



The influence of grey consumers' service quality perception on satisfaction and store loyalty behavior

The influence of
grey consumers'
perception

901

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Abstract

Purpose – The purpose of this study is to identify grey consumers' perceived service quality at department stores and to examine the relationships between perceived service quality, their satisfaction and loyalty to those stores.

Design/methodology/approach – A structured questionnaire was developed to collect the data. Factor analysis was employed to identify dimensions of grey consumers' perceived service quality. Multiple regression analyses were conducted to examine the relationships between grey consumers' perceived service quality at department stores and their satisfaction and loyalty behaviors at those stores.

Findings – Three service quality dimensions were identified. The results showed that all three service quality dimensions in the study were significantly and positively related to their satisfaction at their favorite department stores and overall loyalty behavior to those stores. Among three service quality dimensions, personal interaction was the strongest predictor of both grey consumers' satisfaction and overall loyalty behavior. Personal interaction was identified as the most significant factor for promoting positive word of mouth and store image for repeat purchase intention.

Practical implications – With this study, department stores' managers would be able to better understand grey consumers and thereby take advantage of the potential purchasing opportunities of this powerful consumer market. This study also may contribute to the department stores' management in allocating their resources to improve service in a more effective way to satisfy grey consumers.

Originality/value – Despite the increasing purchasing potential this powerful market has created, grey consumers' shopping behavior is under-researched and their needs are still unmet in the market place.

Keywords Consumers, Grey marketing, Customer services quality, Customer satisfaction, Customer loyalty, Consumer behaviour

Paper type Research paper



Introduction

The growth in the elderly population is one of the most significant changes occurring in contemporary American society (Kim *et al.*, 2005). Elderly people, defined as individuals aged over 50 (Gardner, 2007; Pepper Institute on Aging and Public Policy, 2007), are often called grey consumers (Carrigan, 1998; Mumel, 2005) and are now the

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fastest-growing population segment in the USA, comprising 29 per cent of the US population (Pepper Institute on Aging and Public Policy, 2007). The US Census Bureau (2004) estimates that by 2010, 31.92 per cent of the US population will be aged over fifty, which equates to 98.6 million grey consumers. The US Census Bureau (2004) pointed out that the significant growth of the grey consumers is developing from the 21.3 million aging baby boomers who were born between 1946 and 1958 and are currently progressing into their fifties. A report by Pepper Institute on Aging and Public Policy (2007) at Florida State University indicated that grey consumers control 70 per cent of the nation's discretionary income. They earn more than \$2 trillion in annual income and own more than 77 per cent of all financial assets in the USA (Furlong, 2007). Since many businesses depend heavily on consumers' discretionary spending for their sales and profits and transforming people's discretionary incomes into purchases is a major marketing goal (Johnson, 1996), this demographic segment is a substantial and lucrative consumer group. In fact, according to Ruffenach (2005), grey consumers account for half of all the discretionary spending in the USA. They typically spend 74 per cent more on vacations than the 18-49 year-old population segment (Mature Market Facts, 2003) and spent an estimated \$42.7 billion on apparel in 2004 (Furlong, 2007).

Researchers found that shopping is a major part of grey consumers' lifestyle and a source of pleasure rather than a necessary utilitarian chore (Mason and Smith, 1974). Shopping activity also has a significant impact on grey consumers' mental and physical welfare (Kang and Ridgway, 1996). Grey consumers are currently progressing through various life changes due to the changes in social roles and activities (e.g. being employed versus unemployed) and physical limitations associated with aging (Joung and Miller, 2007). This transition period may be a tipping point for product and service decisions. Their needs for consumption and experiences, as well as their perceptions of and responses to marketing stimuli, are likely to change (Moschis, 2003). Studies on older consumers revealed that these consumers exhibit shopping behaviors that are different from other age groups, such as general expenditure patterns (Lazer and Shaw, 1987), shopping orientation (Huddleston *et al.*, 1990) and store loyalty (Lumpkin and Hite, 1988). They are less influenced by the product's price, and, instead, they prefer to have high quality products and services, showing greater levels of store loyalty (Tongren, 1988; Moschis, 1992; Moschis and Mathur, 1993). A study done by Carrigan (1998) also pointed out that grey consumers pay more attention to services such as courteous treatment and assistance from sales people than younger consumers. In this vein, it is important to understand grey consumers' perceptions of service at retail stores and their shopping behaviors.

Existing evidence from previous research showed the importance of consumers' service quality perception on consumers' shopping behaviors. Researchers suggested that service quality offered by retail stores is a significant determinant for consumers' purchase decisions at the stores (Anon., 1985; Doyle, 1987; Shycon, 1992), perceived value and willingness to buy (Sweeney *et al.*, 1997), customer satisfaction (Berry *et al.*, 1988; Boulding *et al.*, 1993; Duffy and Ketchand, 1998; Fornell *et al.*, 1996; Jun *et al.*, 2004; Sivadas and Baker-Prewitt, 2000; Taylor and Baker, 1994) and customer retention (Bennett and Higgins, 1988; Dabholkar *et al.*, 1995; Parasuraman and Grewal, 2000; Yong, 2000). Among consumer shopping behavior, customer satisfaction and loyalty behavior have become important issues in today's retailing market because a company's success in financial performance and market shares largely depends on the

satisfied customers who are willing to purchase products or services repeatedly and recommend the company's products or services to other consumers (Siu and Cheung, 2001; Raphael, 1999; Reichheld and Sasser, 1990; Srinivasan *et al.*, 2002). Although much research has addressed the relationships between service quality and customer satisfaction and loyalty behavior in various industries (Parasuraman and Grewal, 2000; Taylor and Baker, 1994), little research focused on grey consumers. Despite the increasing purchasing opportunities this powerful market has created, the US retailing market has been traditionally viewed as comprising of relatively younger consumers, and grey consumers' shopping behavior is under-researched and their needs are still unmet in the market place. The lack of academic foundations regarding the relationships between grey consumers' perceived service quality and their satisfaction and loyalty behavior has made it difficult for retailers to penetrate the grey consumer market and retain them as loyal customers through the right service. Thus, the purpose of this study is to identify grey consumers' perceived service quality at their favorite department stores and to examine the relationships between perceived service quality, their satisfaction and loyalty to those stores. The present study focused on department stores because previous research suggested that they have a preference for shopping at department stores (Department stores ignore, 2005; Moyer and Giddings, 2002). With this study, department stores' managers would be able to better understand grey consumers and, thereby, take advantage of the business opportunities that this powerful consumer market may provide. The present study also may contribute to the department stores' management in allocating their resources to improve service in a more effective way to satisfy grey consumers.

Literature review

Service quality

Researchers and marketers have recognized that product quality and price have not been the only dominant element that affects consumers' purchasing decisions (Sweeney *et al.*, 1997). A survey conducted by Wolfsgruber (1998), exploring the main reason for losing customers, indicated that the relative importance of price steadily declined from 68 to 50 per cent during the period between 1995 and 1997, whereas the relative importance of service increased from 17 to 34 per cent during the same period. The results of the study suggested that service is becoming a decisive factor for consumers in deciding whether or not they want to shop at a particular retail store. This change in consumers' purchase decision patterns has urged retailers to offer services that fulfill their customers' expectations. Researchers have tried to develop conceptual models to explain the service quality's inner structure and to measure consumers' perceived service quality in different industries.

Parasuraman *et al.* (1985) developed the "gap model" that conceptualizes perceived service quality as the degree and the direction of discrepancy between customers' perceptions of the actual service performance and their expectations. Ten dimensions, namely "tangibles", "reliability", "responsiveness", "competence", "courtesy", "credibility", "security", "communication", "access" and "understanding", were introduced as important factors that relate to consumers' perceived service quality. Based on the "gap model", Parasuraman *et al.* (1988) developed a standardized multi-item instrument named SERVQUAL with five service quality dimensions measuring consumers' perceived service quality: "reliability", "responsiveness", "tangibles", "assurance" and "empathy".

Gronroos (1984) suggested two types of service quality: “functional” (or “process”) quality and “technical” (or “outcome”) quality. Gronroos (1990) added the “image” dimension as the third component in the service quality model because there is a general perspective that a favorable and well-known image has an impact on customer perceptions in many aspects. In response to Gronroos’ (1984) service quality dimensions, McDougall and Levesque (1994) incorporated “physical environment” into the model. Rust and Oliver (1994) also applied a similar modification to Gronroos’s model by identifying three dimensions as “customer-employee interaction”, “service environment” and “outcome”. Using Gronroos’ service quality dimensions, Sweeney *et al.* (1997) examined the influence of retail service quality on perceived value and willingness to purchase at retail stores. They found that the salesperson’s knowledge (technical service quality) had a significant impact on perceptions of product quality and the value attached to a specific product. They also found that service quality perceptions had a significant and positive influence on willingness to buy. Cronin and Taylor (1992) introduced the SERVPERF scale, including the actual performance scale, and compared it with SERVQUAL. The study’s results showed that SERVPERF outperforms SERVQUAL by explaining more of the variation in consumers’ perceived service quality. Based on their conclusion, therefore, Cronin and Taylor (1992) argued that consumers’ perceived service quality should be based on the difference between consumers’ expectations and perceptions of the actual performance.

In 1995, Dabholkar *et al.* proposed a hierarchical factor structure, “DTR model”, to assess consumers’ perceived service quality in retail store settings such as the department stores. The “DTR model” included five dimensions: “physical aspects”, “reliability”, “personal interaction”, “problem solving” and “policy”. Metha *et al.* (2000) compared the SERVPERF model suggested by Cronin and Taylor (1992) and the “DTR model” suggested by Dabholkar *et al.* (1995) within two different retail store settings: the service-intensive retail store and the product-intensive retail store. They suggested that SERVPERF is more preferable to apply to the pure service and service-intensive industries such as electronic goods retailing stores while the “DTR model” is more preferable to apply to the product-intensive retail store settings of the non-pure service industries, such as department stores, specialty stores and supermarkets.

Using the DTR model, many researchers tried to identify service quality dimensions that influence customer satisfaction. An assessment of service quality done by Siu and Chow (2003) revealed that “personal interaction” and “physical aspects” were the two most important service quality dimensions in determining customer satisfaction at the supermarkets. Wong and Sohal (2003) investigated essential dimensions of service quality that influence consumer satisfaction and loyalty behavior in the department stores. They found that, among the five service quality dimensions, “physical aspects” was the most significant predictor of both customer satisfaction and loyalty behavior in the department stores. Since the “DTR model” is more appropriate in explaining consumers’ perceived service quality in retail store settings such as department stores, it was adopted in this study to examine grey consumers’ perceived service quality at the department stores.

Customer satisfaction

Much research has stressed the positive relationship between service quality and customer satisfaction. According to Berry *et al.*’s (1988), service has become a powerful

and competitive weapon for a company in achieving customer satisfaction. Taylor and Baker (1994) also found that high service quality leads to high customer satisfaction. In another study, researchers indicated that consumers' perceived service quality is a more decisive determinant of customer satisfaction than their perceived value (Fornell *et al.*, 1996). Similarly, Duffy and Ketchand (1998) pointed out that customer satisfaction is strongly influenced by service quality. Although the services perceived by customers in the retail store setting can motivate them to purchase products at the stores (Yong, 2000), not all services can successfully satisfy customers and motivate them to consume. Iacobucci *et al.* (1995) suggested that service quality improvements should be conducted based on customers' needs in order to improve their satisfaction. Therefore, identifying service quality dimensions that are important to the customers will contribute more effectively to improve customer satisfaction (Jun *et al.*, 2004).

Customer loyalty

Marketers realized that customer retention through loyalty toward a company or store might be an effective weapon in reducing costs. Existing research also indicated that customer retention not only increase revenues through increased customer spending and reduced operating costs, but also builds switching barriers (Reichheld and Teal, 1996). Given the increased emphasis on customer retention, more and more companies have been developing customer loyalty programs in order to retain customers (Kotler and Armstrong, 1999) and transforming their approach to customer management by shifting their focus from customer acquisition to customer retention (Payner, 2000). Previous research also suggested that proper service has the potential to prolong and intensify the company-customer relationship, create customer satisfaction and ultimately strengthen customer retention through loyalty (Meyer and Blumelhuber, 2000).

Much academic research on loyalty behavior focused on two factors, positive word of mouth (WOM) and repeat purchase intention, which represent the customers' willingness to recommend the product/service to other consumers and the likelihood of repeat purchases in the future (Dabholkar *et al.*, 1995; Lee *et al.*, 2001; Parasuraman and Grewal, 2000; Reichheld and Teal, 1996). In a study of the relationship between service quality and loyalty behavior, Zeithaml *et al.* (1996) suggested that the favorable assessment of service quality leads to favorable behavioral intentions such as positive WOM and preference for one company over others. Siu and Cheung (2001) studied the service quality of a department store chain and its impact on loyalty intention. They identified six dimensions of service quality: namely, personal interaction, policy, physical appearance, promises, problem solving and convenience. Among those six service quality dimensions, "policy" was salient on repeat purchase intention, while "physical aspects" was classified as important to positive WOM. A study of service quality and customer loyalty in the department stores, conducted by Wong and Sohail (2003), revealed that the "physical aspects" of service quality dimension is the most significant predictor of customer loyalty behavior in department stores.

Conceptual framework

Based on the marketing literature on service quality, customer satisfaction and customer loyalty behavior, a conceptual framework was developed and is shown in Figure 1.

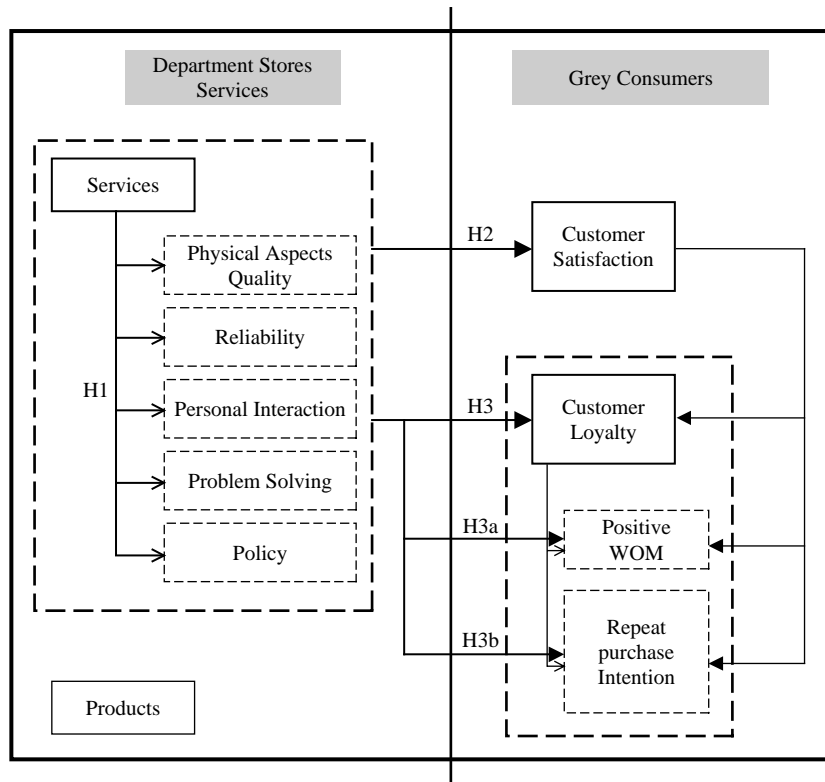


Figure 1.
Conceptual framework
of the study

The conceptual framework in this study primarily consisted of two sections: the first section concerned grey consumers' perceived service quality at their favorite department stores. In this section, the department stores' services were categorized into five dimensions according to the "DTR model": namely "physical aspects", "reliability", "personal interaction", "problem solving" and "policy". The second part included grey consumers' satisfaction and customer loyalty to department stores. Customer loyalty in this study was comprised of two aspects: positive WOM and repeat purchase intention. The main focus of the present study was on the relationships of grey consumers' perceived service quality with their satisfaction and customer loyalty of their favorite department stores to validate the results from the previous studies in that perceived service quality is the antecedent to customer satisfaction and loyalty. The following hypotheses were developed:

- H1.* There are multi-dimensions of grey consumers' perceived service quality at their favorite department stores.
- H2.* Grey consumers' perceived service quality at their favorite department stores is significantly related to their satisfaction toward those stores.
- H3.* Grey consumers' perceived service quality at their favorite department stores is significantly related to customer loyalty toward those stores.

- H3a.* Grey consumers' perceived service quality at their favorite department stores is significantly related to their positive WOM toward those stores.
- H3b.* Grey consumers' perceived service quality at their favorite department stores is significantly related to their repeat purchase intention toward those stores.

The influence of grey consumers' perception

Methodology

Sample and data collection

A convenience sample of 232 people over fifty years old in a town in southeastern part of the USA was invited to complete the structured questionnaires. In order to collect data, the researchers first contacted community organizations who work with elderly people and local churches and a time was arranged to visit the places for the purpose of administering the surveys. Of the 205 questionnaires returned, 182 qualified questionnaires were used for the data analysis. Twenty-three responses that did not meet the sample criteria were excluded. This included six participants who had not been to a department store for apparel shopping in the past year, nine participants who were below the required age threshold and eight participants who did not finish all questions as required. A summary of the respondents' characteristics is shown in Table I.

		Number	Percentage	Mean	SD	Range
Age	50-59	85	46.70	62	9.60	50-86
	60-69	53	29.12			
	70-79	33	18.13			
	Over 80	11	6.05			
Gender	Male	74	40.66			
	Female	108	59.34			
Race	African American	3	1.65			
	Caucasian/White	179	98.35			
	Hispanic	0	0.00			
	Asian/Pacific Islander	0	0.00			
	American Indian/Aleut	0	0.00			
	Others	0	0.00			
Education	High School	26	14.28			
	College	78	42.86			
	Graduate School	78	42.86			
Income	Under 20,000	3	1.65			
	20,000-39,000	17	9.34			
	40,000-59,000	27	14.84			
	60,000-79,000	45	24.72			
	Over 80,000	90	49.45			
Number of household people	1	29	15.94	2.45	1.30	1-8
	2	102	56.04			
	3	19	10.44			
	4	13	7.14			
	5	13	7.14			
	6	4	2.20			
	7	1	0.55			
	8	1	0.55			

Table I.
Profile of respondents

Almost 62 per cent of the respondents in this study reported that they visited department stores to purchase clothing items “occasionally”, 18.13 per cent reported that they “often” visited department stores to purchase clothing items, and 4.40 per cent of the respondents visited department stores “very often” for purchasing clothing items. Only 15.93 per cent said they “seldom” went to department stores to purchase clothing items.

Instrument development

In this study, a structured questionnaire was developed to collect the data pertaining to grey consumers’ perceived service quality at their favorite department stores, their satisfaction and customer loyalty toward those stores. The statements in the questionnaire were adopted and complied from previous studies identifying the retail service quality dimensions (Dabholkar *et al.*, 1995) and related research exploring the relationships between service quality, customer satisfaction and customer loyalty (Bloemer *et al.*, 1999; Reichheld and Teal, 1996; Taylor and Baker, 1994, etc.).

The questionnaire had three sections. The first section was used to measure the respondents’ frequency of purchasing clothing items in department stores and to determine their favorite department stores. This section was used to screen out unqualified respondents who had not shopped in department stores for clothing items during the past year. Eleven department stores in the area were selected and listed in the questionnaire, with an “Others” option representing other unlisted department stores. A conventional definition of department store was used and other types of stores such as discount stores or off-price stores were not included in the list. In addition, multiple locations of the same department store (e.g. Macy’s) were counted as same stores. Participants could select more than one favorite department store. The second section of the questionnaire consisted of 25 questions, among which 18 questions were used to determine perceived service quality in five retail service dimensions (Dabholkar *et al.*, 1995), three questions used to evaluate customer satisfaction (Talyor and Baker, 1994) and four questions were used to estimate customer loyalty specifically in two dimensions: positive WOM and repeat purchase intention (Reichheld and Teal, 1996). A five-point Likert-type scale was used with 1 indicating “strongly disagree” and 5 indicating “strongly agree”. Participants were required to evaluate their perceived service quality for their favorite department stores, as well as their satisfaction and customer loyalty for those stores. The third section inquired about the respondents’ basic demographic characteristics such as age, gender, education, income, etc.

A pilot test was conducted to validate the items and scales in the questionnaire as well as to detect any wording problems that might exist in the survey instructions and questions. Eighteen participants were asked to answer all the questions in the questionnaire and to point out any inappropriate wording in questions as well as any unclear statements. On the basis of the results of the pilot test, the preliminary questionnaire was revised and the contents finalized. Cronbach’s α value was computed for the internal consistency aspect of reliability of the scales measuring the perceived service quality. The perceived service quality measure, consisting of 18 items, had an α value of 0.92.

Results

A principal component of factor analysis with varimax rotation was conducted to identify the dimensions of grey consumers’ perceived service quality at their favorite

department stores. To set the criteria for the factor analysis, factors with eigenvalues greater than 1.0 and items with rotated factor loadings of 0.50 or greater were retained. To ensure that each factor identified by the factor analysis would have only one dimension, any item loading on more than one factor with a loading score equal to or greater than 0.40 on each factor was eliminated from the analysis. In addition, because communality of a variable represents the amount of variance in the factor solution explained by that variable (Hair *et al.*, 1998), variables with communalities less than 0.40 were deleted for reasons of insufficient contribution to explaining the variance. Six items that did not meet the above criteria were excluded from the analysis. Among the 18 items, 12 items were retained for the factor analysis, and 68.11 per cent of the total variance was explained by three service quality dimensions and were identified (Table II). Although the present study used the DTR model to measure service quality, items were regrouped in this study. This may have been a result of some items being deleted due to the high cross-loadings through the dimensions. The three factors were named based on the common characteristics of the included items.

Factor 1 was named personal interaction, which related to the interactions between the customer and the employee such as “service employees inspiring confidence and employees being courteous and helpful” as stated by Dabholkar *et al.* (1995). Among the six items in Factor 1, five items came from the “personal interaction” dimension of

Factor	Item	Factor loading	Variance explained (per cent)	Cronbach α
Factor 1: personal interaction	Employees in this store have the knowledge to answer your questions	0.83	45.88	0.90
	Employees in this store make you feel confident and happy	0.73		
	Employees in this store are never too busy to respond to your requests	0.88		
	Employees in this store are consistently courteous with you either in the store or on the telephone	0.76		
	This store gives you individual attention and help	0.81		
	Employees in this store are able to handle customer complaints immediately	0.65		
Factor 2: store image	The physical facilities at this store are visually appealing	0.82	13.84	0.75
	Materials associated with store service such as shopping bags and catalogs are visually appealing	0.77		
	This store never makes mistakes in your previous transactions	0.74		
Factor 3: convenience	This store provides plenty of convenience parking for customers	0.69	8.39	0.68
	This store has operating hours convenient to all customers	0.82		
	This store issues credit card and you can enjoy discount with this store's credit card	0.7		

Table II.
Factor analysis results:
perceived service quality
dimensions

the “DTR model” developed by Dabholkar *et al.* (1995). Although the item “Employees in this store are able to handle customer complaints immediately” was originally categorized under the “problem solving” dimension in the “DTR model”, it related to the interaction between the customer and the employee in the present study. Factor 2 was named store image, which included two items that related to the store’s physical facilities and one item that related to the store’s non-physical image such as “no mistake in previous transactions”. Factor 3 was named convenience. Though in the DTR model this factor was named as “policy” because researchers believed that most statements included the aspects of service quality that were directly influenced by the store policy, three items in this dimension were also focused on whether the department store brought its customers convenience, such as convenient parking, convenient operating hours and availability of a store-issued credit card with a discount. Thus, Factor 3 could be more appropriately perceived by consumers as convenience rather than “policy”. Among three factors, convenience received the highest mean value ($m = 3.95$), followed by store image ($m = 3.82$) and personal interaction ($m = 3.57$). *H1* was supported in that there are multiple dimensions of grey consumers’ perceived service quality at their favorite department stores.

Multiple regression analysis was conducted to examine the relationship between grey consumers’ perceived service quality at department stores and their satisfaction at those stores in *H2*. The multiple regression analysis indicated that 62 per cent of the variance in grey consumers’ satisfaction was explained by the three perceived service quality factors. The regression model was significant in explaining grey consumers’ satisfaction with department stores, with $F(3, 181) = 95.43$ and $p < 0.0001$ (Table III). The test of the relative contributions of independent variables to explain grey consumers’ satisfaction showed that personal interaction was the strongest indicator of grey consumers’ satisfaction, with a standardized coefficient of 0.56, followed by convenience with a standardized coefficient of 0.41 and store image with a standardized coefficient of 0.37. Thus, *H2* was supported.

H3 concerned the relationship between grey consumers’ perceived service quality at their favorite department stores and the customer retention of those stores, which was further specified in two dimensions: positive WOM (*H3a*) and repeat purchase intention (*H3b*). Multiple regression analysis was first conducted to examine the relationship between grey consumers’ perceived service quality at department stores and customer loyalty for those stores. In this analysis, the independent variables were the three perceived service quality factors, and the dependent variable was grey consumers’ customer loyalty, which equated to the sum of the scores of the four

Independent variables	DF	Parameter estimate	Standardized estimate	<i>t</i> -value
Intercept	1	12.13	0.00	121.48*
Personal interaction	1	1.21	0.56	12.04*
Store image	1	0.80	0.37	8.02*
Convenience	1	0.88	0.41	8.78*

Table III.
Multiple regression
analysis results for *H2*

Notes: * $p < 0.001$; dependent variable: customer satisfaction; analysis of variance: $F(3, 181) = 95.43$, $p < 0.0001$; $R^2: 0.62$

questions related to customer loyalty including two questions for WOM and two questions for repeat purchase intention. The multiple regression analysis indicated that 52 per cent of the variance in grey consumers' loyalty was explained by the three perceived service quality factors. The regression model was significant in explaining grey consumers' customer loyalty for department stores, with $F(3, 181) = 62.99$ and $p < 0.0001$ (Table IV). The test of the relative contributions of the independent variables to explain grey consumers' loyalty showed that personal interaction was still the strongest predictor of customer retention, with the highest standardized coefficient of 0.51, followed by store image with a standardized coefficient of 0.38 and convenience with a standardized coefficient of 0.34. Thus, $H3$ was supported.

Multiple regression analysis was further conducted to examine the relationship between grey consumers' perceived service quality at their favorite department stores and their positive WOM for those stores. In this analysis, the independent variables were the three perceived service quality factors, and the dependent variable was grey consumers' positive WOM, which equated to the sum of the scores of the two questions related to positive WOM. The multiple regression analysis showed that 49 per cent of the variance in grey consumers' positive WOM for department stores was explained by their perception of service quality. The regression model was significant in explaining grey consumers' positive WOM for department stores, with $F(3, 181) = 57.04$ and $p < 0.0001$ (Table V). The test of the relative contributions of the independent variables explaining grey consumers' positive WOM showed that personal interaction was the strongest predictor for consumers' positive WOM for department stores, with a standardized coefficient of 0.55, while store image and convenience had the same standardized coefficient of 0.31. Thus, $H3a$ was supported.

Independent variables	DF	Parameter estimate	Standardized estimate	t-value
Intercept	1	15.72	0.00	106.88*
Personal interaction	1	1.45	0.51	9.73*
Store image	1	1.07	0.38	7.19*
Convenience	1	0.97	0.34	6.53*

Notes: * $p < 0.001$; dependent variable: customer loyalty; analysis of variance: $F(3, 181) = 62.99$, $p < 0.0001$; $R^2: 0.52$

Table IV.
Multiple regression
analysis results for $H3$

Independent variables	DF	Parameter estimate	Standardized estimate	t-value
Intercept	1	8.01	0.00	90.34*
Personal interaction	1	0.91	0.55	10.21*
Store image	1	0.52	0.31	5.81*
Convenience	1	0.51	0.31	5.75*

Notes: * $p < 0.001$; dependent variable: positive WOM; analysis of variance: $F(3, 181) = 57.04$, $p < 0.0001$; $R^2: 0.49$

Table V.
Multiple regression
analysis results for $H3a$

Another multiple regression analysis was conducted to examine the relationship between grey consumers' perceived service quality at their favorite department stores and their repeat purchase intentions for those stores. In this analysis, the independent variables were the three perceived service quality factors, and the dependent variable was grey consumers' repeat purchase intentions for department stores, which equated to the sum of the scores of the two questions related to consumers' repeat purchase intentions. The multiple regression analysis reported that 38 per cent of the variance in grey consumers' repeat purchase intentions for department stores was explained by the three perceived service quality factors. The regression model was significant in explaining grey consumers' repeat purchase intentions for department stores, with $F(3, 181) = 36.74$ and $p < 0.0001$ (Table VI). The test of the relative contributions of the independent variables to explain grey consumers' repeat purchase intentions showed that personal interaction had a standardized coefficient of 0.37, store image had 0.38 and convenience had 0.32. Thus, *H3b* was supported.

Conclusions and discussion

The 18 perceived service quality items adopted from the "DTR model" were analyzed to determine the representative dimensions of grey consumers' perceived service quality at department stores. The exploratory factor analysis identified three dimensions: personal interaction, store image and convenience. The items of "physical aspects" and "reliability" in the "DTR model" were mixed together in this study and formed a dimension named store image. The items of "problem solving" and "personal interaction" in the DTR model were combined together in this study and named personal interaction. The dimension "policy" was renamed as convenience in this study. The results of the study implied that grey consumers perceived the service quality at department stores differently from other population segments. Of the three factors, convenience received the highest mean value ($m = 3.95$), followed by store image ($m = 3.82$) and personal interaction ($m = 3.57$). This result suggests that when grey consumers shopped at their favorite stores, they perceived that those stores have provided relatively sufficient service related to convenience. However, given the lowest mean score for personal interaction, they regarded that store service related to personal interaction was relatively not sufficient enough, implying that department stores should make additional efforts on further improving personal interaction.

A significant, positive relationship was found between grey consumers' perceived service quality at their favorite department stores and their satisfaction and loyalty

Independent variables	DF	Parameter estimate	Standardized estimate	<i>t</i> -value
Intercept	1	7.71	0.00	90.50*
Personal interaction	1	0.54	0.37	6.30*
Store image	1	0.55	0.38	6.46*
Convenience	1	0.46	0.32	5.38*

Table VI.

Multiple regression analysis results for *H3b*

Notes: * $p < 0.001$; dependent variable: repeat purchase intention; analysis of variance: $F(3, 181) = 36.74$, $p < 0.0001$; $R^2: 0.38$

behaviors at those stores. The result showed that all three service quality dimensions in the study were significantly and positively related to their satisfaction at their favorite department stores and overall loyalty behavior of those stores. It is clear that retail managers who are targeting older consumers should not rely only on product quality and price in order to be successful in their business. Among three service quality dimensions, personal interaction was the strongest predictor of both grey consumers' satisfaction and overall loyalty behavior with the highest standardized coefficient value. In addition, personal interaction was identified as the most significant factor for promoting positive WOM among grey consumers, indicating highest standardized coefficient value.

The findings of the study suggest that personal interaction is the key service quality factor perceived by grey consumers, implying that employees at retail stores are crucial to grey consumers purchase decisions at the store. The study also suggests that personal interaction between customer and employee could greatly contribute to the maximization of customer satisfaction and ultimately achieve effective customer retention through positive WOM and repeat purchase behavior among grey consumers. Sales personnel's attitude and manner to their customers and their knowledge, therefore, is of great importance in encouraging grey customers' satisfaction and insuring purchase behavior at the store. To increase their competitiveness, department stores need to provide more personal assistance, specifically to grey consumers, with services such as ushering, locating items, explaining functions and uses of products, and carrying heavy products for them, among others. Recruitment of proper personnel as sales associates and training and motivating employees may be vital for retail managers. For example, hiring more mid-aged in-store employees who might better understand grey consumers' needs could also help department stores attract more grey consumers.

Store image appeared as the most significant dimension for grey consumers' repeat purchase intention, while personal interaction was the second most important factor. These findings could provide fundamental guidelines for department store executives and managers who attempt to resurrect or improve department store business. Department store managers need to create attractive store layouts and methods of displaying merchandise to increase grey consumers' repeat visits and purchase intentions. By doing so, they can enhance the store image through the visual aspects of the store, including physical facilities with visually appealing signs, providing well-designed shopping bags and store catalogs.

From the results of this study, we can find the differences between grey consumers and younger consumers in the relationships of perceived service quality with customer satisfaction and loyalty. Although a study done by Wong and Sohal (2003) revealed that "physical aspects" was the most significant predictor of both customer satisfaction at department stores and the customer loyalty behavior of those stores, personal interaction was the most significant predictor of both variables in the present study with grey consumers. In addition, Siu and Cheung (2001) found that, among the six service dimensions, "physical aspects" was important to their positive WOM, while "policy" was salient on consumers' repeat purchase intentions. Nevertheless, the present study suggests that all the service quality dimensions identified in the study were significant determinants for both WOM and repeat purchase intention. Furthermore, personal interaction, in particular, was the most significant predictor of WOM, whereas store image was the most significant factor for repeat purchase

intention, and convenience (categorized as “policy” in the previous study) turned out to be significant, but the least important determinant of their repeat purchase intention. The lesson that the department store executives can draw from this finding is that, grey consumers, who believe that they have received superior services and more personal attention in a particular store would be more willing to recommend said store to other consumers; and a refined and consistent store image such as appealing physical facilities and positive past shopping experience can remarkably increase grey consumers’ repeat purchase intentions.

This finding is intuitively understandable because grey consumers over the age of fifty often tend to have a greater demand for entrance/exit assistance and more individualized assistance from sales people in locating items and explaining details and functions of different products during their shopping trips. Compared to younger customers, elderly customers usually exhibit more stable and long-lasting loyalty toward a particular store once they determine that it is the right store for them (Semon, 1995). Since store image is one of the crucial elements in establishing store loyalty, department stores need to convey a refined, trustworthy and reliable store image to grey consumers to improve their perception of service quality. Although the result of this study reveals that convenience was the third dimension determining service quality perceived by grey consumers at department stores. This result is consistent with the previous conclusion (Shim and Mahoney, 1992) that services, including convenient parking, are important for grey consumers. It is intuitive to understand why convenience is important to determine the perceived service quality of elderly customers. Elderly customers’ ages dictate that they may wish to have more parking lots closer to the store gates due to the physical limitations associated with aging. Shim and Mahoney (1992) also mentioned that services like in-store rest areas and ease of store layout are important for grey consumers; however, in this study, items representing easy-to-recognize direction signs within the store and well-designed layouts that should be important to grey consumers, were not included in the results. This may be partly because statements in the questionnaire representing those services were not clear or specified enough for respondents.

This study, however, has some limitations. Since the present study was conducted with a convenience sample in a small town in the southeastern part of the USA, the research results cannot be generalized to the entire US population who are aged over 50. Future research should gather a sample of grey consumers from various areas across the USA in order to generalize the grey consumers’ perceived service quality at department stores. By doing so, department store managers can further compare the differences of service quality perception among different areas so that they can establish and offer localized services that can satisfy the consumers in the area.

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