Revision and Validation of Retail Service Quality Scale in Branchless Banking

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Abstract

The objective of the study is to check the validity and reliability of the instrument that is a significant modification of Retail Service Quality Scale (RSQS) and has been adapted for measuring service quality in branchless banking sector of Pakistan. Sample was chosen on the basis of purposive sampling. Primary data were collected through structured questionnaire. A total of 350 respondents from Islamabad and Rawalpindi participated in the study. Exploratory Factor Analysis (EFA) was first applied in order to suggest the dimensions of modified version of the instrument; then confirmatory factor analysis (CFA) based on maximum likelihood method was applied to check the validity and reliability of adapted items in the instrument. The results of EFA supplied the number of factors to be used in the study and CFA show model fitness. However, this study is limited to the extent of instrument development and testing using a small sample size so future research may be extended with large sample size for generalization.

Keywords: Retail Service Quality Scale (RSQS), branchless banking, customer satisfaction, measurement of service quality, customer lifetime value.

1. **Introduction**

Competitive economy is increasingly motivating businesses to become customer centric. The success of a business depends upon the identification, acquisition and retention of profitable customers. Companies have realized the

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ARTICLE HISTORY									
16 Dec, 2016	Submission Received	27 Jan, 2017	First Review						
14 Feb, 2017	Revised Version Received	20 Mar, 2017	Second Review						
30 Mar, 2017	Revised Version Received	31 Mar, 2017	Accepted						

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importance of customer relationship management as a strategic tool for sustaining growth and therefore have started to see their customers as assets (Gupta & Lehmann, 2003).

Customer centric approach is part and parcel for delivering value and satisfaction for many firms (Chan, IP & Cho, 2010). Delivering better customer satisfaction than rivals is vital for survival these days, particularly in the case of services where competition is predominant. Service quality that is defined as the difference between expected and perceived outcomes of the service interaction (Parasuraman, Zeithaml, & Berry, 1985; 1988). Numerous researchers have connected the concepts of service quality and customer satisfaction in the past (Arsali, Katircioglu, & Mehtap-Smadi, 2005; Awan, Bukhari, & Iqbal, 2011; Pantouvakis & Bouranta, 2014). It has been established many times that service quality is an important indicator of customer satisfaction (e.g. Ali & Raza, 2017, Namin, 2017) which ultimately leads to different stages of customer loyalty (Wahab, Hassan, Shahid, & Maon, 2016). The relationship is simple; the more loyal customer you have, the more profits for your organization (Ozantac, Saner, & Sen, 2016).

Some customers are more profitable than others so it is important to differentiate them from the less profitable ones (Mason, 2003). In order to understand the value a customer brings to the company, estimation of customer lifetime value (CLV) is required. Khajvand and Tarokh (2011) argue that calculation of CLV not only helps in understanding of customer needs and the differences between different customer segments but it is also a useful tool for making decisions regarding setting out marketing strategies. CLV has been defined as the present day value of future stream of profits for the company from a particular customer (Berger & Nasr, 1998).

To measure service quality in retail sector, Dabholkar, Thorpe, and Rentz (1996) developed Retail Service Quality Scale (RSQS) that has five dimensions of physical aspects, reliability, personal interaction, problem solving and policy. However, this scale needed some modifications for measuring service quality in branchless banking sector because in this specific sector, physical aspects have little significance for the customers. Generally, these services are being delivered at small retail shops and the customers seek low

cost, quick and prompt service delivery. They are less concerned about the physical ambiance of the store. The customers demand convenience with effortlessness and that is the basic reason for going to these stores instead of going for conventional banking system. There are many approaches to measure service quality for various retail settings and services but none was thought to be fully capable of measuring service quality in branchless banking sector. Therefore, it was envisaged that previous scales needed modification and expansion in order to have a suitable measure. Also, it was recommended by Dabholkar et al. (1996) to test the appropriateness of their scale in different service settings with industry specific measures for validation purpose. This study is intended to develop and test that modified version of retail service quality instrument for measuring service quality in branchless banking sector.

The outcome of this research will be helpful for service operators to understand the importance of maintaining customer relationships and on top of that the degree of service quality preferred by different customers or their segments. This study will supply good consideration of the essential elements of service quality in branchless banking sector. As competition is growing in this sector and service providers are striving for gains in market share, they need to have an unambiguous perspective on the customers' opinion regarding quality of services they are offering. Branchless banking operators will thus be equipped with an effective tool to assess factors that influence service quality and to make improvements. This will also help them maximize customer lifetime value.

This study is aimed at testing the appropriateness of modified version of retail service quality scale in an emerging service sector i.e. branchless banking also known as mobile banking or m-banking. Validity and reliability of the instrument proposed for measuring the service quality in branchless banking sector are needed to be tested.

2. Literature Review

Business concerns are actively delivering greater customer satisfaction through superior service quality now more than ever (Jaiswal, 2008). In order to remain alive in the market and maintaining growth in this progressively aggressive environment, business corporations are concentrating their efforts on delivering higher quality of service (Reichheld & Sasser, 1990). Service quality

is defined as the difference between the level of expectation of the service and observation of how it has been performed (Parasuraman et al., 1985, 1988). Service quality is quite an old phenomenon and it has been measured using different approaches in the past. The most well known approach is SERVQUAL that was developed by Parasuraman et al. (1985, 1988). SERVQUAL measures service quality by using five dimensions of Tangibility, Assurance, Responsiveness, Empathy and Reliability. SERVQUAL can be adapted to accomplish the requirements of any organization (Parasuraman et al., 1988). SERVQUAL has been proved as most appropriate and reliable model of service quality in many service firms. With little modifications in SERVQUAL due to contextual differences, it has been found valid in various services sectors. For example, educational institutes (Akhlaghi, Amini, & Akhlaghi, 2012), insurance companies (Tsoukatos & Rand, 2007), Travel agencies (Bigne', Marti´nez, Miguel, & Andreu, 2003), Banks (Karatepe, Yavas, & Babakus, 2005), Islamic banks (Ali & Raza, 2017), hospitality industry (Akbaba, 2006), telecom (Johnson & Sirikit, 2002) etc. Although SERVQUAL is a recognized model and is highly applicable in services sector, it has been subject to criticism. It has been criticized based on its operationalization and theoretical groundings. Major criticism relates to perception expectation gap measurement and length of questionnaire (Jain & Gupta, 2004). Cronin and Taylor (1992) criticized SERVQUAL on the basis of disconfirmation paradigm and instead of measuring service quality as attitudinal paradigm. This criticism was not well justified and Cronin and Taylor (1994) admit SERVQUAL as best in operationalization of expectancy disconfirmation. Another criticism is related to the generalizability of dimensions of SERVQUAL. Critics have argued about the five dimensions (RATER) and stated that there are alternative conceptualizations of measuring service quality. In the defense of this critique, Parasuraman et al. (1988) provide that SERVQUAL presents the basic frame to estimate service quality by using five dimensions and this frame can be customized to accomplish the needs in a particular situation and circumstances. Therefore, many researchers have applied modified SERVQUAL technique to measure service quality.

Despite all the criticism, SERVQUAL is highly recognized in provisions of its appropriateness in services sector. The validity of SERVQUAL may, however depend on the context. Different researchers have used SERVQUAL or modified SERVQUAL for estimation of service quality for many varied services in many

countries around the world. For example, Mei, Dean, and White (1999); Juwaheer (2004); Hsieh, Lin, and Lin (2008); and Akbaba (2006). Another tool of measuring service quality is SERVPERF that applies performance view of service quality. Because SERVQUAL takes perceptions-expectations gap analysis to ascertain service quality, many research studies argue that SERVPERF is a better measure because it compares performance with expectations (Cronin & Taylor, 1992).

With the intention of measuring service quality in retail sector, Retail Service Quality Scale (RSQS) was devised by Dabholkar et al. (1996). He recommended that retail service quality can be measured by using these five dimensions: physical aspects, reliability, personal interaction, problem solving and policy. Measuring service quality in retail sector is a different story. It needed some modifications in previous scales. Also for continuous refinement of the scale, it has been recommended by Dabholkar et al. (1996) to replicate their study in a different retail service industry with additional industry specific factors.

Service organizations throughout the world are looking for techniques to differentiate their positioning through excellent service performance. To stay alive in today's aggressive environment, customers' satisfaction has become the primary goal of every organization. In essence, the service quality is the valuation of how effectively services have been performed as compared to the customer's expectation (Parasuraman et al., 1985). Customer Satisfaction can be described as an individual's feelings of fulfillment or disappointment as a result of comparison of his or her expectations with the perceived performance (Kotler, 2000). The expectancy disconfirmation theory states that satisfaction can be determined as the difference between predicted and identified performance. The expectancy disconfirmation theory was introduced to measure customer satisfaction in relation with the quality of service delivered. This theory takes into account two variables for measuring customer satisfaction namely expectation and perceived performance. Expectation relates to pre-purchase period which creates a reference framework for comparison with perceived performance which is related to after purchase (Oliver, 1980). When the product or service performs as predicted, satisfaction is the result; and when performance falls short of the expectation, dissatisfaction takes place (Kotler & Keller, 2008). It has been proved that customers' behavioral intentions cannot be increased

directly by improving the level of service quality instead it can only be improved by improving the level of satisfaction in customers (Namin, 2017). Thus customer satisfaction is the important intermediary between service quality and customers' behavioral intentions (e.g. repeat purchasing, word of mouth, loyalty etc.)

Customer lifetime value has gained notable interest in the area of database marketing in the past decade (Glady, Baesens, & Croux, 2009; Tsai, Hu, Hung, & Hsu, 2013 etc.). In this era of mass customization, it is important for companies to identify customer differences in order to maintain individualized relationship with them. Blatterg and Deighton (1996) argued that not every customer is alike in value; companies have to identify and retain the most valuable customers in order to remain in the competition. Because each customer is different and it brings a different value to the company therefore companies try to identify these differences and provide them value at lower cost and better than the competitors. Companies need to become customer centric in order to increase customer retention which would lead to repeat purchases, more profits, higher market share and ultimately increased customer lifetime value.

Berger and Nasr (1998) describe Customer Lifetime Value (CLV) as the present-day value of expected future profits. Measuring customer lifetime value has been an important topic for marketers in the past. Measurement of CLV enables marketing decision makers to understand strategic significance of their customers. Such information can be utilized in taking important decisions e.g. which customers to be preferred, how profitable relations are going to be in the future, which strategy is best for which type of customers etc. (Hiziroglu & Sengul, 2012). Based on the work of Wu and Li (2011), this study takes into account different factors like: usage quality, loyalty, word of mouth, and purchase intension for measuring customer lifetime value in branchless banking sector.

Usage quantity refers to the estimate of future intake of the same product or service. It means the length and durability of the relation that incorporates the regularity of the transaction between company and the customer (Wu & Li, 2011). Individual's commitment and affection towards a specific brand is called loyalty. Loyalty can be behavioral or attitudinal. Behavioral loyalty is measured in terms of repurchase behavior i.e. buying the same product or service again and

again; whereas attitudinal loyalty deals with the overall attitude of a customer after the purchase i.e. it incorporates the repurchase behavior as well as word of mouth intentions (Caruana, 2002). Word of mouth can be described as an informal or casual process of exchanging information regarding a product or service (Murray, 1991). It is an informal connection and a useful tool in shaping consumer repurchase intentions dependent upon sharing of satisfactory or dissatisfactory experience. If the customer is satisfied with a product or service, he or she will recommend it to others and if the customer is unhappy about his or her experience, he or she will spread a negative word about it. The former is known as positive word of mouth and the later as negative word of mouth (Kitapci, Akdogan, & Dortyol, 2014). The desire to maintain a long-term relationship by the way of commitment to purchase from the same provider is known as repurchase intention. It is an individual's dedication of keeping alive the connection with a service provider and buying the next product or service from the same one (Kitapci et al., 2014). Figure 1 is describing the conceptual framework developed for this research.



Figure 1: Conceptual Framework

3. Methodology

3.1. Participants and Data Collection

This research was conducted by taking 350 respondents from branchless banking sector in Pakistan. Both male and female participants were included in the study. These people belonged to different age groups. Majority of the

participants were below 35 years of age. These participants were related to different educational backgrounds e.g. post graduate, graduate, high school, secondary school etc. Some of the participants were employed for wages, some were self-employed, some of them were students, few were home makers and a few unemployed. A complete demographic profile of the respondents is given in appendix (Table-I). Purposive sampling was used and data were collected from those individuals who just completed a service transaction with one of the services provider with the help of a structured questionnaire. Presently there are four major branchless banking operators in Pakistan (Easypaisa, UBL's Omni, Timepay and Mobicash). Following are examples of a few services offered by these companies: money transfer, bills payment, international money transfer, easy load etc. There are no special retail outlets or stores to deliver these services instead these are being delivered on already existing common retail stores. 350 usable responses were selected from 352 after deleting incomplete responses and the ones with zero standard deviation.

3.2. Measures

The instrument consisted 46 items based on 5 point Likert scales ranging from strongly disagree to strongly agree. Retail Service Quality Scale (RSQS) was used to measure service quality. The most widely used and the most functional measure of service quality which has been validated in a variety of service settings is SERVQUAL Parasuraman et al. (1985); which uses gap analysis for measuring service quality. Due to valid criticism related to its applicability in retail setting from Mehta, Lalwani and Han, (2000); and Dabholkar et al. (1996), it was found inappropriate in measuring retail service quality. Therefore, a modified version of this scale was given by Dabholkar et al. (1996) as Retail Service Quality Scale (RSQS). RSQS consists of five dimensions namely physical aspects, reliability, personal interaction, problem solving and policy (Dabholkar et al., 1996). First dimension of physical aspects was modified as customer convenience because of the absence of physical elements in branchless banking sector. The customers at these stores want convenient and quick transaction at lower cost and the physical ambience of the store is of least importance to them. Therefore, the first dimension was modified and adapted as customer convenience. In order to measure customer convenience, 10 items were used, out of which four were specifically formulated

for this study and six were adapted from Kaura (2013). Other dimensions of RSQS are Reliability, Personal Interaction, Problem Solving and Policy. Items for remaining 4 dimensions were adapted from the study of Das, Kumar and Saha, (2010). Customer satisfaction was measured by using 3 items adapted from Kaura (2013) and CLV was measured by using four dimensions of Usage Quantity, Word of Mouth, Loyalty, and Purchase Intentions adapted from Wu and Li (2011).

3.3. Analysis and results

First of all, the accuracy of the data was determined using missing values analysis; all the responses with zero standard deviation and many missing values were removed. Normality of the data was checked by looking at the histograms of the data in SPSS. In order to determine the appropriateness of modified retail service quality scale, conventional methods were used. First of all, an exploratory factor analysis followed by a confirmatory factor analysis was conducted. In order to assess the adequacy of measurement properties, criteria for thresholds given by Schreiber, Stage, King, Nora and Barlow (2006), Cortina (1993), Bagozzi and Yi, (1988), Fornell and Larker (1981) and Hair, Black, Babin and Anderson (2010) were followed. A detailed description of the techniques and procedures applied for the above thresholds is as follows:

3.4. Exploratory factor analysis

The questionnaire items relating to physical aspects of service quality were replaced with new items of customer convenience so an Exploratory Factor Analysis (EFA) was applied for dimensions' confirmation. A series of exploratory factor analysis was conducted on all 46 items in order to examine whether the questionnaire items produce the proposed factors and also to verify if the individual items are loading on their appropriate factors as proposed. Maximum likelihood method with a promax rotation was applied on all items and no restrictions were applied as to the number of components to be extracted. Any items with loadings less than 0.3 on their respective factor or cross loading would be removed. Before removing any item, the number of items already in factor and the meaning of item to be removed are going to be considered. Following results were considered for EFA:

3.4.1. KMO and Bartlett Test

KMO and Bartelett test results are examined in order to determine if the results support factor analysis.

3.4.2. Scree plot

Scree plot is another technique to ascertain the number of factors to be incorporated in final solution. This plot shows the eigenvalues and related component numbers. The point where this plot starts to descend, next coming factors describe less variance.

3.4.3. Total variance explained

Next component to determine the number of factors is total variance explained. This is considered by taking the eigenvalues into account.

3.4.4. Pattern matrix

A pattern matrix is observed next in order to check if items are loading on the intended factor and the total number of factors generated for dimension confirmation.

3.4.5. Convergent and discriminant validity

The convergent validity means that the variables in a factor have high correlation. Factor loadings can be used to determine it. Sufficient and significant factor loadings are required to confirm convergent validity. For a sample size of 350, a factor loading of 0.30 is sufficient (Gaskin, 2016). In order to assess convergent validity, items loadings were examined if they were loading on their dimensions and estimates were checked if they were positive and significant as suggested by Bagozzi and Yi (1988).

Two methods for determining the discriminant validity are to examine the pattern matrix and factor correlation matrix. In pattern matrix, items should load only on one factor; and in correlation matrix, correlation between factors should not exceed 0.7 in order to confirm discriminant validity (Gaskin, 2016). These two are also checked determine the discriminant validity.

3.5. Reliability and confirmatory factor analysis

A CFA was carried out to check the overall model fitness and to disclose the measurement errors in the model. 350 responses were tested to fulfill this purpose in the study. A measurement model was examined in order to determine the dimensions of the constructs. Each item was loaded on specific latent variable and confirmatory factor analysis estimated the model by using Amos 20 Maximum likelihood. All measures of validity and reliability during CFA were examined against the threshold given by Hair et al. (2010).

Model fitness was judged by using different fit indices. Chi-Square, Normed Fit Index (NFI), Comparative Fit Index (CFI), Goodness of Fit Index (GFI) and Root Mean residual (RMR) have been reported. The ratio of chi-square to degree of freedom (X2/df) is used to determine the overall model fitness, which, according to Schreiber et al. (2006) should not be greater than 3.

3.5.1. Assessment of construct validity

In order to determine whether the items of the scale measured the desired concept, the validity of the scale was assessed. The validity of the scale was calculated using Excel stats tool package (Gaskin, 2016). For this purpose, following kinds of reliability were taken into consideration:

3.5.2. Convergent validity

In order to determine the convergent validity during CFA, criteria given by Hair et al. (2010) was followed i.e. for convergent validity the value of AVE should exceed 0.5.

3.5.3. Discriminant validity

Discriminant validity is used to check the degree to which one construct is different from others. In order to check out the discriminant validity the value of AVE (Average Variance Extracted) is compared with respective squared interconstruct correlation estimates (SIC). If the value of AVE exceeds, this shows discriminant validity is there (Fornell & Larker, 1981). AVE is computed by using the following formula in MS Excel:

$$AVE = \frac{\sum_{i=1}^{n} \hat{\mathcal{X}}_{i}^{2}}{n} \tag{1}$$

Where,

 λi is the standardized factor loadings.

n is the number of items.

AVE is therefore calculated by the sum of the square of all factor loadings relating to one construct divided by the number of items.

3.5.4. Composite reliability

Composite reliabilities are another way to measure construct validity. Composite reliability is not computable in AMOS; therefore, it is also computed in MS Excel by using the following formula:

$$CR = \frac{(\sum_{i=1}^{n} \lambda_{i})^{2}}{(\sum_{j=1}^{n} \lambda_{j})^{2} + (\sum_{j=1}^{n} \delta_{j})}$$
(2)

Where

λi is the factor loadings.

 δi is the error variances.

Composite reliability is calculated by using the sum of squared factor loadings and the sum of error variances for the constructs in the above formula. The criterion for composite reliability given by Hair et al. (2010) is that the value of composite reliability should exceed 0.7.

4. Analysis and Results

Before starting the statistical analysis, a preliminary analysis was first conducted briefly in order to inspect the data for outliers and missing values and to determine the normality of the data. Out of all 352 responses 2 were removed due many missing values and zero standard deviation. Other responses with one or two missing values were replaced with series mean. Normality of data was checked using histograms of the data. In order to determine the scale reliability and as a measure of internal consistency, Cronbach's alpha for each dimension is calculated. Additionally, mean, standard deviation, and range was calculated.

Table 1 enlists the results.

Table 1: Mean, Standard Deviation	on, Range and Alpha Coefficients (N=350)
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Variables	No. of items	Mean	Standard deviation	Min	Max	Alpha Coefficients
Customer Convenience	07	3.91	0.67	1	5	0.880
Reliability	05	3.74	0.73	1	5	0.820
Personal Interaction	07	3.65	0.84	1	5	0.897
Problem Solving	03	3.63	0.96	1	5	0.867
Policy	02	3.68	1.04	1	5	0.870
Customer Satisfaction	03	3.79	0.95	1	5	0.870
Usage quantity	03	3.63	.097	1	5	0.858
Loyalty	04	3.59	0.92	1	5	0.805
Word of Mouth	03	3.75	0.98	1	5	0.888
Purchase Intention	04	3.71	0.87	1	5	0.896

Mean, Standard deviations, minimum and maximum values (range) and alpha coefficients are given in Table 1. The number of items used for each variable is also given. All the items were included for measuring the reliability of the variable they are measuring. All the reliabilities are sufficient and acceptable suggesting that all items' internal consistency is relatively high. The maximum value of Cronbach's alpha is 0.897 and the minimum is 0.805, which resides inside acceptable range. According to Cortina (1993), the value of Cronbach alpha should be greater than 0.7 for internal consistency.

4.1. Exploratory factor analysis (EFA)

In order to check the suggested dimensions, an EFA was first conducted. Results of KMO and Bartlett's test are taken into consideration. KMO results are showing the suitability of the data for factor analysis. Result of KMO is 0.840 and this is greater than 0.6, which means factor analysis is recommended. Also

the value of 0.840 is closer to 1 and is recommending middle level of amount of variance among variables.

4.1.1. Scree plot

In the plot, first ten values are slightly above eigenvalue 1. The graph of the eigenvalue after component no. 10 has started to descend (Figure 2). This means the number of factors to be considered here is 10 and all the items combined are representing ten constructs. Also it means that each successive factor is depicting little variance.

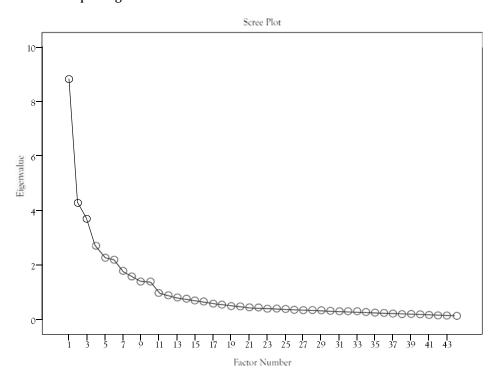


Figure 2: Scree Plot

4.1.2. Total variance explained

The eigenvalues are explaining the variance of the factors. The eigenvalues of first ten factors are greater than one. The eigenvalue of first factor is 8.844 and it explains 18.45 percent variance. The eigenvalue of second factor is 4.284 and it is explaining 8.51 percent variance. The remaining factors are explaining lesser amount of variance i.e. 6.04 percent, 6.73 percent, 5.19

percent, 3.55 percent, 3.23 percent, 3.34 percent, 2.94 percent and 2.47 percent respectively. First ten values are greater than one and overall these components are showing more variance and the remaining factors are explaining less variance therefore, ten final components are selected. The cumulative percentage of variance shown by all ten factors is 60.44 percent. The number of total rows in extraction sum of squared loadings is corresponding to the number of factors retained i.e. ten. A table containing all these values in attached in appendix (Table-II).

4.1.3. Pattern matrix

Pattern matrix generated after promax rotation in maximum likelihood method generated 10 factors. All the items loaded on their intended factors except first two items of personal interaction. These two items were not loading on any one factor and their factor loading were minimum as compared to other items of personal interaction. Additionally, 1st item was loading as a separate 11th factor and second item was loading on both personal interaction factor and 11th factor. Therefore, these two items were removed one by one and results were assessed again. Table-III (appendix) is representing final pattern matrix in detail.

4.1.4. Convergent validity

All factor loadings were found to be statistically significant (p<0.05) and above 0.5. These values confirm the acceptable level for the loadings, which should be greater than 0.5. All the factor loadings of service quality, customer satisfaction and customer lifetime value are given in Table-IV, Table-V and Table-VI in appendix.

4.1.5. Discriminant validity

4.1.5.1 Pattern matrix

The pattern matrix in Table-III (appendix) is showing the item loadings corresponding to their factors. Ten items loaded on factor 1. It is clear from results that all items relate to customer convenience. Next seven items loaded on factor 2 i.e. personal interaction. First two items from personal interaction were removed because these were not loading on a single factor and hence were

not contributing to a factor structure after factor rotation. Also the item loadings of these two factors were low as compared to other items. Additionally the number of items in this factor was initially nine, after removing two items there are still seven items remaining to continue with the process. Four items loaded on next factor 3 which is related to purchase intention. Five items that loaded on factor 4 were related to the correction of transactions by the store and providing the services right. This is measured as reliability dimension. Next three items loaded on factor 5 relating to word of mouth. Three items relating to selecting the right company for branchless banking services loaded on factor 6 i.e. customer satisfaction. For items loaded on factor 7 showing loyalty dimension. Three items loaded on factor 8, three on factor 9, and two on factor 10 depicting usage quantity, problem solving and policy dimensions respectively.

4.1.5.2. Factor correlation matrix

From the Table 2, it is clear that all of the correlations among factors are less than 0.7 which meet the criterion given by Gaskin, (2016) for indicating discriminant validity. Table 6 and Table 7 together are providing the evidence for supporting the discriminant validity. All items are loading on only one predicted factor; the correlations among factors are significant and less than 0.7, thus this is the indication of discriminant validity.

Factor	Cconv	REL	PIN	Prob- Solv	POL	CS	UQ	LOY	WOM	PI
Cconv	1.000									
REL	.282	1.000								
PIN	.137	.244	1.000							
Prob- Solv	.295	.409	.171	1.000						
POL	.276	.270	.283	.193	1.000					
CS	.157	.162	.117	.169	.242	1.000				
UQ	.157	.129	.457	.211	.329	.276	1.000			
LOY	.112	.135	.305	.146	.387	.343	.393	1.000		
WOM	.181	.333	.208	.257	.090	.128	.101	.012	1.000	
PI	.162	.179	.006	.116	.119	.250	.012	.156	.216	1.000

Table 2: Factor Correlation Matrix

 $\label{eq:convenience} Cconv = Customer \ convenience, \ REL = Reliability, \ PIN = Personal \ Interaction, \ ProbSolv = Problem \ Solving, \ POL = Policy, \ CS = Customer \ Satisfaction, \ UQ = Usage \ Quantity, \ LOY = Loyalty, \ WOM = Word \ of \ Mouth, \ PI = Purchase \ Intention$

4.2. Confirmatory Factor Analysis (CFA)

Model fit Statistics are as follows:

Factors	Factors Values		Values Factors		Values				
CMIN	1450.95	Df	853						
Chi-square/df	1.701	GFI	0.841						
NFI	0.839	CFI	0.926						
RMR	0.048	RMSEA	0.045						

Table 3: Model Fit Statistics

The chi-square to degree of freedom (X2/df) ratio is used to determine the overall model fitness. According to Schreiber et al. (2006), it should not be greater than 3. Here this value is 1.701 which means the results are showing overall model fitness. Additionally other measures of fitness were observed. The acceptable range for RMR is that it should be lesser than 0.08, GFI, NFI and CFI should be greater than 0.9 (Bagozzi & Yi, 1988). These results show that all the values are either in the acceptable range or are closer to the acceptable range therefore, model fitness is determined.

4.3. Construct Validity

4.3.1. Convergent validity

For examining the convergent validity average variance extracted for each dimension is calculated. After finding the factor loadings in acceptable range, Average Variance Extracted (AVE) is calculated in MS Excel. AVE for each variable was computed and all the values were above 0.5 except customer convenience and reliability dimension. The AVE value for customer convenience was 0.455 which is alarming.

Therefore, in order to improve the value of AVE, procedure suggested by Ping (2009) was applied. In order to improve AVE, an item with lowest factor loading was removed from data set and AVE was computed for remaining items. This process was repeated with removing a different item and replacing the firstly removed item.

This process was repeated using different combinations until the last three items for the customer convenience were removed and AVE was improved to 0.508. The threshold given by Fornell and Larker (1981) is if AVE is greater than 0.5 then the internal consistency of the constructs is there. The findings of the current study support this criterion (Table-VII in appendix) except for the second variables for which AVE is 0.490. This value is slightly below 0.5 criteria and this may not be considered alarming because not all researchers consider AVE as "the" measure of convergent validity, they prefer reliability. Also it is recommended by Ping (2009) that an AVE value slightly below 0.5 might be accepted if it does not create any problem for discriminant validity. Therefore, as this v alue is close to 0.5 and is not problematic in discriminant validity so this value is acceptable.

4.3.2. Discriminant validity

In order to check out the discriminant validity the value of AVE (Average Variance Extracted) is compared with respective squared inter-construct correlation estimates (SIC). If the value of AVE exceeds, this shows discriminant validity is there. It is clear from Table-VIII (appendix) that all the values of AVE are greater than SIC. The findings of the current study meet this condition (Fornell & Larker, 1981). This indicates that the measured variables are more commonly related to the construct they are measuring than the other constructs.

4.3.3. Composite reliabilities

Composite reliabilities are also computed in MS Excel.

Variables	No. of items	Composite Reliabilities (CR)
Customer Convenience	07	0.878
Reliability	05	0.826
Personal Interaction	07	0.896
Problem Solving	03	0.868
Policy	02	0.871
Customer Satisfaction	03	0.870

Table 4: Composite Reliabilities

Usage quantity	03	0.860
Loyalty	04	0.810
Word of Mouth	03	0.889
Purchase Intention	04	0.897

The criterion for internal consistency of the items in reliabilities is a CR value greater than 0.7 (Hair et al., 2010). From Table 4 it is clear that all composite reliabilities are greater than 0.7 which meets the threshold for construct validity.

5. Discussion of Results

Retail Service Quality Scale has been proved useful in measuring service quality in many retail settings (e.g. Ahmad, Ihtiyar, & Omar, 2014). Results of this study helped in further clarification of the questionnaire items and it assisted in finalizing the (Questionnaire). As the first facet of service quality was modified to fit the needs of measuring service quality in branchless banking sector, so an EFA was first executed. This resulted in item reduction. Two of the items of the personal interaction were removed one by one due to lower factor loadings and inability to load on a single factor. This resulted in seven final items of this facet. Overall factors to be included in the study after examining the EFA results were found to be 10.

The results of CFA show model fitness. Also the reliabilities of the items of questionnaire were in the acceptance range. For examining the validity of the instrument, convergent validity, discriminant validity and composite reliability were taken into consideration. All the thresholds of validity were supported by the results of this study. The confirmatory factor analysis provided a fit for the measurement model. All items were loaded highly on their respective factors. In order to decide the adequacy of individual parameter, all loadings were assessed according to Gaskin (2016). According to Bagozzi and Yi (1988) criterion which says all factor loadings should be greater than 0.6. All factor loadings of service quality, customer satisfaction and customer lifetime value were above 0.6 except one item of service quality which has factor loading of 0.556 (close to 0.6). Additionally, all were found to be statistically significant (p<0.5).

The evidence provides support for the convergent validity. The results of AVE and composite reliabilities all are found in acceptable range and therefore, the construct validity is established. The value of AVE is greater when compared to SIC, thus indicating discriminant validity. The AVE for all constructs exceed 0.5, composite reliabilities all are greater than 0.6 and they meet the standard given by Fornell and Larker (1981). All these measures taken together show the construct validity. Our proposed modifications in RSQS are suitable in measuring service quality in mobile banking sector and similar other convenience stores. This scale is also useful in measuring the satisfaction level of the customers about the services delivered. The service quality can be assessed on regular basis and this diagnosis can help identify the weak points and services level can be improved. This tool is also useful for identifying the significant elements of service quality which are most valuable to the customers; which can assist services operators to deliver better services and to maintain longterm customer relations.

6. Conclusion, Recommendations, and Future Directions

This research was intended to investigate the appropriateness of modified version of retail service quality scale in an emerging sector. This proposed tool is found suitable for measuring service quality in mobile banking or branchless banking sector in order to maintain a regular check on the level of services delivered. This tool can help m-banking retailers to identify the weak points in service delivery so that improvements can be made. An overall service quality evaluation would help in discovering the areas that need improvement and resources can be allocated accordingly. The scale can be used to measure service quality in a similar setting. The relative importance of each dimension of service quality can be known for delivering the desired satisfaction to the consumers. This would further help in predicting the future intentions of the consumers i.e. whether they are going to repeat purchasing, their loyalty status and word of mouth intentions etc. This research can be extended by replicating this study in similar settings. It can also be modified to fit the needs and trends of a particular service industry. Such modifications would help in further refinement of the scale. Although this research tried to

cover all aspects of retail service quality in branchless banking, there may be some aspects that have been omitted or that are significant according to the future needs. Customers can help identify those aspects of the service quality that are important to them. A future research in a similar setting can incorporate such changes in order to develop and validate retail service quality scale on continuing basis. Although this study generates some useful insights but there are certain limitations. This study is limited by the sample size and data were collected from two cities only. A future research with a larger sample size and selection of diverse areas for data collection can solve the issue of generalizability.

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Appendix

Table-I: Demographic Profile of the Respondents

Demographic	Attributes	Frequency	Percentage
C I	Male	125	35.7
Gender	Female	225	64.3
	Less than 35 years	174	49.7
Age	35-50 years	162	46.3
	Above 50 years	14	4.0
Employment Status	Employed for wages	143	40.9
	Self employed	82	23.4
	Unemployed	12	3.4
	Retired	1	0.3
	Housewife	16	4.6
	Student	95	27.1
	Unable to work	1	0.3
	Postgraduate	117	33.4
	Graduate	186	53.1
Education Level	Completed high school	33	9.4
Education Level	Secondary school	6	1.7
	Primary school	4	1.1
	Illiterate	4	1.1

Table-II: Total Variance Explained

Factor	Initial Eigenvalues			Extra	action Sums Loading	-	Rotation Sums of Squared Loadings
	Total	% of Cumulative Variance %		Total	% of Variance	Cumulative %	Total
1	8.844	20.100	20.100	8.119	18.453	18.453	5.780
2	4.284	9.736	9.736 29.836		8.509	26.963	5.576
3	3.699	8.408	8.408 38.244		6.036	32.998	4.198
4	2.711	6.162	44.406	2.959	6.725	39.723	4.173

5	2.276	5.173	49.578	2.282	5.187	44.910	4.024
6	2.198	4.995	54.573	1.563	3.552	48.461	3.257
7	1.777	4.039	58.612	1.422	3.231	51.693	3.812
8	1.577	3.584	62.196	1.469	3.339	55.031	3.620
9	1.404	3.191	65.387	1.293	2.939	57.970	3.199
10	1.387	3.152	68.539	1.087	2.470	60.441	2.281
11	.995	2.261	70.800				
12	.877	1.994	72.794				
13	.809	1.838	74.632				
14	.753	1.711	76.343				
15	.692	1.574	77.917				
16	.661	1.501	79.418				
17	.589	1.338	80.756				
18	.547	1.243	81.999				
19	.500	1.137	83.136				
20	.488	1.108	84.244				
21	.450	1.022	85.266				
22	.437	.992	86.258				
23	.402	.914	87.172				
24	.398	.905	88.077				
25	.384	.872	88.949				
26	.365	.829	89.778				
27	.354	.805	90.583				
28	.350	.796	91.380				
29	.347	.788	92.167				
30	.321	.729	92.896				
31	.309	.701	93.597				
32	.305	.693	94.290				
33	.282	.641	94.931				
34	.278	.632	95.563				
35	.256	.582	96.146				
36	.239	.544	96.689				
37	.218	.496	97.185				
38	.212	.482	97.668				
39	.207	.470	98.137				

40	.199	.452	98.589		
41	.178	.405	98.994		
42	.162	.368	99.362		
43	.146	.332	99.694		
44	.135	.306	100.000		

Table-III: Pattern Matrix

		Factor								
	1	2	3	4	5	6	7	8	9	10
CConv3	.815									
CConv2	.746									
CConv5	.726									
CConv6	.704									
CConv1	.683									
CConv7	.678									
CConv4	.669									
CConv8	.655									
CConv9	.618									
CConv10	.523									
PIN4		.829								
PIN3		.808								
PIN8		.767								
PIN7		.761								
PIN5		.720								
PIN6		.702								
PIN9		.609								
PI2			.923							
PI1			.845							
PI4			.781							
PI3			.740							
Rel2				.812						
Rel3				.741						
Rel1				.702						
Rel4				.653						
Rel5				.533						
WOM2					.864					
WOM3					.857					

WOM1			.820					
CS1				.833				
CS2				.815				
CS3				.813				
LOY3					.882			
LOY2					.781			
LOY4					.555			
LOY1					.487			
UQ2						.885		
UQ3						.780		
UQ1						.774		
Prob- Solv2							.865	
Prob- Solv1							.822	
Prob- Solv3							.802	
POL1								.915
POL2								.834

Table-IV: Factor Loading of Service Quality (N=350)

S No.	Items	Factor Loading
	Customer Convenience	
1	The service provider is available when I need to talk to him.	0.673
2	Location of this service provider stores are easy to access.	0.715
3	I find it easy to complete my service purchase with this service provider.	0.759
4	I am able to complete the purchase of my service quickly with this service provider.	0. 69
5	It takes little effort to deal with this service provider during purchase.	0. 721
6	I am able to get the benefits of this service with little effort.	0. 698
7	The time required to receive the benefits of service is reasonable.	0.704
8	The cost of visiting the store is affordable.	0.633
9	The distance travelled to approach this store is appropriate.	0.609
10	It is safe for me to travel to this store at any time.	0.506

	Reliability	
11	When this store promises to do something (such as correction of transactions) by a certain time, it will do so.	0.67
12	This store provides its services at the time it promises to do so.	0.769
13	This store performs the service right the first time.	0.778
14	This store has services available when the customers want it.	0.704
15	This store insists on error-free sales transactions and records.	0.556
	Personal Interaction	
16	Customers feel safe in their transactions with this store.	0.803
17	The employees in this store give prompt service to customers.	0.764
18	Employees in this store tell customers exactly when services will be performed.	0.755
19	Employees in this store are never too busy to respond to customer's requests.	0.675
20	This store gives customers individual attention.	0.73
21	Employees in this store are consistently courteous with customers.	0.792
22	Employees in this store treat customers courteously on the telephone.	0.668
	Problem Solving	
23	This store willingly handles customer complaints.	0.831
24	When a customer has a problem, this store shows a sincere interest in solving it.	0.873
25	Employees of this store are able to handle customer complaints directly and immediately.	0.781
	Policy	
26	This store offers high quality services.	0.899
27	This store has operating hours convenient to all their customers.	0.857

Table-V: Factor Loading of Customer Satisfaction (N=350)

S No.	Items	Factor Loading
	Customer Convenience	
28	My choice to avail this branchless banking service is a wise	0.829
	one.	

29	I did the right thing when I chose this company for branchless banking services.	0.843
30	Services of this company are exactly same what I need.	0.821

 $\textbf{Table-VI:} \ \ \text{Factor Loading of Customer Lifetime Value (N=350)}$

S No.	Items	Factor Loading
	Usage Quantity	
31	I am willing to purchase from this company again.	0.771
32	The money I spend here is well-spent.	0.888
33	would like to get more services from this company.	0.798
	Loyalty	
34	I am a loyal customer of this company.	0.621
35	I would still use services of this company even if another company offers me a promotional or favored price.	0.762
36	Even if the price increases, I still would go for this service provider.	0.791
37	When I need branchless banking services, this company is my best choice.	0.691
	Word of Mouth	
38	If someone asks me for the information on the related services, I provide them with information about this company.	0.837
39	I would like to share my experience from this company with others.	0.874
40	I would like to, through my introduction, let my relative and friends become loyal customer of this company.	0.848
	Purchase Intention	
41	I will purchase from this service provider.	0.826
42	I will repeat purchasing from this service provider.	0.925
43	I will consume a new service through the promotion from the service personnel of the company.	0.766
44	I hold positive attitude towards this company.	0.79

Table-VII: Average Variance Extracted

Variables	No. of items	Average Variance Extracted (AVE)
Customer Convenience	07	0.508
Reliability	05	0.490
Personal Interaction	07	0.552
Problem Solving	03	0.688
Policy	02	0.771
Customer Satisfaction	03	0.691
Usage quantity	03	0.673
Loyalty	04	0.517
Word of Mouth	03	0.728
Purchase Intention	04	0.687

Table-VIII: Squared Inter-Construct Correlation

Construct	Average Variance Extracted (AVE)			Squared	Squared Inter-construct Correlation (SIC)	truct Con	relation (SIC)		
Customer Convenience	0.508	0.089,	0.087,	0.031,	0.023,	0.023,	0.030,	0.076,	0.017,	0.013
Reliability	0.490	0.183,	0.063,	0.019,	0.041,	0.046,	0.055,	0.031,	0.026,	0.089
Personal Interaction	0.552	0.110,	0.036,	0.039,	0.013,	0.095,	0.064,	0.021,	0.087,	0.183
Problem Solving	0.688	0.045,	0.035,	0.011,	0.018,	0.044,	0.001,	0.031,	0.063,	0.110
Policy	0.771,	0.076,	0.003,	0.019,	0.000,	0.039,	0.023,	0.019,	0.036,	0.045
Customer Satisfaction	0.691	0.113,	0.045,	0.021,	0.132,	0.023,	0.041,	0.039,	0.035,	0.076
Usage quantity	0.673	0.013,	0.026,	0.021,	0.001,	0.039,	0.132,	0.181,	0.162,	0.095
Loyalty	0.517	0.134,	0.236,	0.181,	0.030,	0.046,	0.013,	0.011,	0.003,	0.113
Word of Mouth	0.728	0.085,	0.162,	0.076,	0.055,	0.095,	0.018,	0.019,	0.045,	0.134
Purchase Intention	0.687	0.017,	0.031,	0.064,	0.044,	0.000,	0.021,	0.236,	0.085,	0.095