

## **Service Quality in a Higher Education Context: Antecedents and Dimensions**

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*The aim of this paper is to examine the perceptions of students with regard to antecedents and dimensions of service quality in a higher education context. The study employed both qualitative and quantitative research methods. The findings show that information and past experience are significant determinants to form and evaluate service quality in a higher education context, and that service quality is a second order construct. The core dimensions of service quality are academic service quality, administrative service quality and facilities service quality in the context of Central Queensland University (CQUni).*

**Field of Research:** Service Quality, Higher Education

### **1. Introduction**

A number of studies in service quality have enriched the services marketing domain over the last three decades or so. Amongst these, the widely used scale is the SERVQUAL (Parasuraman, Zeithaml & Berry 1988) and the SERVPERF (Cronin & Taylor 1992, 1994). It is now agreed in the current literature that perception-only measure of service quality produce a better result than perception-versus-expectation measure (Cronin & Taylor 1992, 1994; Gounaris, Stathakopoulos & Athanassopoulos 2003; Parasuraman, Zeithaml & Berry 1994; Teas 1994). This is because perceived quality is based on one's experience and is a function of attitude (Sultan & Wong, 2010). Service quality and its dimensionalities across industries, cultures and firms has been the subject of interest to most services marketing researchers. However, only a few studies (Dabholkar, Shepherd & Thorpe 2000; Gounaris et al. 2003) have focused attention on the antecedents to service quality in the context of commercial service sectors.

Service quality research in higher education sector is new, at least, compared to that of commercial sector. The current literature on service quality in higher education context attempted to measure functional performances of educational services in various institutional, country and cultural contexts. A review of 14 research studies, between 1997 and 2010, show that the dimensions of service quality in higher education context vary widely across country, institution and culture (see, for example, Abdullah 2005, 2006a, 2006b, 2006c; Angell, Heffernan & Megicks 2008; Gatfield, Barker & Graham 1999; Joseph & Joseph 1997; Kwan & Ng 1999; Li & Kaye 1998; LeBlanc & Nguyen 1997; Rojas-Me´ndez et al. 2009; Sultan & Wong 2010; Stodnick & Rogers 2008; Smith, Smith & Clarke 2007). The review of literature also finds a research gap to examine the antecedents of service quality in higher

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education context. Therefore, the critical research question of this study is: what are the antecedents of service quality in a higher education context? While answering this research question, this study also demonstrates that antecedents and dimensions are two important perspectives of studying services quality in a higher education context.

The study has provided careful attention to conform to the requirements of the journal and has organised its sections accordingly. The following section briefly discusses the current literature on service quality. It then discusses the theoretical model and the construct development process, and the research method employed in this study. The next section discusses the findings of data analyses and hypotheses testing results. Finally, the study discusses limitations, implications and conclusion.

### 2. Literature Review

In the context of dimensionalities, the HEdPERF measure (Abdullah 2005, 2006a, 2006b, 2006c) and the PHEd measure (Sultan & Wong 2010) may be considered as comprehensive scales as these measures include a broad range of service attributes (41 and 67 items, respectively) in the context of Malaysian and Japanese universities, respectively. Another study has developed 26 attributes of service quality in a higher education context of Australia with four aspects/dimensions, namely, academic instructions, campus life, recognition and guidance (Gatfield et al. 1999).

In contrast, the antecedent approach to study service quality received a little attention. For example, one study demonstrated that service quality is influenced by four of its dimensions, namely reliability, personal attention, comfort and features (Dabholkar et al. 2000). Although Dabholkar et al. (2000) stated that the four dimensions are the four antecedents to service quality; these findings may not be applicable across service types, firms, service industries and cultures in general. This is because service quality is a contextual issue, its dimensions vary widely. Moreover, the bulk of studies still consider these to be the dimensions of service quality instead of antecedents (see, for example, Bigne, Molinar & Sanchez 2003; Kilbourne et al. 2004; Kim & Jin 2002; Sureshchandar, Rajendran & Kamalanabhan 2001; Swanson & Davis, 2003). Research on customer specific antecedents to service quality also received a little attention (Gounaris et al. 2003). The antecedent approach starts from customers. Customers' perception of service quality are affected by factors such as communications from salespeople, social referrals, various types of information collected, and the credence consumers develop towards a service organisation (Gounaris et al. 2003; Kangis & Passa, 1997). In summary, this study finds that there is a research gap to examine the antecedents of service quality in a higher education context along with the dimensions of service quality. To address these gaps, this study adopted qualitative (i.e. focus groups) and quantitative (i.e. survey) research methods.

### 3. The Theoretical Model and Construct Development

Although Dabholkar et al. (2000) show that the dimensions of service quality are the antecedents of service quality, this finding may be confounding the dimensional approach and the antecedent approach to study service quality. The dimensional

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approach of service quality provides an understanding of quality dimensions and its relevant attributes. The antecedent framework, however, provides an insight of how consumers view service quality as a whole and how this view contributes to predict their behaviour (Dabholkar et al. 2000). In the higher education context, there is no study showing that service quality is a separate construct from antecedent aspects and that it is a second order construct. Therefore,

**H1:** Service quality is a second order construct, separated from antecedent construct.

Studies ascribed that formal communications from various sources, including advertisements, leaflets, and related articles in magazines and newspapers, affect the way customers interpret ambiguous evidence concerning quality (Deighton 1984; Devlin, Gwynne & Ennew 2002; Mathews 1994). The current literature is lacking to explore the nexus between information and service quality. Information pertaining to service quality is important as it provides a basis for evaluating service quality attributes during service encounter. It helps finding critical service attributes that the organisation offers. It is also a basis of forming quality standards as it often provides evidence of past performance. Together with past evidence, information may play a vital role to forming quality perception. However, exaggerated information with gimmick promises may adversely affect quality perception during customers' service encounter.

The focus groups were asked to discuss the factors that affect quality of services in terms of their university prior to enrolment. Respondents stated that information affects the level of quality judgment. They also underlined that the information provided by the institution should be true, want satisfying and reliable. The following are the specific quotes of focus groups' participants.

"The underlying factors affecting quality are adequate information and its genuineness" (Doctoral student).

"...delivered promise should be equal to the delivered service" (Undergraduate student).

The explicit or implicit promises embedded in provided information and/or marketing communication plays a vital role to form and evaluate quality. Information affects quality evaluation in that students evaluate stated or implied promise and provided information during or after service encounter. These findings imply that the role of providing adequate and reliable information to the students, prior to their enrolment, can have tremendous effects to form various aspects of service quality of a university. In short, perceived quality is affected by reliable information. Thus,

**H2:** There is a positive relationship between information received by the students and their evaluation of service quality.

Information is operationalised (with three items) as information that makes promises about quality, information communicated through marketing tools and information provided genuinely translates service attributes. These items are generated from focus group discussions.

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Past experience of service encounter helps customers to determine the standards of any future service performance, especially, if the service is same or similar. It provides a brief cognitive standard about service quality that a customer uses during service encounter.

The focus group findings stated that students' recent experience of meeting or interacting with staff of a university also affects service quality judgment. Students use previous study experience as a fuzzy input to predict service quality of a potential university due to mainly their lack of experience with that potential university. The following are the specific quotes.

"...before coming to this university, I had only high school experience. From that point, it is hard to say. But at least it tells that we would learn some advanced stuff at the university" (Undergraduate student).

"I've attended three different universities in Australia. Many people would agree that out of these three...University is the prestigious. But why I didn't go back to that university? So, considering location, proximity and recent experience with staff, I'm keep going with the Central Queensland University" (Postgraduate student).

Past experience is one of the key issues that play a vital role to form quality. This is because during service encounter customers' evaluate their past experience of receiving the same service with the present one. They tend to compare similar type of service attributes received from various providers. However, higher education service attributes are different compared to commercial service attributes. It is hard to compare the service delivery processes in a higher education setting. For example, it is fairly common practice that two lecturers would create and deploy teaching techniques, methods and environment for a course in an individualistic manner for the same group of students in an undergraduate program. This signifies that students' experience with various staff would be different and that this is often incomparable. However, the common ground, in this respect, is that students' experience can be improved continuously though there are significant differences among the service personnel. This leads to positive and favourable evaluation of service quality. Therefore,

**H3:** There is a positive relationship between past experience of the students and perception of service quality.

The evidences of focus group findings help operationalise past experience (with three items) as students' previous study background, and their interaction and relationships with staff and/or the university prior to enrolment in a higher education context.

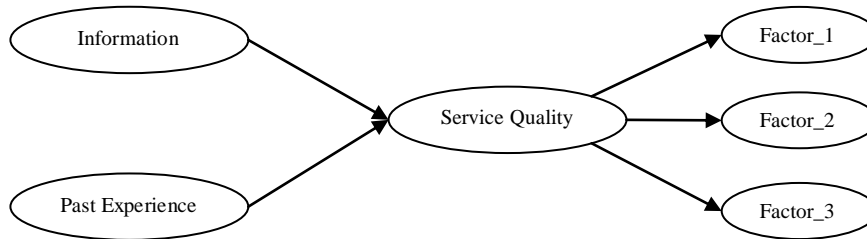
In order to understand the nature of service quality in a higher education context, the focus groups were asked how they evaluate service quality in terms of their university. As revealed from focus group findings, the assessment of service quality is a cognitive process. Meaning that service quality assessment is a psychological result of perception, learning, reasoning and understanding of the service attributes. One specific quote is as follows:

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“I think we add-up the issues like recent experience, present performance and our interests in a subconscious manner...”  
(Postgraduate student).

The focus groups findings uncover a number of service quality attributes with regard to their university. These are used as indicators of perception of service quality in addition to literature review. Thus, a total of 30 items are developed through methodological triangulation procedure to measure service quality. Figure 1 shows the conceptual model:

**Figure 1: The conceptual model**



### 4. Research Method

First, the focus group technique was employed to study the perceptions of students with regard to critical antecedents, natures of perceived service quality, and their causal relationships. The present study included five, eight and six undergraduate, masters and doctoral students, respectively, in three focus group discussions following the suggestions provided by the extant studies (Brown, Varley & Pal 2009; Gatfield et al. 1999; Krueger & Casey 2000; Morgan 1988; Stewart, Shamdasani & Rook, 2007). For example, Brown et al.'s (2009) study used focus group technique with 22 students of a university to examine students' choice processes of university course selection. Although selecting a single university does not afford to generalise the findings to other universities (Sawyer & Thompson 2003), inclusion of all students of the University, programs, schools and campuses in the context of the present study are popular alternative to generate important insights about antecedents and dimensions of service quality in a higher education context. Using a single university to study students' attitudes generate valuable insights, which can be used as empirical hypotheses for representative follow-up studies (Dolnicar 2004).

All of the students were having at least six months of studying experience with the CQUni, Rockhampton, Australia. They were selected based on convenience sampling technique (Gatfield et al. 1999). The respondents were explained about the research aims, and the tasks they would perform during focus group discussions. Then some broad and open-ended questions were posed including what affects quality of services in terms of the CQUni prior to enrolment? How do they evaluate service quality in terms of their university? What are the critical quality aspects of this university? The focus group data were analysed through content analysis procedures suggested by the extant studies (Babbie 2007; Krippendorff 2004; Neuendorf 2005; Sarantakos 1997).

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Second, following the findings of the focus group data, a theoretical model was developed. Third, the theoretical model was tested using quantitative research method where students were surveyed through online questionnaire. A total of 528 cases (having more than six months of studying experience) were entered for factor analysis, and scale reliability test was performed using Cronbach's Alpha test in SPSS. For the purpose of analysing measurement model and structural equation model, the item parcelling technique or partial disaggregation method was followed within AMOS framework following the suggestions of the current studies (Bandalos 2002; Bentler & Chou 1987; Landis, Beal & Tesluk 2000; Little et al. 2002).

### 5. Findings

The results of Bartlett's test of sphericity and Kaiser–Mayer–Olkin (KMO) measure of sampling adequacy are satisfactory in terms of all the constructs. The three items measuring information results to one component in exploratory factor analysis (EFA) (principal component analysis and varimax rotation method). The factor loadings vary between 0.701 and 0.861. The composite reliability is 0.71. With regard to past experience, the three items also results to one component in EFA. The factor loadings vary between 0.622 and 0.837. The composite reliability is 0.70. The EFA with 30 items measuring service quality results to three components/dimensions, namely, academic service quality (ACSQ), administrative service quality (ADSQ) and facilities service quality (FSQ). The cross-loaded items and item loading of 0.30 or below were deleted (fours items) following the suggestions of the current studies (Hair et al. 2010; Ho, 2006). Thus, the factor loadings for ACSQ (09 items), ADSQ (10 items) and FSQ (07 items) vary 0.556–0.839, 0.402–0.859 and 0.443–0.767, respectively. The Cronbach's Alpha values for these three factors are 0.937, 0.943 and 0.848, respectively.

The convergent validity for information, past experience, ACSQ, ADSQ and FSQ was ensured through four tests, including, examining factor loadings ( $\geq 0.5$ ), critical ratio values (c.r. $>1.96$ ,  $p < 0.05$ ), average variance extracted (AVE $>0.5$ ) and reliability estimate (Cronbach's Alpha $>0.70$ ). Although the factor loadings of two of the items are 0.402 and 0.443 in ADSQ and FSQ, respectively, the other measures of convergent validity tests are satisfactory. The discriminant validity was also ensured through three tests, including, pairwise Chi-square ( $\chi^2$ ) difference tests for 10 pairs (significant at 0.01 level), comparison of AVE estimate and the squared correlation estimate (AVE $>$  squared correlation estimate), and pairwise EFA (to produce two components). In brief, the convergent and discriminant validity tests' results are satisfactory.

The measurement model was designed within AMOS framework using partial disaggregation method. The results are satisfactory. The  $\chi^2$  is insignificant,  $\chi^2(N=528, df=25)=36.27$ ,  $p > 0.05$ . The other fit indices, including, RMSEA (0.02), GFI (0.986), NFI (0.988), CFI (0.996) are satisfactory. The analysis of the structural model (Figure 2) is also satisfactory. The  $\chi^2$  is insignificant,  $\chi^2(N=528, df=29)=42.68$ ,  $p > 0.05$ . The other fit indices, including, RMSEA (0.03), RMR (0.02), GFI (0.984), AGFI (0.970), NFI (0.985), TLI (0.993) and CFI (0.995) are satisfactory.

To test hypothesis 1, two models are tested within AMOS framework, a second order model for service quality and service quality as a construct. The results are as follows:

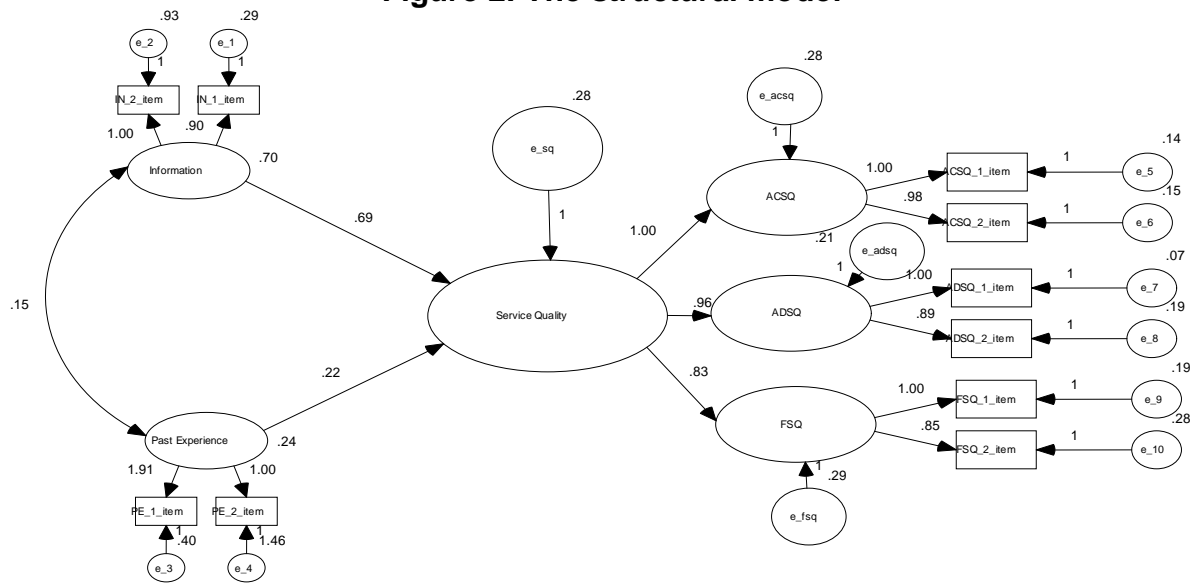
**Table 1: Testing results for hypotheses 1**

Hypothesis	Type	Chi-square	RMSEA	RMR	CFI	GFI	AGFI
H1	Second order	$\chi^2(N=528,df=6)=8.36, p>0.05$	0.027	0.010	0.999	0.995	0.982
	As a construct	$\chi^2(N=528,df=9)=585.4, p<0.01$	0.349	0.083	0.758	0.733	0.377

The results show that service quality is a second order construct, and that as a construct it generates poor results. The EFA results also confirm this. Thus, H1 is supported. The EFA along with convergent and discriminant validity tests confirm that the dimension and antecedent constructs are two different perspective to study service quality. While the dimensional aspects are relevant to perception of service quality attributes during service encounter, the antecedent approach to service quality is relevant to the study of key issues that affect the formation and evaluation of service quality.

The standardised regression weights for information→service quality (H2) is 0.69 ( $p<0.01$ ) and for past experience→service quality (H3) is 0.22 ( $p<0.05$ ). Thus, these two hypotheses are also supported.

**Figure 2: The structural model**



## 6. Limitations of the Study

The research concept of this study was based on three focus groups conducted at the Rockhampton campus. The number of students participated in focus group discussions are aligned with the extant studies (Brown et al. 2009; Gatfield et al. 1999; Krueger & Casey 2000; Morgan 1988; Stewart et al. 2007). However, this study attempted to include representative members of the larger population.

## 7. Implications and Conclusion

Although a number of studies contribute developing service quality measures in the context of higher education, it appears that no study has empirically examined the

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antecedents of service quality and that it is a second order construct in the context of higher education. This study employed focus group technique to get insights about students' perceptions of the antecedents and specific quality aspects in terms of service quality of a university, and formulated a conceptual model with three hypotheses. The model was then tested and the hypotheses were supported.

The role of providing adequate and reliable information to the students, prior to their enrolment, can have tremendous effects to form various aspects of service quality of a university. Due to special nature of higher education services, it is imperative to focus on students' pre-enrolment information structure that can be strengthened through providing adequate and specific information, ensuring its genuineness, maintaining promises and above all focusing on what students' desires in terms of educational information. Past experience of students also found to have significant impact on perception of service quality. As students might build a fuzzy set of assumptions about higher education services due to absence of concrete experience, the university should maintain relationships with local and regional high schools, and invite high school teachers and students to participate in short courses, short visits, meetings and symposiums in order to have favourable outcomes (e.g. selecting the University) while improving the past experience of students about the quality aspects of that university. This might increase enrolments and impact favourably on quality judgment. The findings also show that antecedents and dimensional aspects of service quality are two different perspectives of studying service quality.

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