A pragmatic model of student satisfaction: a viewpoint of private higher education

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Abstract
Purpose – The purpose of this paper is to investigate the relationship between service quality, program quality, institutional image and student satisfaction in the context of higher education. Additionally, the study attempts to describe the mediating impact of institutional image between service quality, program quality and student satisfaction.

Design/methodology/approach – The structural equation modeling was used to analyze the influence of mediating variable and hypotheses testing. The population of this study was fourth-year business students of nine “grade one” private universities in Bangladesh. Data (n = 310) were gathered from students pursuing studies at different private universities in Bangladesh.

Findings – The findings of this study revealed that image occupied full mediation role between service quality and student satisfaction. Furthermore, it also disclosed that the direct path of service quality and student satisfaction was not statistically significant.

Practical implications – These unique findings imply that academic authorities should nurture the institutional image and program quality rigorously to enhance student satisfaction. The findings of this study would benefit both practitioners and academics, especially in the perspective of Bangladesh private higher education.

Originality/value – Past researchers have examined the direct affiliation between service quality and student satisfaction. Hence, there is a deficiency of indirect link between service quality and student satisfaction. This study has incorporated image as a mediating variable to fulfill the deficiency in higher education.

Keywords Service quality, Student satisfaction, Private universities, Institutional image, Program quality

Paper type Research paper

Introduction
Due to the growing competition, student satisfaction has become an important subject matter for educational research. Satisfied students are strong source of testimonials for universities however displeased students may create a complaining environment which could create negative effect on image of the institution (Fitzpatrick et al., 2012). The reasons which are significantly associated to satisfaction of student must be necessary to recognize by the universities. Parasuraman et al. (1985) stressed that quality was dedicatedly linked to the subject of satisfaction leading prospect behavior. In recent times, student satisfaction has gained ample focus and ended up with the leading focusing point of entire tertiary level
educational institutions (Temizer and Turkyilmaz, 2012). Arambewela and Hall (2009) also stressed that student satisfaction was the key basis of competitive lead, and it had become a main contest for the universities.

The higher studies in Bangladesh have gone through massive progress in recent times, and it is broadly perceived that future attainment in a globalization of global economy entirely depends on superior service, which it turns leads to customer satisfaction. Higher education institutions are platforms for generating and dissemination of knowledge. However, the quality of education is not visible in the universities of Bangladesh and gradually declining (UGC, 2004). Rouf, Habibullah, and Islam (2015) conducted a study in Bangladesh private university perspective to explore the level of quality education and revealed that respondents’ satisfaction status was poor regarding campus facilities, lab and library services. Researchers also pointed out that a few non-government institutions are quality focused and rests of them are far away from quality education. Mohsin and Kamal (2012) expressed in their study that the quality of both government and non-government higher educational institutions of Bangladesh have been at a miserable stage. The rank of Bangladesh is 146th, according to the Human Development Index (HDI) in the world with compared to Singapore and Malaysia which are 26th and 61th position according to HDI, 2011. The HDI is an integrated statistic of lifespan, education and earnings per person indicators, which are considered to nominate countries into four levels of human development. Over the past two decades, the general view of educational scholars and other interested party is that the quality of higher education in Bangladesh has been worsening steadily and in particular areas pretty terrifyingly (Aminuzzaman, 2008). Significant growth of both the government and private universities have observed, but the quality of higher studies is not meeting the satisfaction level compared to nearby countries. Not a single institution of Bangladesh has occupied in the list of topmost 400 world’s finest universities (USA News and World Report, 2011). In connection with this discussion, it is clear that performance of the private and public universities is not satisfactory due to poor quality education services.

In the 1990s, the government was clear that public universities were incapable of meeting the growing demand for higher studies; thus, the government took the right initiative to setup private universities in Bangladesh (UGC: 2006). The government obliged to give authorization to set-up private university under the Private University Act 1992 due to the enormous demand for higher studies. At present, 92 private universities are functioning in Bangladesh and more are in the pipeline (UGC, 2014). The figure of student enrollments in private universities is steadily increasing in Bangladesh. The Annual Report of UGC (2015) showed that there were 375,000 students in 2015. Approximately, 62 per cent students are pursuing study at various private universities while only 38 per cent students are pursuing study at public universities implying the exponential growth of privatization of higher education after its inception in 1992 (Haque, 2014). This figure is going upward per year by 20 per cent compared to 5 per cent per year growth in the public universities (Annual Report UGC: 2011). However, majority of the private universities is away from quality teaching standards and suitable academic atmosphere therefore questions have ascended against the value of the degree in the job market (Chowdhury, Iqbal, and Mich, 2010).

The purpose of this study is to explore the influence of service quality, program quality, and institutional image toward student satisfaction in the context of higher education. Past researchers have examined the direct affiliation between service quality and student satisfaction (Abili et al., 2012; Asaduzzaman and Mahabubur, 2013; Dib and Alnazer, 2013; Hishamuddin et al., 2008; Gruber et al., 2010; I-Ming and Chich-Jen, 2006; Malik et al., 2010; Sapri et al., 2009). Hence, there was a deficiency of indirect link between service quality and
This study has incorporated image as a mediating variable to fulfill the deficiency in higher education. Several scholars have suggested that image acts as a predecessor of student satisfaction (Alves and Raposo, 2010; Andreassen and Lindestad, 1998; Brown and Mazzarol, 2009; Pileliene, 2013; Roche, 2014; Tung, 2010), but there was a scarcity of empirical study. A few scholars (Hu et al., 2009; Johnson et al., 2001; Omar et al., 2013; Parves and Ho, 2012) recommended that student satisfaction was responsible for creating institutional image which was an opposite meaning of image leads to student satisfaction. This controversy encourages authors to conduct this study with full devotion. Another interesting recommendation is given by Alves and Raposo (2010) that service excellence develops a favorable image in the thoughts of students which afterwards dominates them to satisfaction. This is a clear indication of image as a mediating role in the construct of service quality and student satisfaction. However, comprehensive empirical study is rare in this respect. In addition, there is a little comprehensive research conducted on student satisfaction perceived by fourth-year business students in respect of “grade one” private universities in Bangladesh. Chitty et al. (2007) further stressed that despite image’s strong influence on customer satisfaction, organizational image does not appear to have been extensively researched in what its relationship with other variables directly/indirectly related with customer satisfaction concerns.

Theoretical underpinnings and past research
The development of the research model of this study was established from the equity theory. The equity theory was developed by Adams (1963). It argues that customer satisfaction takes place when a given party feels that the proportion of the results of a process is somehow adjusted with inputs as expense, time and effort (Oliver and Desarbo, 1988). Apparently, the equity theory has earned an extensive recognition recently in explaining customer behavior and customer satisfaction (Grigoroudis and Siskos, 2010). In addition, Hoyer and Macniss (2008) further detailed out that this theory is suitable in the study of marketing because it helps in giving insights for understanding customer satisfaction and dissatisfaction. This statement has been robustly supported by Yuan et al. (2010).

In a higher education context, results of a process are pertinent to various outcomes such as service quality, program quality, placement, image of the institution, competent graduate, employability rate, quality research outcomes, quality academic materials, industrial link and international recognition. These results of a process are not restricted to particular factors or to a specific situation. They are diverse in nature therefore applicability of the Equity Theory is universal in explaining customer behavior and satisfaction. In this proposed model, considering the relationship between service quality, program quality, institutional image and student satisfaction, it can be enlightened that when students enroll in a university they need to go through various service processes and earn different kinds of experiences. Therefore, their perception towards those experiences would result in either satisfaction or dissatisfaction. Meanwhile, dissatisfaction may occur when students perceive that their requirements are not met. The equity theory is shown in Figure 1.

![Figure 1](image.png)

Source: Oliver and Desarbo (1988)
Service quality

Service quality is recognized as a critical aspect for establishing and sustaining relationship with customers (Park et al., 2006). As it has significant importance on customer satisfaction, this construct has respected as a major determining factor of organization’s success or failure in a competitive environment (Lin et al., 2009). Surprisingly, various studies have emphasized the significance of service quality in educational institutions (Airey and Bennett, 2009; Shekarchizdeh et al., 2011; Annamdevula and Bellamkonda, 2012). Annamdevula and Bellamkonda (2012) developed a measuring instrument of service quality called HiEDQUAL. This newly developed measuring device comprises 27 items divided into five dimensions, which they found to have significant positive influence on overall students’ perceived service quality. The five factors are: teaching and course content, administrative services, academic facilities, campus infrastructure and support services within the higher education sector. Firdaus (2005) constructed HEDPERF (higher education performance) which classified five contributing factors of service quality in tertiary education. They are non-academic aspects, academic aspects, reputations, access and program issues. Non-academic aspects denote to aspects that are indispensable to enable students to fulfill their study obligations and connect to responsibilities carried out by non-academic staff. Academic aspects refer to positive attitudes, good communication skills, sufficient consultation, regular feedback to students and outstanding ability of the teaching staff which relate to the responsibilities of academics. Reputation of university is the professional image estimated by the university. Access is the availability, approach ability and convenience of both academics and non-academic staffs. Program issues were expressed as offering wide-ranging and sound academic programs or specifications with flexible structures. Parasuraman et al. (1985) developed SERVQUAL (gap model), an extensively recognized instrument for measuring service quality. On the other hand, the SERVPERF (purely performance measure) another popular device was developed by Cronin and Taylor (1992). They debated that SERVPERF explains a greater extent of variance in a complete measure of service quality than does SERVQUAL. As a result of the less predictable power of SERVQUAL model, this study deployed SERVPERF model to curtail the shortcoming.

Program quality

Until now, academic factor, curriculum and teaching method are the specific aspects that have been suggested and also found to be the most essential quality dimensions to measure the program quality. The empirical evidence indicates that these three aspects of program quality have a great impact to measure the quality of program perceived by students have been conducted and proved by the past studies of Angell et al. (2008), Farahmandian et al. (2013), Jain et al. (2011), Icli and Anil (2014), Kwan and Ng (1999), Navarro et al. (2005), Petruzzellis et al. (2006), Tsimidou et al. (2010) and Wilkins and Balakrishnan (2013).

In Bangladesh context, several researchers also recommended few aspects of program quality such as teaching quality, input quality of students and quality of faculties (Aminuzzaman, 2008; Andaleeb, 2003; Ashraf et al., 2009; Mamun, 2011; Naser, 2010; Osman and Ashraf, 2014). In addition, Hoque et al. (2013) found that faculty credentials and student selection system explained the highest percentage of variation in explaining quality education. As stated by Aminuzzaman (2008), the quality education and its prerequisites are method of teaching, curriculum and its improvement and upgrading professional knowledge and skills. These components are basically representing “program quality,” but the research was not comprehensive enough in terms of wide geographical areas of Bangladesh. Therefore, the empirical study is necessary to fulfill this gap for robust evidence in future. The current study fulfilled this gap and discovered unique findings.
Thus, the specific dimensions those are the indicators of program quality for the current study include: academic factor, curriculum and teaching methods.

**Institutional image**

Gronroos (1988/GroÈnroos, 1984) stressed that the image of an organization is essential for institutions, as it is influenced by the quality perceived by customers, and in turn influences their expectations, which supposes an interaction between customers and service providers. As a result, image is determined by customers greatly through an evaluation of the service they have consumed. Certainly, favorable image may be an influential instrument not only for encouraging customers to prefer the organization’s services but also for enhancing their levels of satisfaction towards the organization. According to the attitude theory, Fazio (1989) explained that service evaluations are the major reason of the organizational image and these attitudes enhance in predictive value as they become more available in memory. In addition, the organizational image results from the gathering of customers’ utilization experiences, and the service quality is the replacement of these experiences (Lai et al., 2009).

The image of a university is vital because it determines the sustainability of the program, attracts student, maintains retention and manages funding scopes. However, the less evidence is found to describe the image construction processes in literature of higher education (Gallifa and Batalle, 2010, Chitty and Soutar, 2004). The image observed by students is important as it sum-ups students’ perceptions and its consequences ensure strong position in the market. Subsequently image provides a right path in an effective way for a student to evaluate its entire program and services consumed in course of time (Parves and Ho, 2012). As a result of the rising competency in global environment, institutions need to preserve and establish a unique image so that they can grasp an economical gain (Paramewaran and Glowacka, 1995).

**Student satisfaction**

Without any doubt, it can be claim that customers are the influential assessors of service quality (Sakthival et al. 2005). Customer satisfaction became a strategic concern to organizations because it can have emotional influence on customer faith (Omar et al., 2009). Lee and Hwan (2005) stressed that customer satisfaction is a vital part for service organization, and it is extremely associated to service excellence. In this connection, Sapri et al. (2009) stressed that customers are life force of any organization, for both government and non-government organizations.

Tertiary education institutions recognize students as clients, or the ‘leading interested party’ who are engaged in the acquisition of higher education programs and services (Ravindran and Kalpana, 2012). Student satisfaction can be subjective assessment for students, in respects of how well an acquiring knowledge atmosphere assistances their educational accomplishments (Lo, 2010, p. 47). Satisfaction supports students to modify their self-assurance, which, eventually, dictates to the improvement of compulsory expertise and the gaining of intellectual abilities (Letcher and Neves, 2010). Arambewela and Hall (2013) specified that student satisfaction has profoundly influenced by the quality of the services provided. Parahoo et al. (2013) claimed that customer satisfaction was a worldwide perception for prophesying customer behavior, and the term also was observed prominent in academic research.

**Relationship between service quality and student satisfaction**

Service quality is an insightful assessment of customer, which has a strong contribution to satisfaction (Jamali, 2007; Zeithaml and Bitner, 2003). Therefore, service excellence is treated
as a predecessor of customer satisfaction and not adequate studies have been conducted to investigate in services (Prabhakar and Ram, 2013). Arambewela and Hall (2013) indicated that student satisfaction profoundly influenced by the service quality. Recent service quality literature confirmed that the influence of service quality towards satisfaction (Abili et al., 2011; Fernandes et al., 2013). One study reveals that satisfaction is affected by service quality and service quality is passing through perceived value in tertiary education setting (Brown and Mazzarol, 2009). On the other hand, one more investigation verifies service quality–satisfaction relationship through applying the ECSI model, reveals that service quality straightforwardly influences satisfaction (Alves and Raposo, 2010). Thus, it can be concluded that if service aspects are executed in a sound manner then student satisfaction will be ensured.

**Relationship between program quality and student satisfaction**

Several investigations suggest that there are more precise factors are applicable for measuring quality in higher education (Rowley, 1997; Jamail, 2007). Program quality is found and suggested to be an additional variable that is suitable for the higher education context, and it is evident that academic factors, curriculum and teaching method are the most essential determinants of student satisfaction (Abdullah, 2006; Angell et al., 2008; Ford et al., 1999; and Peng and Samah, 2006). Babar and Kashif (2010) communicated that teachers’ knowledge was the most dominant factor for student satisfaction in higher education perspective. Firdaus (2005) confirmed that academic aspects were critical service quality indicators. The academic aspects had a very strong positive relationship with student satisfaction. Hill (1995) disclosed that teaching methods were antecedents of student satisfaction. In this respect, Kuh and Hu (2001) proposed that program issue was a predictor of student satisfaction. Furthermore, Ford et al. (1999) revealed that the student satisfaction would increase with the improving effort in program quality.

**Relationship between service quality and institutional image**

Djafri et al. (2013) examined the relationship between service quality, student fulfillment, institution’s image and student faithfulness. The study uncovered that service quality had a positive and noteworthy relationship with image. Angela et al. (2012) explored the relationship among service quality, image, student satisfaction and WOM intention. They assembled 140 samples from tertiary education institutions in Indonesia. The study observed that service quality positively affects image of the university. Ravindran and Kalpana (2012) conducted a study on student satisfaction in higher education context in India and revealed that institution quality factor leads to overall satisfaction of the students.

**Relationship between program quality and institutional image**

Student impression of institutional image is basic, as it précises students’ bits of knowledge of the standing of a university in the business sector. As university image is a pointer and an essential way for a student to assess its programs, service offered and overall quality in the market place (Parves and Ho, 2012). Kassim et al. (2010) also pointed out that academic program is extremely important because it is an obligatory component in constructing and enriching both the image and value of the institution. Osman and Ashraf (2014) conducted a study regarding service quality of MBA program and expressed that image building highly depends on program quality. Creating life-time image in students’ mind, private institutions should take care of program quality more seriously.
Relationship between institutional image and student satisfaction

In the setting of Australian universities, Brown and Mazzarol (2009) found that satisfaction was influenced by the apparent image of the institution. They likewise specified that an institution with a positive image would give students an aggressive edge in the competitive market upon the completion of their studies and this in turns prompt satisfaction. Palacio et al. (2002) also concluded that the overall image influenced student satisfaction. Similarly, Cassel and Eklof (2001) pointed out that image always had the greatest influence on satisfaction formation in their study.

Ravindran and Kalpana (2012) conducted a study on student satisfaction in higher education context of India and the study recommended that the image had a substantial and affirmative impact on total student satisfaction. Alves and Raposo (2010) explored the contribution of image on student fulfillment and faithfulness in higher education context of Portugal. The model demonstrated that image was such a variable that had the most impact on student fulfillment. The impact of image was additionally pertinent on student faithfulness or loyalty. The image of the business entity on satisfaction had, to some degree, been observationally defensible. Andreassen and Lindestad (1998) confirmed that organizational image influenced customer faithfulness, especially if the customer had inadequate knowledge about the service. Azoury et al. (2014) performed a study that spotlighted on the universities image with the intention of clarifying the segments of image and qualities of student satisfaction. Their study examined the connections between the distinctive parts of the university image and to what extent they may influence the students’ satisfaction. The study revealed that the affective component of image and overall image meaningfully influenced the total satisfaction of students.

Institutional image as a mediating variable

Several scholars incorporated image as a mediating variable in different scenarios of interest apart from higher education and in the construct of service quality and student satisfaction mainly. The evidence can be found below in this respect.

Hung and Li (2009) directed study to explore how promoting strategies can improve guardians’ devotion in the educational setting. In this study, school image is used as a mediating variable in the construct of marketing tactics and parents’ loyalty. The findings conclude that image of school mediated the relationship between marketing strategies and guardians’ devotion. Faria and Mendes (2013) conducted a study and their study aim was to analyze the impact of perceived quality on patients’ satisfaction and to evaluate the potential mediating effect that organizational image may have on the relationship between both constructs, in the specific context of primary health care in Portuguese. The findings also highlighted that the organizational image had a partial mediating influence on the relationship between service quality and customer satisfaction.

Kaur and Soch (2013) conducted a study and the aim of this study was to examine the relations among customer satisfaction, trust, commitment, corporate image, attitudinal loyalty and behavioral loyalty. The aim of the study was to examine the mediating roles of commitment and corporate image on causal relationships between trust and loyalty. The finding found that corporate image mediates the relationship between trust and attitudinal loyalty. Cohen and Gadot (2015) directed a study and the reason of this study was to justify the relationship among image, service satisfaction and public opinion towards reforms in public organizations. The findings suggested that organizational image potentially mediated the relationship between satisfaction and public support for reforms.
**Research framework and hypothesis**

Considering the above literature review, a research model (Figure 2) was developed to investigate the influence of service quality, program quality and institutional image towards student satisfaction, where service quality and program quality are independent variables and institutional image is considered as a mediating variable. The relevant underpinning theory is the “Equity Theory” developed by Adams (1963), and the conceptual research model was constructed with essence of the equity theory. The research model is depicted below in Figure 2.

\[ H1. \text{ There is a significant positive relationship between service quality and student satisfaction.} \]

\[ H2. \text{ There is a significant positive relationship between program quality and student satisfaction.} \]

\[ H3. \text{ There is a significant positive relationship between service quality and institutional image.} \]

\[ H4. \text{ There is a significant positive relationship between program quality and institutional image.} \]

\[ H5. \text{ There is a significant positive relationship between institutional image and student satisfaction.} \]

\[ H6. \text{ Institutional image mediates between service quality and student satisfaction.} \]

\[ H7. \text{ Institutional image mediates between program quality and student satisfaction.} \]

**Research design**

The target population was 5,397 final-year students pursuing education in business management program at nine “grade one” private universities in Bangladesh. According to the suggestion of Gay and Airasian (2003), if population go beyond 5,000, then sample size of 400 would be reasonably sufficient. Thus, a total of 450 samples were chosen through the systematic random sampling technique and 334 (74.22 per cent) were returned. Three samples were removed due to the incomplete responses and left total useable samples of 310 after deleting 21 outliers according to Mahalanobis distance (d2) and $\chi^2 = 81.40$ cut-off point (Tabachnick and Fidell, 2007) in this study. The justification of systematic sampling was to let the respondents arrange for an equal opportunity to participate in this study. The research approach for this study is a quantitative method in nature and data were gathered through a self-regulated questionnaire. The study

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**Figure 2.** The research model of student satisfaction
embraced a cross-sectional research design where the data were collected at single point in time (Sekaran and Bougie, 2010) from February 20, 2016 to April 26, 2016.

**Research instrument**

Service quality was operationalized based on the SERVPERF model proposed by Cronin and Taylor (1992). The construct was measured through five basic dimensions of service quality (i.e. tangibility, reliability, responsiveness, assurance and empathy). A five-point Likert-type scale was deployed to measure students’ perception towards the quality of service within their institutions (ranging from 1 to 5, indicating strongly disagree to 1, indicating strongly agree to 5).

Program quality was operationalized based on three dimensions, such as academic factors, curriculum, and teaching methods adapted from Angell et al. (2008); Kwan and Ng (1999); and Navarro et al. (2005) consisting of 18 items. Respondents have been asked to indicate their reactions regarding their perceptions on the level of program quality within their institutions on a five-point scale (ranging from 1 to 5, indicating strongly disagree to 1, indicating strongly agree to 5).

Institutional image was assessed through six items adjusted from Turkyilmaz and Ozkan (2007). Respondents have been given opportunity to indicate their reactions regarding their perceptions on the level of institutional image on a five-point scale (ranging from 1 to 5, indicating strongly disagree to 1, indicating strongly agree to 5).

Student satisfaction was measured through eight items proposed by Parves and Ho (2012) and Wilkins and Balakrishnan (2013). Respondents have been asked to indicate their responses regarding their perceptions on the level of satisfaction within their institutions on a five point scale (ranging from 1 to 5, indicating strongly disagree to 1, indicating strongly agree to 5).

**Reliability measure**

Reliability is the estimation of a measurement to what extent a measurement is free of random or unstable error. Reliable instruments are strong and they perform well at different phases under diverse perspectives (Cooper and Schinder, 2006). The Cronbach’s alpha was deployed to verify the inner stability of participants’ responses to the entire items in a measure (Sekaran and Bougie, 2010). According to Hair et al. (2010), the lower limit value of Cronbach’s alpha is 0.70, and it can be reduce to 0.60 for exploratory research. Thus, the Cronbach’s alpha value of 0.60 or higher was reflected for inner consistency in this study. The study found Cronbach’s alpha value of 0.83 to 0.911 (Table I).

In this study, the validity is ensured through convergent validity. The convergent validity can be assessed through AVE. Fornell and Larcker (1981) recommended that reliable variables can have less than 50 per cent explained variance (AVE). Hair et al. (2010) recommended that a threshold level of AVE for obtaining convergent validity is least 0.50. Thus, the study achieved the convergent validity constructed on the suggestion of Fornell and Larcker (1981), and Hair et al. (2010). The composite reliability is another measure of convergent validity. It indicates that the level to which a number of items unvaryingly indicate the hidden construct. The suggested value is 0.70 or bigger (Hair et al. 2010). The current study achieved the composite reliability because the value is from 0.77 to 0.95. The item loading for an item must be 0.60 or higher for previously proven scales to obtain the uni-dimensionality (Awang, 2012). In this
study, item loadings under 0.6 were deleted one item at each time with the smallest value first. The process was continued until the uni-dimensionality was obtained.

**Discriminant validity**
According to the suggestion of Fornell and Larcker (1981), discriminant validity can be judged by matching the amount of the variance capture by the construct and the shared variance with other constructs. Several authors recommend a threshold value of correlation between two constructs 0.85 (Clark and Watson, 1995; Kline, 2011), although others recommend a value of 0.90 (Gold et al., 2001; Teo et al., 2008) is acceptable for avoiding multicollinearity. In this study, correlation value 0.90 was considered to achieve discriminant validity. The discriminant validity is attained because correlation value between two constructs is below the cut-off point (Table II).

**Exploratory factor analysis**
More often, it is used as an experimental mode when the researcher prefers to condense the construction of the group of variables. Awang (2012) suggested that factor loading

<table>
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<tr>
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<th>Factor loadings</th>
<th>Cronbach's alpha</th>
<th>CR</th>
<th>AVE</th>
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**Table I.**
Reliability, validity and uni-dimensionality assessment

**Table II.**
Correlations from AMOS output
for an item should be 0.60 or higher for previously proven scales. Consequently, this study uses 0.60 or higher value of factor loadings for uni-dimensionality because the study has incorporated the proven items in the research instrument. The uni-dimensionality is the prerequisite for assessing validity and reliability. According to the suggestion of Awang (2012), less than value of 0.60 should be deleted but one item at a time until the indexes are achieved. Thus, in first phase, in total 12 items were deleted such as e1, e2, e14, e16, e25, e26, e28, e29, e40 and e52 due to factor loading less than 0.60. Also, e22, and e40 deleted due to high modification index. Awang (2012) proposed that modification index (MI) more than 15 should be deleted. One free estimate was placed between e35 and e36 due to high modification index. In second phase, three items e41, e42 and e43 were deleted to obtain the AVE for institutional image according to the suggestion of Hair et al. (2010). They recommended that to increase AVE or composite reliability (CR), normally indicators with loadings between 0.40 and 0.70 should be considered for removal from the scale to meet the threshold level or go beyond the threshold level. They further suggested that items with poor loadings can be accepted based on their influence toward content validity. Finally, Figure 3 (revised fit model) was established for further analysis.
Confirmatory factor analysis

It is an exceptional factor analysis tool. It has supremacy to ensure about a construct and its indicators are stable with the researcher’s hypothesizing of the nature of that construct. Before running the CFA for all constructs, uni-dimensionality, validity and reliability must be achieved (Awang, 2012). In this study, uni-dimensionality, validity and reliability have confirmed (Table III – absolute and incremental fit). The below listed structural fit model (Figure 3) is constructed after performing the CFA.

Goodness of fit

This study provided a good fit of the research model to the data. The ratio $\chi^2/df$ was 1.584, lower than the value of 5.0 as recommended by Hair et al. (1995, 2010) and Holmes-Smith (2006). Incremental fit indices were higher than 0.90, with CFI of 0.927 and TLI of 0.922. In terms of absolute fit index, the RMSEA was 0.043 which is lower than recommended value of 0.08. Together with these indices, it is confirmed that the research model was a proper fit. Table III demonstrates the findings of the goodness of fit indices listed: According to the recommendation of Hair et al. (1995, 2010) and Holmes-Smith et al. (2006), at least one index from each category will ensure of model fit. Thus, the goodness of fit was confirmed in this study.

Results of hypothesis testing

In this study, seven hypothesizes were tested and their status is demonstrated below in Table IV. Figure 4 represents the significance of direct and indirect paths. In this study,

<table>
<thead>
<tr>
<th>Name of category</th>
<th>Index</th>
<th>Acceptable level</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute fit</td>
<td>RMSEA = 0.043</td>
<td>RMSEA &lt; 0.08</td>
<td>Required level achieved</td>
</tr>
<tr>
<td>Incremental fit</td>
<td>CFI = 0.927</td>
<td>CFI &gt; 0.90</td>
<td>Required level achieved</td>
</tr>
<tr>
<td></td>
<td>TLI = 0.922</td>
<td>TLI &gt; 0.90</td>
<td>Required level achieved</td>
</tr>
<tr>
<td>Parsimonious fit</td>
<td>Chisq/df= 1.584</td>
<td>&lt;5.0</td>
<td>Required level achieved</td>
</tr>
</tbody>
</table>

Table III. The assessment of fitness of structural fit model (Figure 3)

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Standardized beta estimate</th>
<th>$P$ value</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H1$. There is a significant positive relationship between service quality and student satisfaction</td>
<td>0.10</td>
<td>0.394 **</td>
<td>Not significant</td>
</tr>
<tr>
<td>$H2$. There is a significant positive relationship between program quality and student satisfaction</td>
<td>0.31</td>
<td>0.018 *</td>
<td>Significant</td>
</tr>
<tr>
<td>$H3$. There is a significant positive relationship between service quality and institutional image</td>
<td>0.31</td>
<td>0.028 *</td>
<td>Significant</td>
</tr>
<tr>
<td>$H4$. There is a significant positive relationship between program quality and institutional image</td>
<td>0.53</td>
<td>***</td>
<td>Significant</td>
</tr>
<tr>
<td>$H5$. There is a significant positive relationship between institutional image and student satisfaction</td>
<td>0.47</td>
<td>***</td>
<td>Significant</td>
</tr>
<tr>
<td>$H6$. Institutional image mediates the relationship between service quality and student satisfaction</td>
<td>Direct path is not significant (0.10) and indirect paths are significant</td>
<td>Fully mediated</td>
<td></td>
</tr>
<tr>
<td>$H7$. Institutional image mediates the relationship between program quality and student satisfaction</td>
<td>Direct path is significant (0.31) and indirect paths are also significant</td>
<td>Not mediated</td>
<td></td>
</tr>
</tbody>
</table>

Notes: ns = not significant; $p < 0.05$ *, $p < 0.001$ ***
mediation was tested according to the direction of Hair et al. (2010, p. 773). They proposed that if direct path is not significant and indirect paths are significant then full mediation is occurring.

**Discussion**

In general, the main purpose of the study was to investigate the influence of service quality, program quality and institutional image toward student satisfaction in higher education perspective of Bangladesh. Seven hypotheses are discussed in line with the findings below:

**Influence of service quality toward student satisfaction**

The current study has found that service quality was not significantly influenced the student satisfaction in respect of private higher education of Bangladesh as shown in Table IV. In other way, the higher the perception of service quality, then the higher of student satisfaction is not established in this study. Thus, H1 is not supported in this study. The probable argument is that nowadays students are not reasonably satisfied with service quality only. Students judge their satisfaction based on pre-purchase and post-purchase experience. Thus, only service quality is not good enough to influence student satisfaction. This finding is not parallel with past studies initiated by Hishamuddin et al. (2008), Yunus et al. (2010), Asaduzzaman and Mahabubur (2013) and Ambrose et al. (2014). This study also resembles with previous study conducted by Dib and Alnazer (2013) in respect of higher education services. Parasuraman et al. (1985) showed that satisfaction is the emotional position derived from the emotion which is combined with the consumer's previous feelings regarding consumption experience. Gilbert and Horsnell (1998) redefined customer satisfaction as an existing position of thoughts in which the client's requirements, and hopes throughout the product or service lifecycle have been satisfied or surpassed. In general, the customer satisfaction is the outcome of communication between prior-purchase and after-purchase evaluation. The result implies that institutions need to focus not only on service quality to enhance student satisfaction. Here is the challenge for institutions to find out the real cause of student satisfaction beyond service quality. Today's students are entering higher studies platform with new and diverse attitudes and talents as a result of social and cultural changes. These changes modify students’ expectation levels and their subsequent satisfaction with the educational environment. Therefore, students bring new challenges to the tertiary education platforms (Tinto, 1988). It is becoming essential for the higher education institutions to connect with and realize the actual demands of these fresh students.
Influence of program quality towards student satisfaction

This study has recognized that program quality was significantly influenced the student satisfaction in respect of private higher education of Bangladesh as shown in Table IV. In other words, the higher perception of program quality has established the higher satisfaction of students. Thus, $H2$ is confirmed in this study. The finding of this study is also consistent with several past studies conducted by Kuh and Hu (2001), Firdaus (2005), Navarro et al. (2005), Huang (2010) and Ali et al. (2016). Reasonably, students are concern about program quality toward their higher education satisfaction. Hence, program quality is sufficient enough to influence satisfaction in this respect. Institutions should focus more on pre-purchase and post-purchase elements for enhancing students’ satisfaction because it is no more a straight forward evaluation. Consequently, other factor such as image of the institution, probability of employment after graduation may have a greater impact on student satisfaction. In recent times, program quality is assessed through international accreditation such as AACSB, AMBA and EQUIS. These accreditations are carrying high value of program quality and open doors for internationally acceptable degree everywhere in the world. As a result, focusing on program quality is sufficient enough to satisfy students in another way. Leaders of higher education institutions need to think progressively and proactively to achieve internationally recognized seal of quality.

Influence of service quality towards institutional image

The finding has revealed the significant influence of service quality towards institutional image ($\beta = 0.31$, sig < 0.01). Thus, $H3$ is supported in this study. This means that improvement of service quality will certainly increase institutional image in respect of private higher education of Bangladesh. In other words, if service quality increases or decreases by 1 standard deviation, institutional image increases or decreases by 0.31 standard deviation. This finding is consistent with past studies initiated by Angela et al. (2012), Djafri et al. (2013) and Ravindran and Kalpana (2012). Image reflects an entire impression that an individual holds toward a thing (Kotler and Fox, 1995). In perspective of higher education, university image can be demarcated as the aggregate views an individual conceives towards the university (Arpan et al., 2003). Basically, image emphasized strengths of the university; thus, the superior service quality had the ability to build strengths of the institution. The investigation has highlighted on the tertiary level institutional image creation process and presented that service quality has an effect on institutional image.

Influence of program quality towards institutional image

The finding disclosed the significant influence of program quality towards institutional image ($\beta = 0.53$, sig < 0.001). Therefore, $H4$ is supported in this study. This means that higher perception of students regarding program quality would certainly enhance institutional image. This outcome is parallel with few past works initiated by Aula and Tienari (2011), Arpan et al. (2003), Kassim et al. (2010), Parves and Ho (2012) and Osman and Ashraf (2014). It can be noted that image building process is extremely depends upon program quality of the particular institution. Creating life-time image in students’ mind, institutions should concentrate on program quality seriously.

The relationship between program quality and image has not ample research evidence. Helgesen and Nesset (2007) specifically examined the influence of program quality on image of the university college in the Scandinavian region. Their finding had confirmed that there was a strong relationship between these two variables.
Influence of institutional image toward student satisfaction

The finding has disclosed the significant influence of institutional image towards student satisfaction ($\beta = 0.48$, $p < 0.001$). Therefore, $H5$ is supported in this study. This means that higher perception of students regarding institutional image would certainly enhance student satisfaction. Kotler and Fox (1995) postulated that an institution’s present image repeatedly carries added values than quality for the reason that it is the conceived image that virtually stimulates selections initiated by forthcoming students. Clow et al. (1997) and Cassel and Eklof (2000) also emphasized that image of the institution influences student satisfaction. Furthermore, the finding of this study is consistent with few more past studies conducted by Fornell (1992), Landrum et al. (1998), James et al. (1999), Alves and Raposo (2010) and Grigaliunaite and Pileliene and Grigaliunaite (2013). It is imperative to state that to measure and to highlight image of the institution are undoubtedly important for the reason that of its supremacy over student satisfaction. If higher education institutions are dedicated to ensure student satisfaction, the first and foremost point to accept is to evaluate the image conceived by students.

Institutional image mediates the relationship between service quality and student satisfaction

The result of this study has disclosed that institutional image was fully mediating between service quality and student satisfaction. Thus, $H6$ is fully confirmed. The result showed that the direct path of service quality and student satisfaction was insignificant ($\beta = 0.10$, $p = 0.394$). Two indirect paths service quality and image ($\beta = 0.31$, $p < 0.01$) and image and student satisfaction ($\beta = 0.47$, $p < 0.001$) were significant. Therefore, according to Hair et al. (2010), institutional image is fully mediating between service quality and student satisfaction. This interesting finding has proved that students were not satisfied with merely service quality. If service quality of an institution is capable of building image of the institution, then students will be satisfied otherwise not. Here is the challenge for institution to focus not only service quality but also need to ensure the image of the institution as well.

Institutional image mediates the relationship between program quality and student satisfaction

The result of this study has revealed that institutional image was not mediating between program quality and student satisfaction. Thus, $H7$ is not supported. The result has exhibited that the direct path of program quality and student satisfaction was significant ($\beta = 0.31$, $p = 0.018$). Two indirect paths program quality and image ($\beta = 0.53$, $p < 0.001$), and image and student satisfaction ($\beta = 0.47$, $p < 0.001$) were significant. Therefore, according to Hair et al. (2010), institutional image is not mediating between program quality and student satisfaction. This interesting finding has proved that students rated program quality high toward their satisfaction. Program quality should be in such a stage that would be responsible for creating image of the institution.

Managerial implications

The findings of this study will motivate university authority to aggressively think about students’ needs and expectations. Thus, it will guide them to develop appropriate strategic formulation to enrich the service quality, program quality and student satisfaction. Also, they will be able to recognize the merits and demerits of the service quality, program quality and image that directly and indirectly affect student satisfaction. This information would be invaluable for them to justify the priorities in favor of student satisfaction because student satisfaction is not static, and it is
changing over time. The result of this study exposed that program quality had a
significant positive impact on institutional image and student satisfaction, whereas
service quality had an insignificant relationship with student satisfaction and a
significant relationship with institutional image. Therefore, serious attention should be
given to program quality aspect. In terms of program quality, management should be
conscious of academic factors, curriculum and teaching methods to enhance image of
the institution and student satisfaction. The management of private universities should
also be aware that service quality is not directly increasing student satisfaction but
influencing through the institutional image. Thus, service quality is necessary for
image building, and ultimately, it leads to student satisfaction. In case of government,
the findings of this study will enrich them for initiating strategic decisions in favor of
qualitative boost of private universities in near future by comprehending students’
priority and expectations. Furthermore, non-government agencies will enrich their
knowledge-bin for consulting government and institutions towards qualitative
improvement and sustainability in the fierce competitive market.

Limitations and future research
There are few natural shortcomings observed in this study that need to be exposed: First,
the study is steered exclusively in private-university perspective of Bangladesh. Thus,
generalization of the findings in tertiary education perspective is debatable. Second, the
study incorporated only “grade one” nine private universities of Bangladesh. Hence, it is not
sensible to generalize the findings to other tertiary education environments in different areas
or to separate business entities. Third, the research concentrated final-year business
students only thus the outcomes of the research are still dubious to take a broad view.
Fourth, there are apparently other variables apart from service quality, and program quality
those need to be investigated in future and are expected to influence student satisfaction.
This study is exclusively restricted to “grade one” private institutions in Bangladesh as a
result opportunities are wide for mid-grade and poor institutions to execute further study. In
future, the study could be assessed embracing other stakeholders’ reactions based on the
conceptual model of this study.

Conclusion
The objective of this study is to investigate the relationship between service quality,
program quality, institutional image and student satisfaction in the context of higher
education. The study also attempted to describe the mediating impact of institutional image
between service quality, program quality and student satisfaction. Virtually, in-depth
investigation on student satisfaction is under-researched. Several previous researchers have
studied the direct relationship between of service quality and student satisfaction.
Therefore, a deficiency of indirect relationship has emerged between service quality and
student satisfaction in the circumstance of higher education. This study has incorporated
image as a mediating role to fulfill the deficiency in this respect. This investigation has
emphasized the role of service quality and program quality as the two independent variables
that have a relationship on the dependent variable, that is, student satisfaction. This study
discovered that institutional image was the most influential construct because it had a direct
effect of 0.47. The second most influential variable was program quality (0.31) that
influenced toward student satisfaction significantly. Concerning the mediation effect, the
study revealed that image occupied full mediation role between service quality and student
satisfaction, but it failed to mediate between program quality and student satisfaction.
Furthermore, it also disclosed that the direct path of service quality and student satisfaction
was not statistically significant. Today’s students are entering higher studies platform with new and diverse attitudes and talents as a result of social and cultural changes. These changes modify students’ expectation levels and their subsequent satisfaction with the educational environment. This interesting finding is invaluable information for academic leaders to think progressively that students are expecting something else beyond service quality. It means improvement of service quality will not necessarily increase the student satisfaction if other factors like program quality and image are undermined. The study also revealed that student satisfaction was not affected by gender. Another interesting finding is that there was a significant mean difference between those who were enjoying financial benefit/scholarship and those who were not enjoying financial benefit/scholarship. Finally, the study also portrayed that there was no variation among different levels of GPA on student satisfaction and variation among different levels of GPA and family income respectively. The aforesaid information contain intrinsic worth concerning strategic formulation toward the improvement of student satisfaction and sustainability in the competitive environment of higher education.

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Further reading


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