The Perception Gap of IS Service Quality Between It Students and IT Staff in A Private University

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Abstract

This study aims to know if stakeholders' expectations have been met by examining their value perceptions of services. There is no systematic study that analyzes the gap between these expectations. Therefore, this case study focuses on assessing the perception gap of IS service quality between IT students and IT staff. The study seeks to answer the question: Is there perception gap between IT students and IT staff? Participants were private university IT staff and IT students who used IT services from internal IT lab. The sample consisted of 135 participants of whom 104 (77%) were IT students while 31 (23%) IT staff. Participants were given a set of self-filled questionnaires to fill within 2 days. Returned questionnaires were collected, checked, and evaluated with independent t-test. The gap was measured by comparing the means obtained from analysis of perception of IS service quality between IT students and IT staff. The results of the study show that there is no difference in the perception of IS service quality between IT students and IT staff in overall. However, some variables were statistically significant, i.e., *rl3 Ability to provide services at the times promised* and *rs3 Ability to be always willing to help users*.

Keywords: IS Service Quality, Perception Gap, IT Students, IT Staff

Introduction

The role of IT in business is to pursue business objectives. There are two challenges of perception gap raised with the use of IT in business. A report by The Economist (2006) indicates that IT managers and CEOs have different expectations of the use of IT in business. IT managers have lower expectations related to their technological experience with IT, while CEOs have higher expectations related to their business interest. Another one is the challenge to match businesses with the appropriate IT systems. Current studies on the use of IT in e-commerce focused only on largely surveys from the business perspectives (Consensus and Statistics, 2014). There are little studies that examine the perception gap between IS managers and users as stakeholders, e.g., Seddon 1997, Rai et.al. 2002, Fortune and Peters 2005. A recent study shows that IS partly fails as the result of the perception gap (Hart & Warne, 2007). Private universities are commercial entities that provide education services to clients who desire their products/services and can afford to pay for them. In this era, they have used IT as a comparative advantage tool in competition with the others. They provide IS service to clients in order to build the relationships between the clients and the organization.

This study brings the different perspectives on the complex relationship between IS managers and users in the educational context. It also shows different perspectives useful in improving IS systems from their expectations. The purpose is to assess the perception gap of IS service quality between IT students and IT staff in a private university. It seeks to answer the question: Is there perception gap between IT students and IT staff? This study contributes to examine the relationship between both stakeholders, by providing a systematic analysis of the complex relationship between IT staff, IT students' perceptions of IS service unit, and the context in which IS are applied. Participants in this study are individuals who have real life experience with these issues. The research objectives are: (1) Assess the perception gap of IS service quality between IT students and IT staff; (2) Analyze implications the gap (if any); (3) Recommend strategies to improve IS service unit and end user relations. In this study, *IT Students* means students of Information Technology Department. *IT Staff* means Trained IT professionals providing IT services. *IS* means Information System(s). *IS Service Quality* means the quality of services provided by the IT staff. *The Perception Gap* means the mean difference between perceptions of IT students and IT staff on IS service quality. The rest of this paper will be discussed as follow: Section II elaborates the review of previous studies. Section III explains the detailed methodology. Section IV shows the results of the study. Section V discusses the main conclusion. Section VI discusses the recommendations for future work.

Literature Review

Information System failure have been addressed by some scholars, e.g., (Heeks, 2002) which focused on the gap between IS design and actual use. The discoveries of the study show 3 categories of IS success and failures namely: (1) Total failure, means an IS system is never implemented i.e., (Devos, Landeghem, & Deschoolmeester, 2008), (Bartis & Mitev, 2008), (Kautz & Cecez-Kecmanovic, 2013), (Goldfinch, 2007), (Benbya & McKelvey, 2006), (Gracz & Filippi, 2014), (Cauter, Snoeck, & Crompvoets, 2014). (2) Partial failure means an IS system is partially implemented. The objectives are achieved but the remaining part is not implemented, i.e., (Hirschheim & Newman, 1988), (Hirschheim & Newman, 1988). (3) IS system is seen as a success when the majority of the objectives have been achieved. Previous studies did not include the needs and expectations of stakeholders in the IS development effort while observing the question of IS success or failure (Hart & Warne, 2007). Late studies, e.g., Seddon 1997, Rai et.al. 2002, Fortune and Peters 2005, have started to consider the need to include stakeholder's expectations in studying IS success and failure. IS success and failure become more complex and are based on the different expectations that stakeholders have on the IS development effort. The major challenge is that the stakeholder expectations are not always known to the systems developer. Therefore, the gap between the stakeholder's expectations turns into the focus of this study. This study uses operant theory, a behavioral theory relating to the design of IS, means that individuals will continue a particular behavior that is positively reinforced, and will eliminate behavior which is punished (Lovata, 1987). It can be used to analyze needs and expectations of IS managers and end users in their context of their interaction. The use of theory in this study will be based on "*Theory as statements providing the lens for viewing phenomena or explaining the world*" by Orlikowski and Robey, 1991 in (Gregor, 2006). The researchers don't test the theory, but it is used to interpret data (Walsham 1995 in (Gregor, 2006)).

Figure 1. Theoretical Framework: Assess the perception gap of IS service quality between IT Students and IT Staff
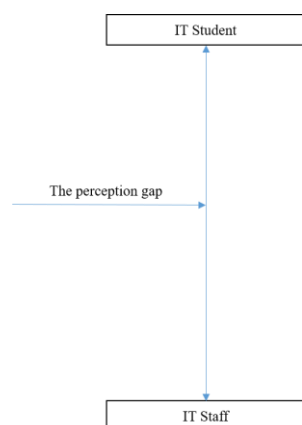
Gap analysis is a method of analyzing the differences in IS application in order to know whether the system or the use of the system meets the requirements, intended objectives, or users' expectations (see Figure 1). It can also be used to examine the difference between the actual and potential performance of a system. Table 1 shows different areas of past studies about gap analysis.

Table 1. Gap Analysis Study

Author(s)	Study	Method	Limitation & Strength (if any)
(Auken, Chrysler, Wells, & Simkin, 2011)	Gap analysis between expected emphasis IS instructors should have given to knowledge and skills areas and the actual emphasis IS Instructors gave to knowledge and skills areas.	The gap was identified by subtracting the means of the expected emphasis on the means of the actual emphasis and by identifying variables that indicated statistically significant differences.	Limitation: The survey has short time span. Strength: The use of same respondents to measure 2 different things, i.e., expected emphasis vs. actual emphasis.
(Surendra & Denton, 2009)	Gap analysis between skills, traits, and attributes valued by practitioners and skills, traits, and attributes emphasized in the traditional IS curriculum. Qualitative case studies of 6 firms were used.	The gap was identified the gap, skills, traits, and attributes practitioners attributed to successful practice by comparing them emphasized in the traditional IS curriculum.	Limitation: Only representatives from 6 firms were interviewed (1-3 people for each). Strength: Interviews give more information than a questionnaire.
(Medline, Schneberger, & Hunsinger, 2008)	Comparison of how students viewed IS technical skills necessary to be successful with technical skills actually sought in online advertisements with a survey.	To determine the gap between students' perception of IT technical skills necessary to be successful and actual IT Jobs in demand, the rankings of IT skills according to the survey was compared to the ranking of actual IT jobs based on means.	-
(Davis, Misra, & Auken, 2002)	Gap analysis between alumni's perceptions of the importance of knowledge and skills in marketing and the actual preparation the alumni had received in these areas.	To determine the gap, means of analyzing the perception of the importance of knowledge and skills in IT Marketing were compared to the means of analyzing rating of their preparedness in marketing knowledge and skills.	Limitation: Did not study the perceptions of the employers.

Based on Figure 2, each of variables is complex and measured by five variables which reflect the nature of the complexity, e.g., "tangibles in IS service quality" in hypothesis H1 is measured with: *t1 Appearance of employees (IT staff); t2 Ability to keep up-to-date hardware and software status; t3 Ability to keep physical facilities to visually appealing; t4 Employee (IT staff) neatness; t5 Physical appearance of equipment and maintenance*.

(H1) There is a significant perception gap of tangibles in IS service quality between IT students and IT staff.

(H2) There is a significant perception gap of reliability in IS service quality between IT students and IT staff.

(H3) There is a significant perception gap of responsiveness in IS service quality between IT students and IT staff.

(H4) There is a significant perception gap of empathy/rapport in IS service quality between IT students and IT staff.

(H5) There is a significant perception gap of technical capabilities in IS service quality between IT students and IT staff.

(H6) There is a significant perception gap of technology characteristics in IS service quality between IT students and IT staff.

(H7) There is a significant perception gap of overall IS service quality between IT students and IT staff
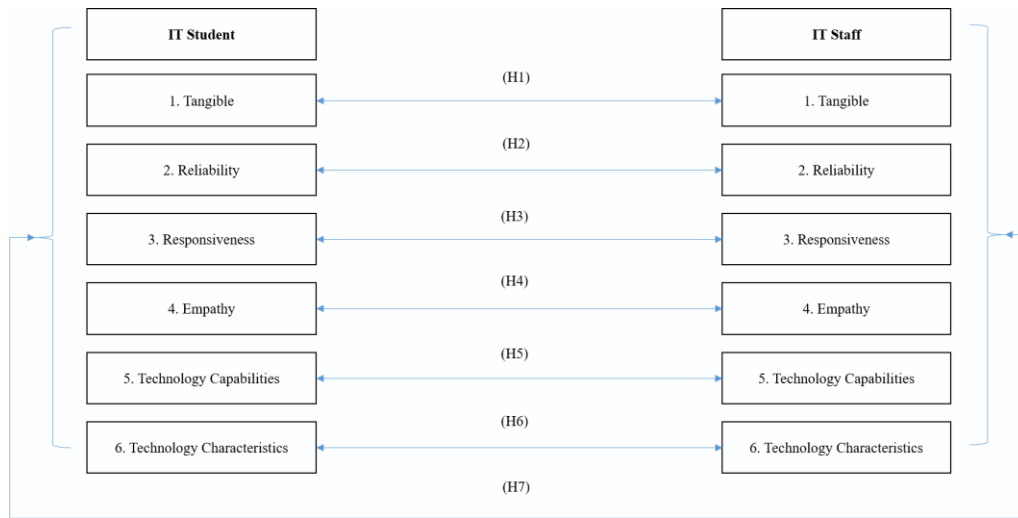

Figure 2. Research Model

Research Methodology

The complexity of the relationship between the context of IS managers and users is the reason for selecting case study with survey. Case studies are good for evaluating complex phenomena because they provide a variety of perspectives and more details of the same phenomena studied (Yin, 2009). In most cases, surveys are used to collect statistical information data about a specific subject (Scheuren, 2004). The researchers requested permission from university authorities to perform data collection. Then, they identify and contacts participants. Participants were focused on private university IT staff and IT students who used IT services from the University's IT lab. The sample consisted of 133 participants of whom 103 (77%) were IT students while 30 (23%) IT staff. A similar study by (Auken, Chrysler, Wells, & Simkin, 2011) was based on a sample size of 100 students (Krejcie and D. Morgan, 1970). Participants were selected based on the following characteristics: knowledge about the context, and experience of the issues related to the university's IS service unit; willing to participate in the study and share information needed; availability to the researchers. Participants were given a set of self-filled questionnaires to fill and return within 2 days. The researchers also explained what the research was about and clarified issues from the participants. Variables for measuring IS service quality are obtained from the review of the following literature: (Jong, Ruyter, & Lemmink, 2003), (Nadiri, Kandampully, & Hussain, 2009), (Urban, 2013), (Paluch & Blut, 2013), (Benlian, 2013), and (Auken, Chrysler, Wells, & Simkin, 2011). These variables were categorized into the following 6 categories: **Tangibles (t)** means variables that measure the overall appearance of the physical environment; **Reliability (rl)** means variables that measure the service provider's ability to provide dependable services; **Responsiveness (rs)** means variables that measure a firm/unit's willingness to assist its clients by providing fast and efficient services; **Empathy/rapport (e)** means variables that measure a firm/unit's readiness to provide each client with personal service; **Technical capabilities (tcp)** means variables that measure essential skills IT staff require in order to provide basic standard IS services; **Technology characteristics (tcr)** means variables that measure the characteristics of technology which are desirable or would motivate the client to want to use a

particular IS service. Ethical issues observed were voluntarily; confidentiality and privacy; wellbeing; and researcher safety (Bachman & Schutt, 2012). Returned questionnaires were collected, cross-checked, sorted, and valid information transcribed according to each group. Based on the questionnaires, data was assigned values and labels then entered into the SPSS. Descriptive statistics and independent *t-test* were used to analyze the data. The gap was identified in 2 ways: (1) The mean difference by subtracting the means obtained from analysis of IT students' perception of IS service quality from the means obtained from analysis of IT staff's perception of IS service quality. (2) By identifying variables that indicated statistically significant differences. The means and statistical significance of perception gap of IT students and IT staff will be compared.

Results of The Study

The purpose of the reliability analysis was to maximize the internal consistency of the scales by identifying those reliable variables. The overall Cronbach's Alpha for the scale was = .710, means that 71% of the variance in the scores are reliable. Table 2 presents the descriptive statistics and t-test results for the study variables.

Table 2. Results of Descriptive Statistics and Independent Samples t-test

Variables	Descriptive		Independent Samples t-test				
	Mean	Std.	Group of IT	Mean	Std.	P-Value	Mean diff.
t1 Appearance of employees (IT staff)	3.89	1.096	Students	3.91	1.086	.729	.079
			Staff	3.83	1.147		
t2 Ability to keep up-to-date hardware and software status	3.64	1.075	Students	3.63	1.075	.874	-.036
			Staff	3.67	1.093		
t3 Ability to keep physical facilities to visually appealing	2.96	1.233	Students	2.88	1.199	.173	-.350
			Staff	3.23	1.331		
t4 Employee (IT staff) neatness	3.79	1.122	Students	3.76	1.098	.542	-.143
			Staff	3.90	1.213		
t5 Physical appearance of equipment and maintenance	3.90	.991	Students	3.92	.997	.667	.089
			Staff	3.83	.986		
rl1 Ability to keep promises to clients	3.69	1.009	Students	3.71	.976	.720	.075
			Staff	3.63	1.129		
rl2 The dependability of the IS unit	2.77	1.241	Students	2.73	1.214	.428	-.205
			Staff	2.93	1.337		
rl3 Ability to provide services at the times promised	3.50	1.172	Students	3.62	1.147	**.022**	.555
			Staff	3.07	1.172		
rl4 Ability to insist on error-free records	3.89	1.061	Students	3.93	1.078	.454	.165
			Staff	3.77	1.006		
rl5 Employee (IT staff) trustworthy behavior	3.66	1.058	Students	3.64	1.074	.675	-.093
			Staff	3.73	1.015		
rs1 Ability to give prompt service to users	3.38	1.191	Students	3.33	1.175	.413	-.203
			Staff	3.53	1.252		
rs2 Ability to tell users exactly when services will be performed	3.80	1.026	Students	3.84	1.027	.405	.178
			Staff	3.67	1.028		
rs3 Ability to be always willing to help users	3.97	.953	Students	4.06	.916	**.047**	.392
			Staff	3.67	1.028		
rs4 Ability to respond to user's request even when the unit is too busy	3.74	1.121	Students	3.69	1.146	.367	-.211
			Staff	3.90	1.029		
rs5 Organization of services	3.35	1.087	Students	3.31	1.103	.491	-.156
			Staff	3.47	1.042		

Item	Mean	SD	Group	Mean	SD	Sig	Col
e1 Ability to put the users' best interests at heart	3.44	1.276	Students	3.53	1.259	.131	.401
			Staff	3.13	1.306		
e2 Employees' (IT staff) ability to give users individual attention	3.71	1.192	Students	3.76	1.150	.367	.224
			Staff	3.53	1.332		
e3 Ability to be consistently courteous with users	3.59	1.067	Students	3.56	1.100	.642	-.104
			Staff	3.67	.959		
e4 Ability to possess the knowledge to do the jobs well	3.17	1.138	Students	3.12	1.140	.291	-.250
			Staff	3.37	1.129		
e5 Ability to give users individual attention	3.44	1.110	Students	3.45	1.127	.841	.047
			Staff	3.40	1.070		
tcp1 Ability to identify and solve network problems	3.33	1.035	Students	3.30	1.083	.540	-.132
			Staff	3.43	.858		
tcp2 Ability to identify and solve server problems	3.44	1.103	Students	3.48	1.092	.445	.176
			Staff	3.30	1.149		
tcp3 Ability to identify and solve website problems	3.32	1.048	Students	3.30	1.046	.651	-.099
			Staff	3.40	1.070		
tcp4 Ability to identify and solve cyber security problem	3.35	1.123	Students	3.34	1.090	.797	-.060
			Staff	3.40	1.248		
tcp5 Ability to identify and solve computer hardware problems	3.70	.913	Students	3.67	.922	.494	-.130
			Staff	3.80	.887		
tcr1 Usefulness	3.14	1.207	Students	3.07	1.239	.186	-.332
			Staff	3.40	1.070		
tcr2 Ease of use	3.49	1.098	Students	3.41	1.115	.116	-.359
			Staff	3.77	1.006		
tcr3 Risk aversion	3.14	1.242	Students	3.06	1.259	.186	-.342
			Staff	3.40	1.163		
tcr4 Remote service security	3.41	1.156	Students	3.45	1.127	.543	.147
			Staff	3.30	1.264		
tcr5 Economic benefit/utility	3.53	1.084	Students	3.56	1.100	.566	.130
			Staff	3.43	1.040		

Conclusions and Recommendations

Based on the results, *with respect to (H1), it is clear that* there is no statistically significant difference between the mean for IT Students and IT Staff for any of the following aspects of **Tangibles**: *t1; t2; t3; t4; t5* (Refer to Table 2). *With respect to (H2), it is clear that* there is no statistically significant difference at a level of 0.05 between the mean values for IT Students and IT Staff concerned with the following aspects of **Reliability**: *rl1; rl2; rl4; rl5*. However, there is a statistically significant difference at a level of 0.05 between the mean values for IT Students and IT Staff concerned with *rl3*. The mean for IT Students is significantly greater than the mean for IT Staff. *With respect to (H3), it is clear that* there is no statistically significant difference at a level of 0.05 between the mean values for IT Students and IT Staff concerned with the following aspects of **Responsiveness**: *rs1; rs2; rs4; rs5*. However, there is a statistically significant difference at a level of 0.05 between the mean values for IT Students and IT Staff concerned with *rs3*. The mean for IT Students is significantly greater than the mean for IT Staff. *With respect to (H4), it is clear that* there is no statistically significant difference between the mean for IT Students and IT Staff for any of the following aspects of **Empathy/Rapport**: *e1; e2; e3; e4; e5*. *With respect to (H5), it is clear that* there is no statistically significant difference between the mean for IT Students and IT Staff for any of the following aspects of **Technical Capabilities**: *tcp1; tcp2; tcp3; tcp4; tcp5*. *With respect to (H6), it is clear that* there is no statistically significant difference between the mean for IT Students and IT Staff for any of the following aspects of **Technology Characteristics**: *tcr1; tcr2; tcr3; tcr4; tcr5*. *With respect to (H7), it is clear that* there is no statistically significant

difference between the mean for IT Students and IT Staff for any of the following **overall aspects**: *Tangibles (t); Reliability (rl); Responsiveness (rs); Empathy/rapport (e); Technical capabilities (tcp); Technology characteristics (tcr).* This study unlike some previous studies (Bartis & Mitev, 2008) (Hart & Warne, 2007) indicates that the stakeholder's expectations in IS service have no difference across stakeholders. The study also shows the importance of taking into account the users view when designing to improve the IS service quality.

Case studies are used to understand complex issues rather than providing generalizations (Yin, 2009). Thus, these findings will not be used for generalizations. This study focuses on the IT students as clients and does not take into account system or system product developers. Thus, future research should focus on larger samples across institutions and other socio-economic sectors. It can also include qualitative studies with interviews or include more internet and socio-psychological variables, e.g., the frequency of use, exposure to the internet, etc.

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