Dimensions of supermarket service quality: A Sri Lankan perspective

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Abstract

The purpose of this study is to develop an instrument, determining dimensions of retail service quality with a specific focus on supermarket industry in Sri Lanka. This was by re-examining the RSQS (Retail Service Quality Scale) model, originally developed by Dabholkar, Thorpe and Rentz (1996) and to put forward a model, suitable to Sri Lankan perspective. The questionnaire was used as a research instrument and a total of 150 usable responses (n = 150) were obtained using Systematic Quasi-Random Sampling. Further, the study employs exploratory factor analysis (EFA) for the purpose of data analysis. The modified RSQS model consists of five dimensions or critical factors as detected by exploratory factor analysis. They are personal interaction, physical aspects, reliability, courtesy and convenience. In addition, factors extracted from the analysis accounted for 59.844 % of the total variability. The findings of this research could be generalized to the countries similar to this category.

Keywords: Retail service quality, exploratory factor analysis, Sri Lanka, supermarket industry

Introduction

Service quality is viewed as one of the most interesting and most discussed concepts in the service marketing paradigm, because there is no common agreement on its definition and measurement (Wisniewski, 2001). Researchers have generally followed two main schools of thought to explain the nature of service quality evaluation, namely the European (Nordic)

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perspective coined by Grönroos (1984) and the American perspective coined by Parasuraman *et al.* (1988). Grönroos (1984) identified three components of service quality, namely technical quality, functional quality, and image. Technical quality is the quality of what consumer actually receives as a result of his/her interaction with the firm and functional quality is how he/she gets the technical outcome. Customer's perceptions of these two dimensions are filtered through the service firm's image. Customers may overlook the firm's minor errors or mistakes when he/she has a positive image of the firm and the impact of mistakes is greater when he/she has a negative image of the firm. The model proposed by Parasuraman *et al.* (1985) is the most well-known and widely used in service quality literature (Sachdev & Verma, 2004; Shahin & Sames, 2010). They have defined perceived service quality as 'the extent of discrepancy between customers' expectations or desires and their perceptions' and developed a model named as the Gap Model of Service Quality. Based on the concept, service quality is recognized as the vehicle for increasing value for customers and ensuring customer satisfaction, especially in the service sector (Sivadas & Baker-Prewitt, 2000). Further, service quality aids in retention and patronage of existing customers (Yavas *et al.*, 2004). In this context, importance of service quality for improving their customer base has been realized by retailers. Retailers can frame their strategies in two different ways to get customer value. In the hyper-competitive environment, retailers have to face the competition which becomes difficult. Therefore, retailers in the globalized level should have the competitive advantage with creative and innovative manner to face the challenges. The retail sector in Sri Lanka can be put into two broad categories, modern trade retailers and traditional trade retailers (grocery shops). Modern retailers consist of hypermarkets, supermarkets, and convenience stores. A hyper-market is a very large self-service store that sells products usually sold in department stores and supermarkets. A supermarket is a self-service store, offering a wide variety of food and household merchandise, organized into departments. It is larger than a traditional grocery store and smaller than a hypermarket. A convenience store is a small-sized conveniently located store which provides limited number of merchandises and opens usually early to late-night.

In Sri Lankan perspective, Velnampy and Achchuthan (2013) have pointed that, the economic growth rate was spread between 1 and 7 % in last four decades. In the year 2001, Sri Lanka got negative growth rate due to the political instability in the country. After that, the growth rate was increased steadily. In the year 2010, the Sri Lankan economy has achieved the highest level of economic growth of 8 %. In this view, the growth of the Sri Lankan economy in the post war phase helped to drive the retailing sector in the country at an unparalleled level. The wholesale and retail trades are viewed as the largest sub category in the service sector in the Sri Lankan economy which accounted for 23.6% of Gross Domestic Production (GDP) with a contribution of Rs. 676 billion to the GDP in 2011 (Central Bank, 2011).

Based on these arguments, requirements for the research have been realized by the researchers to find out the determinants of retail service quality in the Sri Lankan context which will give the insights to frame the marketing strategies to create the customer value. In this way, the current study is aimed at investigating the components of retail service quality in the case of supermarkets in Sri Lanka by borrowing a framework developed by Dabholkar, *et al.* (1996).

Objectives of this study are twofold to:

- Identify the determinants of retail service quality from the customers' perspectives, and
- Develop a statistical model to measure customer-perceived retail service quality based on identified factors with a specific focus on the supermarket sector.

Literature review

Service quality is a concept that has produced significant interest and debate in the research literature (Ananth *et al.,* 2010). It is an elusive, distinctive and abstract concept (Sachdev & Verma, 2004) that is difficult in defining and measuring (Hoffman and Bateson, 2002; Ananth *et al.,* 2010). Concept of service quality has been defined in different ways by different scholars. Hoffman and Batesan (2002) defined service quality as 'an attitude formed by a long-term, overall evaluation of a firm's performance'. Parasuraman *et al.* (1985) defined service quality as 'the extent of discrepancy between customers' expectations or desires and their perceptions' and Grönroos (1984) has defined it as 'the outcome of an evaluation process, where the customers compare their expectations with the service they have received'.

Service quality in retailing is different from any other product/service environment (Finn & Lamb, 1991; Gagliano & Hatchcote, 1994; Hanjunath & Naveen, 2012). In retail setting, especially retail stores where there is a mix of product and service, retailers are likely to have impact on service quality more than on product quality (Dabholkar *et al.,* 1996). Thus a need of driving a measurement with a set of items that accurately measures the quality from the perspective of services as well as goods was emerged. Dabholkar *et al.* (1996) developed a hierarchical factor structure scale that they named as RSQS to measure service quality in retail setting. The overall service quality was viewed as a higher or second order factor. Dabholkar *et al.* (1996) conducted qualitative studies to construct the instrument and used phenomenological interviews, exploratory depth interviews, and tracking the customer through the store as methodologies. They found out that the scale possessed a strong validity and reliability in the US. Dabholkar *et al.* (1996) identified 5 basic dimensions to evaluate retail service quality; (1) Physical aspects - retail store appearance and store layout; (2) Reliability - retailers keep their promises and do the right things; (3) Personal interaction - retail store personnel are courteous, helpful, and inspire confidence in customers; (4) Problem solving - retail store personnel are

capable to handle returns and exchanges, customers' problems and complaints ; and (5) Policy - retail store's policy on merchandise quality, parking, operation hours, and credit cards.

In this context, Kumar and Gour (2010) have jointly focused on the research which aims to examine the applicability of the Retail Service Quality Scale (RSQS) in retail stores in Kazakhstan, a country of the Commonwealth of Independent States. Research instrument as structured questionnaire has been utilized among 220 shoppers from department stores, discount stores, and supermarkets in Almaty City. Five dimensions (physical aspects, reliability, personal interaction, problem solving, and policy) and six sub-dimensions (appearance, convenience, promises, doing-it-right, inspiring confidence and courteousness/helpfulness) of RSQS have taken to test the reliability and validity of their research. Findings revealed that, RSQS structure is a good fit in the Kazakhstan retail setting. The five dimensions and six sub-dimensions together provide significant usefulness in measuring the quality of retail services. Further, they suggested that, prospective and existing retail service providers who place a high priority on quality can use this instrument to track the high growth potential of the retail sector. In a supportive way, a study by Mehta *et al.* (2000) has proved that the scale proposed by Dabholkar *et al.* (1996) was slightly better than SERVPERF in measuring the service quality in supermarkets, while the reverse was true in measuring service quality in electronic goods retailers in Singapore. Further, the study found that the service quality in supermarkets mainly based on two factors, physical aspects and personal interaction. Nhat and Hau (2007) concluded that personal interaction and problem solving as the key factors impacting customer's perception on service quality. The fact was revealed by research conducted on retail service quality in the context of supermarket in Vietnam. Furthermore, they stated that policy and physical aspects as other factors that customer concerned at supermarket.

According to a study conducted on the relationship between service quality dimensions and customer satisfaction at discount stores in India by Arun, *et al.* (2012), all the dimensions of RSQS were positively related to customer satisfaction. The study was conducted on 17 items based on RSQS and then later it was reduced to five dimensions. Thenmozhi and Dhanapal (2011) applied RSQS to identify the retail service quality factors in unorganized retail outlets in India and six service quality dimensions were identified by them, namely store merchandise, access, personal interaction, problem solving, policy and physical aspects. It has also been stated by them that the most important retail service quality factors were store merchandise and access. For the applicability purpose, Kaul (2007) has conducted a research to assess the applicability of RSQS for measuring service quality in India and findings suggested that the service quality dimensions were not appropriate for measuring service quality in India. Furthermore, findings of a research that was conducted to access the validity and reliability of RSQS by Parikh (2006) has also pointed out that RSQS was not supported in Indian retails. A similar view is held by Singh and Singh (2011). They have compared various studies on service quality by using published

research papers and concluded that the RSQS was not fitted to Indian retail context. A requirement of a completely modified RSQS was evident from their study. In addition, Study which was conducted by Bouzaabia, *et al.* (2013) focused on retail logistics service quality: a cross-cultural survey on customer perceptions. Results revealed that, respondents in both countries reported high levels of perceived logistics service quality. Suggestion of the study pointed that; managers in the retail sector should focus on the customers' relationships with the staff in logistics service by implementing appropriate customer-oriented training programs.

Factors determining retail service quality is illustrated in figure 1. Physical aspects, reliability, personal interaction, problem solving and policy were identified as important factors by Dabholkar *et al.* (1996).
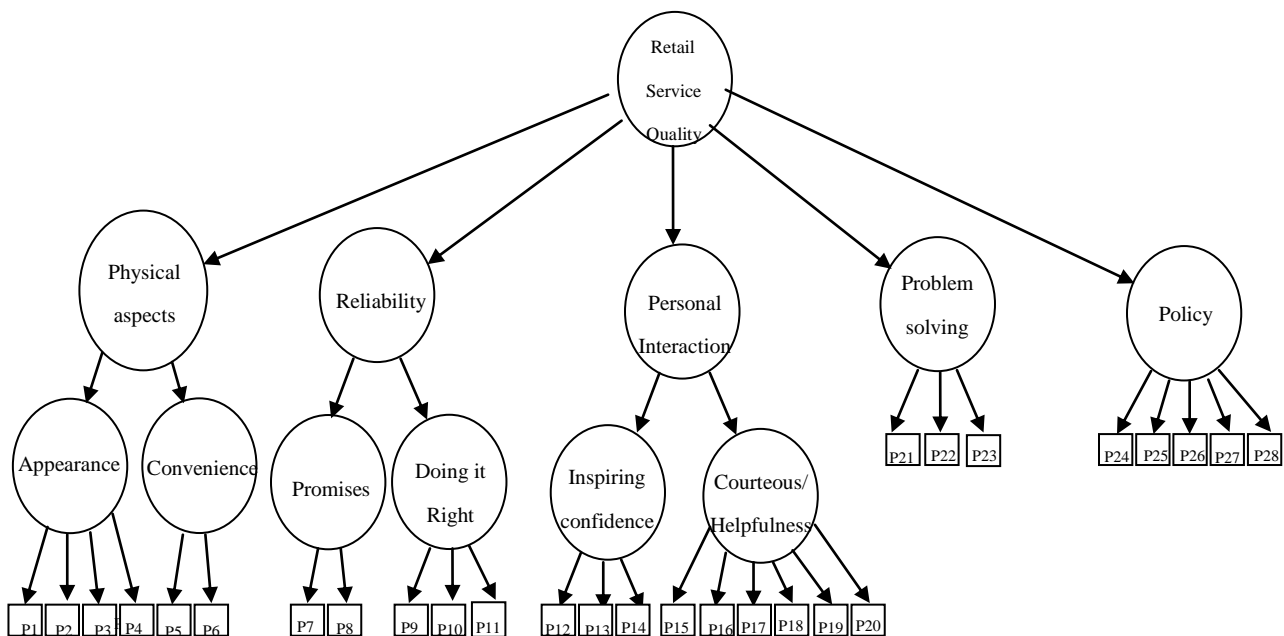
Sources: Dabholkar, *et al*. (1996)

Figure 1: Factors determining retail service quality

Research methodology

Scale development

The survey instrument of this study was a questionnaire, which was a derived from previous studies. This survey was initially developed by Dabholkar, *et al.* (1996) and deployed in this study with necessary modifications. Then, this was translated into Sinhala language in order to collect data conveniently from respondents, who speak Sinhala as their mother tongue.

This survey consists of two sections:

- Section A considers the respondent's demographic profile such as gender, age, educational qualifications, occupation and income.

-    Section B consists of 27 attitudinal questions related to retail service quality in supermarkets. From the original questionnaire, one item was excluded, as it was not applicable in Sri Lankan context. Each item was rated on a seven-point Likert-type scale ranging from strongly disagree (1) to strongly agree (7).

Population and sample

The target population for the study is all the consumers who shop at the supermarkets located in Colombo City. There are over 300 supermarket outlets owned by various companies and some of the leading companies are Cargills (Cargills Food City), John Kells Holdings (Keells Super), and Richard Pieris (Arpico Supercenter's). Others include many small supermarket chains running under the names of Magna, Laughs Sun- Up, Crystal, etc (Gajanayake *et al.,* 2011).The leading four supermarket brands in Colombo City were selected for the purpose of data collection.

Systematic quasi-random sampling method was used to select the sample of the study. This sampling method was chosen because it permits analysis of possible selection bias or error (Ndubisi, 2006). The data were collected on 12th of December 2013 from 10.00 a.m. to 4.00 p.m. Consumers of 14 supermarket outlets from the above four supermarket brands were randomly selected to participate in the study. The questionnaire was personally administered to two consumers in every one hour, who shopped at the supermarket outlets. As a result, a total of 158 consumers contributed to the survey. Among these participants, a number of 18 consumers failed to complete the questionnaires as expected.

Data collection and mode of analysis

The first five responses were treated as a pilot study which was excluded by the researcher. The primary and secondary data were collected for the study. Primary data were collected through questionnaires and secondary data were collected from books, journals, and magazines, research reports etc. The data collected was then analyzed by using a Statistical Package for Social Science (SPSS, version 20). The descriptive statistics have been used to display the sample profile of the respondents. Further, reliability test, test of sampling adequacy and factor analysis were performed to identify the critical factors which determine retail service quality (Velnampy & Sivesan, 2012). Specially, the factor analysis technique has been used to extract relevant dimensions from 27 statements on retail service-quality measured on the Likert scale of 1 to 7.

Results

Sample profile of respondents

The profile of respondents is presented in table1.The sample consists of 52 per cent male and 48 per cent female respondents. The majority of the respondents (i.e. 49.3 per cent) belong to the age group of 31-40 years, followed by the age group of 41-50 that constitute 19.3 per cent of total

respondents. Most of the respondents belong to the middle class income group with monthly income ranging from LKR 25,001 -50,000. Again, most of the respondents around 46.7 % are working in private sector.

Table 1: **Profile of respondents**

Description of personal variables		No of consumers	%
Gender	Male	78	52
	Female	72	48
Age	Below 17	10	6.7
	Between 18 and 30 years	23	15.3
	Between 31 and 40 years	74	49.3
	Between 41 and 50 years	29	19.3
	51 years and above	14	9.4
Occupation	Government	43	28.7
	Private	70	46.7
	Business	18	12
	Self-Employed	11	7.3
	Others	8	5.3
Salary	Below LKR 25,000	38	25.3
	Between LKR 25,001 – 50,000	75	50
	Above LKR 50,000	37	24.7

Source: Survey data (2013)

Reliability test

Reliability is an indication of consistency between two measures of the same dimension or variable (Black, 1999). The internal consistency among items within each dimension should be verified before employing factor analysis. This internal reliability is generally verified by Cronbach's alpha. This value may vary from 0 to 1.

The widely recognized rule of thumb for internal reliability is 0.7 (Nunnally, 1978). Table 2 presents the reliability coefficient calculated for each dimension.

Table 2: Statistics of reliability coefficient

Number of Indicators	Dimension(s)	Cronbach's Alpha
6	Physical aspects (PA)	0.766
5	Reliability (RI)	0.780
9	Personal interaction (PI)	0.759
3	Problem solving (PS)	0.765
4	Policy (PO)	0.859

According to the above table, the results indicate that Cronbach's alphas are above the threshold and suggest good internal consistency among items denoted in the instrument. Hence, data can be used with other statistical procedures for further analysis.

Validity test

Factorability of 27 items in respect of retail service quality also needs to be tested prior to the analysis. This is examined in two steps as carried out by Hussin and Iskandar (2013). First, Kaiser-Meyer-Olkin (KMO) is performed to measure the sampling adequacy. The KMO measure takes a value of 0.834, which exceeds recommended value of 0.5 (Kaiser, 1974) and 0.6 (Pallant, 2007).As this KMO value is between 0.80 and 0.89, it's interpreted as meritorious (Beavers *et al.*, 2013).The guidelines used to interpret the Kaiser-Meyer-Olkin measure (Nimalathasan, 2009; Beavers *et al.,* 2013; Sivathaasan & Chandrasekar, 2013; Achchuthan *et al.,* 2014) are presented in table 3.

Table 3: Guidelines for KMO test

KMO value	Degree of common variance
0.90 to 1.00	Marvelous
0.80 to 0.89	Meritorious
0.70 to 0.79	Middling
0.60 to 0.69	Mediocre
0.50 to 0.59	Miserable
0.00 to 0.49	Don't Factor or unacceptable

Second, the significance of the study is measured by performing Bartlett's Test of Sphericity. In this study, test value of chi-square is 1487.506 ($X^2 =1487.506$), which is significant at 5 % levels, as p-value takes zero (p = .000) value. This is in line with Pallant (2007), who suggests that, the significant value of Bartlett's Test of Sphericity should be 0.05 or smaller. Hence, the data confirm the suitability and validity of the responses collected to the problem being addressed through the study. The output of KMO measure and Bartlett's Test is given in table 4.

Table 4: KMO Measure and Bartlett's Test

Description		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.834
Bartlett's Test of Sphericity	Approx. Chi-Square	1487.506
	df	253
	Sig.	.000

Exploratory factor analysis (EFA)

The study used exploratory factor analysis to identify the component factors from 27 items related to retail service quality by using Principal Component Analysis (PCA) with Varimax rotation. How much variance a factor has to explain in order to warrant the retention of a factor or a component is decided based on criteria. The first criterion is the Kaiser Criterion, which is

the most commonly used Eigen value criteria (Beavers *et al.,* 2013), stating that only factors with an Eigen value of 1 or more are retained for further investigation (Guttman, 1954; Kaiser; 1960; Costello & Osborne, 2005; Beavers *et al.,* 2013). Second criterion is that, items with a loading smaller than 0.5 (low factor loadings) on any factor are deleted. For parsimony, only factors with loadings above 0.50 are considered significant (Pal, 1986; Pal & Bagai, 1978; Hair *et al.,* 2010). Finally, items that demonstrated cross-loadings greater than 0.5 or more than one factor are dropped, assuming that no pure measures of a specific construct are provided (Olorunniwo *et al.*, 2006).

According to the above criteria, four items or statements were excluded from the analysis and only five factors were extracted after the third run of EFA. During the first run of EFA, three items such as RI 3, PI 6 and PI 8 were removed. Further, one more item "RI 4" was also removed after the second run of EFA. Hence, the third run of EFA was conducted for remaining 23 items.

The procedure resulted in a five factor solution such as factor 1, factor 2, factor 3, factor 4 and factor 5. These five factors extracted together account for 59 % of the total variance with factor 1 contributing to 17.852 %, factor 2 contributing to 15.623 %, factor 3 contributing to 12.547 %, factor 4 contributing to 7.301% and factor 5 contributing to 6.522 %.Table 5 presents eigenvalue of 1 or more, percentage of explained variance for each factor and cumulative percentage of explained variance.

Table 5: Matrix of variance explained

Description	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Eigenvalue	7.267	2.532	1.544	1.356	1.033
Percentage of explained variance	17.852	15.623	12.547	7.301	6.522
Cumulative percentage of explained variance	17.852	33.474	46.022	53.322	59.844
Number of Items	8	8	4	2	1

Factor 1 and factor 2 were labeled as personal interaction and physical aspects respectively, which compose of eight items each in relation to retail service quality. Factor 3, having Eigen value of 1.544 consists of 4 items relating to reliability. Hence, it was named as reliability. Factor 4 includes 2 items and was labeled as courtesy. Finally, factor 5 is related to parking facility of the consumers and was named as convenience. The factor loading of each factor or component is furnished in table 6.

Table 6: Matrix of factor loadings structure

Items	Personal interaction	Physical aspects	Reliability	Courtesy	Convenience
PI5	0.727				
PI7	0.722				
PS1	0.645				

PS3	0.645			
PI 3	0.633			
PI4	0.617			
PO4	0.586			
PS2	0.518			
PA2		0.701		
PA6		0.683		
PA1		0.632		
PO3		0.630		
PA4		0.572		
PA5		0.557		
PA3		0.533		
PO1		0.530		
RI1			0.754	
RI2			0.733	
RI5			0.724	
PI2			0.504	
PI9				0.738
PI1				0.545
PO2					0.801

On the basis of EFA, a model for factors determining retail service quality is proposed in figure 2. In this model, retail service quality is dependent variable and five factors such as personal interaction, physical aspects, reliability, courtesy and convenience are independent variables. This model has been derived on the basis of statistical evidence.
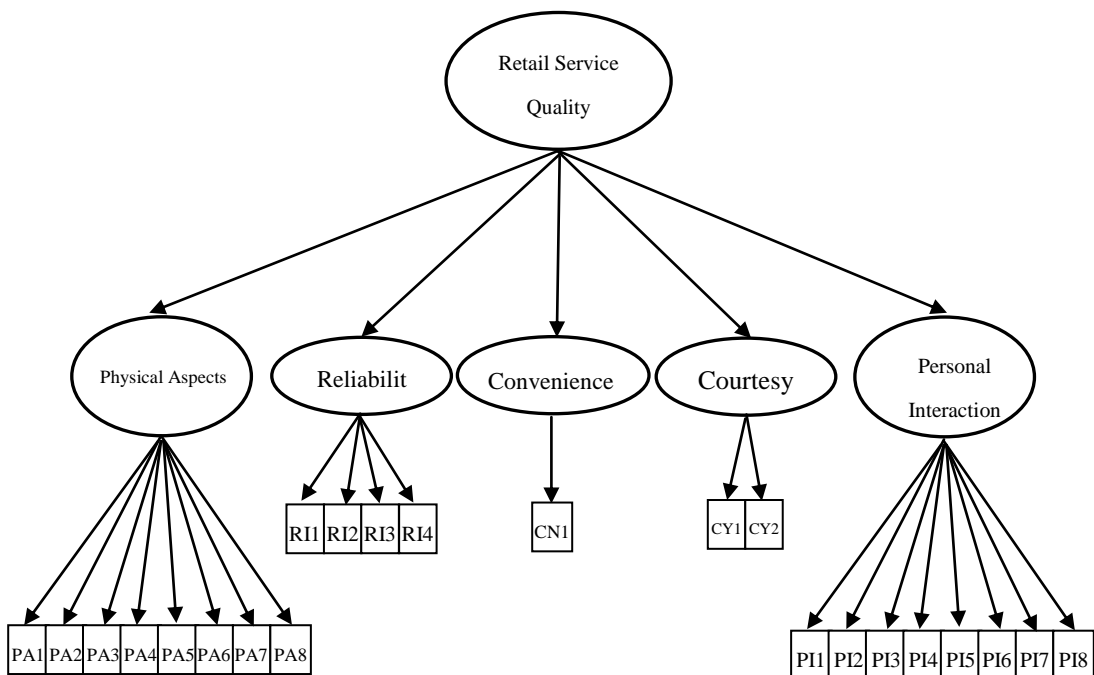

Figure 2: Proposed model of retail service Quality

Discussion

Culture and service quality are interrelated and linked by both academicians and practitioners in the marketing paradigm (Malhotra *et al.,* 2005). In this view, elaborately, Malhotra *et al.* (2005) viewed that, due to cultural and environmental differences, consumers of services in different countries may have different perceptions about service quality. In a supportive way, Zhang *et al.* (2008) examined and revealed that, different countries and cultural backgrounds have different expectations, react differently to service encounters, and divulge different behavioral intentions. When researchers center on the cross-cultural aspects to the marketing research, findings and recommendation make the research fruitfully (Malhotra *et al.,* 2005).

Recently, Khare (2013) has investigated to understand Indian consumers' definition of retail service quality with respect to small retailers and influence of hedonic and utilitarian shopping values. Results indicated that, small retail service quality for Indian consumers comprises ambience, layout, and service/relationships dimensions. Hedonic and utilitarian shopping values influence consumers' service quality evaluations. Furthermore, our research finding is also consistent with the findings of Khare (2013) in Indian context. In short, dimensions as ambience, layout, and service/relationships dimensions are consistent with the dimensions as physical aspects, reliability and problem solving. Those are identified as factors influencing on retail service quality in our study frame. In a supportive way, Rym *et al.* (2013) approached the study on the perceptions of retail logistics service quality among Romanian and Tunisian customers. Findings also exposed that, respondents in both countries reported high levels of perceived logistics service quality. However, Romanians reported higher perceived logistics service quality than Tunisians.

Furthermore, the US and Korean customers have been examined on the retail service quality by Kim and Jin (2002). Confirmatory factor analysis revealed that, personal attention and problem solving dimensions have been realized and confirmed as predictor dimension in both regions. Meanwhile, policy has not been found as fruitful one in both regions. This study also is in line with our study findings. Based on our study, the factor as policy which was framed by the Dabholkar *et al.* (1996) initially has been extracted by the exploratory factor analysis in our study. This reveals that, policy is not viewed as powerful predictor of the retail service quality in Sri Lankan view point. Interestingly, in developed countries like United States, policy was not recognized by the confirmatory factor analysis by Kim and Jin (2002). Importantly, the factor dimensions as convenience and courtesy were identified as separate predictor variable form the model which has been originally framed by the Dabholkar *et al.* (1996). Fascinatingly, the convenience is measured by the statement as convenient parking for customers. Especially, in Colombo City, customers in the retail supermarkets have to face the difficulties in terms of

parking facilities and convenient operating hours. For these reasons, customer perception towards parking facilities is found as predictor variable in Sri Lankan Context.

Conclusion

The study attempted to develop an instrument, determining dimensions of retail service quality of Super market industry in Sri Lanka and employed the technique of exploratory factor analysis. Five dimensions of the construct of retail service quality were identified as the first order factor in Sri Lankan context. These subscales measure personal interaction, physical aspects, reliability, courtesy and convenience. The above model was modified by re-examining the RSQS model, originally developed by Dabholkar *et al.* (1996). Factors extracted from the analysis accounted for 59.844 % of the total variability. A list of 23 retail service quality items that were grouped into five factors is presented in table 7.

This study has focused only the customers, purchasing the products in Colombo City. Colombo is the commercial capital of Sri Lanka. People in Colombo City hold the better conditions in terms of demographic factors as income, social status, and life pattern etc. Studies in different countries might give different findings. Thus, this may call for further investigation to determine whether this concept is unique among developing countries. Moreover, retail service quality should be taken into various service industries, provinces and districts. Further, the concept like retail service quality should be connected with customer loyalty, customer retention and brand equity to get more insights in marketing practices of retail supermarkets.

Table 7: Dimensions and indicators of retail service quality – supermarket industry

Coding	Items/Indicators	Dimension
PA1	The physical facilities at this store are visually appealing.	
PA2	The store layout makes it easy for you to move around in the store.	
PA3	This store has modern-looking equipment and fixtures.	
PA4	This store has operating hours convenient to all their customers.	
PA5	This store has clean, attractive and convenient public areas (restrooms, fitting rooms).	Physical aspects (PA)
PA6	The store layout makes it easy for you to find what you need.	
PA7	Materials associated with this store's service (such as shopping bags, catalogs or statements) are visually appealing.	
PA8	This store offers high quality merchandise.	
RI1	When this store promises to do something by a certain time, it will do so.	
RI2	This store provides its services at the time it promises to do so.	Reliability (RI)
RI3	This store insists on error-free sales transactions and records.	
RI4	The behavior of employees in this store instills confidence in you.	
PI1	Employees in this store tell you exactly when services will be performed	
PI2	This store gives you individual attention.	Personal interaction (PI)
PI3	This store willingly handles returns and exchanges.	

PI4	Employees of this store are able to handle your complaints directly and immediately	
PI5	You feel safe in their transactions with this store.	
PI6	Employees in this store give prompt service to you.	
PI7	This store accepts most major credit cards	
PI8	When you have a problem, this store shows a sincere interest in solving it.	
CY1	Employees in this store treat you courteously on the telephone	
CY2	Employees in this store have the knowledge to answer your questions	Courtesy (CY)
CN1	This store provides plenty of convenient parking for customers	Convenience (CN)

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