the variation was explained. The other 56.8% were unexplained and this percentage is explained by other variables which are not mentioned in the research.

Significance of the Model

If "Sig" is greater than 0.05, we conclude that our model could not fit the data. In this case the value is .000 which is less than 0.05, so the model is significant at 99% and F-ratio is significant with 14.697

Table 4.9: Beta Value

Variables	Beta Value
Training Availability	0.076
Technical Expertise	-0.019
Knowledge Level	-0.083
Knowledge Acquisition	0.341
Knowledge Sharing	0.456
Knowledge Application	-0.047

The beta value tells us about the relationship between e-business implementation success and each predictor. The higher the beta value the important the variable. Knowledge sharing is the most important variable with the highest beta value of 0.456.

Impact on e-business implementation success

The respondents' perception on e-business implementation success and the impact contributed from implementation of e-business is illustrated in Table 4.10 below using mean values. The mean values are greater from standard deviation showed that there is positive impact on the organizational to implement e-business in their organization. Impact on internal efficacy is scored higher mean value which is 3.70 compared to e-business implementation success which scored 3.54. The means value of the other two which are impact on commerce and impact on coordination is a bit lower from e-business implementation success. From the respondent's perception, this shows that the e-business implementation success contribute significantly to effectiveness of the organization, coordination among business partner and suppliers and increased market share. In Malaysia, the e-business adoption for Small Medium Enterprises (SME) is still at the initial stage. The acceptance of e-business among the government and society seems to be encouraging as attested by

related conferences and programs held by the Government and business associations. Many companies are making the transition over to e-commerce for conducting their required business processes in hopes of lowering operational costs, but in turn have been able to dramatically improve the level of their service offerings (Klein, 2000; Zetlin, 2000; Vizard, 2000). E-commerce is changing the way business is being conducted and eventually all companies will have to make the transition to remain competitive because soon it will inevitably become the standard for customer satisfaction (Rust and Kannan, 2003).

Table 4.10: Mean and Standard Deviation for E-business Impact

Variables	Mean	Standard Deviation
Impact on Commerce	3.44	0.499
Impact on Internal Efficacy	3.70	0.670
Impact on Coordination	3.48	0.483
E-business Implementation Success	3.54	0.433

4.4   Summary of Research Result

The adoption and proposed conceptual model would be able to provide an efficient framework to assess the firm's readiness for Internet adoption in hope to reap the e-business benefits. Top management and managers will be able to evaluate the readiness for current and future e-business development within their firms and how they must enhance their expertise and technology.

There were three hypotheses that studied the organizational capabilities and the other three were on the knowledge management. It's only technical expertise that was found no relationship with e-business implementation success in Malaysia.

The result obtained from this study showed that there is a need of technical expertise to contribute their ideas and firms have to strategies their marketing and also calculate the risk taken by organization.

The overall result of the study shows that there are significance value to test the organizational capabilities and knowledge management in e-business implementation. In Malaysian context, Knowledge management is a critical value that contributed to the e-business implementation success. Clearly, electronic business today plays a major role in the world's economic growth driven by the advances in information technology. B2B actual and estimated sales (including EDI) hit $680 billion in 2007 whilst Business to Consumer (B2C) actual and estimated sales rose to $240 billion, up from $190 billion in 2006 (www.emarketer.com and www.forrester.com). This online evolution and progress affected individuals, organizations as well as businesses.