Antecedents and Consequences of Educational Service Quality

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Abstract

Service quality has become an important topic in the educational sector. This research explores the causal connections among service quality, customer satisfaction, and behavioural intention. Results suggest that improving client’s satisfaction may be more beneficial to higher education institutions than improving perceived service quality.

Introduction

Providing excellent service quality has become a major objective in the higher education sector in Australia. This is partly due to the Federal Government’s decision to allocate funds to universities based on their quality initiatives, and partly due to the growing number of claims that clients’ service quality perceptions can affect universities’ bottom-line measures of success - number and amount of external research grants, enrolment of full-fee paying overseas students - to mention a few.

How is ‘perceived service quality’ conceptualised in the literature? Are perceived service quality and consumer satisfaction/dissatisfaction different constructs? What are the antecedents and consequences of service quality? This paper addresses these and other similar questions.

Definitions of Perceived Service Quality and Customer Satisfaction/Dissatisfaction

Perceived Service Quality

Perceived service quality is client’s judgement about the excellence of a service. It is a second-order phenomenon. In other words, it is an overall evaluation of a service, not an evaluation of simple service attributes. Geistfield, Sproles, and Badephop (1977) define it as somewhat abstract, multidimensional but measurable. If one uses the ‘cognitive’, ‘affective’ classification of social-psychologists, then service quality is ‘affective’ (Luntz 1986, cited by Zeithaml 1988). In other words, it is an attitude: a disposition to respond favourably or otherwise to the service.

Consumer Satisfaction

Consumer satisfaction/dissatisfaction has been defined as an emotional response to a specific consumption experience (Swan and Oliver 1989). It is determined by how well a consumer perceives the service fulfills needs, wants or desires. It is a “state” variable in that a consumer can be “very dissatisfied” or “very satisfied” (Tse, Nicosia and Wilton 1990). Consumer satisfaction/dissatisfaction is usually measured as a sum of satisfaction with the different attributes of a service.

A Model of Perceived Service Quality

Research into the antecedents and consequences of service quality is limited (Cronin and Taylor 1992). This is mainly due to the differing arguments among researchers of the relationship between service quality and consumer satisfaction/dissatisfaction. For example, some researchers have posited that consumer satisfaction or dissatisfaction is an antecedent of service quality (example, Parasuraman, Zeithaml and Berry 1988). However, recent evidence suggests that it is a consequence of service quality (example, Woodside, Frey and Daly 1989; Cronin and Taylor 1992). In addition, as aptly observed by

1 Parasauraman, Zeithaml and Berry (1994) now agree with this causal direction.
Parasuraman et al (1994), practitioners and popular press add to this confusion by using these terms interchangeably. Teas (1993) suggests a solution for this ‘causal-direction’ ambiguity. He recommends that researchers use two different measures of quality: one ‘transaction specific’, and another ‘global’. Parasuraman et al (1994) developed on Teas suggestion and proposed a two-stage model of service quality. According to this model, transaction specific quality will be evaluated first, and then used to explain consumers’ global quality evaluation. In sum, clear explanation of the causal connections between consumers’ service quality perceptions, consumer satisfaction/dissatisfaction, and their behavioural intentions do not exist. This is the status of service quality research in non-educational sector.

In education, much debate centers around the measurement of quality, let alone its antecedents and consequences. For example, although the Course Experience Questionnaire ((CEQ) Ramsden 1991) has been adopted by the GCCA and many other organisations as an indicator of quality, its validity is being questioned by some senior academics and administrators. They believe that graduates’ CEQ ratings will be influenced by one or two ‘critical’ incidents (example, poor teaching and/or excellent teaching of some subjects). As mentioned earlier, service quality is a global impression about a service provider. It is shaped over a period of time through several transactions or dealings with the service provider. There is little empirical evidence that suggests global attitude towards an object will be influenced by one or two deviant incidents (Oliva, Oliver and MacMillan 1992). This is not to say that CEQ is flawless. While CEQ’s scale items do measure higher-order attributes, some items confound consumer satisfaction/dissatisfaction with service quality. For example, item 23 of the GCCA’s CEQ reads, “Overall, I was satisfied with the quality of this course...” 2 Thus, research on educational quality is still in its infancy. However, it is time that research is undertaken to articulate plausible models of perceived educational quality.

Figure 1 shows a model derived from the service quality literature. A client’s service quality perception will be influenced by cues similar to the ‘subjective norm’ construct in the ‘theory of reasoned action’ (Azjen and Fishbein 1980). In other words, people tend to evaluate an object or thing positively when they believe that others, such as the community, will evaluate the object positively. Theoretical support for this argument can also be found in Olson (1977). Service quality cues will have a direct impact on consumer satisfaction/dissatisfaction. However, this effect will be smaller in magnitude than the effect on service quality.

**Figure 1: The Model**

Perceived service quality, in turn, will affect consumer satisfaction/dissatisfaction. Note that it was mentioned earlier that perceived service quality is a second-order phenomenon whereas consumer satisfaction/dissatisfaction is concerned with “defining” attributes (Geistfield, Sproles, and Badehop 1977; Cohen 1979). Also, note that both evaluations usually take place in a comparison context. If a consumer

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2 In this research, this item was rephrased as follows: "Overall the quality of the course was high".

3 In this paper, the term "client" refers to graduates of the University.
perceives high service quality - that is, delivery of service (evaluation of the second-order attributes) perceived as equal to or better than expected, then she might also express substantial satisfaction with first-order attributes. Research conducted by Woodside, Frey and Daly (1989) supports the recursive relationship: Perceived service quality \( \rightarrow \) Consumer satisfaction/dissatisfaction.

Bearden and Teel (1983) argue that consumer satisfaction/dissatisfaction is an important determinant of behavioural intentions of clients such as word-of-mouth recommendations. Similarly, Bitner (1990) observes that perceived service quality generates word-of-mouth recommendations. Cronin and Taylor (1992) tested a structural model which examined the relationship between perceived service quality and purchase intentions, and consumer satisfaction/dissatisfaction and purchase intentions in four service sectors: banking, pest control, dry cleaning, and fast food.

They found more significant “path” coefficients for the consumer satisfaction/dissatisfaction and purchase intentions links than the service quality and purchase intentions links. However, they observe that the relationship may be different for other service industries and call for additional research in this area (p. 65). In this research, coefficients will be estimated for both the paths: that is, \( b_{3y1} \) and \( b_{3y2} \). Finally, note that the path model can be generalised only to the graduates of the university. It is also assumed that the variables are all in “equilibrium-type” condition: that is, the values of the variables have reached a state of approximate constancy.

**Method**

A cross-sectional design was employed to estimate the path coefficients. The assumption that the values of the variables are constant, justifies the use of such a design.

**The Sample**

The ‘sampling frame’ consisted of the names and addresses of all graduates of a medium-size university in the state of NSW during the period 1990 to 1993. In all, there were 11,675 valid entries in the sampling frame. A systematic sampling procedure was employed to select 1000 graduates from each of the four years or 4000 graduates in total.

**Procedure**

Service quality and its cue, consumer satisfaction/dissatisfaction, and behavioural intention were assessed by questionnaire. Service quality cue was obtained by asking respondents, ‘How do you feel the general public rates _______ academically?’. The question had a 7-point answer continuum ranging from “Poor” to “Outstanding”. Perceived service quality was measured using the Course Experience Questionnaire (Ramsden 1991). There are two different versions of CEQ: one with 30 items (Ramsden 1991), and another with 24 items (Long, 1993). The psychometric properties of the 24-item scale were assessed by the authors in early 1994 (Athiyaman and O’Donnell 1994). That analysis resulted in the deletion of 2 items from the 24-item scale. This reduced 22-item scale was used in this research to ‘tap’ service quality (SQ). In addition, respondents were requested to rate the overall quality of the course ((OSQ, see Item 25 of CEQ, Annexure 1)). Consumer satisfaction/dissatisfaction (CSID) was assessed by asking, ‘Considering everything, how satisfied are you with your _______ education?’. Response alternatives on a 7-point continuum ranged from “Not at all Satisfied” to “Extremely Satisfied”. Finally, behaviour items (Intention) were:

- ‘If you had it do over again, would you’ - response alternatives on a 7-point scale ranged from “Not attend _______” to “Attend _______”, and
- ‘Would you encourage a child of yours (or some other person) to attend _______’ - answer on a 7-point continuum ranged from “Not at all Encourage” to “Highly Encourage”.

**Analysis**
The analysis was done in two stages. First, all multi-item scales were examined for their dimensionality, reliability, and validity. For CEQ, this was done using confirmatory factor analytic procedures - maximum likelihood method. In other words, the relationships among variables and their latent factors were specified *a priori*. The expected factor structure was a five-factor model based on the five subscales of CEQ: good teaching, clear goals and standards, appropriate assessment, appropriate workload, and generic skills.

The goodness of fit of the measurement model (confirmatory factor analysis) was assessed using the likelihood ratio $\chi^2$ test, and the Bentler-Bonett (Bentler 1980) normed fit index (see Dillon and Goldstein 1984 for a discussion on confirmatory factor analysis procedures).

Next, path coefficients were estimated, and the theoretical model tested using the following criteria:
- all path coefficients included in functional equations should be significantly different from zero, and
- the omitted parameters should not be significantly different from zero.

**Results and Discussion**

Approximately 1000 graduates responded to the survey. However, pairwise elimination of missing responses reduced the total useable cases to the 700-760 range.

**Psychometric Properties of the Multi-item Measures**

1. **CEQ**

Table 1 shows the results of the confirmatory factor analysis. The 22-item CEQ failed to associate properly with the five latent variables that were presumed to be their causes (Figure 2). Note that the hypothesis: the model fits the data, was rejected at the 0.00 probability level. Also, the goodness-of-fit index was less than the minimum level of 0.90 prescribed by Bentler (1980).

**Table 1: Confirmatory Factor Analysis (CFA) Parameter Estimates for CEQ**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-square</td>
<td>883.713</td>
</tr>
<tr>
<td>d.f.</td>
<td>199</td>
</tr>
<tr>
<td>$p$</td>
<td>0.00</td>
</tr>
<tr>
<td>GFI: Bentler-Bonett Normed</td>
<td>0.87</td>
</tr>
<tr>
<td>GFI: Bentler-Bonett Non-normed</td>
<td>0.88</td>
</tr>
</tbody>
</table>

*Note: The confirmatory factor analysis was done using EQS. The command file can be obtained from the authors.*

**Figure 2: CEQ as Conceptualised by Ramsden (1991)**

Since the confirmatory factor analysis failed, the 22-items were subjected to an exploratory factor analysis: the principal axis method. An ‘oblique’ rotation was used to clarify the factor loadings since previous studies have shown the existence of “second-order factors” (see Richardson 1994). Although, the factor analysis gave five eigenvalues greater than one, some variables loaded on more than one factor. In
addition, except for five variables, all others had more than 0.30 correlation with the first factor (Table 2). This pattern suggests that the 17-items can be combined into a single index of service quality. The Cronbach \(a\) reliability of this 17-item index was 0.90.

Table 2: Factor Analysis of CEQ

<table>
<thead>
<tr>
<th>Variable</th>
<th>'r' with Factor 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>.50</td>
</tr>
<tr>
<td>V2</td>
<td>.41</td>
</tr>
<tr>
<td>V3</td>
<td>.78</td>
</tr>
<tr>
<td>V4</td>
<td>.14*</td>
</tr>
<tr>
<td>V5</td>
<td>.32</td>
</tr>
<tr>
<td>V6</td>
<td>.53</td>
</tr>
<tr>
<td>V7</td>
<td>.72</td>
</tr>
<tr>
<td>V8</td>
<td>.17*</td>
</tr>
<tr>
<td>V9</td>
<td>.30</td>
</tr>
<tr>
<td>V10</td>
<td>.45</td>
</tr>
<tr>
<td>V11</td>
<td>.33</td>
</tr>
<tr>
<td>V12</td>
<td>.30</td>
</tr>
<tr>
<td>V13</td>
<td>.42</td>
</tr>
<tr>
<td>V14</td>
<td>.45</td>
</tr>
<tr>
<td>V15</td>
<td>.77</td>
</tr>
<tr>
<td>V16</td>
<td>.84</td>
</tr>
<tr>
<td>V17</td>
<td>.79</td>
</tr>
<tr>
<td>V18</td>
<td>.27*</td>
</tr>
<tr>
<td>V19</td>
<td>.76</td>
</tr>
<tr>
<td>V20</td>
<td>-.03*</td>
</tr>
<tr>
<td>V21</td>
<td>.17*</td>
</tr>
<tr>
<td>V22</td>
<td>.60</td>
</tr>
</tbody>
</table>

Note: * = Items with less than 0.3 loadings are potential candidates for deletion.

2. Behavioural Intention

The two items loaded on a single factor which explained 89% of the variation in the items. The reliability of this summed 2-item scale was approximately 0.88. Descriptive statistics for the measures are given in Table 3.

Table 3: Descriptive Statistics for Study Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>(\bar{X})</th>
<th>(\sigma)</th>
<th>(\alpha)</th>
<th>(n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service quality cue</td>
<td>4.39</td>
<td>1.01</td>
<td>N/A</td>
<td>733</td>
</tr>
<tr>
<td>Perceived service quality</td>
<td>76.94</td>
<td>15.51</td>
<td>0.90</td>
<td>729</td>
</tr>
<tr>
<td>Overall service quality measure</td>
<td>5.25</td>
<td>1.26</td>
<td>N/A</td>
<td>757</td>
</tr>
<tr>
<td>Consumer satisfaction or dissatisfaction</td>
<td>5.32</td>
<td>1.11</td>
<td>N/A</td>
<td>758</td>
</tr>
<tr>
<td>Behavioural intention</td>
<td>11.08</td>
<td>2.57</td>
<td>0.88</td>
<td>745</td>
</tr>
</tbody>
</table>

Note: N/A = Not Applicable

Relationship among Constructs

Table 4 presents the correlation matrix of the constructs. Note that the validity of the reduced 17 item CEQ - convergent, discriminant, and nomological - is evident from the correlation matrix. However, the single-item measures do not relate to their constructs adequately. For example, the bivariate correlation between the 17-item CEQ and the single-item measure of overall quality is smaller than the correlation between consumer satisfaction/dissatisfaction and the overall quality measure. On plausible explanation for this unanticipated relationships is 'method variance': that is, the common measurement procedure has inflated the correlation among the constructs. Yet another reason could be the specification of “molar” relations. In other words, the causal laws are stated in terms of large an complex objects such as service
quality and consumer satisfaction. It may be possible to articulate the model in terms of more mediating mechanisms. Whatever the reason, given the limitation of the measures, the results of the path model should be considered preliminary.

Table 4: Correlation Coefficients

<table>
<thead>
<tr>
<th></th>
<th>SQ cue</th>
<th>PSQ</th>
<th>OSQ</th>
<th>CS/D</th>
<th>Intention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service quality cue</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived service quality</td>
<td>.35</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall service quality measure</td>
<td>.43</td>
<td>.68</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer satisfaction/dissatisfaction</td>
<td>.44</td>
<td>.64</td>
<td>.76</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Behavioural intention</td>
<td>.19</td>
<td>.51</td>
<td>.58</td>
<td>.68</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: n = 700

Figure 3 and Table 5 show the results of the path analysis. Note that the service quality cue has lesser impact on consumer satisfaction/dissatisfaction. This partially supports the argument that consumer satisfaction is, to a large extent, a transaction-specific phenomenon. The most interesting path is the recursive relationship between consumer satisfaction and behavioural intentions. This path coefficient is the largest of all: 0.59. In contrast, the path between service quality and behavioural intention is a low 0.11. This suggests that increasing consumer satisfaction could be more beneficial to universities. However, given the weaknesses in the measures, conclusive evidence should await further research.

Figure 3: Path Estimates

Table 5: Path Estimates for the Model

<table>
<thead>
<tr>
<th>Path</th>
<th>Standardised loading</th>
<th>Adjusted R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ Cue -&gt; SQ</td>
<td>0.35*</td>
<td>0.12</td>
</tr>
<tr>
<td>SQ Cue, SQ -&gt; CS/D</td>
<td>0.24* + 0.52*</td>
<td>0.46</td>
</tr>
<tr>
<td>SQ Cue, SQ, CS/D -&gt; Intention</td>
<td>0.04 + 0.11* + 0.59*</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Note: * Significant at P < 0.05 level.

Summary and Conclusion

The literature on service quality defines the construct as a client’s overall evaluation of the excellence of a service provider. In other words, the definition suggests that perceived service quality is similar to a client’s attitude toward the organisation. People in general tend to confuse service quality with customer satisfaction. There is a difference between these two constructs. As mentioned earlier, the former is concerned with “global” or overall evaluation of a service organisation, while the latter deals with a specific consumption experience.
Providing excellent quality service has become a major objective for almost all higher education institutions in the industrialised nations. This is to enhance their competitive position in the higher education sector. This research explored the impact of perceived service quality, and consumer satisfaction/dissatisfaction on clients’ intention to recommend the services to others. The results reveal that increasing customer satisfaction may provide immediate benefits to higher education institutions seeking to achieve competitive advantage in the industry.

Another important result of this study is the failure of CEQ items to associate with their underlying latent variables: a confirmatory factor analysis failed to validate the five-factor conceptualisation of CEQ. If we want to further our understanding of the consequences of providing high quality service, then further research is required to clarify the current conceptualisation of CEQ and to replicate this study using multi-item measures for all constructs.

References


Luntz, R (1986) “Quality is as Quality Does: An Attitudinal Perspective on Consumer Quality Judgments”. Presentation to the Marketing Science Institute Trustees’ Meeting, Cambridge, MA.


## Annexure 1: The CEQ

### The Good Teaching Scale
1. The teaching staff of this course motivated me to do my best work
2. The staff put a lot of time into commenting on my work
3. The staff made a real effort to understand difficulties I might be having with my work
4. The teaching staff normally gave me helpful feedback on how I was going
5. My lecturers were extremely good at explaining things
6. The teaching staff worked hard to make their subjects interesting

### The Clear Goals and Standards Scale
1. It was always easy to know the standard of work expected
2. I usually had a clear idea of where I was going and what was expected of me in this course
3. It was often hard to discover what was expected of me in this course
4. The staff made it clear right from the start what they expected from students

### The Appropriate Workload Scale
1. The workload was too heavy
2. I was generally given enough time to understand the things I had to learn
3. There was a lot of pressure on me as a student in this course
4. The sheer volume of work to be got through in this course meant that it couldn't all be thoroughly comprehended

### The Appropriate Assessment Scale
1. To do well in this course all you really needed was a good memory
2. The staff seemed more interested in testing what I had memorised than what I had understood
3. The course was overly theoretical and abstract *
4. Too many staff asked me questions just about facts

### The Generic Skills Scale
1. The course developed my problem-solving skills
2. The course sharpened my analytical skills
3. The course helped me develop my ability to work as a team member *
4. As a result of my course, I feel confident about tackling unfamiliar problems
5. The course improved my skills in written communication
6. My course helped me to develop the ability to plan my own work

*Note: * denotes deleted items (see Athiyaman and O’Donnell, 1994).