Determinants of education quality: what makes students’ perception different?

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ABSTRACT
In recent decades, the commercialization of education has become more apparent and the need for using marketing tools is greater than before. This study aims to identify the demographic and background information of students that differentiate their perception about quality of higher education. A sample of 432 students was taken from five top private universities of Bangladesh to evaluate their perception toward dimensions of higher education. Multinomial regression analysis was conducted to identify the characteristics of students which make their perception about quality of higher education dissimilar. The findings show that status of students for scholarship, extracurricular activities, parents' education, age, previous result, and university they study in have a significant influence on perception about quality of higher education. Part-time job status has moderate influence on the students’ perception. This research carries value to education policy-makers and university authorities. They can use these findings to formulate regulations, and target specific groups of students to ensure favorable academic environment and increase the brand image of their institutions.

1. Introduction
‘Education is one of the basic needs for human development and to escape from poverty’ (Sivakumar & Sarvalingam, 2010, p. 20), it is necessary for national development and a prosperous society. According to Rahman and Uddin (2009) education is the responsibility of the government and should be managed through national resources. Furthermore, higher education is important for social and economic impacts in society (Brennan & Teichler, 2008). Thus, governments and society have a vested interest in ensuring a constant flow of students in higher education.

Each year a large number of students go abroad for ‘quality’ higher education from different developing countries. The result is that a significant amount of money is spent outside the country, resulting in missed economic opportunity. We suggest that these local students can be retained and foreign students can be attracted by identifying the confirmed ‘quality’ higher education in local universities and thus allowing increased...
economic activity in this sector. However, higher education institutions and the relevant authorities need to understand the importance of creating an attractive image of quality education in order to form a body of loyal customers (Briukhanov, Kiselev, Timchenko, & Vdovin, 2010). Wilkinson and Yussof (2005) stated that the tendency of private universities is to get their specialization in profitable areas only. In developing countries like Bangladesh, universities are operating in the same manner. For this reason, it is urgent to ensure good quality of higher education for a society’s own interest.

In order to provide ‘quality’ of higher education, quality assurance is necessary. In this article, quality is defined as ‘fitness for purpose’ and quality assurance is defined as ‘those systems, procedures, processes and actions intended to lead to the achievement, maintenance, monitoring and enhancement of quality’ (Woodhouse, 1998, p. 258). Quality assurance for higher education systems has become an important issue worldwide, instigating collaborations among quality assurance agencies at international and regional levels. Indeed the Association of South East Asian Nations (ASEAN) has taken steps to assure the quality of higher education within Southeast Asian countries through the ASEAN University Network (AUN). Umemiya (2008) stated that four basic areas of AUN’s activities are: exchanging academic staff and students, doing collaborative research activities, sharing information, and promoting ASEAN studies. According to this study, the driving forces of AUN quality assurance activities are (1) taking policies to reduce economic gap within the region; (2) making policies of the more developed countries to internationalize higher education institutions; (3) exchanging staff and transferring credits, and (4) making policies to create a single market. Umemiya (2008) suggested that these activities are designed not only to increase collaboration among universities, but also to establish regional economy and improve the productivity and efficiency.

Furthermore, higher education institutions need to assure a standard quality of service to sustain in the market they operate in. These institutions are now considered as service centers like other profitable and non-profitable organizations, which can segment and target markets based on the dimensions of higher education quality. Recent studies identified the dimensions of quality higher education as quality of students, faculty credentials, academic features, and administrative supports (Akareem & Hossain, 2012; Ashraf, Ibrahim, & Joarder, 2009). Using segmentation, the total student market can be classified into subgroups, and then university authorities can analyze the attractiveness of each group to decide which segment(s) they should focus on for promotional efforts (Kotler & Armstrong, 2010). Ehrman (2006) stated that modern universities are experiencing a ‘buyers’ market’ and that students are buying higher education from universities via the curriculum, faculties, library, resources offered, etc. The author explored what each segment’s needs are in relation to these value propositions. Therefore, selecting the appropriate segment is a critical issue for universities because these students will ultimately be the target market and represent a loyal student body.

Although previous studies agree that education quality can be determined by multiple dimensions that help the higher education institutions to design appropriate value propositions, which factor(s) influence the students’ perception about these dimensions is relatively unexplored. Some authors focus on students’ evaluation of individual classes or the evaluations of individual teachers by students to measure the quality of education (Ginns, Prosser, & Barrie, 2007). Others focus on students’ perception of learning environment across their entire degree and the way these perceptions are related with study and
learning outcomes (Lizzio, Wilson, & Simons, 2002). Additionally, the study of Akareem and Hossain (2012) identified that students’ characteristics, such as current status and socio-economic background, influence perception of higher education quality. Very few studies, however, have measured the extent to which students’ characteristics influence perceptions of quality higher education. Therefore, this research will identify and measure the extent to which students’ characteristics influence the perceptions of higher education quality. As it is difficult to change the existing value propositions to satisfy a diverse group of students, it is easier and more effective for universities to select the specific market segment(s) that can be satisfied with the current strength of universities. Thus, these findings will help university authorities and policy-makers to segment the student groups based on their characteristics and target the right group of students for different institutions.

2. Quality of higher education

Quality of higher education can be defined in multiple ways. Longanecker and Blanco (2003) defined it as by who and how students are taught rather than by what students learn. Their definition highlights both the perspectives of academic staff and administrators. Later, Koslowski (2006) defined both of these perspectives separately. According to his research, academic staff are more likely to define quality of higher education in resource rather than performance terms, such as individual reputation, number of publications, and number of courses taught. On the other hand, administrators define it as problems of coordination, which is required in numerous institutional goals and obligations (Fish, 2003). Koslowski (2006) classified higher education quality as (1) ‘transcendent quality’ as the result of reputation of and expertise of academic staff, (2) ‘manufacturing-based quality’ as the service conforms to specifications and is fit to be used in manner for which it was designed, (3) ‘product-based quality’ as increased student learning produced by the curriculum and academic staff, (4) ‘value-based quality’ as acceptable performance at an acceptable price, and (5) ‘user-based quality’ as students’ needs, wants, and preferences. However, both these studies tried to conceptualize quality of higher education from either staff’s or administrators’ perspective which lacks the perspective of students and external quality control agencies. Mitchell (2010) defined it from four perspectives: stakeholders’ perceptions, quantifiable elements, course design elements, and external standards. She recommended that definition of higher education quality should be aligned with required recognition of outside agencies. Still, her study could not accommodate the perspective of students. Moreover, a recent study defined quality of higher education subjectively, which is determined by status of peer groups (usually where the elites are found) rather than the status determined by quality (Bertolin, 2011). This study argues that previous studies failed to bring a holistic view of higher education quality and highlights the competition-based view of higher education (Acareem & Hossain, 2012; Ashraf et al., 2009) for the purpose of better segmentation and target marketing.

Following the competition-based view, dimensions of higher education quality are expressed by quality of students, faculty credentials, academic features, and administrative supports (Acareem & Hossain, 2012; Ashraf et al., 2009). First, students’ qualification and their background, according to Akareem and Hossain (2012), contribute significantly to defining the quality of education. Individual characteristics like age, research interests,
previous results, perception pattern, family background, and income are important contributors to the perception of education quality. These authors show that environmental factors such as social, economic, and cultural influences can also play vital roles. Rahman and Uddin (2009) stated that parents’ education, their income, attitude, and present examination system affect the education of children. In Bangladesh, private universities charge a high rate of tuition fees which is higher than the fees of public universities (Al Helal, 2012; Monem & Baniamin, 2010). Despite the large number of scholarships provided by the universities, top students are the main recipients (Ashraf et al., 2009). Sarpkaya (2010) showed that students put more emphasis on factors like employment potential and individual satisfaction, and are less influenced by marketing factors like media coverage and publicity.

Second, qualifications of teaching staff are found to be one of the most important factors affecting the perception of education quality. Arnon and Reichel (2007) showed that students see two types of images of teachers: the image of an ideal teacher and own self-image as a teacher. Their study revealed that students perceive personal qualities and professional knowledge to be the most significant qualities needed to be an ideal teacher. The personal qualities include general personal qualities, kindness, leadership, and attitude toward profession; and professional qualities include knowledge of the subject matter and didactic knowledge. They also stated that other qualities like general knowledge, teacher as a socializing agent and a person with a distinct social mission are perceived to be less important. Ingvarson, Beavis, and Kleinhenz (2007) identified a set of characteristics for effective teacher education programs. These are: opportunity to learn during the pre-service course, ability to assess student learning, ability to plan curriculum unit, and ability to receive feedback. In developing countries like Bangladesh, teaching staff do not always get effective training to ensure effective teaching and rely on job experience. Hence, addressing the issue of training existing and future teaching staff is critical and will ultimately result in higher quality education.

Third, an important aspect of education quality is identified by academic factors within the universities. Lizzio et al. (2002) explored that perception about university learning environment contributes to academic outcome, whereas it is not influenced by prior academic achievements. According to Walker (2008), students’ expectation can be measured by explaining three broad categories: course contents, academic staff, and grades. The study showed that students’ responses had a wide range of deviations among the three categories: academic content that is studied in the university; career skills that are needed either in or outside the college, and life skills that are useful in all aspects of post-higher-education life. The author found that students sometimes suggest that learning is not correlated with the course design and instructor, what students actually learn does not always reflect in their grades, but recognized that student evaluation of teaching is treated as one of the widest research literature in applied psychology (Ginns et al., 2007). Contradicting this Buchanan (2011) declared that students’ evaluation is not the only method to judge teachers’ performance, and this can be used for internal uses but it is not suitable for disclosing to broader audiences.

Lastly, the administration systems of a university will also determine how well a projected plan will be implemented to ensure the quality of education. In their research, Nadiri, Kandampully, and Hussain (2009) tried to examine the perceived service quality
provided by the administrative units, for example, services provided by the registrar, library, faculty office, rector office, dormitory, sports, and health care center. They found two fundamental dimensions, tangibles and intangibles, to measure the service quality. Both tangible and intangible factors have a positive effect on student satisfaction. Kohont and Nadoh Bergoc (2010) stated that human resource management tools play important roles in developing the teachers, supporting changes in the organizational culture, and preparing managers, leaders, and academic personnel for the higher education institutions.

All of these four dimensions determine the quality of higher education (Akareem & Hossain, 2012; Ashraf et al., 2009). However, extant literature does not clearly identify which characteristics make the students perceive these dimensions differently. Therefore, this study takes a quantitative research approach to identify this research gap.

3. Objectives and research questions

Ehrman (2006) suggested including different demographic, current and background information to segment the students, so that the university authority can target the desired group of students for their institution. This study focuses on the demographic and other background information of the students, and their impact on perception about quality of higher education. Through the findings of the study, the processes of segmentation, market targeting, and positioning can be done effectively by the university authority. Therefore, this study will identify and measure the extent to which students’ characteristics influence higher education quality so that university authorities and policy-makers can segment the entire student pool into subgroups based on the differences of students’ characteristics and target the right group of students. The following research questions will be answered by this study:

I. To what extent do demographic characteristics of students influence perceptions of higher education quality?
II. To what extent do current and background status of students influence perceptions of higher education quality?

4. Methodology

A traditional survey was conducted from the existing students of five top ranking private universities in Bangladesh located in Dhaka City. The questionnaire was divided into two parts containing closed-ended questions. The first part contained questions regarding the dimensions of higher education quality, which are dependent variables. The second part of the questionnaire contained questions regarding students’ socio-economic and background-related questions, which are the independent variables. The questionnaire can be found in the Appendix. A total of 432 responses were taken on the basis of cluster sampling, where sections (groups) of students attending the same course under the same teacher in the same classroom are considered as a cluster. Such clusters in each of the universities are listed first and each of the students in the selected clusters are surveyed. The cluster selection is done using a simple random sampling. Dimensions of higher education quality were taken as dependent variables, whereas students’ characteristics were taken as independent variables.
4.1. Dependent variable

A total of 31 questions related to the perception considering administrative system, faculty qualifications, institutional features, and students’ characteristics were set in the questionnaire, which revealed the quality of current education. These perceptions were taken in 9-point measurement scale, which were later converted into three responses based on higher, moderate, and lower expectation of the students using K-Means Cluster analysis (see, for example, Everitt, Landau, Leese, & Stahl, 2011). This new variable is considered as the dependent variable in this study.

4.2. Independent variable

Along with the perception on present education quality, students were given questions related to their individual socio-economic and other background-related questions. The independent variables were name of university, gender, age, recent previous result (highest grade is GPA 5.00), scholarship status, involvement in research work, part-time job status, extra-curricular activities, university promotion, parents’ highest education (highest of the father’s and mother’s highest education level), and family income (in Taka value).

4.3. Data analysis

To demonstrate the associations that dependent variable and different independent variables have among them, a multinomial logistic regression analysis was conducted. The multinomial logistic regression is basically an extension of binary logistic regression for nominal variables with more than two categories. The expression for the multinomial logistic regression model is given by

$$P[y_i = j] = \frac{e^{x_i \beta_j}}{1 + \sum_{j=1}^{J-1} e^{x_i \beta_j}},$$

where $P[y_i = j]$ is the probability of belonging to group $j$, $x_i$ is a vector of explanatory variables, and $\beta_j$ is the coefficients, which are estimated using maximum likelihood estimation (for details, see, for example, Agresti & Kateri, 2011). In a way we can say that we are fitting $n-1$ separate binary logistic models, where we compare category 1 to the baseline category, then category 2 to the baseline and so on. In practice, software algorithms (IDRE, 2015) allow us to model the comparisons to the baseline simultaneously using maximum likelihood estimation, which is better as doing it sequentially could lead to mis-estimation of the standard errors. The expected beta value $E(\beta_j)$ gives the relative odds of an individual to be in the $j$th category in comparison with the reference category, where the odds is defined to be the ratio of probability of an individual being in a category and that of not being in it.

4.4. Ethical issues

For ethical purposes, respondents were free to not disclose information they did not wish to share. They also got the opportunity to refuse any question which they felt
uncomfortable answering. Therefore, the relationship with the respondents during the survey was professional but comfortable (Marshall & Rossman, 2010). In addition, in the analysis and reporting, identification of respondents (such as real name) was anonymous (Marshall & Rossman, 2010).

5. Result analysis and discussion

Data were analyzed in two phases. In the first phase, descriptive analysis (frequency and percentage) was used to describe the data. In the second phase we went through multivariate analysis where the dependent variable was modeled as a joint effect of all the independent variables. All data were analyzed using the SPSS (version 17.0) statistical program.

A brief percentage description is given about the students’ individual characteristics in Table 1.

The percentages in Table 1 indicate that for each of the variables considered, none of the categories is found to be rare, that is each of the categories has a representation.

The result of logistic regression is presented in Table 2. Two sets of estimates are given: one for cluster 1 which represents lower degree of responses and another is cluster 2 which represents moderate degree of responses about the dimensions of education quality. Cluster 3 is the reference group which represents higher degree of responses for education quality.

Table 2 also shows the 95% confidence interval for the odds ratio or Exp(β) which will be considered as the basis of justifying significance. However, the interpretations made in this article, therefore, are not restricted only on null hypothesis significance testing as use of

Table 1. Percentage distribution of students’ different variables.

| Variables                                | Categories | Number of students | %    |
|------------------------------------------|------------|--------------------|------|
| University                               | BRAC       | 71                 | 20.10|
|                                          | EW         | 72                 | 20.30|
|                                          | IUB        | 67                 | 18.90|
|                                          | NSU        | 73                 | 20.60|
|                                          | UIU        | 71                 | 20.10|
| Gender                                   | Female     | 185                | 52.30|
|                                          | Male       | 169                | 47.70|
| Currently getting scholarship            | No         | 275                | 77.70|
|                                          | Yes        | 79                 | 22.30|
| Participation in university research     | No         | 296                | 83.60|
|                                          | Yes        | 58                 | 16.40|
| Currently doing part-time job            | No         | 291                | 82.20|
|                                          | Yes        | 63                 | 17.80|
| Promotion seen of the University         | No         | 87                 | 24.60|
|                                          | Yes        | 267                | 75.40|
| Students’ involvement in extra-curricular activities | No | 197                | 55.60|
|                                          | Yes        | 157                | 44.40|
| Parents’ highest education               | ≤HSC       | 37                 | 10.50|
|                                          | Hons       | 117                | 33.10|
|                                          | ≥Masters   | 200                | 56.50|
| Family income                            | ≤TK.35,000 | 73                 | 20.60|
|                                          | TK.35,001–65,000 | 134              | 37.90|
|                                          | >TK.65,000 | 147                | 41.50|
| Age                                      | ≤20        | 122                | 34.50|
|                                          | 21–22      | 150                | 42.40|
|                                          | ≥23        | 82                 | 23.20|
|                                          | ≤4.50      | 171                | 48.30|

BRAC: BRAC University; EW: East West University; IUB: Independent University of Bangladesh; NSU: North South University; UIU: United International University; HSC: Higher Secondary Certificate; Hons: Honors Degree.
The 95% confidence intervals for the coefficients for independent variable ‘university’ were found to include unity for all of the universities indicating no significant influence of the university a student studies in on his/her expectation of education quality. However, the expected beta value for BRAC University in Cluster 1 is 1.121 where United International University (UIU) is taken to be reference group. This indicates that a BRAC University student is 12% more likely than a UIU student to be placed in Cluster 1 compared to Cluster 3. Similarly, the likelihood of being placed in Cluster 1 compared to Cluster 3 by a East West University (EWU) student and a NSU student are, respectively, 62% and 63% more than that of a UIU student, for an Independent University of Bangladesh (IUB) student this odds is observed to be less than that of a UIU student. The expected beta values in Cluster 2 compared to Cluster 3 for EWU, IUB, and NSU are 61%, 57%, and 70% more than that for UIU whereas for BRAC University, it is about 40% less.
This trend of a higher expectation of education quality by BRAC students than by students of UIU and other private universities may be due to students often acclimatizing the existing education quality of the university they study in. From the date it was established BRAC University has been recognized to fulfill the highest quality of education, and has established itself as a leader in the industry. Thus if a university does not have reputation for quality, students are more reflective of quality perceptions (i.e. BRAC) rather focusing on personal and professional achievement (rest of the private universities). Authorities of higher education institutions should understand their positioning and brand image in the minds of students and their guardians, and then design education quality accordingly. This means that if the university has brand image of academic excellence, it should emphasize more on educational quality dimensions compared to other personal and professional support services. On the other hand, institutions having a position of professionalism should focus on establishing a strong employment placement program, professional counseling, and stronger ties among alumni members, rather than academic features.

Although the association of gender and perception about the higher education quality is not statistically significant, the expected beta value for female is 1.455 and 1.228 for less and moderate expectation groups when male is the reference group. It means that female students have 45% and 23% more chance to be in the less and moderate expectation group compared with the high expectation group than male students. So, there is an indication that there may be gender differences in terms of perception level related to higher education quality.

Educators should carefully consider the gender difference during students’ admission and how this is related to perception of higher education quality. The result of this study shows that female participants are more likely to expect moderate quality of higher education. The logic of this result may be explained by higher expectation from boys rather than girls in a family. So, universities focusing on high quality of higher education should promote selected male candidates having higher expectation and run campaigns to encourage female students to be more ambitious about their careers and jobs. In this way, they can target both male and female students for their instructions.

Result shows that there is significant association between the perception of higher education quality and the status of getting a scholarship, whereas research involvement is not significant. Negative scholarship status and research participation have 0.505 and 0.797 beta value for cluster 1 compared with cluster 3. This means that students who responded ‘no’ for their scholarship and research status compared with those who responded ‘yes’ have less odds to be in less expectation group than high expectation group. When cluster 3 is the reference group compared with cluster 2, both the students who are not getting scholarships and not involved in research have higher odds to be in moderate expectation group compared with high expectation group.

This result implies that students who get scholarships or are involved in research work have comparatively less expectation about higher education quality that the institutions provide to them. If the scholarship is based on non-academic merit (i.e. need-based, sports, etc.) students are more likely to emphasize these factors rather than academic excellence. On the other hand, if it is based on merit, the university authority should encourage these students to engage in a more challenging curriculum. This approach will motivate high achievement oriented students to perceive their distinction among general students. A similar approach is applicable for the students engaging in research work.
work, because this is another indication of making students different in a positive way from the general students.

The 95% confidence interval perception about higher education quality has an association with both part-time job and extra-curricular activities status. Students who do not have a part-time job or extra-curricular activities have less odds to be placed in clusters 1 and 2 compared with cluster 3 than those who have part-time job or extra-curricular activities.

Students who have part-time employment and extra-curricular activities have lower expectations which contradict the findings of Akareem and Hossain (2012), maybe because those students spend less time in formal education and more time on these tasks. For this reason, educators focusing on professional development should prefer students who are engaged with more extra-curricular activities and part-time basis jobs and vice versa.

Our result shows that promotional activity is not associated with the perception of education quality, which supports the finding of Akareem and Hossain (2012). From Table 2 students who did not see any promotional activities of their own university have expected beta value 0.823 for being in cluster 1 compared with cluster 3 than who have seen promotion. It means the odds of students who did not see any promotion is 18% less than those who have seen promotion to be placed in cluster 1 compared with cluster 3. On the other hand, students who did not see promotion have 1.306 times higher chance to be placed in moderate expectation group compared with high expectation group.

Promotional activities are one of the most important factors that help to create and convey the organizational image (Kotler & Armstrong, 2010). Our finding shows that students who have seen promotional activities of their own university tend to expect lower quality of higher education. The reason for this can be explained by the overall image of the education industry. In general people believe more in word-of-mouth references rather than supplier sponsored promotional activities (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004). Therefore, authorities of higher education institutions should design promotional aspects through word-of-mouth references over a sponsored program because it will create a better brand image for the institution.

Parents’ education and family income are two demographic traits which show a student’s social and family background. From Table 2 expected beta value for students having higher educated parents are 0.797 and 0.481 for Master’s program (or above) and Honors degree in cluster 1 compared with cluster 3. It means students who have higher educated parents have less odds to be placed in low expectation group rather than high expectation group. Moreover, students with masters or above degree-holding parents have 56% less odds to be placed in cluster 2 compared with cluster 3, whereas students having honors degree-holding parents have marginally higher odds (2.4%) for the same cluster than students having parent educated to Higher Secondary Certificate (HSC) or below.

Unlike the finding of Akareem and Hossain (2012), our study shows that parents’ educational qualification contributes to the perception of their children about education quality. Universities should target students having higher educated parents. In that case, parents can make their children understand the importance of quality features of education.

Students with family income up to BDT 35,000 and BDT 35,000–65,000 have expected beta value 0.894 and 1.353 for being in cluster 1 compared with cluster 3 than those who
have family income above BDT 65,000. It means students coming from comparatively lower income families tend to have higher expectation about the education quality compared with students having higher family income, whereas for students coming from moderate income level this tendency is opposite. According to Table 2 students coming from both lower and moderate income family tend to be in cluster 2 (moderate expectation group) compared with cluster 3 than students with higher income families.

Therefore, the family income level of students has a direct influence on their perception of higher education quality. The result shows that students from lower income families are more likely to perceive a higher level of education quality from their institution. This may come from their urge to be successful in life, because these students know that they are not supposed to get any direct help from their family to build their career (Lareau, 2002). For this reason, educators should target this segment of students to make their overall perceived education quality higher.

Age and HSC or equivalent result are the individual characteristics of a student that indicates maturity and previous educational success. For both characteristics, students with lower ages and lower previous educational success have higher expectations about the education quality than higher aged and higher result holding students. This result may occur because with increased maturity and educational success students start to understand that result is not the only parameter to get success for getting jobs or career progress, rather it requires continuous improvement to add value to a student’s profile (Bailey, Chow, & Haddad, 1999). This result indicates that authorities of higher education institutions should design their curriculum as if academic success can reflect the higher odds to get success in post-study professional life.

6. Concluding remarks

Students’ perception of higher education quality is heavily influenced by the university they study at, scholarship status, extra-curricular activities, parents’ education, age, and previous educational success. The results for students’ participation in part-time employment only shows moderate significance and parents’ income shows no influence on students’ perception.

This study indicates that the environment created by higher education institutions influences the students’ perception of quality. Students studying in the universities where a high level of education quality is advocated generally have a higher level of perception (or expectation) of education quality. Thus, university authorities should ensure a supportive learning environment for the students. Establishing a practice of field inspection to rate the environmental support available in different universities would improve an understanding of these characteristics and could be administered by quality assurance authorities, such as country- or region-specific agencies. This type of practice could be more effective if universities of different developing countries establish their own standard of educational environment. Indeed a unified body of this type could check the appropriate compliance of campus and off-campus environmental issues on a regular basis.

Students who receive a scholarship usually set a high standard for education quality and that is why they are found to be in the higher expectation groups compared to those students who do not receive a scholarship. Status of getting a scholarship is not
only the indicator of higher quality perception, but also a symbol of recognition as a better student. Regional or country specific agencies could make it mandatory for private universities to provide more scholarships. Students participating in extra-curricular activities are expected to have a greater degree of exposure to the real world and thus seem to compromise moderately on the perception of education quality resulting in a lower expectation than those students who do not participate in any extra-curricular activities. A similar interpretation can be drawn regarding the influence of whether a student participates in part-time employment. The difference between learning in the classroom and application in a practical job may be the reason for such a result. Therefore, authorities should design the course curriculum so that students can find synergy between institutional learning and application of that learning in a career. This kind of practice of balancing theoretical-practical exposure within the curriculum has already been adopted in developed countries (Bay, 1999) and could be replicated in universities of developing countries.

The influence of parents’ education may have occurred because higher educated parents can more easily assess the quality and result of education than lower educated parents. Nonetheless, students with high family income are not found to be influenced regarding education quality compared to those with lower family income. In this kind of situation where students and their parents cannot understand the long-term effect of their learning and preference for specialization, university authorities can arrange counseling on these issues. As the process of globalization encourages free movement of people and goods, job markets are not specific to country boundaries, but more accurately within regional blocks (Hill, 2014). As such, learning and career counseling to achieve post-study goals could entail a worldwide perspective of the entire world, especially the integrated regional areas.

Age and HSC or equivalent result are individual characteristics of students that indicate maturity and previous educational success regardless of the geographical area of the world. For both cases, students with lower age and lower educational success have higher expectations of higher education quality. This result may have occurred because with increased maturity and educational success, students start to understand that they need to add value in addition to an acceptable result and continuously improve those added values for a successful job or career (Bailey et al., 1999). The responsibility of the authority is to take special care for students to bring a wider overview about the success factors during and after the university period. Here, establishing strong alumni associations and bringing practitioners from professional fields from different industries and different parts of the world in diverse programs can provide better understanding about the dimensions of education.

All of these findings are important criteria for segmenting the total market and then targeting the most attractive group(s) of students. Future studies in this area can be done considering different sets of socio-cultural dimensions. In this study, only demographic and background characteristics are included to understand their effect on quality perception in education. Other segmentation criteria such as geographic, psychographic, and behavioral dimensions suggested by Kotler and Armstrong (2010) can be incorporated in future studies. Some of the results of this study confirm the outcome of previous studies, whereas some of the results contradict them, for example, association between perception of higher education quality and participation in part-time job or
extra-curricular activities contradicts with the prior study of Akareem and Hossain (2012). Future studies can explore similar associations and explain them in different contexts.

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References

Agresti, A., & Kateri, M. (2011). Categorical data analysis. London: Springer.
Acareem, H. S., & Hossain, S. S. (2012). Perception of education quality in private universities of Bangladesh: A study from students’ perspective. Journal of Marketing for Higher Education, 22(1), 11–33.
Al Helal, M. A. (2012). Expensive private higher education in Bangladesh: Who can afford? Asian Journal of Business and Economics, 2(4), 1–19.
Arnon, S., & Reichel, N. (2007). Who is the ideal teacher? Am I? similarity and difference in perception of students of education regarding the qualities of a good teacher and of their own qualities as teachers. Teachers and Teaching: Theory and Practice, 13(5), 441–464.
Ashraf, M. A., Ibrahim, Y., & Joarder, M. H. (2009). Quality education management at private universities in Bangladesh: An exploratory study. Jurnal Pendidikan, 24(1), 165–180.
Bay, A. (1999). Balancing theory and practice in teaching. Retrieved from http://core.journals.yorku.ca/index.php/core/article/view/2724/1929
Bertolin, J. C. G. (2011). The quasi-markets in higher education: From the improbable perfectly competitive markets to the unavoidable state regulation. Educação e Pesquisa, 37(2), 237–248.
Brennan, J., & Teichler, U. (2008). The future of higher education and of higher education research. Higher Education, 56(3), 259–264.
Briukhanov, V., Kiselev, V., Timchenko, N., & Vdovin, V. (2010). Monitoring the opinions of parents of college students as a component of the institution’s in-house education quality management system. Russian Education & Society, 52(5), 79–88.
Buchanan, J. (2011). Quality teaching: Means for its enhancement? Australian Universities’ Review, 53(1), 66–72.
Ehrman, C. (2006). On using benefit segmentation for a service industry: A study on college career counseling services. Journal of American Academy of Business, 8(2), 179–185.
Everitt, B. S., Landau, S., Leese, M., & Stahl, D. (2011). *Cluster analysis* (5th ed.). Chichester: John Wiley & Sons.

Fisher, S. (2003). First, kill all the administrators. *The Chronicle of Higher Education, 49*(30). Retrieved from http://chronicle.com/article/First-Kill-All-the/45128/

Ginns, P., Prosser, M., & Barrie, S. (2007). Students’ perceptions of teaching quality in higher education: The perspective of currently enrolled students. *Studies in Higher Education, 32*(5), 603–615.

Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & Gremler, D. D. (2004). Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the internet? *Journal of Interactive Marketing, 18*(1), 38–52.

Hill, C. W. L. (2014). *International business: Competing in the global marketplace* (Vol. 10E). New York, NY: McGraw Hill Education.

IDRE, I. f. d. r. a. e. (2015). *SPSS data analysis examples: Multinomial logistic regression*. University of California, Los Angeles. Retrieved from http://www.ats.ucla.edu/stat/spss/dae/mlogit.htm

Ingvarson, L., Beavis, A., & Kleinhenz, E. (2007). Factors affecting the impact of teacher education programmes on teacher preparedness: Implications for accreditation policy 1. *European Journal of Teacher Education, 30*(4), 351–381.

Kohont, A., & Nadoh Bergoc, J. (2010). On the Way into the Bologna reform—a consideration of the quality and the role of human resource management in higher education system. *Quality of Higher Education, 7*, 12–36.

Koslowski III, F. A. (2006). Quality and assessment in context: A brief review. *Quality Assurance in Education, 14*(3), 277–288.

Kotler, P., & Armstrong, G. (2010). *Principles of marketing*. (13th Global ed.). Upper Saddle River, NJ: Pearson Education.

Lareau, A. (2002). Invisible inequality: Social class and childrearing in black families and White families. *American Sociological Review, 67*, 747–776.

Lizzio, A., Wilson, K., & Simons, R. (2002). University students’ perceptions of the learning environment and academic outcomes: Implications for theory and practice. *Studies in Higher Education, 27*(1), 27–52.

Longanecker, D. A., & Blanco, C. D. (2003). Public policy implications of changing student attendance patterns. *New Directions for Higher Education, 2003*(121), 51–68.

Marshall, C., & Rossman, G. B. (2010). *Designing qualitative research*. Thousand Oaks, CA: Sage.

Mitchell, R. L. G. (2010). Approaching common ground: Defining quality in online education. *New Directions for Community Colleges, 2010*(150), 89–94.

Monem, M., & Baniamin, H. M. (2010). Higher education in Bangladesh: Status, issues and prospects. *Pakistan Journal of Social Sciences (PJSS), 30*(2), 293–305.

Nadiri, H., Kandampully, J., & Hussain, K. (2009). Students’ perceptions of service quality in higher education. *Total Quality Management, 20*(5), 523–535.

Nuzzo, R. (2014). Statistical errors: P values, the ‘gold standard’ of statistical validity, are not as reliable as many scientists assume. *Nature, 506*(150), 150–152.

Rahman, A. U., & Uddin, S. (2009). Statistical analysis of different socio economic factors affecting education of NW. FP (Pakistan). *Journal of Applied Quantitative Methods, 4*(1), 88–94.

Sarpkaya, R. (2010). Factors affecting individual education demand at the entrance to university: Adnan menderes university sample. *Educational Sciences: Theory and Practice, 10*(1), 475–488.

Sivakumar, M., & Sarvalingam, A. (2010). *Human deprivation index: A measure of multidimensional poverty*. Umemiya, N. (2008). Regional quality assurance activity in higher education in Southeast Asia: Its characteristics and driving forces. *Quality in Higher Education, 14*(3), 277–290.

Walker, P. (2008). What Do students think they (should) learn at college? student perceptions of essential learning outcomes. *Journal of the Scholarship of Teaching and Learning, 8*(1), 45–60.

Wilkinson, R., & Yussof, I. (2005). Public and private provision of higher education in Malaysia: A comparative analysis. *Higher Education, 50*(3), 361–386.

Woodhouse, D. (1998). Quality assurance in higher education: The next 25 years. *Quality in Higher Education, 4*(3), 257–273.
Appendix

Questionnaire

1. Name of Student:

2. University:

3. Subject of Study: ____________________________

4. Level of study Hons’ □ 1st Year, □ 2nd Year, □ 3rd Year, □ 4th Year, □ Masters, □ Other: ___________

5. Gender: □ Male □ Female

6. Age:

7. Medium of previous study: □ Bangla □ English □ Others: ____________

8. Result in HSC or Equivalent: CGPA_______ in scale of ____

9. Result in SSC or Equivalent: CGPA_______ in scale of ____

10. Do you get any financial support (waiver or scholarship from your university)?:
    □ Yes □ No
    
    a. If yes, please specify reason(s):

    I
    II
    III

11. Did you participate in any research work from your university?: □ Yes □ No
    
    a. If yes, please specify:

    I
    II
    III

12. Did you see any promotion (advertisements or others) of your university?: □ yes □ No
    
    a. If Yes, please specify the source(s):

    □ TV □ Newspaper □ Magazine □ Radio □ Billboard □ Leaflet
    □ Others (specify): ________________

13. Do you have any extra-curricular activities?: □ yes □ No
    
    a. If Yes, please specify:

    I
    II
    III

14. Parent’s highest educational qualification:
    □ SSC □ HSC □ Hon’s □ Masters □ Doctorate □ Other: ________________

15. Family monthly income:

    □ Below tk 20,000 □ tk 20,001-35,000 □ tk 35,001-50,000 □ tk 50,001-65,000 □ tk 65,001-80,000
    □ tk 80,001-100,000 □ above tk 100,000
Tick in the right box reflecting your opinion about factors affecting quality of education:

| Highly Disagree | Highly Agree |
|-----------------|--------------|
| 1               | 2            |
| 3               | 4            |
| 5               | 6            |
| 7               | 8            |
| 9               |              |

- Institutional Status (ranking) reflects quality of education
- Environmental Influences (political & others) contribute in education quality
- Higher Tuition and other fees are indicator of education quality
- Financial support (scholarships) is important indicator of education quality
- Research works (within the university) are important indicator of education quality
- Infrastructure and resources are important indicator of education quality
- Smaller Student-Faculty ratio is important indicator of education quality
- Supporting human resources (administration support) are important indicator for education quality
- Job prospective (within and outside the organization) indicates quality of education
- Promotional activities (through media & others) reflects education quality
- Flexible marks giving tendency by faculty reflects education quality
- Educational qualifications of faculty reflects education quality
- Class preparation of faculty reflects education quality
- Presentation skill of faculty reflects education quality
- Teaching methods (students' participation) reflects education quality
- Knowledge of faculty about subject (examples, latest concepts & information) reflects education quality
- Faculty relationship with students contributes in education quality
- Faculty training (from university authority) reflects education quality
- Curricular design and planning with broad coverage reflect education quality
- Curricular design and planning with up-to-date information reflect education quality
- Students' Evaluation system (exam and other tests) reflects education quality
- Faculty Evaluation system (by students and other faculties) conforms education quality
- Guidance and counseling (from faculty or other psychologists within university) reflect education quality
- Admission Procedure reflects education quality
- Flexible Class and Exam schedule reflect education quality
- Previous Result of students contributes in education quality
- Medium of previous education (Bangle/English/others) contributes in education quality
- Students' Participation in different research work contributes in education quality
- Extra-curricular activities by students contributes in education quality
- Parents' education level of students contributes in education quality
- Parents' Economic status (Low-medium-high income level) of students contributes in education quality