CHAPTER 4

DATA ANALYSIS AND RESEARCH FINDINGS

4.1 Introduction

The research findings chapter provides a description of the data on the samples and characteristics in the three companies as well as other companies and responses retrieved via the Internet. The data collected from the 55 respondents were coded, key-punched and processed by computer on the basis of frequency tests and cross tabulation tests in the Statistical Package for Social Sciences (SPSS). The statistical procedure used in this research is basically descriptive statistics. Generally, the questionnaire for the study was organized into three parts:-

a) Personal particulars of respondents

b) Respondents' knowledge of electronic commerce

c) Respondents' general perspectives on electronic commerce and related matters

4.2 Personal particulars of the Respondents

The personal particulars of the respondents were analyzed in terms of sex, age, ethnic, academic qualification, employment and level of employment. The purpose is to see the profile of the respondents and to generate demographic data for this study. (Refer to Table 4.1 to Table 4.6).

4.2.1 Frequency analysis

The Frequencies procedure produces frequency tables for single variables and calculates a variety of descriptive statistics, in the case of this study to see the percentiles.

Table 4.1

Distribution of respondents by Sex

N=55

Sex	No. of Respondents	Percentage
Male	39	70.9%
Female	16	29.1%
Total	55	100.0%

From Table 4.1, it can be said that 70.9% of the respondents are male employees and 29.1% of them are female. This indicates that there are more male employees in the Information, Communication and Technology field in Malaysia. This is ironic because according to an informal interview with one of the managers in one of these companies, he indicated that there are more female students enrolled in the field of Computer Science and Information Technology, but when it comes to the work force, the male employees seems to dominate this field, for various reasons. He also added that from his experience in recruiting new employees, the female candidates with Computer Science and IT qualifications end up doing administrative work rather than technical work. This is an interesting finding and it is suggested that more research to be conducted on this area of gender discrepancy in IT field.

Table 4.2

Distribution of respondents by Age

N=55

Age	No. of Respondents	Percentage
20 to 25 years	6	10.9%
26 to 30 years	31	56.4%
31 to 35 years	13	23.6%
Above 36	5	9.1%
Total	55	100.0%

The distribution of respondents by age is shown in Table 4.2, where it can be seen that the majority of the respondents are within the age group of 26 to 30 years with the percentage of 56.4%. The second highest respondents are within the age group of 31 to 35 years with 23.6%. This shows that the manpower in this field is fairly young, which also indicates that Malaysia is relatively new in the Information Technology field.

Table 4.3

Distribution of respondents by Ethnic group

N=55

Ethnic	No. of Respondents	Percentage
Malay	13	23.6%
Chinese	25	45.5%
Indian	14	25.5%
Others	3	5.5%
Total	55	100.0%

Table 4.3 shows the distribution of respondents by ethnic group. As seen from the table, there are 13 Malays, which represents 23.6% of total respondents, 25 Chinese that make up 45.5%, 14 Indians, which constitutes 25.5% and other race with just 3

respondents that represents 5.5% of the total respondents. This figures indicates that the Chinese currently monopolizes the employment in the ICT field in Malaysia.

Table 4.4

Distribution of respondents by Academic Qualification

N=55

Academic qualification	No. of Respondents	Percentage
SPM/STPM	1	1.8%
Diploma	6	10.9%
Degree	41	74.5%
Masters	6	10.9%
PhD	1	1.8%
Total	55	100.0%

Looking at Table 4.4, it can be seen that the majority of the employees hold a baccalaureate degree with 74.5%, Diploma and Masters holders are equal in number where each have 6 respondents that represents 10.9% with 37.0% and SPM/STPM and PhD holders are also equal with 1 respondent each that make up 1.8%. This indicates that there are not many people that we can call "expert" or "specialist" in this field currently in Malaysia. More people need to be encouraged to pursue a higher degree in IT field to generate a pool of people with specific knowledge in this field. This means the government needs to invest more in education and other related facilities to encourage more people to join this field.

Table 4.5

Distribution of respondents by Employment

N=55

Employment	No. of respondents	Percentage
Intel	6	10.9%
Motorola	7	12.7%
Ericsson	4	7.3%
Others	38	69.1%
Total	55	100.0%

Table 4.5 shows the distribution of respondents by the company that they work in. Majority of the respondents work in small and medium scale IT related companies with 69.1%, followed by 7 employees from Motorola, which constitutes 12.7%, then 6 more employees from Intel that represents 10.9% and 4 employees from Ericsson which make up 7.3% of the total respondents.

Table 4.6

Distribution of respondents by Level of Employment.

N=55

Level of employment	No. of Respondents	Percentage
Manager	3	5.5%
Supervisor	7	12.7%
Staff	45	81.8%
Total	55	100.0%

The distribution of respondents by level of employment is shown in table 4.6, where the majority of the employees are at the ordinary staff level with 81.8% as compared to supervisor level with 12.7% and managerial level with 5.5%. From the numbers, it is understandable that managers are in general very busy to take time off to answer survey questions.

4.3 Respondents' knowledge of E-commerce

This section is designed to find out the level of knowledge of the respondents regarding the subject of IT and E-commerce in particular, and the skills they possess. Some of the answers given are used to discuss one of the objectives, which are to find out the level of knowledge of the current manpower regarding IT and E-commerce. Please refer to table 4.7 to 4.25 for frequency tests.

Table 4.7

Responses to the level of knowledge on E-commerce (Heard of E-commerce).

N=55

Yes		No		No answer		Total	
Frequency	%	Frequency	%	Frequency	%	Frequency	%
49	89.1	0	0	6	10.9	55	100.0

According to table 4.7, 49 out of the 55 respondents indicated that they have heard of E-commerce and only 6 respondents, which is only 10.9% admitted that they have never heard of this subject. This shows that in general, the employees in the ICT industry have heard of what E-commerce is, even though it is relatively new in Malaysia.

Table 4.8

Responses to the level of knowledge on E-commerce (Know E-commerce).

N=55

Yes		No		No answer		Total	
Frequency	%	Frequency	%	Frequency	%	Frequency	%
48	87.3	0	0	7	12.7	55	100.0

From table 4.8, we can see that 48 respondents know what E-commerce is, which constitutes 87.3% and only 7 respondents answered that they do not know, which represent 12.7% of the total respondents.

Table 4.9

Responses to the level of knowledge and training on E-commerce.

N=55

Yes		No		No answer		Total	
Freq.	%	Freq.	%	Freq.	%	Freq.	%
18	32.7	31	56.4	6	10.9	55	100

From table 4.9, we can see that the majority of the respondents, which represents 52.7% have never attended any course or training regarding E-commerce. This shows that most companies do not take the initiative to retrain their workers to cope with the challenge of Information Age. The changing trend from resource-based to knowledge-based employment means that each employees need to be retrained at least five times in their working life. This is because it is hard for employees to keep up with the changing technology, without any structured training program.

Table 4.10

Responses by level of knowledge and skills on E-commerce related technologies.

N=55

Skill	Yes		No		No answer		Total	
	Freq	%	Freq	%	Freq	%	Freq	%
E-mail	49	89.1	0	0	6	10.9	55	100.0
Internet	49	89.1	0	0	6	10.9	55	100.0
Browser	47	85.5	0	0	8	14.5	55	100.0
Dbase software	32	58.2	16	29.1	7	12.7	55	100.0
Server	46	83.6	2	3.6	7	12.7	55	100.0
CD ROM	45	81.8	3	5.5	7	12.7	55	100.0
WWW	49	89.1	0	0	6	10.9	55	100.0
EDI	20	36.4	28	50.9	7	12.7	55	100.0

According to table 4.10, the majority of the respondents indicated that they are familiar with the electronic mail, the Internet, browser, Server, CD ROM, WWW which counted for more than 80 percent and on the other hand the respondents are less familiar with Dbase software and EDI.

Table 4.11

Responses on the skills that the respondents possess

N=55

Skill	Yes		No		No answer		Total	
	Freq	%	Freq	%	Freq	%	Freq	%
System hardware/engineer	42	76.4	5	9.1	8	14.5	55	100.0
Software developer/engineer	26	47.3	21	38.2	8	14.5	55	100.0
Business/system analyst	17	30.9	31	56.4	7	12.7	55	100.0
Computer programmer	46	83.6	3	5.5	6	10.9	55	100.0
Technical support	41	74.5	6	10.9	8	14.5	55	100.0

According to table 4.11, the majority of the respondents possess the skills of system hardware/engineer, computer programmer and technical support, which counted for 70 percent and above while they indicated that they lack the skills of software developer/engineer and business/systems analysts.

Table 4.12

Responses by the question on shortage of IT professionals

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
46	83.6	2	3.6	1	1.8	6	10.9	55	100.0

According to table 4.12, the majority of the respondents agreed that there is a shortage of IT professionals in the country, which accounted for 83.6% of the total respondents. This indicates that even among themselves, the employees of ICT companies are aware that there is a need to increase the number of IT professionals to cope with the changing technologies, to be able to compete in the open market in this age of globalization.

Table 4.13

Responses by the question on the IT infrastructure and activities

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
21	38.2	27	49.1	1	1.8	6	10.9	55	100.0

Table 4.13 shows that the majority of the respondents, which accounted for 49.1 percent indicated that the IT and E-commerce related infrastructures and activities in Malaysia are adequate to sustain the industry. However, a significant number of respondents, about 38.2 percent also believe that the IT and E-commerce related infrastructures and activities are still not adequate.

Table 4.14

Responses by the question on the R & D capability in learning institutions

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
40	72.7	4	7.3	5	9.1	6	10.9	55	100.0

According to table 4.14, the majority of the respondents, which accounted for 72.7 percent of the total respondents indicated that they believe that the Research and Development capability in local learning institutions are still low. This is because Research and Development is important in keeping up with the current trend and changes in the IT and E-commerce related industry.

Table 4.15

Responses by the question on the courses in IT and Computer Science

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
6	10.9	41	74.5	2	3.6	6	10.9	55	100.0

Looking at table 4.15, it can be concluded that the majority of the respondents, which represent 74.5 percent of the total respondents, said that in general courses in IT and Computer Science are easy compared to other courses offered. This is further supported by the increase in enrolment in Computer Science and IT courses from 3,770 students in 1995 to 15, 050 students in 2000 in higher public institutions, whereas 49,040 students were enrolled in private institutions in 2000 as shown in 8MP (8MP, page 104).

Table 4.16

Responses by the question on whether E-commerce subjects should be taught in primary schools.

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
6	10.9	21	38.2	22	40.0	6	10.9	55	100.0

According to table 4.16, the majority of the respondents who do not agree or do not know, which accounted for 89.1 percent (from "No", "Don't know" and "No answer") whether E-commerce subject should be taught in as early as in primary schools exceeds the respondents who agree that it should. This is probably due to the highly technical terms and involving complex technical knowledge, which may not be appropriate for primary school children level of thinking.

Table 4.17

Responses by the question whether work in IT line is highly paid

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
39	70.9	9	16.4	1	1.8	6	10.9	55	100.0

Table 4.17 indicated that the majority of the respondents, which represent about 70.9 percent of the total respondents believe that work in IT line is highly paid.

Table 4.18

Responses by the question of which IT and E-commerce related technologies needed training

N=55

Technologies	Yes		No		Don't know		No answer		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
System/hardware engineer	43	78.2	5	9.1	1	1.8	6	10.9	55	100.0
Software developer /engineer	48	87.3	0	0	1	1.8	6	10.9	55	100.0
Business/system analyst	43	78.2	4	7.3	2	3.6	6	10.9	55	100.0
Computer programmer	36	65.5	12	21.8	1	1.8	6	10.9	55	100.0
Technical support	35	63.6	13	23.6	1	1.8	6	10.9	55	100.0

According to table 4.17, the majority of the respondents are of the opinion that all the five technologies related to IT and E-commerce still needed more training. Even though most of the respondents themselves posses these skills, they still think that Malaysia still need more training on these technologies. This is probably due to the fact

that these technologies are changing rapidly and it would be almost impossible to keep up with the changes without some kind of training and retraining. It is estimated that each school leaver will need to be retrained at least five times during his or her entire career.

Table 4.19

Responses by the question on whether E-commerce has impact on current job

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
45	81.8	3	5.5	1	1.8	6	10.9	55	100.0

According to table 4.19, the majority of the respondents, which accounted for 81.8 percent of the total respondents, believe that E-commerce does have an impact on their present job. This is probably due to the current trend where every body is trying to make business electronically to attract more customers and to stay competitive with their competitors.

Table 4.20

Responses by the question whether E-commerce pose a threat to job

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
2	3.6	46	83.6	1	1.8	6	10.9	55	100.0

From table 4.20 it can be seen that the majority of the respondents are of the opinion that the emergence of E-commerce some how do not pose any threat on their

present job. This is perhaps most of the respondents asked are not involved in retail service, and if retail service is included in the category of work, probably the answer for yes would be higher. One of the E-commerce advantages in to eliminate the middlemen, which is the retailer as through E-commerce customers can execute the transactions directly with the seller.

Table 4.21

Responses by the question whether E-commerce will benefit the company

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
44	80.0	0	0	5	9.1	6	10.9	55	100.0

According to table 4.21, the majority of the respondents, which constitute 80.0 percent of the total respondents, believe that adoption of E-commerce will benefit their company. This is probably true because E-commerce can reach out to more people with less cost.

Table 4.22

Responses by the question whether Malaysians are ready for Information Age

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
22	44.0	14	25.5	13	23.6	6	10.9	55	100.0

Looking at table 4.22, it can be seen that the majority of the respondents, which represent about 60.0 percent of the total respondents (those who answer "No", "Don't know" and "No answer") exceeds those who answered that they think that Malaysians are ready for the Information Age.

Table 4.23

Responses by the question whether Malaysia has enough manpower to sustain E-commerce

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
3	5.5	43	78.2	3	5.5	6	10.9	55	100.0

According to table 4.23, the majority of the respondents, which represents 78.2 percent of the total respondents believe that Malaysia do not have enough manpower to sustain E-commerce. Even though we have enough infrastructure, the main problem still lies in the lack of manpower who has the skills and technical-know how of IT and e-commerce.

Table 4.24

Responses by the question on whether the respondents need more training on E-commerce

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
47	85.5	2	3.6	0	0	6	10.9	55	100.0

From table 4.24, it can be seen that the majority of the respondents, which constitutes 85.5 percent of the total respondents, believe that they and their colleagues need more training to cope with the rapid changes in IT. This is to make sure that the present manpower have adequate knowledge and skills to be able to contribute to the IT and E-commerce industry.

Table 4.25

Responses by the question on the future of E-commerce

N=55

Yes		No		Don' know		No answer		Total	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
20	36.4	11	20.0	18	32.7	6	10.9	55	100.0

According to table 4.25, it can be seen that the majority of the respondents do not think that E-commerce will have a bright future in Malaysia based on the answer of "No", "Don't know" and "No answer", which exceeds the "Ÿes" answer which is only 36.4 percent of the total respondents. This is because E-commerce is a relatively new subject and not many people actually know about it, unless they are involved in the IT field. The Internet usage in Malaysia is also low compared to other Asian countries like Singapore and Taiwan, and this further hinder the success of E-commerce in Malaysia.

4.4 Cross tabulation test

The crosstabs procedure produces two-way to n-way crosstabulations. For this study the crosstabulation procedure is to see the distribution between:

1) Variable sex and variable respondents who have heard of E-commerce

2) Variable sex and variable respondents who actually know E-commerce

3) Variable sex and variable respondents who has some training on E-commerce

4) Variable sex and variable respondents' knowledge on E-commerce technologies

5) Variable sex and variable E-commerce technologies that need more training

6) Variable sex and variable respondents need more training

7) Variable ethnic and variable respondents who have heard of E-commerce

8) Variable ethnic and variable respondents who actually know E-commerce

9) Variable ethnic and variable respondents who has some training on E-commerce

10) Variable ethnic and variable respondents' knowledge on E-commerce technologies

11) Variable ethnic and variable E-commerce technologies that need more training

12) Variable ethnic and variable respondents need more training

1-Cross tabulation between sex and heard of E-commerce

A1*B1 Cross tabulation

A1=sex
B1=respondents heard of E-commerce

Table 4.26

Sex(A1)	Heard of E-commerce(B1)				Total	
	Yes		No answer			
	Freq	%	Freq	%	Freq	%
Male (1)	39	79.6	0	0	39	70.9
Female (2)	10	18.2	6	10.9	16	29.1
	49		6		55	100.0

From the table we can see that there are 39 males who have heard of E-commerce and there are 10 females who have heard of E-commerce and 6 females did not answer this question. This means that all the 39 male respondents who participated have heard of E-commerce and 16 female who answered the questionnaire also indicated that they have heard of E-commerce. However, 6 out of the 16 females did not answer this question. This means that there are no respondents who answered "no" for this question. So, there are 49 respondents who indicated that they have heard of E-commerce and 6 did not answer the question.

2-Cross tabulation between sex and level of knowledge of E-commerce

A1*B2 Cross tabulation

A1=sex
B2=respondents actually know what is E-commerce

Table 4.27

Sex(A1)	Knowledge of E-commerce(B2)				Total	
	Yes		No answer			
	Freq	%	Freq	%	Freq	%
Male (1)	39	79.6	0	0	39	70.9
Female (2)	9	16.4	7	12.7	16	29.1
	48		7		55	100.0

From the table we can see that there are 39 males who actually know what E-commerce is all about. On the other hand, out of the 16 female respondents there are 9 who actually know what E-commerce is and 7 did not answer this question. This means that out of the 55 respondents 48 of them know what E-commerce is and only 7 did not know or did not want to answer. From this table, it can be seen that the female respondents who indicated that they know about E-commerce is low, this is because from the returned questionnaire, there are 6 females who just answered the first section of the questionnaire. If they have answered all the sections, the percentage for females might be higher.

3-Cross tabulation between sex and training on E-commerce

A1*B3 Cross tabulation

A1=sex
B3=respondents attended training on E-commerce

Table 4.28

Sex(A1)	Training on E-commerce(B3)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Male(1)	16	29.1	23	40	0	0	39	70.9
Female(2)	2	3.6	8	14.5	6	10.9	16	29.1
	18		31		6		55	100.0

From the table we can see that out of 39 male respondents, 16 of them have attended course or had some kind of training on E-commerce and 23 of them indicated that they have had no training or attended any course on E-commerce. On the other hand, out of 16 female respondents, there are 2 females who have attended course or had some kind of training on E-commerce and 8 of them indicated that they have never attended any course or training on E-commerce and the other 6 did not answer this question.

4-Crosstab between sex and skills in E-commerce technologies

A1*B7.1

A1=sex
B7.1=skills in E-commerce technologies (System/Hardware engineer)

Table 4.29

Sex(A1)	System/Hardware engineer(B7.1)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Male(1)	35	63.6	2	3.6	2	3.6	39	70.9
Female(2)	7	12.7	3	5.5	6	10.9	16	29.1
	42		5		8		55	100.0

From table 4.29, it can be seen that 35 male respondents have the skill for System/ Hardware engineer and only 7 female respondents have this skill. From an informal interview, the female respondents indicated that they did not want to be involved in this work because it required them to do quite a laborious job, which was considered to be easy for the male respondents and 6 respondents did not answer this question.

5-Crosstab between sex and skills in E-commerce technologies

A1*B7.2

A1=sex
B7.2=skills in E-commerce technologies (Software developer/ engineer)

Table 4.30

Sex(A1)	Software developer/ engineer(B7.2)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Male(1)	21	38.2	16	29.1	2	3.6	39	70.9
Female(2)	5	9.1	5	9.1	6	10.9	16	29.1
	26		21		8		55	100.0

According to table 4.26, 21 male respondents indicated that they have the skill of software developer/engineer and 16 of them indicated that they did not have this skill and 2 male respondents did not answer this question. Out of the 16 female respondents, 5 of them indicated that they have this skill and the other 5 indicated that they did not have this skill. 6 of them did not answer this question.

6-Crosstab between sex and skills in E-commerce technologies

A1*B7.3

A1=sex
B7.3=skills in E-commerce technologies (Business/System Analyst)

Table 4.31

Sex(A1)	Business/System Analyst(B7.3)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Male(1)	15	27.3	23	41.8	1	1.8	39	70.9
Female(2)	2	3.6	8	14.5	6	10.9	16	29.1
	17		31		7		55	100.0

From table 4.31, it can be seen that 15 male respondents indicated that they have the skill in business/system analyst and 23 of them indicated that they do not know this skill and 1 male decline to answer this question. On the other hand, out of the 16 female respondents, 2 of them indicated that they know this skill and 8 of them indicated that they do not know this skill while the other 6 declined to answer this question.

7-Crosstab between sex and skills in E-commerce technologies

A1*B7.4

A1=sex

B7.4=skills in E-commerce technologies (Computer programmer)

Table 4.32

Sex(A1)	Computer programmer(B7.4)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Male(1)	37	67.3	2	3.6	0	0	39	70.9
Female(2)	9	16.4	1	1.8	6	10.9	16	29.1
	46		3		6		55	100.0

According to table 4.32, 37 male respondents indicated that they have the skill as computer programmer and only 2 respondents indicated that they do not have this skill. On the other hand, out of the 16 female respondents, 9 of them indicated that they have this skill and 1 respondent indicated that they do not have this skill, while the other 6 did not respond to this question.

8-Crosstab between sex and skills in E-commerce technologies

A1*B7.5

A1=sex
B7.5=skills in E-commerce technologies (Technical support)

Table 4.33

Sex(A1)	Technical support(B7.5)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Male(1)	35	63.6	2	3.6	2	3.6	39	70.9
Female(2)	6	10.9	4	7.3	6	10.9	16	29.1
	41		6		8		55	100.0

The table shows that 35 out of the 39 male respondents indicated that they could provide technical support service, while the other 2 indicated that they could not and the other 2 more declined to respond. On the other hand, out of the 16 female respondents, 6 of them can provide technical support and 4 of them cannot do so, while the other 6 declined to respond.

9-Crosstab between sex and more training of E-commerce for employees

A1*C14

A1=sex
C14=more training of E-commerce for employees

Table 4.34

Sex(A1)	More E-commerce training(C14)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Male(1)	37	67.3	2	3.6	0	0	39	70.9
Female(2)	10	18.2	0	0	6	10.9	16	29.1
	47		2		6		55	100.0

According to table 4.34, 37 male respondents indicated that they needed more training on E-commerce and only 2 respondents indicated that they did not need more training. On the other hand, out of 16 female respondents, 10 indicated that they needed more training and 2 of them indicated that they did not need more training, whereas the remaining 6 of them did not respond. From the table it can be seen that 85.5 percent of the respondents indicated that they needed more training, so it illustrates that the employers should organized more on the job training or seminars or workshop on E-commerce.

10-Cross tabulation between ethnic group and respondents heard of E-commerce

A3*B1 Cross tabulation

A3=Ethnic group
B1=respondents heard of E-commerce

Table 4.35

Ethnic(A3)	Knowledge of E-commerce(B1)				Total	
	Yes		No answer			
	Freq	%	Freq	%	Freq	%
Malay(1)	13	23.6	0	0	13	23.6
Chinese(2)	19	34.5	6	10.9	25	45.5
Indian(3)	14	25.5	0	0	14	25.5
Others(4)	3	5.5	0	0	3	5.5
	49		6		55	100.0

From table 4.29, it can be seen that out of the 39 respondents who have heard of E-commerce, 13 of them were Malays, 25 were Chinese but 6 of them did not answer this question, 14 of them were Indians and 3 of them were of other race.

11-Cross tabulation between ethnic and level of knowledge on E-commerce

A3*B2 Cross tabulation

A3=ethnic group
B2=respondents actually know what is E-commerce

Table 4.36

Ethnic(A3)	Knowledge of E-commerce(B2)				Total	
	Yes		No answer			
	Freq	%	Freq	%	Freq	%
Malay(1)	12	21.8	1	1.8	13	23.6
Chinese(2)	19	34.5	6	10.9	25	45.5
Indian(3)	14	25.5	0	0	14	25.5
Others(4)	3	5.5	0	0	3	5.5
	48		7		55	100.0

From the table we can see that out of 13 Malay respondents, 12 of them actually know what E-commerce is and only 1 did not answer. For the Chinese respondents, 19 of them actually know what E-commerce is and 6 of them did not answer this question. All the Indian respondents indicated that they actually know what E-commerce is about and the same with the other race.

12-Cross tabulation between sex and level of knowledge on E-commerce

A3*B3 Cross tabulation

A3=Ethnic group
B3= respondents attended training on E-commerce

Table 4.37

Ethnic(A3)	Training on E-commerce(B3)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Malay(1)	2	3.6	11	20.0	0	0	13	23.6
Chinese(2)	7	12.7	12	21.8	6	10.9	25	45.5
Indian(3)	7	12.7	7	12.7	0	0	14	25.5
Other(4)	2	3.6	1	1.8	0	0	3	5.5
	18		31		6		55	100.0

According to the table, out of 13 Malay respondents, only 2 have attended course or training on E-commerce, while 11 more did not have any. The Chinese have 7 respondents who have attended course or training on E-commerce, while 6 of them did not have any training and 6 of them did not answer this question at all. Out of the 14 respondents, 7 of them have attended course and training, while the other 7 did not have any training on E-commerce. For the other 3 respondents from other ethnic group, 2 of them have attended course and training while only 1 indicated no training.

13-Crosstab between ethnic and skills in E-commerce technologies

A3*B7.1

A3=Ethnic group
B7.1=skills in E-commerce technologies (System/Hardware engineer)

Table 4.38

Ethnic(A3)	System/Hardware engineer(B7.1)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Malay	9	16.4	3	5.5	1	1.8	13	23.6
Chinese	18	32.7	1	1.8	6	10.9	25	45.5
Indian	13	23.6	1	1.8	0	0	14	25.5
Other	2	3.6	0	0	1	1.8	3	5.5
	42		5		8		55	100.0

From table 4.38, it can be seen that out of the 13 Malay respondents, 9 of them indicated that they possess the skill of system/hardware engineer, while the other 3 indicated that they did not have this skill and 1 did not answer. 18 out of the 25 Chinese respondents indicated that they have this skill and 1 did not have it, while 6 of them did not answer. Out of the 14 Indian respondents, 13 of them have this skill and 1 did not have. 2 out of the 3 respondents of other race have this skill and 1 did not have this skill.

14-Crosstab between ethnic and skills in E-commerce technologies

A3*B7.2

A3=Ethnic group
B7.2=skills in E-commerce technologies (Software developer/engineer)

Table 4.39

Ethnic(A3)	Software developer/ engineer(B7.2)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Malay	6	10.9	6	10.9	1	1.8	13	23.6
Chinese	12	21.8	7	12.7	6	10.9	25	45.5
Indian	6	10.9	8	14.5	0	0	14	25.5
Other	2	3.6	0	0	1	1.8	3	5.5
	26		21		8		55	100.0

According to table 4.39, 6 out of the 13 Malay respondents indicated that they have the skill of software developer/engineer and the other 6 did not have it while 1 respondent did not answer. Out of the 25 Chinese respondents, 12 of them responded that they have this skill and 7 of them did not have the skill while 6 of them did not answer. Out of the 14 Indian respondents, 6 of them indicated that they have this skill and the other 8 did not have it. 2 of the other race respondents have this skill while 1 respondent did not have this skill.

15-Crosstab between ethnic and skills in E-commerce technologies

A3*B7.3

A3=Ethnic group
B7.3=skills in E-commerce technologies (Business/System analyst)

Table 4.40

Ethnic(A3)	Business/System analyst(B7.3)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Malay	3	5.5	10	18.2	0	0	13	23.6
Chinese	10	18.2	9	16.4	6	10.9	25	45.5
Indian	2	3.6	12	21.8	0	0	14	25.5
Other	2	3.6	0	0	1	1.8	3	5.5
	17		31		7		55	100.0

From table 4.40, it can be seen that 3 out of the 13 Malay respondents have the business/system analyst skill while the other 10 of them did not have this skill. Out of the 25 Chinese respondents, 10 of them indicated having this skill and 9 of them did not whereas 6 of them did not answer. Out of the 14 Indian respondents, 2 of them indicated that they possess this skill and 12 of them did not. The respondents from the other race, on the other hand, have 2 of them possessing this skill while 1 respondent did not.

16-Crosstab between ethnic and skills in E-commerce technologies

A3*B7.4

A3=Ethnic group
B7.4=skills in E-commerce technologies (Computer programmer)

Table 4.41

Ethnic(A3)	Computer programmer(B7.4)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Malay	11	20.0	2	3.6	0	0	13	23.6
Chinese	18	32.7	1	1.8	6	10.9	25	45.5
Indian	14	25.5	0	0	0	0	14	25.5
Other	3	5.5	0	0	0	0	3	5.5
	46		3		6		55	100.0

According to table 4.41, out of the 13 Malay respondents, 11 of them indicated possessing the skill of computer programmer and 2 of them did not. Out of the 25 Chinese respondents, 18 of them responded that hey have this skill and 1 did not whereas the remaining 6 did not answer. All of the 14 Indian respondents indicated that they have this skill and all of the respondents from other race also indicated that they possess this skill.

17-Crosstab between ethnic and skills in E-commerce technologies

A3*B7.5

A3=Ethnic group
B7.5=skills in E-commerce technologies (Technical support)

Table 4.42

Ethnic(A3)	Technical support(B7.5)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Malay	8	14.5	4	7.3	1	1.8	13	23.6
Chinese	18	32.7	1	1.8	6	10.9	25	45.5
Indian	13	23.6	1	1.8	0	0	14	25.5
Other	2	3.6	0	0	1	1.8	3	5.5
	41		6		8		55	100.0

From table 4.42, it can be seen that out of the 13 Malay respondents, 8 of them can provide technical support service while 4 of them could not and 1 respondent did not answer. Out of the 25 Chinese respondents, 18 of them indicated that they possess this skill while 1 respondent did not and 6 of them did not answer. Out of the 14 Indian respondents, 13 of them indicated that they could provide technical support service and 1 respondent did not give any answer. Out of the 3 respondents of the other race 2 of them have this skill and 1 did not answer.

18-Crosstab between ethnic and more training of E-commerce for employees

A3*C14

A3=ethnic
C14= more training of E-commerce for employees

Table 4.43

Ethnic(A3)	More training of E-commerce for employees(C14)						Total	
	Yes		No		No answer			
	Freq	%	Freq	%	Freq	%	Freq	%
Malay	6	10.9	6	10.9	1	1.8	13	23.6
Chinese	12	21.8	7	12.7	6	10.9	25	45.5
Indian	6	10.9	8	14.5	0	0	14	25.5
Other	2	3.6	0	0	1	1.8	3	5.5
	26		21		8		55	100.0

According to table 4.43, out of the 13 Malay respondents, 6 of them indicated that they needed more training while the other 6 said they did not need it whereas 1 respondent did not respond to this question. 12 out of the 25 Chinese respondents, indicated that they needed more training while 7 of them indicated no training and 6 decline to answer. 6 out of the 14 Indian respondents indicated that they needed more training whereas 8 of them indicated that they did not need more training on E-commerce. 2 out of the 3 respondents from other race indicated that they needed more training while 1 respondent decline to answer.

4.5 Conclusion

Looking at the data analysis, it can be summarized that there are more male employees who are working in the Information, Communication and Technology companies surrounding Klang Valley area compared to female. The majority of the respondents are between the age of 20 to 30 years old. The analysis also indicated that there are more Chinese compared to other races such Malay and Indian who answered the questionnaire. The majority of the respondents have a college degree. Even though the current employees have the required skills to enforce E-commerce, the majority of them still indicated that they need more training to keep up and cope with the rapid change in this field. The majority of the respondents seem to agree that Malaysia has adequate infrastructure and facilities for IT age and for E-commerce but they seems to agree that there is a shortage of manpower. This means that the government needs to increase the effort for supplying professionals with the knowledge to teach and train the current and future workforce to cope with the fast rapid changes in this field.