APPLYING SERVQUAL MODEL TO MEASURE ONLINE CUSTOMER SATISFACTION IN PACKAGE DELIVERY SERVICES

NUSRAT HAFIZ¹, A. S. A. FERDOUS ALAM²

ABSTRACT. Online customer is a person or association that purchases goods from a retail store via internet. This online purchasing is facilitated by companies that deliver shipping parcels, known as package delivery companies. The service quality is measured by the difference between customers’ expectations towards a service and their actual experience from that service. The objective of the study is to explore the correlation of online customer satisfaction with service quality in the package delivery industry using quality management framework SERVQUAL. Quantitative data on customer satisfaction levels divulged from questionnaires were scrutinized against service quality factors, which was later replaced in the service quality model using a five-point Likert scale and conducting simple regression. The result of the study found positive impact of reliability, assurance and empathy dimensions of service quality model on online customers’ satisfaction level pertaining to package delivery companies, with overall dominance of reliability dimension. The study adds value to the untapped sector of package delivery service, a critical backbone of e-commerce. The findings can be applicable for any e-commerce entrepreneurs in order to enhance optimum customer management efficiency by focusing on imperative dimensions of service quality model and perking up customer satisfaction.

Key words: Customer satisfaction, Service quality, Service quality dimensions, SERVQUAL, package delivery services.

JEL Classification: A13, P46, C54

¹ Lecturer, BRAC Business School, BRAC University, Dhaka, Bangladesh, nusrat.hafiz@bracu.ac.bd
² Senior Lecturer, Universiti Utara Malaysia, Sintok, Kedah, Malaysia, ferdous@uum.edu.my

**INTRODUCTION**

The explosion of internet population spurred the technology in terms of speed, efficiency, versatility and dynamism in the 21st century. Since then the volume of trade conducted electronically has developed remarkably. E-commerce has turned to the major modality for prospective trades regardless of the size and type of startups (Rahman, 2014). The country focus for this study is Bangladesh, which has a promising growth of e-commerce categorically during the last few years. The impact of ‘Digital Bangladesh program by the year 2021’ (a2i, 2009), ease of transaction, decreased overheads, increased private sector investment (Garza, 2015 World Bank, 2014) fueled interest in many small companies to engage in e-commerce business. With nominal to zero-capital-intensive infrastructure, and just the right know-how and platform selection, the m-commerce and f-commerce dynamics have grown and revolutionized over the last few years.

The e-commerce companies are always in a pressure to build more efficient business models to satisfy and delight the fickle-minded, price sensitive, better-informed and more mobile-customers using technology and innovative customer service as their key success factors (KSF). These key success factors eventually enable them to “beat the traditional retailers at their own game”. The launching of the good number of online startups leads to newer business opportunities for the package delivery service-providers. The carriers catering to online customers, regardless of their retail-nature of being either brick-and-mortar or virtual, serve the key backstage operations to facilitate online purchasing and thereby help boost the e-commerce transactions. Hence, it is imperative to build a framework of service excellence on the ground of online customer satisfaction (Parasuraman, Zeithaml & Berry, 1985), which is the key recipe to save the service pertaining to e-commerce from being in a detrimental position (Fabien, 2005).
The objective of the study is to explore the correlation of online customer satisfaction with service quality in the package delivery industry using quality management framework named, "SERVQUAL". The framework is widely accepted for measuring service quality, which, using the dimensions of the model, effectively measures customers’ expectations towards service and their perceptions of service they receive. The growth of e-commerce largely depends on the effectual coordination of the business-model components of online entrepreneurs and the most vital partnership network of the model, i.e., the package administration network. Hence, the package administration has positioned itself as the most imperative backbone of e-commerce.

Previously, the scope of parcel carriers was narrowed to the extent that it that was confined within the infrequent parcel delivery between household and corporate houses only. The system has now been broadened to cover a great range of services particularly in the past few years. The medium and small online start-ups along with f-commerce and m-commerce have positively contributed to the new growth opportunity of package delivery industry.

Unfortunately, very few studies were conducted to scrutinize the generic state of e-commerce in Bangladesh; yet the area of exploring online customers’ perceptions towards receiving their ordered products has visibly remained untapped. The paper pioneers in analyzing buying behavior of online customers pertaining to the package delivery industry by focusing on the factors of satisfaction. The present implication of the study would approach the new entrepreneurs embracing new business opportunity in the package delivery sector and realign their strategy with consumer demand (Rahman, 2015). Even, international associations are also taking deep interest in Bangladeshi e-commerce and investing in order to get a sturdy grip in the niche that offers huge potential. The paper looks in to relationship between online customer satisfaction with service quality in the package delivery industry using quality management framework SERVQUAL.

LITERATURE REVIEW

Customer satisfaction has always been one of the best predictors of customers’ buying behavior, including their brand selection, brand loyalty and switching attitude (Oliver, 1993; McQuitty et al., 2000). Three
prominent researchers Parasuraman, Zeithaml and Berry investigated thoroughly for 13 years (1985 to 1988) and set the benchmark for customer satisfaction "gap" based on the differences between customer expectation towards a service and their actual experience.

Service excellence is assured if it marks up to the expectations of the customers (Asubonteng et al., 1996; Wisniewski and Donnelly, 1996). The SERVQUAL (service quality model) developed by Parasuraman et al. (1985) is used in this paper in order to assist in reflecting the service excellence. The model offers five dimensions, i.e., tangibles, reliability, responsiveness, assurance, and empathy; where reliability playing the key dimension and other dimensions makes most sense to consumers given reliable service is provided (Berry et al., 1994).

In order to further explore online consumers’ attitudes towards service excellence in e-commerce sector; their online shopping trend needs to be taken into account. The emergence of a colossal number of online customers is the aftermath of f-commerce and m-commerce technologies, who are increasingly taking charge of their shopping experiences by proactively deciding where, how, when and what they want to buy. The nativity and attractiveness of the concept 'online shopping' are materialized due to the customer convenience. Li, N. and Zhang, P. (2002) mentioned it as purchasing of the consumers using the internet, which is positively related with the growth of the local package delivery businesses. (Kim, 2015).

Package delivery in this study refers to the delivery of parcels sent by online merchants to online customers. These carriers act as external suppliers that provide logistic management on behalf of an e-commerce start-up in order to ensure an efficient internal delivery-chain (Coyle, Bardi & Langley, 2003) of that start-up. Package delivery industry functionally bridges the online shops and consumers, and offers high potentials because of the dependability of online shops and increased customer convenience by it. In Bangladesh, the increased number of users of the social networking websites along with the easy ordering system via trendy apps of the smart-gadgets and convenient payment facilities are the key rationales behind the high growth of the sector.

The Bangladeshi package delivery services were almost annihilating even few years back until the boom of e-commerce that had to revamp the overall distribution strategy of various products including clothing, accessories, electronics and even books. The entrance of package delivery
industry that consists of traditional carriers, and online carriers, redefined the significance of e-commerce. Key traditional carriers include Sundarban Courier, Continental Courier, S.A. Paribahan Ltd, Sonar Courier etc, while kaymu.com, upoharbd.com, daraz.com, priyoshop.com, aponzone.com, eCourier.com.bd etc are the key online carriers. As the integral facilitators of e-commerce, the carriers need to create synergies with the online entrepreneurs in order to ensure online customer retention (Bowen and Chen, 2001).

An in-depth study of online customer satisfaction will enable the online start-ups determine the necessary assignments recognize their potencies and flaws relating to the delivery-system, which eventually will help them create competitive positions towards profit-orientation. The study would also reinforce the willingness of online retailers to create a complete package of “enhanced online purchasing experience” by helping to craft a synergy with delivery system in the long-run.

Based on the above discussion and literature review, the following research question is developed: “Do the dimensions in the SERVQUAL model have impacted the satisfaction level of the online customers by the package delivery providers?”

**RESEARCH FRAMEWORK**

It is imperative for service-providers to meet customers’ expectations while providing the actual service (Parasuraman, Berry, and Zeithaml, 1991), as the customer expectation level will determine their satisfaction level (Grönroos, 1994; Parasuraman et al., 1985; Parasuraman et al., 1988; O’Connor et al., 2000; Van Pham & Simpson, 2006). The service-providers should constantly contemplate on the best possible modus operandi to meet the customer expectations (Pakdil & Aydın, 2007) and take necessary steps to improve their competence and commitment-level. Ensuring customer satisfaction through quality services is the up-to-the-minute strategy for organizations, hence conducting a research on consumer-satisfaction is crucial to retain the existing customers and attracting the prospective ones.

Despite the growing interest in e-commerce in Bangladesh, almost no empirical research has been conducted regarding online customer satisfaction focusing the package delivery providers. The pre-research feedback from
university students in late-2015 revealed that, their e-commerce experience does not meet their online shopping expectations specially from categories such as delivery charging policies, reliability and product-accuracy by the carriers, payment-related safety, timely delivery of the products, accessibility, know-how about the product-usages and courtesy-level of the online courier-representatives. The feedback leads to a logical paucity (Rahman, 2015) in the prevailing delivery system and raise the need to conduct the research for the online merchants who constantly look forward to act upon customers’ expectations in order to safeguard them against early-failure and ensure ultimate survival (Fornell et al., 1996; Chan et al., 2003; Lien-TiBei & YuChingChiao, 2001).

Hence, the purpose of the study is to investigate the influential aspects of satisfaction of online customers. To gauge the level of satisfaction by online customers to package delivery companies, the SERVQUAL model (Parasuraman et al. 1985) will be used. Under the approach, the service quality dimensions would be considered as independent variables while customer satisfaction as the dependent variable, in order to correlate the package delivery with fulfilling customer expectation and ensuring customer satisfaction. SERVQUAL model is based on tangibility, reliability, responsiveness, assurance, and empathy dimensions. SERVQUAL is the most comprehensive endeavor to conceptualize service quality (Nyeck, Morales, Ladhari, and Pons 2002).

Figure 1. The Research Framework
Figure 1 depicts the association of service quality dimensions with customer satisfaction. According to the research framework, the correlation between online customer satisfaction and service quality by the package delivery industry has been chalked down using the five dimensions of quality management framework SERVQUAL.

Service quality (SQ) can be defined from the gap between expected service (E) and perceived service (P) by the customers; i.e., SQ = P - E. If the gap between customer expectation and their perceptions of actual experience is low, service quality is deemed high and likewise. The equation can be interpreted by the customers’ perception of service performance. If they feel that the performance is equal to or more than what is expected (confirmation), then they are satisfied. On the other hand, perceived performance falling short of their expectations (disconfirmation) leads to their dissatisfaction (Oliver, 1980). Based on the framework, the following five hypotheses have been developed:

H1: Online customer satisfaction is high when tangibility is ensured by package delivery companies.

H2: Online customer satisfaction increases when package delivery representatives are reliable.

H3: Online customer satisfaction improves with the level of responsiveness of carriers.

H4: Online customer satisfaction is high when assurance by the package delivery companies is high.

H5: Online customer satisfaction is positively related with empathy of the carrier personnel.

Here, the hypotheses i.e., H1, H2, H3, H4 and H5 represent the relationship between tangibility, reliability, responsiveness, assurance and empathy (independent variables) with customer satisfactions (dependent variables) respectively. The speedy transport, attractive packaging, accessibility to the personnel represent tangibility; while reliability is represented by providing promised products, payment security and timeliness; responsiveness are signified by promptness in service, eagerness to solve problem and delivery efficiency; whilst trust, knowledge and courtesy are demonstrated by assurance and finally empathy is denoted by the level of care, individualized attention and affinity.
METHODOLOGY

Sampling and Data Analysis Procedure

This study used both primary and secondary data. The survey was conducted between October 2015 and February 2016 using a non-probability sampling technique to the online buyers, who interact with package delivery companies while receiving products. 230 questionnaires were distributed among the random population from all over Dhaka city, and 205 usable questionnaires were accepted, which yielded a response rate of 89.13 percent. The collected data used ordinal five-point Likert scale.

The respondent group consists of 116 (56.59 percent) male and 89 (43.41 percent) female respondents. More than half of the online buyers' age range is between 25 and 40 (51.22%), a majority of which belong to the working class, while 30.24% of the respondents belong to the young generation and students (age between 13 and 24), while 17.07% are middle-aged (age between 41 and 50); however only 1.46% respondents’ age have crossed 50 years.

The respondents’ occupations are in accord with their age grouping as well. 50.24% are either job-holders or entrepreneurs; 33.66% are students; 13.17% are home-makers and only 2.93% are in the group of retired and job-less. The majority of respondents (55.6%) have been pursuing the service for 1 to less than 2 years, while 27.32% were availing the service between 1 and 6 months, 10.73% started very recently (less than a month) and 6.34% have been using the service for the longest period (2-5 years).

As Figure 2 suggests, 44 (21.4%) respondents take service from Continental Courier, while 31 (15.12%) respondents got their products through Sundarban Courier; on the other hand, S A Paribahan Ltd facilitated transactions to 34 respondents (16.59%). Kaymu.com served 51 (24.88%) respondents and 28 (13.66%) respondents said that they were served by various online carriers, such as Upoharbd, ClickBD, Daraz.com, Rokomary.com etc. Interestingly, 17 (8.29%) respondents said they experienced a blend of online and retail delivery services. As per the respondents’ profile, the presence of online delivery companies are gaining gradual strength; though the traditional retail package delivery services are still preferred by them over the online delivery.
Quantitative data on customer satisfaction levels divulged from the questionnaires were scrutinized against various service quality factors, which have later been replaced in the service quality model. The Statistical Package for Social Science (SPSS) Version 17 was used to conduct the simple linear regression analysis to analyze the questionnaire dataset.

The secondary data was collected by reviewing various literatures from international publications of journals, case-studies, books and research papers on customer satisfaction and SERVQUAL Model but the review was not limited to package delivery services only.

Variable Measurements

Twenty one items were chosen to represent the service quality dimensions by Parasuraman et al. (1991) with minor modifications were made to reflect those items to show the impact on customer satisfaction from the present context of Bangladesh. The service quality dimensions i.e., tangibility (TAN), reliability (REL), assurance (ASSU), empathy (EMP) and responsiveness (RES) being the independent variables and customer
satisfaction (SAT) being the dependent variable, the following equation has been developed:

\[ SAT = f (TAN, REL, ASSU, EMP, RES) \]

Out of the service quality dimensions, tangibility, reliability and empathy are based on four items; while assurance and responsiveness have three bases. The customer satisfaction also is based on three items. A Five-point Likert scale ranging from 1 = “poor” to 5 = “excellent” is used to rank the responses.

**FINDINGS**

**Validity and Reliability Analyses**

The questionnaire is being tested for its validity and reliability. The latent variable in this model has high Cronbach’s Alpha values, such as: tangibility (.8); reliability (.87); assurance (.85); empathy (.83); responsiveness (.91) and customer satisfaction (.82). Therefore, the reliability level of the questionnaire meets the critical value of 0.7 suggested by Nunnally and Bernstein (1994).

**Table 1. Reliability of Service Quality Dimensions and Service Satisfaction**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Items</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangibility</td>
<td>4</td>
<td>3.42</td>
<td>0.71</td>
<td>0.80</td>
</tr>
<tr>
<td>Reliability</td>
<td>4</td>
<td>3.54</td>
<td>0.82</td>
<td>0.87</td>
</tr>
<tr>
<td>Assurance</td>
<td>3</td>
<td>3.38</td>
<td>0.86</td>
<td>0.85</td>
</tr>
<tr>
<td>Empathy</td>
<td>4</td>
<td>3.35</td>
<td>0.91</td>
<td>0.83</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>3</td>
<td>3.38</td>
<td>0.81</td>
<td>0.91</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>3</td>
<td>3.42</td>
<td>0.68</td>
<td>0.82</td>
</tr>
</tbody>
</table>

According to table 1, the respondents’ perceived reliability (M = 3.54, SD = 0.82) is the most dominating variable, which is followed by tangibility (M =3.42, SD = 0.71), responsiveness (M =3.38, SD = 0.81), assurance (M = 3.38, SD = 0.86), empathy (M = 3.35, SD = 0.91), which are all rated as “good”. Also, the customer satisfaction (M =3.42, SD =0.68) is also rated as “good” as per the likert scale categories.
Regression Analysis

A simple regression has been conducted and analyzed to check the comparative impact of the dimensions of service quality to customer satisfaction. According to Table 2, the dimensions of SERVQUAL model (independent variables) explained 0.970 of variance (R Square) in customer satisfaction (dependent variable). The F statistic is 1290.084 for customer satisfaction at 95 percent confidence level.

Table 2. Result of Regression Analysis of Service Quality Dimensions and Customer Satisfaction on the dependent variable

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>90.349</td>
<td>5</td>
<td>18.070</td>
<td>1290.084</td>
<td>.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>2.787</td>
<td>199</td>
<td>.014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>93.136</td>
<td>204</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R Square=.970; Adjusted R Square=.969;  
a: Predictors: (Constant), EMP, TAN, RES, ASSU, REL;  
The coefficient of determination (R2) means that the regression line fits the data properly and the relationship between the model and response variable is strong. Nevertheless, since the value for the F-test of overall significance test is more than the significance level, the null-hypothesis cannot be rejected.

Table 3. Result of Regression Analysis of Service Quality Dimensions and Customer Satisfaction on independent variables

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Standardized Coefficients (β)</th>
<th>t-stat</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangibility</td>
<td>-.009</td>
<td>- .701</td>
<td>.484</td>
</tr>
<tr>
<td>Reliability</td>
<td>.392</td>
<td>25.199</td>
<td>.000*</td>
</tr>
<tr>
<td>Assurance</td>
<td>.431</td>
<td>30.980</td>
<td>.000*</td>
</tr>
<tr>
<td>Empathy</td>
<td>.456</td>
<td>32.043</td>
<td>.000*</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>-.004</td>
<td>- .236</td>
<td>.813</td>
</tr>
</tbody>
</table>

Note: * Significance @1% level

According to Table 3, the regression analysis outputs have supported H2, H4 and H5, but not H1 and H3. Hence the customer satisfaction have a positive relationship with the hypotheses mentioning about reliability, assurance and empathy (H2: β = .392, t = 25.199; H4: β = .431, t = 30.98 and H5: β = .456, t = 32.043).
RESULTS AND DISCUSSION

The result of the study interprets that the reliability dimension is dominant, which is also consistent with the theories. As per the results pertaining to the reliability dimension, online customer satisfaction increases when the parcel carriers are able to provide them consistently the exact products as promised by the online merchants (without damaging it) and thereby enhancing accuracy, ensure safety relating to payment and the reaching products within the promised time.

Besides the reliability dimension, assurance, and empathy dimensions of SERVQUAL model play key roles to enhance online customer satisfaction. A diverse behavioral attribute that increase customer confidence including the employees’ service competence and know-how, courtesy and honest behaviors cumulatively demonstrate the assurance dimension (Parasuraman et al., 1991). This holds for the online customers too, whose confidence would strengthen with the courtesy and honesty level of delivery-men and if their expectation in terms of delivery charges are met.

Providing attention at individual levels with a caring mind-set would be the most prominent feature of empathy dimension (Parasuraman et al., 1991), which is experienced by the online customers as well. As they found the delivery men to be helpful to them, their satisfaction went up.

Nevertheless, as per the results of the study, the tangibility dimension, i.e., the physical attributes associated with the actual service (Parasuraman et al., 1991) found to play no significant role in augmenting customer satisfaction. Similar result appeared for the responsiveness dimension that demonstrated the enthusiasm to insure promptness in service (Parasuraman et al., 1991) has no effect on creating customer satisfaction in the package delivery industry.

A remarkable observation throughout the demographic profile-analysis was that the majority of respondents’ usually have pre-determined perceived satisfaction towards the renowned delivery companies even before experiencing the actual services. This perception might offset their focus on the tangibles associated with the package delivery, as their key expectation is that, the basic products needs to be flawless and accurate, in other words service to be reliable. They might just prefer the delivery men to be helpful and fulfilling customer expectation. Hence, the presence of assurance and empathy components in services will add to their satisfaction level.
On the other hand, promptness of performing the services might not be the key requirement by the customers; it rather should be the key requirement of the sellers who would like to recover their sales proceeds at their earliest possible time from customers with the help of the carriers. The package delivery industry being composed of both superior service-providers and the not-so-committed delivery channels might be one of the reasons for not being acknowledged by all the hypotheses based on all the dimensions of SERVQUAL Model.

LIMITATIONS

The service quality model has never been tested on startups or institutions might be a major limitation to the study. Other limitations might include scarcity of funding and limited geographic coverage (Dhaka city only). Also, the noisy environment and unpredictable respondents’ attitude turned out to be the constraints to accuracy of data. Finally, the data being collected within four months’ time might not help any perceptual adjustments in customers’ mindset to reveal. It is possible to increase the true explanatory power of the model by adding predictors. A further study should be performed to explore the association in related service industries.

CONCLUSION

This paper conducts an investigative assessment of the relationship between SERVQUAL model dimensions with customer satisfaction concentrating the package delivery industry and attempts to contribute a hands-on approach to the existing literature. Throughout the study, the SERVQUAL model was proven to exert a moderate to high impact on the level of satisfaction of online customers in the package delivery industry. The study effectively adds value to the untapped sector of package delivery using the SERVQUAL model. The success of e-commerce can be ensured by the endorsement of online entrepreneurs and online package delivery industry that encourages satisfied customers to spread positive words-of-mouth to create a great deal of a business.
As the e-commerce is booming in Bangladesh, a good number of package delivery providers are entering into the business and creating more corridors to earn revenue. They may offer online tracking facilities to enhance their operational efficiency. The online startups and package delivery companies need to shake hands to provide better customer service and climb up the business ladder together to ensure a win-win situation for both. Additionally, they should conduct joint-researches and market studies mutually to reach the goal to serve the customers at the optimum manner.

The result can be particularly applicable for corporate or institutional managers to deal with customers by altering some factors of the dimensions to ensure optimum efficiency management and by emphasizing on the more imperative dimensions of the model in order to improve service excellence and thereby satisfaction level of customers.

ACKNOWLEDGEMENT

We would like to thank our research team member Mrs. Halima Begum, Faculty of Social Sciences and Humanities, National University of Malaysia for her insightful comments and encouragements. Without the precious support from Ms. Priya Darshini Dina, ST, BBS, it would not be possible to conduct this research within the limited time-frame. Finally our sincere gratitude goes to BRAC Business School, BRAC University Bangladesh for the continuous support.

REFERENCES