



## Impact of customer loyalty and service operations on customer behaviour and firm performance: Empirical evidence from UK retail sector

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## Impact of customer loyalty and service operations on customer behaviour and firm performance: Empirical evidence from UK retail sector

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**Abstract**

Retail networks are striving to achieve competitive advantage by increasing value through loyalty and efficiency with a focus on service operations. As sales promotions have become an integral part of the retail supply chain planning, customer behavioural aspects based on loyalty and service operations have been challenged greatly. Subsequently, management capabilities, such as planning and timely replenishment, have become complicated tasks for many retail store managers. This study develops a model integrating retail network value and efficiencies with customer behaviour and performance. We validate the model using survey data from prominent UK retail store customers. Our data analysis shows that both loyalty and service operation attributes have positive significant impact on customer behaviour while the service operation mediates the relationship between loyalty and customer behaviour. This result gives a new outlook to build managerial capability based on customer loyalty and service operations. Our results specifically show that the service operation attributes will indirectly influence the customers' buying behaviour even in the presence of loyalty attribute such as promotion schemes. This result sends a strong signal to retail supply chain managers to offer customized promotions considering local community rather than having uniform sales promotion nationwide.

**Keywords:** Retail network performance, service operations, customer loyalty, customer behaviour, management capabilities.

## 1. Introduction

Retailers were intermediaries in supply chain and played a passive role until few decades ago. Recently there is a power shift from manufacturers to retailers because of various value additions offered by retailers. Walmart is a fascinating example that demonstrated various management capabilities, such as sales and service options, to attract customers in the developed economies.

Retailing is one of the largest dynamic sectors in the UK economy. Leading retail stores in the UK, such as Asda and Tesco, are highly competitive and trying to survive in this competitive market using different sales techniques, such as sales discounts, promotional sales, coupons, free vouchers and online offers (Cooper et al. 1999; Divakar et al. 2005). These retail firms' management capabilities help them to be competitive in the market (Bititci et al. 2011). Customers are either attracted by general sales discounts offered by retailers or discounts offered particularly for their favourite brands.

In this competitive market place, in order to attract weekly shoppers almost all retail stores offer different price discounts and sales promotions for both branded and store items (Dube and Gupta 2008; Raju 1995). Among the various information cues within the retail context, 'price' is one of the most important information that determines the customer behaviour in terms of purchase decision. In fact, it accounts to 40% of their information search (Jin and Sternquist 2003). Thus 'price war' pulls customers from one retail store to another store. In effect, not many customers are loyal to any shop unless they get discounts continuously in all their shopping trips. A recent study by Gandomi and Zalfahari (2013) discusses the importance of customer satisfaction in profitability of loyalty programs. Also it is widely accepted that the customer satisfaction increases the customer retention and boosts the profitability of businesses (Au et al. 2002). In the context of emerging economies, importance of trust and customer services is higher to achieve customer satisfaction and loyalty (Krishna and Dangayach 2012). In addition, retail stores are interested to develop a novel business model that increase both retail network value and retail network efficiency through customer loyalty (Chatterjee 2013). The novel business models are not simple and depend on the capabilities of the network and how retail network team is going to utilise the manpower and other resources to create unique value to retain customers and reduce inefficiencies to increase the performance.

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3 One of the ways to create retail network value is through developing loyalty based on brands,  
4 store and schemes along with price which ultimately benefits customers. Previous studies  
5 have tested the impact of promotions of branded items and store loyalty independently on  
6 sales of retail stores (Dube and Gupta 2008; Blatteberg and Levin 1987). But many of these  
7 articles have discussed the brand loyalty and store loyalty either in isolation or with  
8 behavioural aspects, but have not related the loyalty aspects with the actual sales and supply  
9 chain performance.  
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12 Retail network efficiency can be achieved by offering unique customer service, product  
13 display, location of retail outlets, and introduction of the product. While some customers  
14 prefer convenience based on service operations others prefer to travel longer to go to their  
15 favourite shopping place (Market research, Panorama, BBC 1, 05 Dec. 2011 8:30 pm).  
16 Unlike many other service sectors, shifting the loyalty in grocery retail sector does not affect  
17 the customers but affects the supply chain efficiency. Subsequently this complicates the  
18 planning process in retail stores and also in the supply chains.  
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21 Hence, we attempt to understand the influence of retail network value and efficiency on  
22 customer behaviour and retail sales. Sales promotions not only influence customer behaviour  
23 but also have a vital role in loyalty and service operations. A recent study by Su and Genues  
24 (2012) discusses the impact of promotions in sales and argues that the benefit of promotions  
25 will outweigh the operations' costs of whole supply chains. Undoubtedly, in the past few  
26 years, sharp increase in the number of promotions offered by UK retail stores reflected in  
27 cross-shopping behaviour of customers and disloyalty (Bustos-Reyes and Gonzalez-Benito  
28 2008).  
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31 In this line, we develop a conceptual model by integrating retail network value and efficiency  
32 with consumer behaviour based on promotions and retailer performance. We validate the  
33 model using survey data from prominent retail stores located in Northeast of England. This  
34 study will be highly helpful to develop the managerial capabilities of retail supply chain  
35 network according to the customer behaviour and to focus on specific attributes of network  
36 value and network efficiency. From the practical point of view, this study will suggest how  
37 managers can leverage their capabilities in terms of loyalty or service attributes to improve  
38 the retail network performance.  
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41 The rest of the paper is organised as follows: Section 2 gives background of the study,  
42 conceptual model and research hypothesis. Research methodology, data description and data  
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validation are explained in Section 3. Model, analysis and results are reported in Section 4. Section 5 discusses the results of the analysis in line with the proposed hypotheses and also explains the managerial implications of this research. The final section concludes with limitations and future research opportunities.

## 2. Research background and hypotheses development

In this 21st century for any business, customers are of prime importance. Especially in the context of retail sales, network customer convenience based on service operations and attractions are getting attention from management team in order to survive in the competitive market. Attractive sales offers with high discount on branded items along with convenient shopping trips can potentially turn many existing and new customers into loyal customers.

### 2.1. Retail network operations and customer behaviour

In retail sector, customer is the central point who decides the actual sales. Lee et al. (2010) related the retail sales with store loyalty using hierarchical value map approach. In this aspect, many retail managers use 'convenience' as a catchall term which always includes service operations aspects such as location, product assortment, knowledge of sales associates, speed of checkout, hours, service levels, store layout, and ample parking. Managers rarely consider the relationships among these features (Seiders et al. 2000). In simple words, for customers, retail convenience means shopping speed and ease. The best-performing retailers understand the customer perspective and exceed their expectation through unique services. In the past few years, successful retail giant Tesco in the UK has been using customer profile information from 'Clubcard' to attract and retain the customers. According to Seiders et al. (2000) service attributes include the entire shopping experience starting from easy to reach (access convenience), product identification (search convenience), obtain desired products (possession convenience), and return of products (transaction convenience). These attributes of service operations have driven most innovations and added value to operations in retailing.

Jones et al. (2003, p. 703) define a convenient location as "providing a service to a consumer at a place that minimizes the overall travel cost to the consumer". This travel cost has been referred to as a fixed cost in previous research and refers to the distance the consumer must travel between his/her point of origin (e.g. home or office) and the service provider (Bell, Ho and Tang 1998). 'Location! Location! Location!' has long been a mantra for retailers and service providers (Jones et al. 2003). It has been widely believed that the choice of a shopping location is one of the most important decision criteria for shoppers. Especially, the

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3 location is highly relevant to service firms that require the customer to travel to the service  
4 organization to receive the service (Brown 1990). Despite its potential use as a strategic factor,  
5 the location has received relatively little attention in the services literature.  
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9 Apart from location, the retail customers are also attracted by loyalty programs. The loyalty  
10 program is a marketing program that is designed to build customer loyalty by providing  
11 incentives to profitable customers (Yi and Jeon 2003). Richard and Zhang (2012) discussed  
12 inter-relationships and impact of corporate image, satisfaction and commitment on customer  
13 loyalty in tourism industry. The goal of a loyalty program is to establish a higher level of  
14 customer retention in profitable segments by providing more satisfaction and value to certain  
15 customers (Bolton et al. 2000). There are various views about the effectiveness of loyalty  
16 programs (Yi and Jeon 2003). This is because the three determinants of retail loyalty have  
17 been recognised as individual characteristics, merchandise characteristics and  
18 service/interaction characteristics (Straughan and Albers-Miller 2001). Although the stated  
19 aim of most schemes is to reward loyal customers, the fundamental aim of most schemes is to  
20 manipulate consumer behaviour within this sophisticated system, where incentives and  
21 coupons can be individually targeted, in order to encourage customers to try new products or  
22 brands; increase multi-pack purchases; pay premium prices, and/or use the brand for  
23 increasingly diverse services (O'Malley 1998).  
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34 There is always an overlap in understanding the concept of loyalty – brand loyalty and store  
35 loyalty. Brand loyalty originally referred to consumers' repeated purchasing. Many  
36 academics accepted the definition by Oliver (1999) on brand loyalty as a strong commitment  
37 to re-buy a preferred product or re-patronize a service consistently in the future, thereby  
38 causing repetitive purchasing of same-brand or same brand-set products, despite situational  
39 influences. However, the repeat purchasing may only indicate consumers' temporary  
40 acceptance of a brand (Shang, Chen and Liao 2006). Therefore, the concept of brand loyalty  
41 was extended to encompass both attitudinal and behavioural loyalty (Jacoby and Kyner 1973).  
42 This two dimensional approach to assessing brand loyalty thus captures the reasons behind  
43 the purchase while also focusing on the behaviour (Ha et al., 2009). Thus purchase decisions  
44 based on loyalty may become simplified and even habitual in nature and this may be a result  
45 of satisfaction with the current brands (Solomon 1992).  
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54 However, Dowling and Uncles (1997) claimed that a loyalty program is unlikely to alter  
55 customer behaviour fundamentally, especially in established competitive markets. The  
56 authors' claims are partly based on findings from the British grocery market in which market  
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3 shares of competing firms have remained stable despite use of loyalty programs. In recent  
4 years, many retailers use various types of loyalty programmes to boost their sales. It is also  
5 evident that Tesco achieved increase in sales based on *Clubcard* scheme. However loyalty is  
6 one among the initiatives carried out by retail giants in addition to that based on their  
7 managerial capabilities they try to indigenise the service operation attributes as per customer  
8 expectations. Hence, in this study, we will check the mediating role of service operations  
9 attributes on the relationship between loyalty features of retailers and the customer behaviour.  
10 Our research findings will help retail firms to leverage their managerial capability to focus on  
11 influential loyalty and service operations attributes to gain competitive advantage.  
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15 Based on the above discussion we develop a conceptual model (see figure 1) by relating the  
16 concepts of the service operations attributes, the loyalty attributes, the customers' behaviour  
17 and retail sales. We further discuss the development of hypothesis relating the major  
18 constructs in the following sections.  
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2.2. *Service operations attributes*

Impact of customer service and friendly approach on customer satisfaction in retail sales is widely discussed in the literature (Parasuraman et al. 1988; Ramanathan and Ramanathan 2011; Krishna and Dangayach 2012). Some researchers related organisations' service quality management with performance (Shrivastava et al. 2006) In the UK context, empathy and responsiveness have been found to be the two key dimensions of customer service which in turn affirms the behavioural intention towards purchase (Smith and Reynolds 2009). Therefore, stores with friendly workers helping customers to locate items may attract more numbers of customers. It is also recognised that store workers in the cash counter with warm welcome and a helpful attitude will also have a great impact on customers' intention to buy or revisit the same store (Grace and O'Cass 2005). Based on the above arguments we posit our first research sub-hypothesis as follows:

- H1a: Customer service positively influences customer behaviour

In the literature of marketing, many different ways of advertisements are discussed to attract the potential customers. Advertising before the advent of internet was either through visual communication media like television, news magazines, brochures or good word of mouth from friends or relatives. Some low cost advertising techniques, such as banners, in-store promotions and store-team engaging customers with sample products, were still in use. In this 21st century although many sales advertisements are made through a variety of media, the



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3 buyers tend to know about the store or brand quality through the actual experiences of friends  
4 or through widely available online feedbacks.  
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7 Although sales advertisement attract customers, the retail buyers especially grocery shoppers  
8 venture out themselves in buying specific products that suit the needs of their entire family.  
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10 Normally, customers tend to choose a retail store for their weekly shopping based on various  
11 reasons. Sometimes a good introduction by a close friend, who has had a positive experience  
12 of product quality or service, may add a loyal customer to retail store or to a brand. In this era  
13 of e-consumerism, many customers also look at the store rating and product rating before  
14 they go for shopping. Hence, we consider introduction as one of the attractive features of  
15 customers buying behaviour in our next research sub-hypothesis.  
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21 • H1b: Introduction has a significant positive impact on customer behaviour  
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23 Location of the store is another important aspect for customers to choose from many stores.  
24 Some elderly customers may tend to minimise their travel time and prefer visiting the store  
25 located in a convenient place closer to their home. Some working people may prefer to visit  
26 the shop that is closer to their office during working days and prefer to visit to the shop closer  
27 to home during weekends. For many families with young children, the weekly shopping trip  
28 becomes a pleasure trip and hence they look for a convenient car parking area. This demands  
29 many retailers to prove their management capabilities like offer car parking to their weekly  
30 grocery shoppers. If a store is working late in the evening, working people will make their  
31 shopping trip closer to home after office hours or else make a short trip to the shop closer to  
32 office for immediate needs. For many young families, use of credit or debit card with 'over-  
33 payment' option is a boon in the recent financial crisis. This prompts retailers to offer a  
34 variety of payment methods. Display within the store also plays a great role in sales.  
35 Customers are intent to buy items displayed in end aisles or in a visible location (Cooper et al.  
36 1999). Some stores use display strategies combined with promotional sales while others do  
37 not have any price discount but will have attractive display of items in a convenient location  
38 within the store. In this line, we propose the next two research sub-hypotheses as follows:  
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- 50 • H1c: Store convenience positively influences customer behaviour  
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- 52 • H1d: Store display has a significant positive impact on customer behaviour  
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54 Service operations and convenience factors such as access, transaction, and benefit play a  
55 considerable role in customers' perceptions about the retail outlet (Belvedere 2014; Nguyen  
56 et al. 2012). These studies emphasise the importance of convenience both in western and  
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3 eastern contexts to attract and retain customers. In this research, we combine the above  
4 discussed elements of attractive features namely display, convenience, introduction and  
5 customer service under the heading of ‘service operations features’. Additionally, customers’  
6 perception of shopping convenience in a particular store may vary when they encounter the  
7 services offered in the store. Actual experience of customers will greatly reflect in their  
8 buying behaviour (Pucinelli et al. 2009). Based on this discussion, we posit our first main  
9 research hypothesis.

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15 ***H1: Service operations attributes are positively related to customer behaviour***

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18 ***2.3. Loyalty attributes***

19 Literature of customer loyalty is very extensive with many models. Macintosh and Lockshin  
20 (1997) developed a model with multilevel relationship between customers and stores. They  
21 claimed that trust, commitment and interpersonal relationships are directly related to purchase  
22 intention of shoppers. Flavian et al. (2001) related store loyalty with income, education and  
23 employment in the Spanish market. Srinivasan et al. (2002) based on Lipstein (1959) and  
24 Kuehn (1962) described loyalty as profitability on repeat purchase of items. Due to recent  
25 promotional sales offered by many retailers for leading brands, it is very hard for the  
26 customers to shift their loyalty from one brand to the other. Also people tend to make their  
27 weekly shopping based on the coupons available at the time of shopping. He we posit the  
28 following sub hypothesis

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- H2a: Store loyalty positively influences customer behaviour

From early 1970’s to late 1980’s customers of retail stores had a limited range of choices.  
Hence, every visit to the store made the customers resulted in the purchase of the same  
product (Flavian et al. 2001). This has been one of the factors contributing to brand loyalty.  
In the 21st century there are many retail chains operating around the world. Weekly shoppers  
have a variety of choices, such as megastores and superstores giving them a very wide choice  
of products and brands, to make their shopping experience very interesting. Almost all the  
leading brands are available from many big stores. Thus shoppers do not have to travel to  
different stores in search of their favourite brands. Here we state the following sub hypothesis  
between brand loyalty and customer behaviour.

- H2b: Brand loyalty has a positive influence on customer behaviour

To attract many customers, retail stores try and introduce loyalty scheme/store cards. Due to on-going competition, offers made through loyalty schemes are also increasing by many leading retailers. At this juncture, understanding buyers' behaviour and maintaining customers' loyalty has become a big challenge for retail stores. This particular complication attracted attention of practitioners and academics to conduct in-depth study on customer behaviour on store loyalty and brand loyalty. Hence our sub hypothesis relating loyalty schemes and customer behaviour is given below

- H2c: Loyalty schemes are positively related to customer behaviour.

In recent days, price matching guarantee provided by retail stores (for example Tesco and Sainsbury's) reduces the customers' time on searching for the better price either by visiting many shops or using the internet. This reduces customers' loyalty to any one particular store or product. Due to 'shifting loyalty' behaviour of customers, it is difficult for many businesses to attract and retain customers for a longer period. Frequent in-store promotions and other promotional sales with attractive low price influence customers' decision on buying. Our next sub hypothesis relating price and customer behaviour is given below

- H2d: Sales price has a significant positive influence on customer behaviour

Overall using the above discussion regarding four sub hypotheses related to loyalty attributes and customer behaviour, we posit our loyalty relationship with customer behaviour as given below (see H2). In this hypothesis, the loyalty attributes include four main factors namely store loyalty, brand loyalty, loyalty schemes and sales price. Impacts of these four factors are tested on customer behaviour.

***H2: Loyalty attributes are positively related to customer behaviour***

*2.4. Customer behaviour and sales*

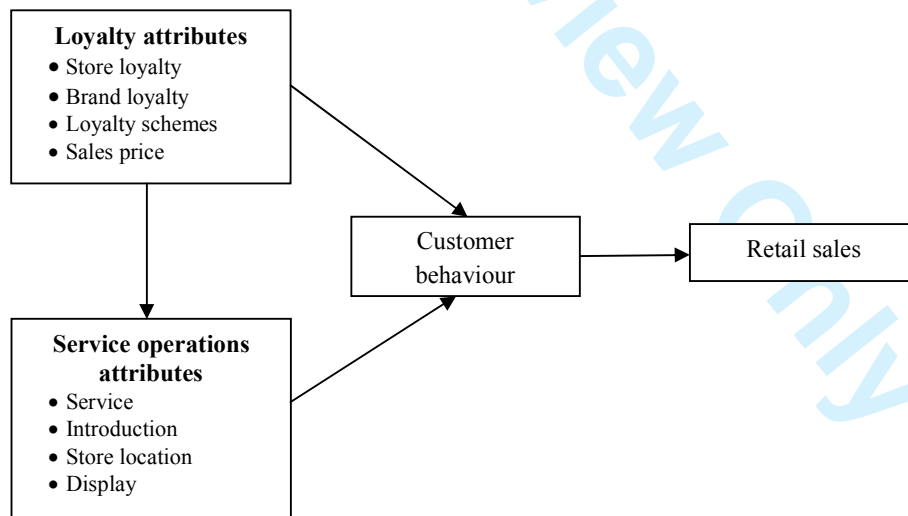
Both the service operations attributes such as introduction, display, location and customer satisfaction; and the loyalty attributes such as loyalty scheme, store and brand loyalty and price dependency will certainly impact the behaviour of customers during their weekly shopping. Satisfied customers with long relationships with the local shops may prefer to buy items from the same shop although other competitors provide more lucrative offers. On the other hand people may tend to shop in different stores within limited proximity if they get good promotional offers. Allender and Richards (2012) modelled the relationship between brand loyalty and retail promotion strategies. Impact of loyalty features and convenience

features in customer behaviours is measured through their intention to visit again and recommend the shop and their favourite items to friends and relatives (Ramanathan and Ramanathan 2013). Retail sales are measured through satisfied buyers in the store and satisfied buyers of the product. Accordingly, we propose the next two research hypotheses.

**H3: Customer buying behaviour is positively linked to retail sales**

As discussed earlier in section 2.2, retail network giants will maximise network value by combining loyalty attributes and service operations attributes to increase the customer satisfaction. Service operations are viewed as compliment to promotional sales and loyalty cards (Seiders et al. 2000). While, the direct effect of loyalty attributes are clearly evident from the literature, it is not widely discussed how service operations are indirectly influencing the customer buying behaviour (Divakar et al. 2005). To unveil this point, we posit our next research hypothesis that service operations will mediate the relationship between loyalty attributes and customer behaviour. Refer to Figure 1 for hypothesised model of retail network value.

**H4: Service operations mediates the relationship between loyalty and customer behaviour**



**Figure 1:** Retail network value conceptual model

### 3. Research methodology and data description

We used survey questionnaire to collect information on customers buying behaviour. Based on the literature (see Section 2) and discussion with peer academics and practitioners, we

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3 developed the initial questionnaire. Then the questionnaire was validated by testing with ten  
4 experts, who are good in customer behavioural study and are also regular shoppers. There  
5 was no change in the questionnaire items as all questions were accepted by the peers, except  
6 for restructuring of the questions for easy understanding. The survey questionnaires, with 50  
7 questions having Likert scale 1 (strongly disagree) to 7 (strongly agree), were distributed  
8 among weekly-shoppers of leading stores such as Tesco, Asda, Morrisons' and Sainsbury's,  
9 located in the North of England. It is important to note that we have not considered two main  
10 retailers namely Lidl and Aldi for our study as they were not having the same or similar  
11 business (in terms of volume and variety of products) like these four retailers in the UK in  
12 2010 and 2011. We have chosen survey method, as this will be an effective tool to collect  
13 true opinions of customers, regarding their preferences on buying 'established brand'  
14 products and visiting retail stores - Tesco, Asda, Morrisons and Sainsburys.  
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23 In each of these retail stores, 150-225 customer responses through survey questionnaires were  
24 collected for data analysis. In total 605 survey questionnaires were collected and recorded in  
25 the excel sheet for further analysis. Every respondent was supported by a research assistant to  
26 complete the questionnaire. In certain cases, especially for elderly participants, help was  
27 extended for entering the responses in the paper based questionnaire. Hence, we could  
28 achieve 100% response rate for almost all questions, except for the question on 'income  
29 range'.  
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35 The survey questions were in two parts. In the first part of the questionnaire, the main focus  
36 was given to research questions related to the proposed hypotheses. The second part of the  
37 questionnaire tried to obtain some general information such as age, income and gender. This  
38 approach helped to avoid any distrust and confusion amongst the respondents. Questions  
39 were focusing on factors such as customer service, display, advertisements, service  
40 operations, loyalty on store and brands. Price related choices of customers helped to identify  
41 the actual buying behaviour of the shoppers. The response from the survey has been used to  
42 measure the sales volume as the readiness to buy the product. This will represent purchase  
43 intention and potential sales in retail stores (Divakar et al. 2005).  
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51 Out of 605 responses 280 responses are from male shoppers and remaining 325 are from  
52 female shoppers. Nearly half of the responses (51%) have come from the age group of 21-30.  
53 The next high response of 21% is from the age group 31-40. Percentage of responses from  
54 teenagers (15-20) is 4% and from over 70's is 1%. The responses from other age groups  
55 make 23% of the total. 7 out of 605 responses did not specify their income range. The  
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monthly income of 441/605 shoppers are less than £1601 and the monthly income of 22/605 shoppers are more than £2800. The remaining 135 respondents' income was in the range of £1601-£2800.

After collecting the customers' opinion, the data was first analysed using the statistical package, SPSS for basic descriptive analysis and to analyse the factors. Principal component analysis and confirmatory factor analysis confirmed the presence of 10 factors with 35 measured items with more than 0.4 loadings. Table 1 represents the mean and standard deviation of each of the measured items. This also represents the loadings of each observed item under 10 factors. All the loading are above the suggested level of 0.4 (Hair et al. 2006). We have used Kaiser–Meyer–Olkin's (KMO) measure of sampling adequacy to test appropriateness of using factor analysis for the data analysis. KMO values of factors are above 0.5 proved the validity of using factors (Hair et al. 2006). F-values of all ten factors are found significant (see Table 1).

Based on the initial data analysis and confirmatory factor analysis we have identified ten factors namely, loyalty scheme, introduction, store loyalty, store display, store convenience, customer service, brand loyalty, price dependency, sales and customer behaviour. Some of these factors namely loyalty (store and brand), display, price sensitivity, customer service, customer behaviour and sales have been adopted from the literature (Cooper et al. 1999; Divakar et al. 2005; Parasuraman et al. 1988). While the importance of other factors namely convenience, competitive loyalty schemes and introduction have been developed from our initial interaction with retail store managers and customers, all these measures are used further for regression analysis.

**Table 1: Results of confirmatory factor analysis**

Main constructs	Attributes (sub-factors)	Items	Mean	SD	Loadings	KMO	F-value (significant)	Percentage of variance explained
Loyalty	Store loyalty	Low Price	5.02	1.328	.858	0.669	22.210	71.008
		Save money	4.94	1.348	.890			
		Get favourite item cheaper	4.70	1.312	.776			
	Brand loyalty	Promotion item	4.79	1.294	.778	0.657	71.116	46.126
		Favourite item	4.36	1.473	.625			
		Any item	4.65	1.404	.768			
		Any branded item	5.31	1.247	.508			
	Loyalty Scheme	Loyalty card	4.40	1.648	.779	0.669	113.284	56.456
		Gift Voucher	4.24	1.509	.842			
		Media Adverts	4.61	1.386	.790			
Sales Promotions		5.32	1.163	.564				

	<b>Sales price</b>	Buy favourite brand with high price	4.57	1.568	.878	<b>0.546</b>	<b>14.870</b>	62.454
		Buy favourite brand with high promotion price	4.44	1.491	.869			
		Promotion price of favourite is higher than	4.91	1.149	.589			
<b>Service operations</b>	<b>Customer service</b>	Easy to return	5.08	1.307	.756	<b>0.798</b>	<b>42.739</b>	68.594
		Customer support	5.37	1.167	.880			
		Friendly staff	5.42	1.149	.879			
		Help to choose items	5.57	1.099	.791			
	<b>Introduction</b>	Shop introduction	4.55	1.631	.689	<b>0.698</b>	<b>25.918</b>	56.467
		Shop review	4.03	1.716	.783			
		Brand introduction	4.58	1.436	.755			
		Customer review	4.32	1.579	.775			
	<b>Store location</b>	Close to my office	5.30	1.475	.704	<b>0.717</b>	<b>82.311</b>	51.163
		Convenient parking	5.07	1.487	.631			
		Convenient opening hours	5.67	1.171	.806			
		Choice of payment	5.96	1.074	.709			
	<b>Display</b>	Easy to locate	5.32	1.158	.757	<b>0.749</b>	<b>39.426</b>	60.360
Clear display of price		5.37	1.180	.808				
Improves lifestyle		4.86	1.377	.771				
Specific needs		5.10	1.291	.770				
<b>Customer behaviour</b>	Visit again	5.84	.943	.782	<b>0.630</b>	<b>89.713</b>	59.160	
	Recommend shop	5.41	1.188	.822				
	Recommend favourite item	5.19	1.230	.699				
<b>Retail sales</b>	Satisfied buyer (store)	5.56	1.019	.827	<b>0.502</b>	<b>23.813</b>	68.311	
	Satisfied buyer (product)	5.33	.993	.827				

Correlation between the factors (research constructs) is given in Table 2. None of the factors have high significant correlation, greater than 0.9, with each other. This proves the discriminant validity of the factors used in the analysis. We have used composite reliability to check the reliability measures of the factors. The diagonal elements of the Table 2 represent composite reliability. The values of composite reliability are above the recommended minimum 0.7 (Hair et al. 2006).

**Table 2: Correlations of inter-constructs**

Constructs	1	2	3	4	5	6	7	8	9	10
1. Store loyalty	0.880									
2. Brand loyalty	.330**	0.769								
3. Loyalty scheme	.098*	.150**	0.836							
4. Sales price	-0.045	.145**	.197**	0.829						
5. Customer service	.113**	.140**	.226**	.254**	0.897					
6. Introduction	.202**	.263**	.381**	.425**	.230**	0.838				
7. Location	.145**	0.071	0.064	.142**	.440**	0.028	0.806			
8. Store display	.243**	.255**	.214**	.294**	.554**	.310**	.454**	0.859		
9. Customer behaviour	.177**	.185**	.251**	.230**	.380**	.315**	.360**	.422**	0.812	

10. Retail sales	-0.045	.145**	.197**	0.89**	.254**	.425**	.142**	.294**	.230**	0.812
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\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Diagonal elements show composite reliability

#### 4. Data analysis and results

Further to factor analysis, we have tested the research hypotheses developed in Section 2 using regression analysis. Use of the regression analysis is widely accepted tool for the purpose of classifications and critical analyses (Chen 2012). First, we have tried to understand the relationships between service operations features and customer behaviour. As explained before we have categorised the characteristics of service operations under four factors, namely location, display, introduction and customer service. In the regression analysis, we have considered ‘customer behaviour’ as the dependent variable with all the four independent variables (service operations). Table 3 represents results of the regression analysis establishing the relation between service operations and customer behaviour. R-square of the model is 0.274 with significant F-value 56.421. All the factors of service operations have significant positive influence on the behaviour of customers. ‘Introduction’ has highest beta coefficients compared to other factors. ‘Customer service’ has the lowest beta coefficient among all the four factors. However, all the four factors are significant and positive in the model. This result confirms our first hypothesis that customers’ service operations is directly related to customers’ behaviour.

**Table 3: Impact of convenience on customer behaviour**

Model	Standardized Coefficients		t	Sig.	Collinearity Statistics	
	Beta				Tolerance	VIF
(Constant)			.048	.961		
Customer service	.132		3.027	.003	.641	1.561
Introduction	.223		6.004	.000	.877	1.141
Store display	.184		4.081	.000	.595	1.680
Store location	.211		5.147	.000	.725	1.378

In order to verify our second hypothesis we have used four factors of loyalty namely, brand loyalty, store loyalty, price dependency, and loyalty schemes. The regression analysis has R-square is 0.129 with significant F-value 22.275. Table 4 represents the direct effect of loyalty on customer behaviour. All the four factors of loyalty have proved their direct significant



influence in customers' behaviour. Loyalty schemes have the highest beta coefficient with high significance  $p < 0.000$ . This regression analysis result supports our second hypothesis that the loyalty features impact customers' behaviour. As all the four factors of loyalty features are found significant in the regression model, we can claim that hypotheses H2a-d are proved.

**Table 4: Impact of loyalty on customer behaviour**

	Standardized Coefficients			Collinearity Statistics	
	Beta	t	Sig.	Tolerance	VIF
(Constant)		-.014	.989		
Store loyalty	.140	3.451	.001	.878	1.139
Brand loyalty	.083	2.007	.045	.859	1.164
Loyalty scheme	.188	4.778	.000	.943	1.061
Sales price	.187	4.739	.000	.937	1.067

After establishing direct significant positive relationships of service operations –customer behaviour and loyalty-customer behaviour, we have further tried to test the relationship between behaviour and retail sales. We have observed a positive significant influence of customer behaviour in retail sales (see Table 5). This regression model has  $R^2 = 0.053$  and significant F-value = 33.674 with  $p < 0.00$ . This result has proved our third research hypothesis that customer behaviour positively reflects in retail sales.

**Table 5: Relationship between customer behaviour and retail sales**

	Standardized Coefficients			Collinearity Statistics	
	Beta	t	Sig.	Tolerance	VIF
(Constant)		.000	1.000		
Customer behaviour	.230	5.803	.000	1.000	1.000

In order to test mediating role of service operations in relationship between loyalty and customer behaviour, we have used a two-step approach. First we have tested the direct impact of loyalty on service operations. Then we have tested the combined impact of service operations and loyalty in customer behaviour.

In testing for mediation, the relationships amongst the variables must satisfy all of the following conditions: (1) the independent variable must significantly influence the dependent variable; (2) the independent variable must significantly influence the mediator; (3) the mediator must significantly influence the dependent variable; and (4) the effect of the independent variable on the dependent variable must diminish after controlling for the effect

of the mediator (Baron and Kenny, 1986). If all of these conditions are satisfied and the impact of the independent variable becomes non-significant in the presence of the mediator, then full mediation is supported. If all of the conditions are satisfied, but the influence of the independent variable is reduced but remains significant in the presence of the mediator, then partial mediation is supported. If any of these conditions are not satisfied, there is no mediation (Baron and Kenny 1986; Sarkis, Gonzalez-Torre and Adenso-Diaz 2010).

We have used a regression analysis to carry out these tests. We have used four factors of 'loyalty' as independent variables and we have used each of the factors of 'service operations feature', individually one at a time, as dependent variables. In this way we have run four different regression tests without changing the independent variables. The results of these four regressions are given in Table 6. Results of regression models with dependent variables 'introduction' and 'display' are all positive and significant. However, in case of regression model for 'location (store convenience)', the factors 'loyalty scheme' and 'brand loyalty' are not significant. Similarly, for regression model of 'customer service', the factor brand loyalty is not significant.

**Table 6 Testing mediation effect – step 1**

	Standardized Coefficients		t	Sig.	Collinearity Statistics		R <sup>2</sup>	F-value (significant)
	Beta				Tolerance	VIF		
<b>Dependent variable : Introduction</b>				.000			0.319	70.045
(Constant)			-.025	.980				
Store loyalty	.151		4.203	.000	.877	1.140		
Brand loyalty	.119		3.269	.001	.859	1.164		
Loyalty scheme	.278		7.991	.000	.943	1.060		
Sales price	.359		10.306	.000	.937	1.067		
<b>Dependent variable: Display</b>				.000			0.183	33.515
(Constant)			-.013	.989				
Store loyalty	.199		5.037	.000	.878	1.139		
Brand loyalty	.132		3.316	.001	.859	1.164		
Loyalty scheme	.123		3.226	.001	.943	1.061		
Sales price	.258		6.768	.000	.937	1.067		
<b>Dependent variable: Store location</b>				.000			0.044	6.904
(Constant)			.036	.972				
Store loyalty	.150		3.516	.000	.878	1.139		
Brand loyalty	-.001		-.012	.990	.859	1.164		
Loyalty scheme	.022		.546	.585	.943	1.061		
Sales price	.146		3.530	.000	.937	1.067		
<b>Dependent variable: Customer service</b>				.000			0.109	18.297
(Constant)			-.025	.980				
Store loyalty	.089		2.163	.031	.878	1.139		
Brand loyalty	.053		1.281	.201	.859	1.164		
Loyalty scheme	.165		4.155	.000	.943	1.061		
Sales price	.216		5.433	.000	.937	1.067		

In the final test of mediation, impact of all the elements of factors from loyalty and service operations features have showed expected significance level. The four items of service operations – introduction, display, convenience and customer service, showed positive significance with  $p < 0.007$ . Meanwhile, the significance level of the four items of loyalty has proved no or less significance compared to previous regressions. Store loyalty, brand loyalty and price dependency have been fully mediated by convenient features while loyalty schemes showed less level of significance. This is evident from comparing the level of significance of four factors of loyalty features. All these factors have been proved insignificant or less significant in the regression model. Store loyalty, brand loyalty and price dependency has no significance at all in the regression (see Table 7). But the factor ‘loyalty scheme’ has shown less significance in regression given in Table 7. This regression model has  $R^2$  value 0.285 with significant F-value 29.605. P-value of loyalty scheme has changed from 0.000 in Table 4 to 0.011 in Table 7. This result confirms our hypotheses that the service operations mediate the relationship between loyalty and customer behaviour. This change in significance level of loyalty scheme indicates that although service operations mediates the relationship between loyalty and customer behaviour, changing loyalty schemes may sometimes make the buyers to overlook their own convenience. People may tend to travel a bit longer to avail the gift vouchers. However, this trend may or may not continue for a longer period of time (Panorama, BBC 1, 05 Dec. 2011 8:30 pm).

**Table 7: Testing mediation effect – step 2**

Dependent variable: Customer behaviour	Standardized	Collinearity Statistics			
	Coefficients Beta	t	Sig.	Tolerance	VIF
(Constant)		.027	.979		
Store loyalty	.041	1.069	.286	.817	1.224
Brand loyalty	.037	.981	.327	.830	1.205
Loyalty scheme	.098	2.565	.011	.834	1.199
Sales price	.030	.746	.456	.752	1.329
Customer service	.119	2.707	.007	.628	1.592
Introduction	.165	3.861	.000	.658	1.520
Display	.160	3.459	.001	.563	1.775
Store location	.211	5.131	.000	.716	1.397

## 5. Discussion and managerial implications

As loyal customers are always viewed as profitable, many retailers try to invest considerable sums of money to provide incentives, in many forms such as coupons or store loyalty cards,

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3 to loyal customer to retain them (Bustos-Reyes and Gozalez-Benito 2008). A few coalition  
4 loyalty card schemes (multi-brand loyalty cards) are also available in the market; but these  
5 cards have poor response from customers due to lack of awareness of sponsors (Moore and  
6 Sekhon 2005). Meanwhile, from the customers' point of view, the perceived value for money  
7 is varying highly, depending on the promotions and the sales offers provided by the retailers  
8 in the same period of time (Sirohi et al. 1998). This attitude of customers left many retailers  
9 to be involved in various sales promotions, such as loyalty card, coupons, customised  
10 promotions vouchers etc., to attract and retain customers. Still, such - hard earned customer  
11 loyalty does not guarantee future profitability (Kumar et al. 2006).

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18 Our data analysis and regressions models confirmed our first two research hypotheses. First  
19 regression model of customer behaviour has significant positive influence of factors -  
20 introduction, display, store convenience and customer service. Our second regression model  
21 confirms that the customer behaviour is directly related to customer loyalty, loyalty cards and  
22 price sensitivity at the time of shopping. In-store promotional sales may encourage shoppers  
23 to buy items even if they have not planned to buy those items in their weekly shopping. This  
24 attitude increases store loyalty and also loyalty card purchase points of the shoppers lead to  
25 their next shopping. Buyers who are sensitive to sale price normally do not buy  
26 brand/favourite items during non-promotion period. However, they may prefer to visit the  
27 store with loyalty card facility to collect points for future benefits. Our regression model 3  
28 confirms our assumption (Hypothesis 3) that the customer buying behaviour is directly  
29 related to the actual sales.

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39 Another important finding of this study is the mediating role of service operations attributes  
40 on the loyalty attributes–customer behaviour relationship. Despite the importance of service  
41 operations in achieving competitive advantage (Johnston et al. 2012), few empirical studies  
42 have investigated the mediating role of service operations on the relationship between loyalty  
43 attributes and customer behaviour. Therefore, our study extends and complements the  
44 existing literature by incorporating an integrated model that investigates the relationships  
45 among loyalty attributes, service operations attributes, customer behaviour and retail sales,  
46 and provides strong confirmation of the mediating effect of service operations in retail  
47 management. This finding of the mediation is important in providing a better understanding  
48 of the relationships between loyalty attributes and customer behaviour in the sense that  
49 customer loyalty may not be enough for customer behaviour trends of returning and  
50 recommending to others. Retail firms also need to emphasize on improving service  
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3 operations management (such as service, store location, and display), which will help firms  
4 manage consumer buying behaviour more effectively. On the practical front, the mediation  
5 analysis also provides important managerial implications for retail managers. It can be  
6 suggested that retail managers should not always expect the direct benefits of loyalty  
7 attributes because it is service operations that directly influence customer behaviour. This is  
8 evident from recent loss of the leading UK retail chain, Tesco. Improving service operations  
9 capability is important for retail success in today's dynamic and competitive business  
10 environment.

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13 In practice, several retailers use various marketing techniques to attract customers. In our  
14 research we have tested the effect of loyalty features in customer behaviour and have found a  
15 positive link between these two. Similarly, we have also established a positive significant link  
16 between service operations features and their buying behaviour. From the research hypothesis  
17 H4, we have tried to test the mediating role of the service operations features as a link  
18 between loyalty and customer behaviour. Our analysis results have given some new findings.  
19 Interestingly, the service operations features mediate the relationships between loyalty  
20 features and customer behaviour. This result gives a hint on customers changing behaviour,  
21 provided many retailers offer variety of loyalty schemes and discounts. As long as the  
22 customers get almost similar kind of incentive in shopping in any retail store, the next  
23 important criterion the customers may look for is the convenience. This result stresses the  
24 importance of local shoppers. If a customer is not fascinated by the offers provided by a store  
25 in a distant location, he/she may think of shopping in the local area. In this case, it is the  
26 responsibility of the store to retain such customers and offer a good value for money. This  
27 approach can help the retailers to create a loyalty bond with the buyer. Our results are  
28 somewhat similar to the arguments of Chaudhuri and Ligas (2009), that in retail sector,  
29 merchandise value is directly related to repurchase loyalty and indirectly related to attitudinal  
30 loyalty. While Richard and Zhang (2012) claimed that both brand image and affective  
31 commitment will help securing loyal customers but customer satisfaction will have less  
32 impact on loyalty. In this research, we claim that loyalty is directly related to customers  
33 buying behavioural attitude but indirectly affected by service operations.

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36 In order to retain weekly buyers, retail stores offer incentives in various forms, such as  
37 discounts, vouchers and coupons, with or without involving suppliers. In recent days, many  
38 retail giants like Tesco involve suppliers. For example, Tesco coupons for club card  
39 customers also offer high club card point for special purchase on some leading brands. This  
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3 arrangement creates a responsible involvement of suppliers that provides support for retail  
4 stores in retaining loyal customers and increasing sales. On identifying the customer  
5 preferences, the stores can improve their service by stocking more number of customers'  
6 preferred brands. Actual data analysis and understanding the underlying factors of customer  
7 behaviour can help the businesses to improve management capabilities having right decisions  
8 at the right time. Understanding the retail sales by studying the relationship between loyalty,  
9 service operations and customer behaviour will provide an insight into the importance of new  
10 business practices in the UK retail stores. The resulting model can indeed help the companies  
11 to improve business strategies based on the current market scenario.  
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## 18 **6. Conclusion, limitation and future research**

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20 In current economic downturn, UK retail stores are engaged in price wars to survive in the  
21 market (Panorama, BBC 1, 05 Dec 2011 8:30 pm). Insight on customers' preferences can  
22 help the businesses to make effective planning to attract customers and also to retain loyal  
23 customers. As retail market competition is becoming very fierce, research on customer  
24 loyalty in the current market is essential to support UK economy. Suggestion to the UK retail  
25 sector based on the exclusive findings on relationships between retail network value based on  
26 customer loyalty and service operations with sales can help the retail giants to sustain the  
27 competition effectively. The research conducted in North of England in 2011 has revealed  
28 that retail customers are more loyal to stores and brands as long as they have convenience in  
29 shopping. Mere store loyalty cards will not attract the buyers. This research finding is in line  
30 with the findings of Su and Deunes (2012). Buyers influenced by loyalty schemes may tend  
31 to change their loyalty if they do not find the store as convenient for their weekly shopping.  
32 More specifically, the customers who make travel to purchase in the retail stores expect no  
33 stock-outs (Grewal et al. 2012). Some of the respondents even expressed 'small convenient  
34 stores' as their choice of shopping place mainly because it is closer to their home or office. In  
35 this case, service operations and satisfaction have been considered important but not the price  
36 of items. More specifically, our finding of mediating effect of service operations is important.  
37 In today's dynamic and competitive retail market, retail firms more than ever need to  
38 improve service operations capability that involve understanding and fulfilling customer  
39 requirements, managing service process, and paying attention to the continuous improvement  
40 of service operations (Johnston et al. 2012). Such capabilities will enable retailers to  
41 effectively manage customer buying behaviour, which in turn leads to improved retail sales.  
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3 Changing customer preferences and shifting loyalties leave a great challenge to the  
4 businesses operating in this competitive market place. At this juncture, many companies try  
5 different sales promotions and a variety of management capabilities, including marketing  
6 techniques, to survive in the market. In the current competitive retail market, almost all  
7 retailers offer a variety of sales promotions at frequent intervals. This confuses the consumers  
8 whether to buy and stock or to buy from the other retail stores during the next promotional  
9 event. Some retail stores may sell branded products cheap but these may not be the favourite  
10 brand that a particular customer is looking for. This makes the consumers shift their loyalty  
11 from their - favourite brands and also favourite stores to other brands and other retail stores.  
12 Customers shifting loyalty to the brand and stores is moderated by income and age of the  
13 customers. This can be further studied in future research. Future study can also focus on  
14 customer loyalty for online shopping and convenience.  
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23 In behavioural study, customer preference is an attitude towards the brand/store, only when  
24 considered together with an intention to purchase, results in actual purchase behaviour  
25 (Cobb-Walgren, Ruble and Donthu 1995). Foxall et al. (1998) have commented that it is too  
26 simplistic to assume that 'attitudes cause behaviours' because there could be other  
27 determinants of behaviour such as motives, past behaviour; and the social and physical  
28 setting in which the action takes place. In a few instances, these can sometimes interfere with  
29 purchase intention, thus coming in the way of attitude-behaviour consistency. Though  
30 attitude-behaviour consistency is often assumed in consumer behaviour studies, with many  
31 researchers relying on reported rather than actual behaviour, it is important to be aware of  
32 these potential limitations (Acock and DeFleur 1972). However, in this study, we try to  
33 overcome this limitation by considering customers buying behaviours (sales) unlike that of  
34 Chaudhuri and Ligas (2009).  
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43 Our study has considered customers from North of England and has not represented the  
44 whole population of England. Future study can make similar survey in all parts of the UK to  
45 generalise the results on consumer behaviour for promotional offers. Already we have started  
46 extending our research by collecting data from other parts of the UK, especially from South  
47 of England. We hope that this comparative study will help to draw evidence based consumer  
48 behaviour from North and South of England. Also our research has considered only four  
49 major retailers, future studies can consider rapidly growing retailers, namely Lidl and Aldi, to  
50 get different perspectives on consumer behaviour.  
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## References

- Acock, A. C. and M. L. DeFleur (1972), "A configurational approach to contingent consistency in the attitude-behaviour relationship", *American Sociological Review*, 37 (6), 714-726.
- Allender, W. J. and T. J. Richards (2012), "Brand loyalty and price promotion strategies: An empirical analysis", *Journal of Retailing*, 88 (3), 323-342.
- Au, N., E. W. T. Ngai, T. C. E. Cheng (2002). "A critical review of end-user information system satisfaction research and a new research framework", *Omega: The International Journal of Management Science*, 30 (6), 451-78.
- Baron, R. M. and D. A. Kenny (1986), "The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Bell, D.R., T. Ho and C.S. Tang (1998), "Determining where to shop: fixed and variable costs of shopping", *Journal of Marketing Research*, 35, 352-369.
- Belvedere, V. (2014), "Defining the scope of service operations management: an investigation on the factors that affect the span of responsibility of the operations department in service companies", *Production Planning and Control*, 25 (6), 447-461.
- Bititci, U.S., F. Ackermann, A. Ates, J. D. Davies, S. Gibb, J. MacBryde, D. Mackay, C. Maguire., R. van der Meer and F. Shafti (2011), "Managerial processes: an operations management perspective towards dynamic capabilities", *Production Planning and Control*, 22 (2), 157-173.
- Blattberg, R.C. and A. Levin (1987), "Modeling the effectiveness and profitability of trade promotions", *Marketing Science*, 6(2), 124-146.
- Bolton, R.N., P. K. Kannan, and M. D. Bramlett (2000), "Implications of loyalty program membership and service experiences for customer retention and value", *Journal of the Academy of Marketing Science*, 28 (1), 95-108.
- Brown, L. G. (1990), "Convenience in services marketing", *Journal of Services Marketing*, 4, 53-59.
- Bustos-Reyes C. A. and O. B. González-Benito (2008), "Store and store format loyalty measures based on budget allocation", *Journal of Business Research*, 61 (10), 1015-1025.
- Chaudhuri, A and M. Ligas (2009), "Consequences of value in retail", *Journal of Retailing*, 85 (3), 406-419.
- Chen, L-F. (2012), "A novel approach to regression analysis for the classification of quality attributes in the Kano model: an empirical test in the food and beverage industry", *Omega: The International Journal of Management Science*. 40 (5): 651-9.
- Cobb-Walgreen, C. J., C. A. Ruble and N. Donthu (1995), "Brand equity, brand preference, and purchase intent", *Journal of Advertising*, 24 (3), 25-40.
- Cooper, L. G., P. Baron, W. Levy, M. Swisher and P. Gogos (1999), "PromoCast™: A New Forecasting Method for Promotional Planning", *Marketing Science* 18 (3), 301-316.
- Divakar, S., B. T. Ratchford, and V. Shankar (2005), "CHAN4CAST: A multichannel, multi-region sales forecasting model and decision support system for consumer packaged goods", *Marketing Science*, 24 (3), 334-350.
- Dowling, G. R. and M. Uncles (1997), "Do customer loyalty programs really work?", *Sloan Management Review*, 38, 71-82.



- 1  
2  
3 Dube, J. -P. and S. Gupta (2008), "Cross-brand pass through in supermarket pricing", *Marketing Science*,  
4 27 (3), 323.
- 5  
6 Flavian, C., E. Martinez and Y. Polo (2001), "Loyalty to grocery stores in the Spanish market of the  
7 1990s", *Journal of Retailing and Consumer Services*, 8(2), 85-93.
- 8  
9 Gandomi, A. and S. Zolfaghari (2013). Profitability of loyalty reward programs: An analytical  
10 investigation. *Omega: The International Journal of Management Science*. 41 (4), 797-807.
- 11  
12 Grace, D. and A. O'cass (2005), "An examination of the antecedents of repatronage intentions across  
13 different retail store formats", *Journal of Retailing and Consumer Services*, 12 (4), 227-243.
- 14  
15 Grewal, D., P. Kopalle, H. Marmorstein and A. L. Roggeveen (2012), "Does Travel  
16 Time to Stores Matter? The Role of Merchandise Availability", *Journal of  
17 Retailing*, 88 (3), 437 - 444.
- 18  
19 Ha, H. Y., S. Janda and S. K. Park (2009), "Role of satisfaction in an integrative model of brand loyalty",  
20 *International Marketing Review*, 26 (2), 198-220.
- 21  
22 Hair, J. F. Jr. Black, W. C., B. J. Babin, R. E. Anderson and R. L. Tatham (2006). *Multivariate data  
23 analysis*, 6th ed., New Jersey: Prentice Hall.
- 24  
25 Jacoby, J. and D. B. Kyner (1973), "Brand loyalty vs. repeat purchasing behavior", *Journal of Marketing  
26 Research*, 10, 1-9.
- 27  
28 Jin, B. and B. Sternquist (2003), "The influence of retail environment on price perceptions", *International  
29 Marketing Review*, 20 (6), 643-660.
- 30  
31 Johnston, R., G. Clark and M. Shulver (2012), "*Service Operations Management*", 4th edition, Harlow,  
32 England; Pearson.
- 33  
34 Jones, M.A., D. L. Mothersbaugh and S. E. Beatty (2003), "The effects of locational convenience on  
35 customer repurchase intentions across service types", *Journal of Services Marketing*, 17 (7), 701-712.
- 36  
37 Krishna, A., and G. S. Dangayach (2012), "Service operation strategy: a developing country perspective",  
38 *Production Planning and Control*, 23 (10-11), 789-800.
- 39  
40 Kumar, V., D. Shah and R. Venkatesan (2006), "Managing retailer profitability-one customer at a  
41 time!", *Journal of Retailing*, 82 (4), 277-294.
- 42  
43 Lee, W-I., C-Y. Chang and Y-L. Liu (2010), "Exploring customers' store loyalty using the means-end  
44 chain approach", *Journal of Retailing and Consumer Services*, 17(5), 395-405.
- 45  
46 Macintosh, G. and L. S. Lockshin (1997), "retail relationships and store loyalty: A multi-level  
47 perspective", *International Journal of Research in Marketing*, 14 (5), 487-497.
- 48  
49 Moore, G. and H. Sekhon (2005), "Multi-Brand Loyalty Cards: A Good Idea", *Journal of Marketing  
50 Management*, 21:5-6, 625-640
- 51  
52 Nguyen, D. T., T. DeWitt and R. Russell-Bennett (2012), "Service convenience and social servicescape:  
53 retail vs hedonic setting", *Journal of Services Marketing*, 26 (4), 265 - 277.
- 54  
55 O'Malley, L. (1998), "Can loyalty schemes really build loyalty?", *Marketing Intelligence & Planning*, 16  
56 (1), 47-55.
- 57  
58 Oliver, R.L. (1999), "Whence consumer loyalty?", *Journal of Marketing*, 63, 33-44.
- 59  
60 Parasuraman, A., L. L. Berry and V. A. Zeithaml (1988), "SERVQUAL: A Multiple-Item Scale For  
Measuring Consumer Perceptions of Service Quality", *Journal of Retailing*, 64, 1, 12-40.
- Pucinelli, N.M., R. C. Goodstein, D. Grewal, R. Price, P. Raghuram, and D. Stewart (2009), "Customer  
experience management in retailing: understanding the buying process", *Journal of Retailing*, 85(1),  
15-30.

- 1  
2  
3 Raju, J.S. (1995), “Theoretical models of sales promotions: contributions, limitations, and a future  
4 research agenda”, *European Journal of Operational Research*, 85 (1), 1–17.
- 5 Ramanathan, U. and L. Muyltermans (2010), “Identifying demand factors for promotional planning and  
6 forecasting: A case of a soft drink company in the UK”, *International Journal of Production  
7 Economics*, 128 (2), 538-545.
- 8 Ramanathan, U. and L. Muyltermans (2011), “Identifying the underlying structure of demand during  
9 promotions: A structural equation modelling approach”, *Expert Systems with Applications*, 38(5),  
10 5544-5552.
- 11 Ramanathan, U. and R. Ramanathan (2011), “Guests’ perceptions of factors influencing customer  
12 loyalty: An analysis for UK hotels”, *International Journal of Contemporary Hospitality Management*,  
13 23 (1), 7-25.
- 14 Ramanathan, U. and R. Ramanathan (2013), “Investigating the impact of resource capabilities on  
15 customer loyalty: A structural equation approach for the UK hotels using online ratings”, *Journal of  
16 Service Marketing*, 27 (5).
- 17 Ramanathan, U. (2013), “Aligning supply chain collaboration using Analytic Hierarchy Process”, *Omega  
18 - The International Journal of Management Science* 41 (2), 431-440.
- 19 Richard, J. E. and Zhang, A. (2012), “Corporate image, loyalty, and commitment in the consumer travel  
20 industry”, *Journal of Marketing Management*, 28 (5-6), 568-593.
- 21 Sarkis, J., P. Gonzalez-Torre and B. Adenso-Diaz (2010), “Stakeholder pressure and the adoption of  
22 environmental practices: The mediating effect of training”, *Journal of Operations Management*, 28  
23 (2), 163-176.
- 24 Seiders, K., L.L. Berry, and L. G. Gresham (2000), “Attention, retailers! how convenient is your  
25 convenience strategy”, *Sloan Management Review*, 41, 79-89.
- 26 Shang, R., Y. Chen and H. Liao (2006), “The value of participation in virtual consumer communities on  
27 brand loyalty”, *Internet Research*, 16 (4), 398-418.
- 28 Smith, A. and N. Reynolds (2009), “Affect and cognition as predictors of behavioral intentions towards  
29 services”, *International Marketing Review*, 26 (6), 580-600.
- 30 Solomon, M. R. (1992), *Consumer Behavior: Buying, Having and Being*, Needham Heights: Allyn and  
31 Bacon.
- 32 Srinivasan, S. S., R. Anderson and K. Ponnnavolu (2002), “Customer loyalty in e-commerce: an  
33 exploration of its antecedents and consequences”, *Journal of Retailing*, 78, 41-50.
- 34 Shrivastava, R. L., R. P. Mohanty, and R. R. Lakhe (2006), “Linkages between total quality  
35 management and organisational performance: an empirical study for Indian industry”, *Production  
36 Planning and Control*, 17 (1), 13-30.
- 37 Straughan, R. D. and N. D. Albers-Miller (2001), “An international investigation of cultural and  
38 demographic effects on domestic retail loyalty”, *International Marketing Review*, 18 (5), 521-541.
- 39 Su, Y. and J. Geunes. (2012). Price promotions, operations cost, and profit in a two-stage supply chain.  
40 *Omega: The International Journal of Management Science*. 40(6), 891-905.
- 41 Yi, Y. and H. Jeon (2003), “Effects of loyalty programs on value perception, program loyalty, and brand  
42 loyalty”, *Journal of the Academy of Marketing Science*, 31 (3), 229-240.

### 53 Appendix: Measures

54 Survey responses to loyalty, service operations, customer behaviour and retail sales measures are based  
55 on 7-point Likert-type scale (1-strongly disagree, 7- strongly agree). The measurement scales used in  
56 the analysis are given below:  
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**Loyalty**

- SL1- Generally low price for all items  
 SL2- I can save money by shopping in this store  
 SL3- I get my favourite items cheaper in this store
- BL1- I always buy my favourite brand  
 BL2- I prefer buying any item if there is promotion  
 BL3- I will buy only my favourite item during promotions  
 BL4- I will buy any item if it is cheaper
- LS1- I use loyalty card for shopping  
 LS2- I use gift vouchers in my shopping  
 LS3- I follow media advertisements before shopping  
 LS4- I go shopping during sales Promotions
- SL1- I buy only favourite brands even the price is high  
 SL2- I buy favourite brands even the promotion price is high  
 SL3- I prefer buying items on promotions, even it is costlier than other brands

**Service operations**

- CS1- It is easy to return the products  
 CS2- I get good customer support in this store  
 CS3- Staffs are very customer friendly  
 CS4- I get good customer support to choose items
- INT1- My friend/relative/Media introduced this shop to me  
 INT2- I will read other customers' shop review before I visit  
 INT3- I use social media to see review of products  
 INT4- I use customer review before I purchase any new brand

- SL1- This store is close to my office  
 SL2- This store has convenient parking  
 SL3- Convenient opening hours is suitable to me  
 SL4- I can choose any mode of payment (card/cheque/cash/other)
- Disp1- Display in the store helps me to locate the product easily  
 Disp2- I can see a clear display of price of items  
 Disp3- Shopping in this store helps to improve my lifestyle  
 Disp4- This store satisfy my specific needs

**Customer behaviour**

- CB1- I will visit again the shop again  
 CB2- I will recommend this shop to my friends (social media)  
 CB3- I will recommend my favourite item (social media) to my friends

**Retail sales**

- RS1- I bought all items I wanted from this store today  
 RS2- I am happy with today's purchase of products
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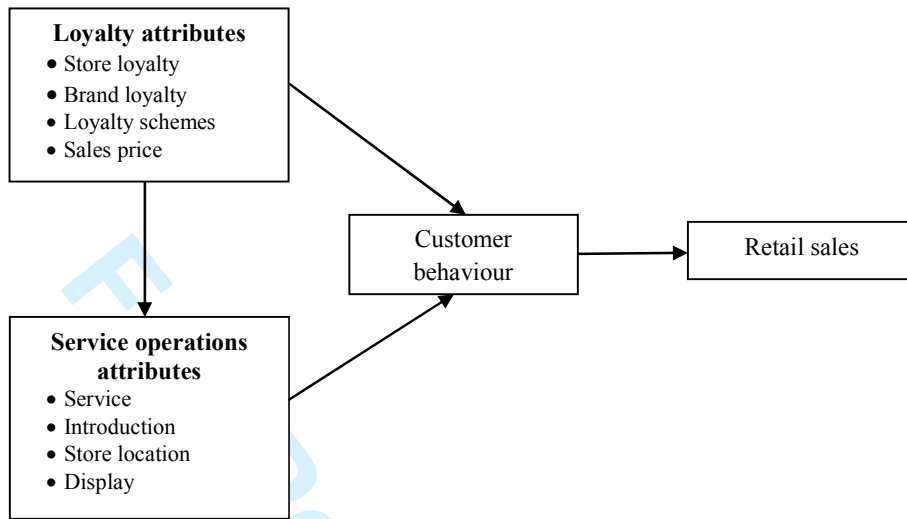


Figure 1: Retail network value conceptual model

Table 1: Results of confirmatory factor analysis

Main constructs	Attributes (sub-factors)	Items	Mean	SD	Loadings	KMO	F-value (significant)	Percentage of variance explained
Loyalty	Store loyalty	Low Price	5.02	1.328	.858	0.669	22.210	71.008
		Save money	4.94	1.348	.890			
		Get favourite item cheaper	4.70	1.312	.776			
	Brand loyalty	Promotion item	4.79	1.294	.778	0.657	71.116	46.126
		Favourite item	4.36	1.473	.625			
		Any item	4.65	1.404	.768			
		Any branded item	5.31	1.247	.508			
	Loyalty Scheme	Loyalty card	4.40	1.648	.779	0.669	113.284	56.456
		Gift Voucher	4.24	1.509	.842			
		Media Adverts	4.61	1.386	.790			
		Sales Promotions	5.32	1.163	.564			
	Sales price	Buy favourite brand with high price	4.57	1.568	.878	0.546	14.870	62.454
		Buy favourite brand with high promotion price	4.44	1.491	.869			
Promotion price of favourite is higher than		4.91	1.149	.589				
Service operations	Customer service	Easy to return	5.08	1.307	.756	0.798	42.739	68.594
		Customer support	5.37	1.167	.880			
		Friendly staff	5.42	1.149	.879			
		Help to choose items	5.57	1.099	.791			
	Introduction	Shop introduction	4.55	1.631	.689	0.698	25.918	56.467
		Shop review	4.03	1.716	.783			
		Brand introduction	4.58	1.436	.755			
		Customer review	4.32	1.579	.775			
	Store location	Close to my office	5.30	1.475	.704	0.717	82.311	51.163
		Convenient parking	5.07	1.487	.631			
		Convenient opening hours	5.67	1.171	.806			
		Choice of payment	5.96	1.074	.709			
	Display	Easy to locate	5.32	1.158	.757	0.749	39.426	60.360
		Clear display of price	5.37	1.180	.808			
		Improves lifestyle	4.86	1.377	.771			
Specific needs		5.10	1.291	.770				
Customer behaviour	Visit again	5.84	.943	.782	0.630	89.713	59.160	
	Recommend shop	5.41	1.188	.822				
	Recommend favourite item	5.19	1.230	.699				
Retail sales	Satisfied buyer (store)	5.56	1.019	.827	0.502	23.813	68.311	
	Satisfied buyer (product)	5.33	.993	.827				

**Table 2: Correlations of inter-constructs**

Constructs	1	2	3	4	5	6	7	8	9	10
1. Store loyalty	0.880									
2. Brand loyalty	.330**	0.769								
3. Loyalty scheme	.098*	.150**	0.836							
4. Sales price	-0.045	.145**	.197**	0.829						
5. Customer service	.113**	.140**	.226**	.254**	0.897					
6. Introduction	.202**	.263**	.381**	.425**	.230**	0.838				
7. Location	.145**	0.071	0.064	.142**	.440**	0.028	0.806			
8. Store display	.243**	.255**	.214**	.294**	.554**	.310**	.454**	0.859		
9. Customer behaviour	.177**	.185**	.251**	.230**	.380**	.315**	.360**	.422**	0.812	
10. Retail sales	-0.045	.145**	.197**	0.89**	.254**	.425**	.142**	.294**	.230**	0.812

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Diagonal elements show composite reliability

**Table 3: Impact of convenience on customer behaviour**

Model	Standardized Coefficients		t	Sig.	Collinearity Statistics	
	Beta				Tolerance	VIF
(Constant)			.048	.961		
Customer service	.132		3.027	.003	.641	1.561
Introduction	.223		6.004	.000	.877	1.141
Store display	.184		4.081	.000	.595	1.680
Store location	.211		5.147	.000	.725	1.378

**Table 4: Impact of loyalty on customer behaviour**

	Standardized Coefficients		t	Sig.	Collinearity Statistics	
	Beta				Tolerance	VIF
(Constant)			-.014	.989		
Store loyalty	.140		3.451	.001	.878	1.139
Brand loyalty	.083		2.007	.045	.859	1.164
Loyalty scheme	.188		4.778	.000	.943	1.061
Sales price	.187		4.739	.000	.937	1.067

**Table 5: Relationship between customer behaviour and retail sales**

	Standardized Coefficients			Collinearity Statistics	
	Beta	t	Sig.	Tolerance	VIF
(Constant)			.000	1.000	
Customer behaviour	.230	5.803	.000	1.000	1.000

Table 6 Testing mediation effect – step 1

	Standardized Coefficients	t	Sig.	Collinearity Statistics		R <sup>2</sup>	F-value (significant)
	Beta			Tolerance	VIF		
<b>Dependent variable : Introduction</b>			.000			0.319	70.045
(Constant)		-.025	.980				
Store loyalty	.151	4.203	.000	.877	1.140		
Brand loyalty	.119	3.269	.001	.859	1.164		
Loyalty scheme	.278	7.991	.000	.943	1.060		
Sales price	.359	10.306	.000	.937	1.067		
<b>Dependent variable: Display</b>			.000			0.183	33.515
(Constant)		-.013	.989				
Store loyalty	.199	5.037	.000	.878	1.139		
Brand loyalty	.132	3.316	.001	.859	1.164		
Loyalty scheme	.123	3.226	.001	.943	1.061		
Sales price	.258	6.768	.000	.937	1.067		
<b>Dependent variable: Store location</b>			.000			0.044	6.904
(Constant)		.036	.972				
Store loyalty	.150	3.516	.000	.878	1.139		
Brand loyalty	-.001	-.012	.990	.859	1.164		
Loyalty scheme	.022	.546	.585	.943	1.061		
Sales price	.146	3.530	.000	.937	1.067		
<b>Dependent variable: Customer service</b>			.000			0.109	18.297
(Constant)		-.025	.980				
Store loyalty	.089	2.163	.031	.878	1.139		
Brand loyalty	.053	1.281	.201	.859	1.164		
Loyalty scheme	.165	4.155	.000	.943	1.061		
Sales price	.216	5.433	.000	.937	1.067		

Table 7: Testing mediation effect – step 2

Dependent variable: Customer behaviour	Standardized Coefficients	t	Sig.	Collinearity Statistics	
	Beta			Tolerance	VIF
(Constant)		.027	.979		
Store loyalty	.041	1.069	.286	.817	1.224
Brand loyalty	.037	.981	.327	.830	1.205
Loyalty scheme	.098	2.565	.011	.834	1.199
Sales price	.030	.746	.456	.752	1.329
Customer service	.119	2.707	.007	.628	1.592
Introduction	.165	3.861	.000	.658	1.520
Display	.160	3.459	.001	.563	1.775
Store location	.211	5.131	.000	.716	1.397