FACTORS AFFECTING SERVICE: THE USE OF COMPUTER LABORATORY OF STUDENTS AND PERSONNEL IN CASE OF SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

The purposes of this research were to study the factors affecting the service of using computer laboratory of students and personnel in case of the Computer Science program, Science and Technology faculty, Suan Sunandha Rajabhat University. Questionnaires and interview were used as the research tool to collect data. The samples were 136 users both students and lecturer who used the service of computer laboratory. Data was analyzed using descriptive statistics including percentage, mean, and standard deviation. Inferential statistics methods on multiple regressions, at the statistical significance level of 0.05, were used to test hypotheses in the study. The results found that the service quality factors were in the high level of importance and the service quality affects the service knowledge and service mind factors in the positive relationship. The analysis of multiple regressions found that the service mind (x_1), the service knowledge (x_2), and the organizational support (x_3) influenced total aspect of service ($\hat{y}$). In conclusion, the factors affecting the service of using computer laboratory of students and personnel are the service mind, the service knowledge, and the organizational support respectively.

Keywords: factors, service, computer laboratory, students and personnel

1. INTRODUCTION

At present, the era of information and technology has changed over time and the modern digital world has a leap forward resulting in the life of this generation that affects to our convenience lifestyle. Computer programs play the importance role to communicate and collect data in various work systems. Moreover, Thailand 4.0 is an important policy that the government is trying to drive the country's economy to grow with strength and sustainability. The model of integrating technology into the curriculum means that computers are on demand throughout the school day (Bruce Pohlmann, 2011 and S. Mahimuang, 2017, K. Phuamorn and K. Kularbphettong, 2018). In the profession "Programmer" is writing and developing computer programs and plays behind the scenes of those computer programs or software codes.

The computer science program, Suan Sunandha Rajabhat University, aims to develop the curriculum to be up-to-date and able to produce graduates with knowledge and ability in Computer Programming, Computer operating system, Database system, Computer communication network, Internet technology, and development of software with modern technology and graduates are suitable to match the needs of users and organizations as much as possible. Therefore, the program has the computer labs for learning and practice in programming and related computer theories. The student satisfaction in the laboratory is the significant factor indicated the quality of the equipment and affects to the ability of student learning (S. Nikolic and et al, 2015) and according to T. Kostulski and S. Murray, the laboratory is the most important component of teaching and learning in universities (T. Kostulski and S. Murray, 2010). Also, the lack of awareness on the laboratory service leads to unnecessary expenditures and the quality of laboratory service depends on technical skills, quality management systems and the motivation of human resources (Simundic AM and et al, 2011).

The IT Services Support takes responsibility to support learning and teaching in computer and network services for staffs and students with ranging from managing over 1000 computer machines, printers and other resources in Faculty Science and Technology, SSRU. Therefore, the satisfaction of IT service acts as the

evidence to assess university's success because if the IT service has prepared computer services to students sufficiently and efficiently, the enhancement of students' knowledge and skills will be increased. The expectation and satisfaction theory is a cognitive theory that has been applied in many industries and studies (Linda Tran, 2016). According to Churchill and Suprenant, 1982, the customer satisfaction has been considered as a central topic and the satisfaction is a human feeling that expresses two types of feelings: positive feelings and negative feelings (Shelly, M. W., 1975). Nowadays, education institutions have embraced the marketing concept and student acts as consumer (Kotler and Levy 1969). The purpose of this study is to measure the levels of expectation and satisfaction on the services according to the perspectives among the students and staffs and the results will be a guideline for the improvement of computer room service and encourage the use of computer room services to meet the needs of students and staffs and the maximum benefit of the students' education.

2. THE OBJECTIVES OF THIS RESEARCH

The main purpose of this study is to identify as follow: the satisfaction level of using the computer laboratory and machine equipment regarding the service quality factors and the problems and suggestions of the computer laboratory

3. RESEARCH METHODOLOGIES

This research project was conducted based on descriptive research to study expectation and satisfaction on IT service of faculty of Science and Technology. The methodology included:

Participants

The participants in this study were 136 staffs and undergraduate students of Faculty of Science and Technology in the second semester of academic year 2017-2018.

Research Instruments

Questionnaires and interview were used as the research tool to collect data and identify the expectation and satisfaction of IT service support. The questionnaire consists of three main sections including demographic data, the service quality and suggestion for improvement.
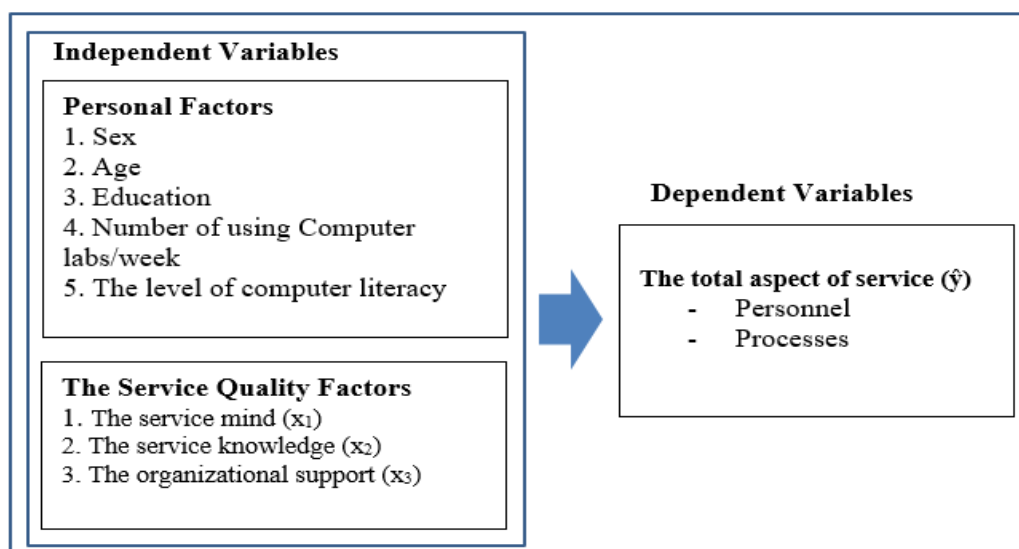

Independent Variables

Personal Factors
1. Sex
2. Age
3. Education
4. Number of using Computer labs/week
5. The level of computer literacy

The Service Quality Factors
1. The service mind (x_1)
2. The service knowledge (x_2)
3. The organizational support (x_3)

Dependent Variables

The total aspect of service ($\hat{y}$)
- Personnel
- Processes

FIGURE I THE CONCEOT OF THIS RESEARCH

Data analysis

When the process of completed questionnaires was collected, the data was analyzed by using a computer program as follows: 1. General information for the sample group was analyzed by use of descriptive

statistics i.e. distribution of frequency, percentage, mean, range, and standard deviation, 2. The Multiple Linear Regression was used to evaluate the relationship of the service quality factors: the service mind, the service knowledge, and the organizational support. The Service Quality are divided into three sections: the service mind, the service knowledge and the organizational support. The five points Likert scale used to range scale from highly agree to highly disagree.

4. RESULTS

To evaluate the validity and reliability of the questionnaire, the statistics was conducted with the reliability coefficient based on the value of Cronbach's Alpha and the questionnaire used in this study had validity and reliability test with the overall value is 0.84. The results collected by the questionnaire and interview were analyzed by statistical description and the significant amount of quantitative and qualitative data collected from the 136 surveys allows to seek feedback on its services in its drive for continual service improvement. This study presented the results of the analysis of data in 2 phases by following this:

Results of general data analysis of respondents
The result found that, as shown in Table 1, there are 132 students and 4 staffs and 92 of all were male and 44 were female. Most respondents are students and 62% of respondents used computer lab 3-4 times/week and they also passed the computer literacy test in case of students.

TABLE I THE DEMOGRAPHIC DATA OF PARTICIPANS

Characteristics	Variables	Value
Sex	Male	92
	Female	44
Age	18-20 years old	132
	20 years above	4
Education	Undergraduate	132
	Above	4
Number of using computer labs / week	1-2	52
	3-4	62
	above	22
The level of computer literacy	Passed	85
	Not passed	51

Note: N = 136

Results of analyzing the quality service
The results of analyzing data about 3 quality service factors found that the service mind, the service knowledge and the organizational support as follows:

TABLE II THE RESULTS OF THE SERVICE MIND

The Service Mind Aspect	Level		
	$\bar{x}$	S.D.	Interpretation
1. Staffs are polite and have good manners of service.	3.52	0.78	High
2. Staffs are reliable.	3.56	0.77	High
3. Staffs are suitable for service duties.	3.34	0.75	Average
4. Staffs can provide services according to the specified period.	3.69	0.92	High
5. Quality of service is standard.	3.52	0.81	High
Overall	**3.52**	**0.48**	**High**

Table II shows the mean and standard deviation of the service mind aspect are high ($\bar{x}$ = 3.52, S.D. = 0.48). The service mind aspect in "Staffs can provide services according to the specified period" is high level ($\bar{x}$ = 3.69, S.D. = 0.92).

TABLE III THE RESULTS OF THE SERVICE KNOWLEDGE

The Service Knowledge Aspect	Level		
	$\bar{x}$	S.D.	Interpretation
1. Staffs can provide effective advice.	3.92	0.75	High
2. Staffs can solve the problems	3.90	0.81	High
3. Staffs can provide knowledge expertise in problem solving	3.91	0.81	High
4. The service is clear.	3.90	0.79	High
5. Staffs pay attention to help users	3.89	0.89	High
Overall	**3.89**	**0.64**	**High**

Table III shows the mean and standard deviation of the service knowledge aspect are high ($\bar{x}$ = 3.89, S.D. = 0.64). The service mind aspect in "Staffs can provide knowledge expertise in problem solving" is high level ($\bar{x}$ = 3.91, S.D. = 0.81).

TABLE IV THE RESULTS OF THE ORGANIZATIONAL SUPPORT

The Organizational Support Aspect	Level		
	$\bar{x}$	S.D.	Interpretation
1. The availability of equipment in the room	396	0.78	High
2. The quality of Computer	3.89	0.81	High
3. Computer programs available on the computer	3.94	0.82	High
4. Room temperature	3.90	0.74	High
5. Appropriate Size of computer table set	3.94	0.82	High
Overall	**3.91**	**0.65**	**High**

Table IV shows the mean and standard deviation of the Organizational Support Aspect are high ($\bar{x}$ = 3.91, S.D. = 0.65). The service mind aspect in "The availability of equipment in the room" is high level ($\bar{x}$ = 3.96, S.D. = 0.78).

To evaluate the service quality factors affecting the satisfaction of the users in IT service support, Multiple Linear Regression was applied to indicate at .05 levels and the results found that the service mind (x_1), the service knowledge (x_2), and the organizational support (x_3) influenced total aspect of service ($\hat{y}$) and formed the forecasting equation as follows:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_n X_n + \varepsilon$$

where:
Y_i = dependent variable
X_1 = independent variable
X_2 = independent variable
β_0 = constant, the value of Y when all X values are zero
β_n = the slope of the regression surface
ε = an error term, normally distributed about a mean of 0

After estimating the regression equation parameters, the equation above can be written as:

When considering the service mind of staffs and process, the multiple regression analysis equation, with significance at the level of 0.05, is as follows:

$$\hat{y}_1 = 3.52 + 0.62\,X_1 + 0.18\,X_2 + 0.17\,X_3 + 0.04\,X_4 + 0.03\,X_5$$

When considering the service knowledge of staffs and process, the multiple regression analysis equation, with significance at the level of 0.05, is as follows:

$$\hat{Y}_2 = 2.53 + 0.25\,X_1 + 0.05\,X_2 + 0.19\,X_3 + 0.12\,X_4 + 0.03\,X_5$$

When considering the organizational support of staffs and process, the multiple regression analysis equation, with significance at the level of 0.05, is as follows:

$$\hat{Y}_3 = 2.40 + 0.09\,X_1 + 0.08\,X_2 + 0.06\,X_3 + 0.15\,X_4 + 0.02\,X_5$$

From this equation, the satisfaction degree is directly proportional with the following variables: the service mind (x1), the service knowledge (x2), and the organizational support (x3) influenced total aspect of service ($\hat{y}$).

$$\hat{y} = 3.12 + 0.52x_1 + 0.76x_2 + 0.083x_3.$$

The value of the determination coefficient (R^2) is of 0.192 and the P-value (Sig. = 0.01) is lower than 0.05 which shows us that the model is statistically significant.

5. CONCLUSION AND RECOMMENDATIONS

The research explains the factors affecting the service of using computer laboratory of students and personnel in case of the Computer Science program, Science and Technology faculty, Suan Sunandha Rajabhat University. Questionnaires and interview were used as the research tool to collect data and the samples were 136 users both students and lecturer who used the service of computer laboratory. Descriptive statistics including percentage, mean, and standard deviation. Inferential statistics methods on multiple regressions, at the statistical significance level of 0.05, were used to evaluate data of this study. The results found that the service quality factors were in the high level of importance and the service quality affects the service knowledge and service mind factors in the positive relationship. The analysis of multiple regressions found that the service mind (x_1), the service knowledge (x_2), and the organizational support (x_3) influenced total aspect of service ($\hat{y}$). Also, the suggestion should enhance in management process of using computer laboratory and set explicitly the rules and regulations to use the room to clear and clarify for users.

6. ACKNOWLEDGMENTS

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