CHAPTER IV

RESULTS AND DISCUSSION

4.1 THE SAMPLING GROUP

4.1.1 Section A: Personal Information

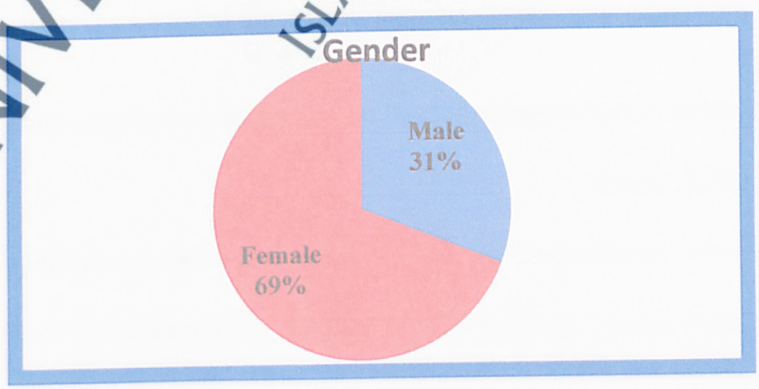
The total number of students in FST of both undergraduate and postgraduate is (1875 +278) respectively. 520 copies of questionnaires were distributed to Faculty of Science and Technology (FST) students of the Universiti Sains Islam Malaysia and there was a return copy of 515. Hence, sampling size of the research was 515 respondents. There were 30.9% (159) of male students and 69.1% (356) of female respondents. Table 2 shows the information about this sampling group and Figure 2 illustrates the number of male and female student's respondents.

TABLE 2: Gender of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	159	30.9	30.9	30.9
	Female	356	69.1	69.1	100.0
	Total	515	100.0	100.0	

Source: SPSS 20

FIGURE 2: Gender of Respondents



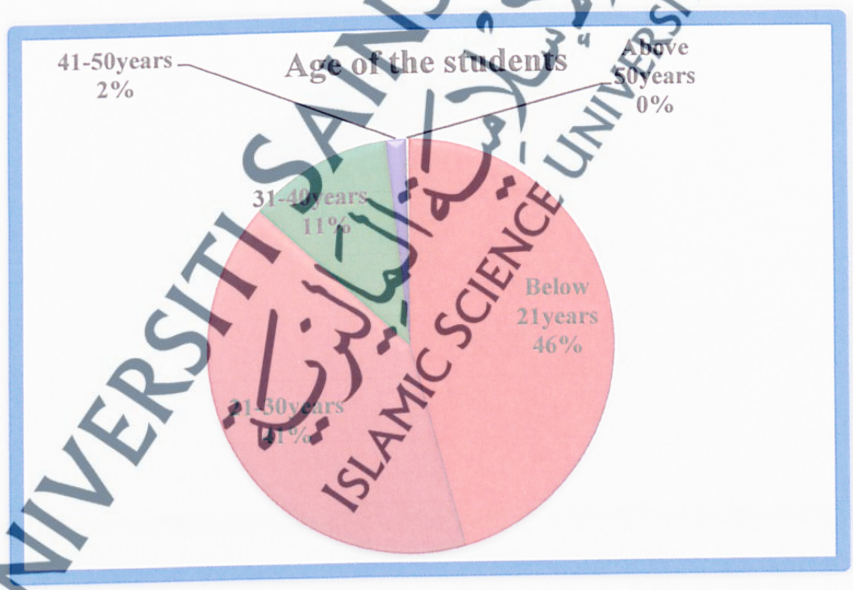
There are 45.8% (236) of respondents whose age is below 21 years, 41% (211) of respondents whose age is from 21-30 years, and 11.5% (59) of respondents whose age is from 31-40 years, 1.6% (8) whose age is from 41-50 years and 0.2% (1) is above 50 years. Table 3 shows the information about this sampling group's age and Figure 3 illustrates the range of age of respondents.

TABLE 3: Age of the Students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 21years	236	45.8	45.8	45.8
	21-30 years	211	41.0	41.0	86.8
	31-40 years	59	11.5	11.5	98.3
	41-50 years	8	1.6	1.6	99.8
	Above 50 years	1	.2	.2	100.0
	Total	515	100.0	100.0	

Source: SPSS 20

FIGURE 3: Student's Age



Source: SPSS 20

There are significant proportions of 81.7% (421) of respondents who are Bachelor Degree students of the Faculty of Science and Technology. This is interrelated to the

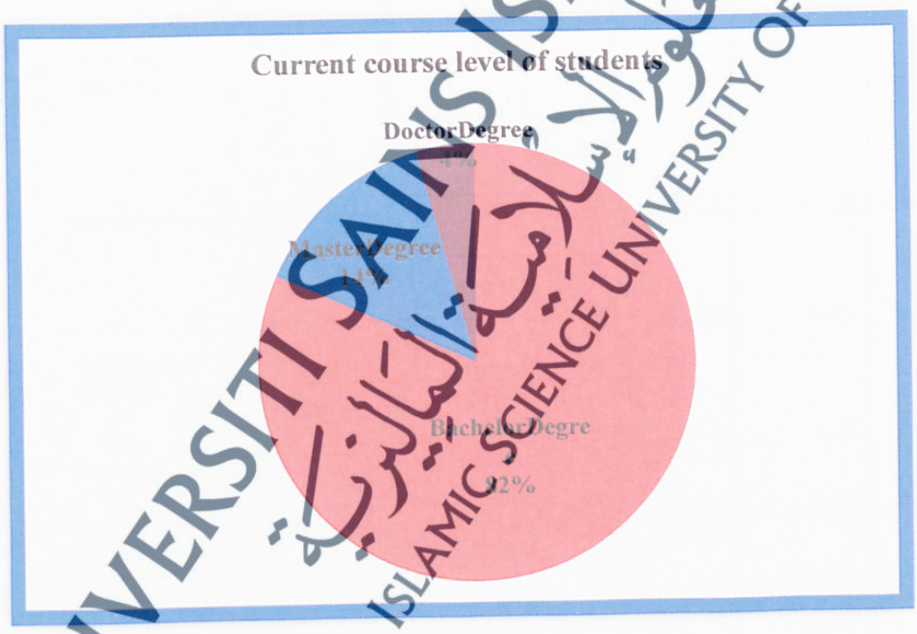
earlier result of respondents whose age is below 21 years, for these age groups are still in their Bachelor Degree program. 14% (72) of respondents are from the Master Degree Level and 4.3% (22) are from Doctorate Degree. Table 4 shows the information about this sampling group's course and Figure 4 illustrates the range of course currently studied by respondents.

TABLE 4: Current Course Level of Students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor Degree	421	81.7	81.7	81.7
	Master Degree	72	14.0	14.0	95.7
	Doctorate Degree	22	4.3	4.3	100.0
	Total	515	100.0	100.0	

Source: SPSS 20

FIGURE 4: Current Course Level of Students



Source: SPSS 20

4.2 Section B: Data Analysis using SPSS

RQ1: What is the view among FST students about computer mediated instruction?

TABLE 5: Current Course Level of Students * Computer Mediated Instruction Crosstabulation

			Level of students perception on Computer Mediated Instruction				Total
			Strongly Agree	Agree	Neutral	Disagree	
Current course level of students	Bachelor Degree	Count	22	203	184	12	421
		% within Current course level of students	5.2%	48.2%	43.7%	2.9%	100.0%
		% within Computer Mediated Instruction	95.7%	76.9%	85.2%	100.0%	81.7%
		% of Total	4.3%	39.4%	35.7%	2.3%	81.7%
	Master Degree	Count	1	44	27	0	72
		% within Current course level of students	1.4%	61.1%	37.5%	0.0%	100.0%
		% within Computer Mediated Instruction	4.3%	16.7%	12.5%	0.0%	14.0%
		% of Total	0.2%	8.5%	5.2%	0.0%	14.0%
	Doctorate Degree	Count	0	17	5	0	22
		% within Current course level of students	0.0%	77.3%	22.7%	0.0%	100.0%
		% within Computer Mediated Instruction	0.0%	6.4%	2.3%	0.0%	4.3%
		% of Total	0.0%	3.3%	1.0%	0.0%	4.3%
Total		Count	23	264	216	12	515
		% within Current course level of students	4.5%	51.3%	41.9%	2.3%	100.0%
		% within Computer Mediated Instruction	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	4.5%	51.3%	41.9%	2.3%	100.0%

Source: SPSS 20

From Table 5, it can be seen that the number of FST students that Strongly Agree, Agree, Neutral, Disagree or Strongly Disagree among student's Course Level. The total number of Agree and Disagree and the number among student's Course Level as highlighted in the table. It shows that 51.3% (264) of students Agree on Computer Mediated Instructions, 41.9% (216) is Neutral, 4.5% (23) Strongly Agree, 2.3% (12) Disagree while none Strongly Disagree respectively.

TABLE 6: Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.347[a]	6	.038
Likelihood Ratio	16.967	6	.009
Linear-by-Linear Association	3.256	1	.071
N of Valid Cases	515		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .51.

Source: SPSS 20

From Table 6: Chi-Square Tests

Research Hypothesis:

H_0: There is a statistically significant association between Course Level and Computed Mediated Instruction.

H_1: There is no statistically significant association between Course Level and Computed Mediated Instruction.

When reading this table, we are interested in the results for the "pearson chi-square"

We can see here that $\chi^2 = 13.347$, *p-value* = 0.038. Since *p-value*$<\chi^2$;

This shows that there is no statistically significant association between Course Level and Computed Mediated Instructions. That is, both Diploma, Bachelor Degree, Master

Degree and Doctorate Degree equally have an interest in Computed Mediated Instructions.

TABLE 7: Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.161	.038
	Cramer's V	.114	.038
N of Valid Cases		515	

Source: SPSS 20

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

Phi and Cramer's V (0.161 and 0.114) are both tests of the strength of association. We can see that the strength of the association between the variables is fair because it is greater than 0.038 as shown in Table 4.6.

FIGURE 5: Level of Students' Perception on Computer Mediated Instructions

Source: SPSS 20

From Figure 5, it can be seen that there is no "Strongly Disagree" because no student Strongly Disagree with perception on Computer Mediated Instructions.

TABLE 8: ANOVA: Students Perception on Computer Mediated Instructions

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.546	2	.773	2.793	.062
Within Groups	141.711	512	.277		
Total	143.257	514			

Source: SPSS 20

From Table 8: ANOVA Tests

Research Hypothesis:

H_0: There is statistically significant difference between Course level and Computed Mediated Instruction.

H_1: There is no statistically significant difference between Course level and Computed Mediated Instruction.

From the ANOVA table since our *p-Value* (0.062) is greater than 0.05 ($\alpha = 0.05$) means there is no statistically significant difference between Course Level and Computed Mediated Instruction. As it is in previous tests (chi-square) in the analysis, Diploma, Bachelor Degree, Master Degree and Doctorate Degree equally have an interest in Course level and Computed Mediated Instructions. The ANOVA test is just to confirm the result of the previous chi-square test.

RQ2: What is the view among students about Adopting Blended Learning in the University?

The statistical analysis below using Chi-square test to know the view of FST students in Adopting Blended Learning. In this analysis, there are various tables below and the

explanations of each table or interpretation of each table will be clarified below each of them.

TABLE 9: Gender * Blended Learning Adoption Crosstabulation

			Blended Learning Adoption					Total
			Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Gender	Male	Count	9	110	38	2	0	159
		% within Gender	5.7%	69.2%	23.9%	1.3%	0.0%	100.0%
		% within Blended Learning Adoption	47.4%	38.3%	20.0%	11.1%	0.0%	30.9%
		% of Total	1.7%	21.4%	7.4%	0.4%	0.0%	30.9%
	Female	Count	10	177	152	16	1	356
		% within Gender	2.8%	49.7%	42.7%	4.5%	0.3%	100.0%
		% within Blended Learning Adoption	52.6%	61.7%	80.0%	88.9%	100.0%	69.1%
		% of Total	1.9%	34.4%	29.5%	3.1%	0.2%	69.1%
Total		Count	19	287	190	18	1	515
		% within Gender	3.7%	55.7%	36.9%	3.5%	0.2%	100.0%
		% within Blended Learning Adoption	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	3.7%	55.7%	36.9%	3.5%	0.2%	100.0%

Source: SPSS 20

From "Table 9: Gender * Blended Learning Adoption Crosstabulation", it can be seen that the number of male students and female students in FST that Strongly Agree, Agree, Neutral, Disagree or Strongly Disagree among male student and the female ones. We can read the total number of Agree and Disagree and the number among female students and male student as highlighted in Table 9.

As in the table it shows that 55.7% (287) of students Agree on Adopting Blended Learning, 36.9% (189) are Neutral, 3.5% (18) Strongly Agree, 3.7% (19) Disagree while 0.2% (1) Strongly Disagree respectively.

TABLE 10: Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.161[a]	4	.000
Likelihood Ratio	25.552	4	.000
Linear-by-Linear Association	23.191	1	.000
N of Valid Cases	515		

Source: SPSS 20

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is .31.

From "chi-square" table:

Research Hypothesis:

H_0: There is a statistically significant association between Gender and Adopting Blended Learning.

H_1: There is no statistically significant association between Gender and Adopting Blended Learning.

When reading this table, we are interested in the results for the "pearson chi-square" where it can be seen that $\chi^2 = 23.573$, *p-value*= 0.000. Since p-value $<\chi^2$; this shows that there is no statistically significant association between Gender and Adopting Blended Learning. That is, both male and female equally have an interest in Adopting Blended Learning. (Although there are more female students in FST than male students, but that doesn't have any effect on the analysis).

TABLE 11: Symmetric Measures

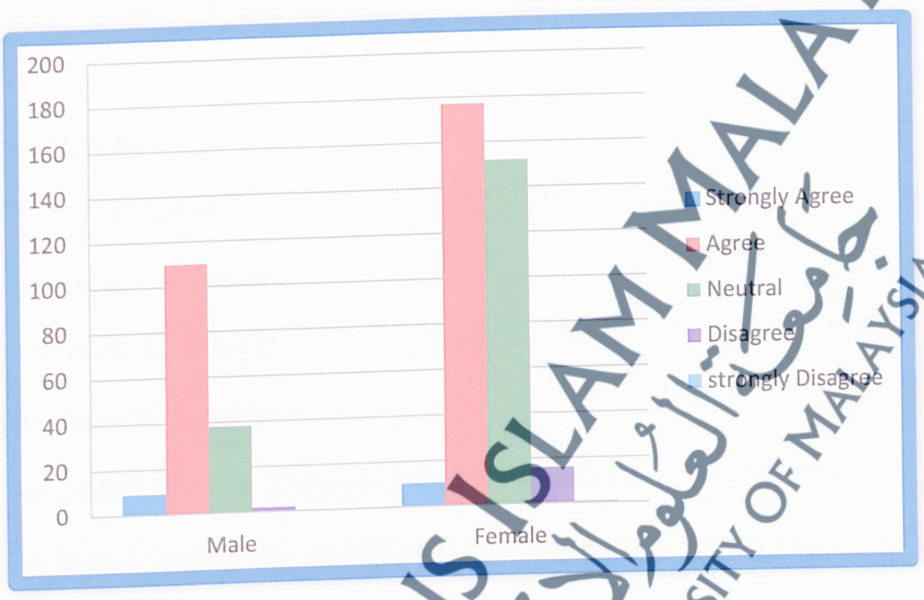
		Value	Approx. Sig.
Nominal by Nominal	Phi	.217	.000
	Cramer's V	.217	.000
N of Valid Cases		515	

Source: SPSS 20

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

Phi and Cramer's V (0.217) are both tests of the strength of association. It can be seen that the strength of association between the variables is fair because it is greater than 0.000.

FIGURE 6: Level of Students' Perception on Blended Learning Adoption



Source: SPSS 20

RQ3: What is the Level of Computer Security Awareness Knowledge among FST students?

TABLE 12: T-Test One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Current course level of students	515	2.23	.510	.022
Security Issues	515	1.3884	.22638	.00998

Source: SPSS 20

TABLE 13: T-Test One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Current course level of students	98.950	514	.000	2.225	2.18	2.27
Security Issues	139.186	514	.000	1.38842	1.3688	1.4080

Source: SPSS 20

Research Hypothesis:

H_0: There is statistically significant difference between Course Levels based on Computer Security Awareness.

H_1: There is no statistically significant difference between Course Levels based on Computer Security Awareness.

From the Table 13: T-Test One-Sample Test, we see that, our p-Value $(0.000) < (\alpha = 0.05)$, so there is statistically significant difference between Course Levels based on Computer Security Awareness. Further analysis will tell us where and why.

TABLE 14: Crosstabs Current Course Level of Students * Security Issue Crosstabulat

			SecurityIssue			Total
			Yes	No	Don't Know	
Current course level of students	Bachelor degree	Count	298	117	6	421
		% within Current course level of students	70.8%	27.8%	1.4%	100.0%
		% within SecurityIssues	81.2%	82.4%	100.0%	81.7%
		% of Total	57.9%	22.7%	1.2%	81.7%
	Master degree	Count	57	15	0	72
		% within Current course level of students	79.2%	20.8%	0.0%	100.0%
		% within SecurityIssues	15.5%	10.6%	0.0%	14.0%
		% of Total	11.1%	2.9%	0.0%	14.0%
	Doctorate	Count	12	10	0	22

	degree	% within Current course level of students	54.5%	45.5%	0.0%	100.0%
		% within SecurityIssues	3.3%	7.0%	0.0%	4.3%
		% of Total	2.3%	1.9%	0.0%	4.3%
Total		Count	367	142	6	515
		% within Current course level of students	71.3%	27.6%	1.2%	100.0%
		% within SecurityIssues	100.0%	100.0%	100.0%	100.0%
		% of Total	71.3%	27.6%	1.2%	100.0%

Source: SPSS 20

From Table 14, it can be seen that the number of FST students that say "Yes", "No" and "Don't Know" based on Computer Security Awareness. We can read the total number of agree and disagree and their corresponding values based on computer security awareness knowledge as highlighted in the Table. As in the table it shows that 71.3% (367) "Yes" on Compute Security Awareness, 27.6% (142) "No" and 1.2% (6) respectively.

TABLE 15: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.592[a]	4	.159
Likelihood Ratio	7.414	4	.116
Linear-by-Linear Association	.003	1	.955
N of Valid Cases	515		

Source: SPSS 20

a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is .26.

TABLE 16: Symmetric Measures

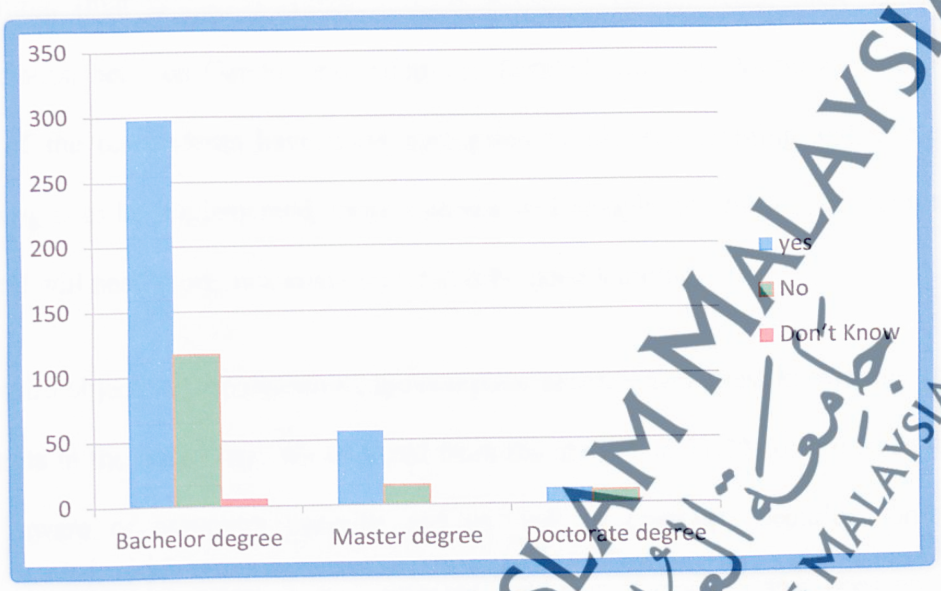
		Value	Approx. Sig.
Nominal by Nominal	Phi	.113	.159
	Cramer's V	.080	.159
N of Valid Cases		515	

Source: SPSS 20

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

Phi and Cramer's V are both tests of the strength of association. It can be seen that the strength of association between the variables is fair.

FIGURE 7: Level of Students Perceptions on Security Issues



Source: SPSS 20

It can be easier to visualize data than read tables. It can be clearly seen that Bachelor Degree students have the highest frequency of Computer Security Awareness knowledge, followed by master degree and Doctorate Degree.

4.3 DISCUSSION OF THE RESULTS

From the first objective of the study is to examine the perception on computer mediated instruction among students in the university. We can evaluate from the study that 55.8% of the students are having better insight of computer mediated instruction, (that is 51.3% Agree + 4.5% strongly Agree). It means only more than half population is in support of computer mediated instruction. However, the remaining population of the students will need more orientation on computer mediated instruction.

The second objective of the research is to evaluate the possibility of implementing blended learning among students in the university. We are able to evaluate and infer from the study that 59.4% of the students have good insight for Adopting Blended Learning, (that is 55.7% Agree + 3.7% strongly Agree). Also, there is no any association between Gender and Adopting Blended Learning. Moreover, more than half of the respondents have good perception of blended learning and if blended learning is to be implemented, more students will comply and those students that are neutral will need more awareness on what is blended learning.

The third objective is to determine the computer security awareness knowledge among students in the university. We deduced from the study that 71.3% of the students are well aware of computer security and as well of computer security conscious. However, this percentage is well satisfied. The rest of students that does not have knowledge of computer security will need more orientations.