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Customer Experience Drivers and Behavioral Responses in Pakistan's Retail Sector: An Empirical Assessment of Engagement, Technology, and Channel Integration

Abstract

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Keywords: Technology Driven, Technology Acceptance Model, Behavior

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Title

Customer Experience Drivers and Behavioral Responses in Pakistan's Retail Sector: An Empirical Assessment of Engagement, Technology, and Channel Integration

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Contents

Abstract

Supermarket industry in Pakistan is growing at a fast pace, technology-driven retail experiences regarding customer reactions in emerging-market contexts is not verified. This research examines effects of technological improvement on behavioral outcomes. Based on technology acceptance model and stimulus organism response viewpoint, study uses a cross-sectional survey of 226 customers in Pakistan supermarkets. PLS-SEM was used to evaluate data. Findings showed significant mediating role of experiential factors mediated by satisfaction on behavioral outcomes. Direct influences indicate that channel integration leads to willingness to pay and technological advancement and engagement/interactivity lead to loyalty. Work contributes to existing body of knowledge in digital retail by providing a practical suggestion on how supermarkets can enhance advocacy and value perception by designing experience with interactive and integrated experience.

Keywords:

Technology Driven, Technology Acceptance Model, Behavior

Introduction:

Study Background

Global retail world has experienced an unprecedented revolution in the past ten years, which has been mostly due to the development and adoption of new technology and the changing consumer demands. Technological innovations like Artificial Intelligence (AI), Augmented Reality (AR), Virtual Reality (VR), and Internet of Things

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(IoT) have re-invented the shopping experience of the past by making it personalized, interactive, and convenient on an unprecedented level (Quinones et al., 2023; Rosario & Dias, 2023). Innovations are being used by retailers all over the world to increase efficiency in their operations, improve customer experiences and create long term loyalty.

The same thing is happening to the retail sector in developing economies like Pakistan but at uneven growth. One of the rapidly growing markets in South Asia, which is driven by urbanization, rising disposable income, and digital connectivity, is the retail industry of Pakistan, which is worth more than USD 150 billion (Pakistan Bureau of Statistics, 2024). Carrefour, Imtiaz and Metro Cash and Carry are supermarket chains which have provided online ordering, mobile app and loyalty systems to appeal to digitally oriented consumers. However, even with the progress, retail technology strategy is still not fully adopted, and lots of local retailers are still using the traditional in store format with low interactivity with customers (Ahmad et al., 2023).

With the Pakistani consumers getting increasingly technologically mature they have increased demands of smooth, interactive and omnichannel experiences. Consumers are becoming more demanding of an integrated experience that connects the physical stores with the digital medium an experience that is functional and also creates emotional and relational value (Feldman et al,. 2024). Such a change stresses the significance of exploring the role of technological progress, integration of omni channels, and engagement in defining satisfaction and behavioral consequences, including loyalty, word of mouth (WOM), and the willingness to pay (WTP).

1.2 Research Problem

Although the spread of digital instruments is rather fast, the extent of the effect of technology-powered experience on customer satisfaction and behavioral outcomes within the Pakistani supermarket industry is under researched. Although international retailers have made great steps towards integrated digital approaches, most of the Pakistani supermarkets take up technology in intermittent bursts, with transactional convenience as the main priority instead of overall customer engagement (Santos & Ramos, 2023). Such a patchy strategy frequently causes inconsistent service experiences that customers can perceive between digital and in store service quality, and create confusion and reduced satisfaction.

In addition to that, local retailers have not used immersive technologies (AI based personalization, AR based product demonstration, and interactive store systems) to the fullest extent but have become a commonplace in developed markets (Trunfio et al., 2022). As a result, the interactions of technological development, combining channels, and interaction and their joint impact on satisfaction, loyalty, and advocacy have not been adequately theorized and empirically tested in the context of a Pakistani retail industry. The need to fill this gap is crucial to the establishment of a sustainable and competitive retail environment that is able to address the current consumer expectations.

Research Objectives

Although digital tools are spreading rapidly, the influence of digital tools-driven experiences on customer satisfaction and behavioral outcomes on the supermarket industry in Pakistan has not been well studied. Although global retailers have made tremendous strides by integrating digital solutions, a high number of Pakistani supermarkets embrace technology in fits and starts as opposed to comprehensive customer service (Santos & Ramos, 2023). This piecemeal approach tends to lead to fragmented service experiences that customers experience with the digital platform not being consistent with in store service quality, causing confusion and a lack of satisfaction.

Furthermore, local retailers are not taking full advantage of immersive technologies like AI based personalization, AR based product demonstrations, and interactive store systems that have become a norm in developed markets (Trunfio et al., 2022). Therefore, the interaction among technological progress, channel integration, involvement and interaction and their joint impact on satisfaction, loyalty, and advocacy are not adequately theorized or empirically confirmed in the context of Pakistan retail. This gap is crucial to bridging so that a sustainable and competitive retail ecosystem can be

developed to address the expectations of the modern consumer.

Research Questions

To answer the research problem, the following central questions are used in form of analysis in the given research:

1. What is the relationship between technological advancement and customer satisfaction in the supermarket industry in Pakistan?
2. How does in store/online integration affect customer satisfaction and consequential behavior?
3. What role does customer interaction and engagement play in customer satisfaction, loyalty, word of mouth and willingness to pay?
4. How far does customer satisfaction mediate the correlation between technology and experience (technological development, omnichannel integration, and involvement) and behavioral results (loyalty, WOM, WTP)?

All these questions look at the multidimensional nature of the relationship between technology enabled retail experience and customer behavior in an emerging market setting.

Research Gap

An analysis of the recent studies shows that there are major deficiencies in the current knowledge on the subject of technology enabled customer experiences in emerging markets. One, the majority of the current studies address the developed economies where digital ecosystems are at the mature stage and consumer expectations are technologically oriented (Yang et al., 2024). Conversely, there is limited evidence in the form of Pakistan. Second, the limited literature done even in South Asian retail setting will tend to focus on independent variables like e commerce satisfaction or mobile app usability, without trying to identify the synergies between technological progress, omnichannel consistency, and interaction addictiveness triggered by engagement (Rosário and Dias, 2023). Third, the empirical investigation of how these technological dimensions has been converted into behavioral consequences such as loyalty, WOM, and WTP, which are crucial metrics of retail performance, is limited (Zhang et al., 2022). Lastly, there is yet to be a complete framework on how Pakistani supermarkets can use digital transformation to maximize the levels of satisfaction and profitability.

This study fills these research gaps by creating a multidimensional model to empirically correlate the elements of digital transformation with satisfaction and behavioral intentions in the Pakistani retail environment.

Research Contribution

This study develops a combined model explaining how technology, omnichannel retailing, and interactive engagement affect supermarket customer satisfaction. Evidence from Pakistan shows satisfaction links innovations to behavior, offering guidance for retailers and policymakers on digital adoption.

Theoretical Framework

Literature Review

Modern Technologies

The change in the retail environment has been extensively influenced by the technological innovation, which has transformed the interaction between consumers and the supermarkets and other service providers. The combination of Artificial Intelligence (AI), Augmented Reality (AR), and Virtual Reality (VR) has become the new powerhouse contributing to customer experience improvement.

Thanks to AI-inspired systems, retailers can understand customer behavior and patterns of purchases and provide their customers with recommendations, which are more personalized, and consequently, more meaningful and responsive. Simultaneously, AR and VR can offer some sense of immersion to shoppers by letting them see or even test a product in real-life before buying it.

They are convenient, engaging and trusting technologies that strengthen the emotional bond between customers and brands. Introduction of such advanced technologies in the light of the emerging supermarket industry in Pakistan would provide a competitive edge to the industry due to the efficiency, interactivity and general satisfaction of the consumers as well as breaking the digital

innovation barrier and human centric service provision.

In Store and Online Integration

Integration of both online and brick-and-mortar stores has turned out to be a necessary condition of the customer satisfaction in the contemporary market. The integration of the omnichannel in the form of the Click and Collect service, as well as the integration of mobile applications with the e commerce platforms enables customers to navigate, order and pick goods and services in various touchpoints smoothly.

This integration also makes sure that there is uniformity in product information, prices, and quality of service, which gives flexibility and reliability to the consumers in their shopping experiences.

With the Pakistani supermarkets where online and offline experiences are rapidly converging, brand trust and operational effectiveness is enhanced. A combination of in store and online systems eventually leads to customer satisfaction through reduction of friction, maximization of convenience and development of a cohesive and accessible shopping ecosystem.

Engagement and Interactivity

The concept of customer interaction has also been transformed with technological progress allowing an interactive and participatory form of customer interaction in the retailing experience. VR experiences, gesture-based interfaces, and smart mirrors are some of the tools that can enable customers to have new ways of experiencing products beyond the conventional shopping. Correspondingly, the use of AR based product displays, interactive navigation, real time chat support, and voice activated assistant makes the shopping process personalized and easy to respond to queries posed by consumers instantly.

The interactive kiosks and community platforms, which are web based, serve in creating a prolonged engagement, as they promote social engagement and brand promotion.

These processes do not only increase customer engagement, but also maximize satisfaction and loyalty because they create a feeling of empowerment and freshness. In the context of the Pakistani supermarket market, the adoption of this sort of engagement-based technologies is indicative of innovation, trustworthiness, and customer first philosophy that differentiates forward looking retailers among the existing traditional competition.

Customer Satisfaction

Satisfaction is an emotional expression or fulfilment that customers get after considering a product or a service (Solimun & Fernandes, (2018). The empirical studies in different domains have proved that environmentally sustainable or green programs have a strong positive impact on consumer satisfaction rates Elisabeth Robinot, J L. Giannelloni (2010). The point in this is that when organizations are sustainable, consumers would see greater value, leading to increased satisfaction.

In the hospitality sector, e.g., this has been demonstrated in terms of energy efficiency operations and resource conservation facilities e.g., low energy fluorescent lights and soap dispensers that are known to bring overall satisfaction to the guests (Berezan et al., 2013).

García. A et al., (2021) found that green entrepreneurial activities that are carried out in the retail industry enhance positive customer experiences. Customer satisfaction is a multidimensional variable that requires the ability of a retailer to meet or surpass customer expectations. It is a blend of satisfaction, loyalty, willing to pay, and positive communication that can be transferred to the word of mouth and all of these are signatures of long-term business success. A customer that is satisfied will tend to attain loyalty, make repeat buying, and market the brand and name to others thus strengthening the reputation of the organization. Customer satisfaction levels are also connected with the willingness to pay high levels being satisfied in the better quality of the experience.

Pakistani supermarket case, as competitive situations and consumer consciousness escalate, it is necessary to improve the level of satisfaction by means of technological incorporation and interactive involvement to maintain the growth and profitability. The proper utilization of technology does not only enhance the shopping experience but

also results in consumer trust and advocacy which are long-term.

Behavioral Outcome:

Word of mouth (WOM)

It is known as informal two-way communication between consumers and their social communities in which experiences and perceptions of products, services, or brands are shared Abdul Rahim et al., (2015). According to the definition by Alan S. Dick, Kunal Basu (1994) and WOM is a voluntary post purchase communication that is mostly driven by high levels of emotional response positive or negative towards the consumption process. Moise et al. (2019) also attested that the positive WOM intentions are greatly boosted by sustainable activities implemented by hotels.

Moreover, the concept of satisfaction has been also found to be a precursor of WOM. Customers who have positive experiences are also more likely to discuss their satisfactory experience on the internet and offline Young Ha, Hyunjoo Im (2012). The positive and direct correlation between customer satisfaction and WOM behavior is also supported by direct empirical findings of Torabi, Hamidi, and Safaie (2021).

Willingness to Pay

Willingness to pay (WTP) refers to the maximum price that a customer is willing to pay on a specific product or service Krishna (1991). It represents the perceived worth of the purchase or usage experience that is attributed by the customers and is commonly perceived as a physical measure of brand equity and successful brand management Kambele et al., (2012)

The WTP of consumers towards greener efforts is investigated in different industries, among them greener products, sustainable aviation Mazón et al., (2019). The studies indicate that eco-friendly customers are usually ready to pay a price premium to eco-friendly products Kang et al. (2012). Similar results in other empirical studies ensure that the degree of satisfaction will be translated into increased readiness to pay on desired products and services Kuminoff, Parmeter, and Pope (2010).

Customer Loyalty

Customer loyalty can be defined as the long-term commitment of the customers to repurchase or sustain a long-term relationship with a brand, which is carried out in terms of repeat and positive attitudes. Loyalty is achieved due to repeated pleasant experiences which develop confidence and perceived less risk in further dealings (Luarn & Lin, 2003).

The combination of the latest technology systems and interactive services has turned out to be a very important tool towards creation of this loyalty. The Customer Experience and Technological Advancement improves the personalization and responsiveness of the service and results in the repeat customer and emotional engagement. Conversely, In Store and Online Integration provides a dependable and steady service delivery within the platforms which strengthens consumer trust, and habitual behavior. Similarly, Engagement and Interactivity creates a lasting engagement and community membership, which enhances the affective loyalty and advocacy (Markovic et al., 2018).

According to the prior research, satisfaction is an essential predisposition to loyalty. Choi and Hyun (2019) also found that there is a direct and positive relationship between satisfaction and loyalty, and in the same study, Torabi, Hamidi, and Safaie (2012) recognized that satisfied consumers tend to remain loyal to the brands of their choice. In the case of supermarkets, technological involvement enhances this relationship as it guarantees convenience, responsiveness and emotional attachment.

Theoretical Justification Summary

Model Element	Theoretical Basis	Empirical Rationale
Technological Advancement & Omnichannel Integration → PU & PEOU	TAM	Technology and integration shape customers' perceptions of usefulness and ease of use.
PU & PEOU → Engagement & Satisfaction	TAM + S–O–R	Positive cognitive evaluations create emotional connection and satisfaction.
Engagement & Satisfaction → Behavioral Outcomes	S–O–R	Emotional and experiential states drive loyalty, repurchase, and advocacy.
Model Element	Theoretical Basis	Empirical Rationale

Theoretical Statement

This research study combines the Technology Acceptance Model (TAM) and the Stimulus - Organism-Response (S-O-R) model to describe the potential impact of technological progress and the evolution of the omnichannel on customer interaction, satisfaction, and behavioral intentions in the Pakistani supermarket industry.

TAM proves the cognitive assessment of technological and omnichannel characteristics by the customers as the perceived usefulness and the ease of use, and S-O-R describes the results of this reaction as the emotional and behavioral reactions. The transactional model therefore offers an extended account of how digital transformation endeavors translate into favorable customer behaviours by cognitive and affectionate capacities.

Hypothesis Development

Retail advantage, satisfaction and loyalty are close to customer experience. Technology is transforming the supermarket market in Pakistan, a growing market in terms of shoppers encountering brands and service quality considerations. Contactless payments, e-commerce platforms, and mobile apps provide the connection between the store and online touchpoints and provide customers with convenience as they can switch channels easily. Personalization is done by analyzing data and promoting and recording product recommendations, and automated chat service will offer immediate help. Sales systems, loyalty cards, and social media provide real-time analytics that can be used to identify emotions and issues and make decisions faster and recover services. AR product preview and VR store simulation are examples of immersive features that enhance interest, and associated gadgets enhance inventory visibility. Such benefits should be balanced by ethical information usage and privacy in order to retain trust. In general, technological innovation will increase convenience, relevance, quality of service, which will motivate satisfaction and retention.

Technological Advancement and Customer Satisfaction

Retail is changing under the influence of technological advances that allow making the shopping experience more personalized, responsive, and engaging. Intelligent algorithms, integrating devices, immersive technologies, and analytics enhance the quality and efficiency of the services. Personalized suggestions, self-service cashier, and live product stocking systems in supermarkets reduce time, increase reliability, and customer satisfaction. (Joung & Kim, 2023)

In Store and Online Integration and Customer Satisfaction

Combination of both in-store and online directions with a synced platform, applications, and click-and-collect will provide a seamless and consistent experience. Satisfaction and loyalty are reinforced when the product information, prices, and service are consistent across touchpoints, as they will create a sense of increased reliability, convenience, and trust in the shoppers. It has been found that coherent cross-channel experiences can raise retention and frequency of purchase. This transparency across channels also elevates the perceived quality of service, hence customers are more ready to spread the word about the supermarket via word of mouth and to enjoy greater emotional attachment. Lastly, omnichannel service will raise perceived value and reduce risk, which forces customers to accept higher prices since the brand is a product of quality and reliability (Gao & Su, 2017).

Engagement and Interactivity and Customer Satisfaction

The aspects of engagement and interactivity include gesture-based kiosks, smart mirrors, and voice assistants, which transform the process of regular shopping into a more participatory, emotionally engaging process. This continued usage creates a sense of investment and makes the shoppers rate the service offered by the retailer more positively.

So, we hypothesize as:

H1: Technological advancement has a positive and significant impact on customer satisfaction.

H2: In Store and Online Integration has a positive and significant impact on customer satisfaction.

H3: Engagement and Interactivity has a positive and significant impact on customer satisfaction.

Customer satisfaction mediates the relationship between modern technologies and behavioral outcome

Choi and Hyun (2017) point out that customer satisfaction directly and positively affects loyalty. They indicated that "Customer satisfaction has a positive and direct effect on customer loyalty". An example of this effect is a cafe chain, were customer satisfaction influences customer loyalty directly . Other studies confirm customer satisfaction's direct and positive effect on customer loyalty Han H et al., (2018). This leads to the following hypothesis:

Hypothesis 4. Customer satisfaction has a direct and positive effect on supermarket customer loyalty.

Choi et al., (2019) states that customer satisfaction has a positive relationship with customers' WOM behavior. Online shopping websites influence customers' WOM satisfaction directly and positively. Customer satisfaction has a direct and positive effect on customer WOM" (Torabi, Hamidi, & Safaie, 2021). So, following hypothesis is posed:

Hypothesis 5 Satisfaction has a positive and direct effect on supermarket customer WOM.

Choi et al. (2019) provided a positive relationship between willingness to pay and satisfaction and this trend is replicated across contexts. Dong et al. (2021) expressed readiness to pay increase with tourist satisfaction, whereas. Customers are more willing to spend more to purchase or sample a brand when they believe the firm has met and possibly surpassed their expectations (Casidy & Wymer, 2016). The results give rise to the following hypothesis:

Hypothesis 6 Customer satisfaction with a supermarket has a direct and positive effect on willingness to pay.

Direct effect:

Customer Loyalty

Customer loyalty is the lasting commitment to keep buying from and relating to a brand, shown in repeat purchases and positive attitudes. Luarn and Lin (2003) note that loyalty grows from consistently good experiences that build trust and lower perceived risk in future dealings (see also Arjun & Holbrook, 2001).

Today, loyalty is increasingly shaped by technology and interactive retail experiences. Improved customer experience through new technologies supports better personalization and faster responses, encouraging repeat visits and emotional bonding. At the same time, strong in-store and online integration delivers the same dependable service across channels, which reinforces trust and routine buying. Ongoing engagement and interactivity also keep customers involved and create a sense of community, strengthening advocacy and affective loyalty (Grace et al., 2019).

Prior research shows satisfaction is a key driver of loyalty; satisfied shoppers are more likely to stay with their preferred supermarkets (Torabi et al., 2021). Hence, the following hypotheses are proposed:

H7: Customer Experience and Technological Advancement positively and directly influence customer loyalty.

H8: In Store and Online Integration positively and directly influences customer loyalty.
H9: Engagement and Interactivity positively and directly influence customer loyalty.

Word of Mouth (WOM)

Word of Mouth (WOM) encompasses informal, voluntary communication between consumers concerning their experiences with products or services. Positive WOM often arises from emotionally satisfying encounters that exceed expectations (Chang & Chang, 2017)

Advancements in technology-based customer experience design have been found to drive favorable WOM behaviors.

Customer Experience and Technological

The high level of personalization and immersive AR/VR would allow building memorable shopping experiences, which clients would be happy to share. Good in store and online integration through providing uninterrupted and conveniently available service creates trust and reliability, which will attract referrals to friends and family. Similarly, the interactivity and engagement tools- live chat, brand communities, and interactive product displays create excitement, the feeling of belonging, and make shoppers discuss their experiences, talking about them positively (Li & Nor, 2021).

It is also suggested by research that the use of technology-based engagement leads to greater word-of-mouth intentions (Moise et al., 2017). On top of this, satisfaction is one of the primary triggers of word of mouth; highly valued and happiness customers have a higher chance of marketing a retailer whether offline or online (Young, 2012).

In this way, the hypotheses are formulated as follows:

H10: Customer Experience and Technological Advancement positively and directly influence customers' word of mouth behavior.

H11: In Store and Online Integration positively and directly influences customers' word of mouth behavior.

H12: Engagement and Interactivity positively and directly influence customers' word of mouth behavior.

Willingness to Pay (WTP)

Willingness to Pay (WTP) represents the maximum price a consumer is prepared to spend on a product or service, reflecting their perceived value and satisfaction with the offering. In the digital retail era, technological innovation and interactivity significantly shape consumer valuation and premium willingness (Li et al., 2012)

Customer Experience and Technological Advancement adds value to its perceived value by using smart personalization, real time support, and immersive visualization variables that merit the investment of extra expenditure because of better service quality and convenience. Store and Online Integration enables the ease of buying and delivering goods, minimizing the transaction cost and psychological hindrances thereby making people to buy more. Moreover, Engagement and Interactivity enhances emotional connection and perceived originality, so consumers connect improved experiences with high value (Chen et al., 2019)

Empirical research has shown that customers who have high levels of satisfaction on their shopping experiences have higher WTP. Satisfaction is a mediating variable that transforms the perceived value and emotional involvement into material financial commitment (Kang S. and Sarah N., 2021).

So following hypotheses are advanced:

H13: Customer Experience and Technological Advancement positively and directly influences consumers' willingness to pay.

H14: In Store and Online Integration positively and directly influences consumers' willingness to pay.

H15: Engagement and Interactivity positively and directly influences consumers' willingness to pay.

Conceptual Framework

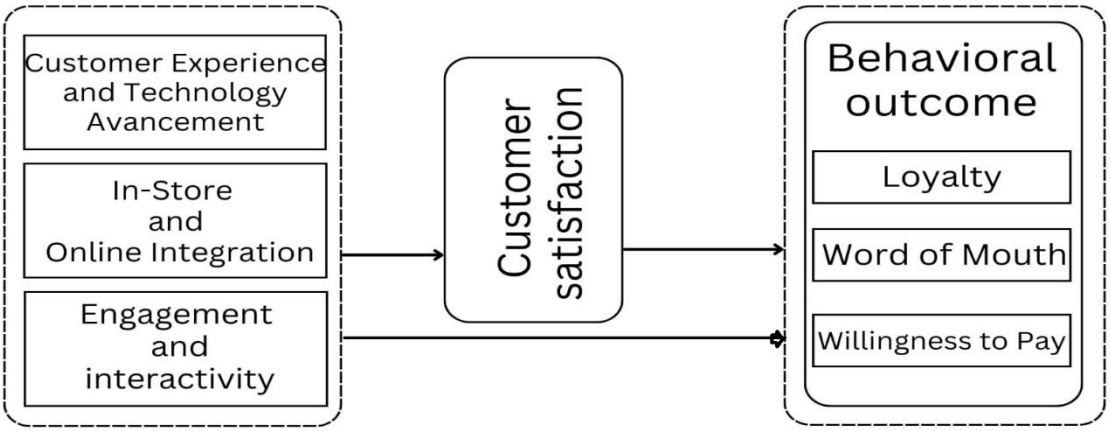
The sustainable consumption is becoming more and more dependent on the fast-developing supermarket market of Pakistan. Shoppers are increasingly becoming environmentally friendly and socially responsible due to increasing middle class and heightened environmental awareness.

The model proposed in this study is that technology-enabled sustainability initiatives are the primary cause of consumer outcomes in Pakistani supermarkets. The responsible practices are expected to ensure customer satisfaction by promoting the perceived value and emotional attachment. The satisfied customers will then have a better chance of remaining loyal, giving good word of mouth, and paying more towards products that align with the sustainability ideals.

On the whole, the framework is connected to the green marketing and consumer behavior in order to demonstrate how sustainability can create competitive advantage within Pakistani supermarket industry. The proposed model is provided in figure 1

Figure 1

Conceptual framework



Research Methodology:

Questionnaire Design

In this article, the model hypotheses were tested using a quantitative approach, which involved the application of a structured questionnaire.

The questionnaire was developed in a systematic and multiphase step in order to make it easy. to develop the questionnaire, detail description of aims of the research, and in order to enhance the validity and reliability of the research findings. The process started with a broad scan of the existing literature to identify some of the important constructs, dimensions, and variables that were relevant in the study. The review provided the foundation of drawing up the theoretical framework, and informed the original set of questionnaire items.

The current study examines how the different contemporary methods can be used to examine the behavioral outcome of the customers within the advanced retail sector in Pakistan. The survey adopted was the cross-sectional survey, which was in line with focus of collecting the data on the various perceptions and attitudes of a large respondent population (Kerlinger and Lee, 2000).

A close ended questionnaire was structured in a close ended format (Bougie and Sekaran, 2019). It adopted, to include dichotomous, multiple choice and rating scale items to elicit responses (D. R. Cooper & Schindler, 2014). Cronbachs alpha was used to determine internal consistency.

The scale of 7-point Likert (1= Strongly Disagree, to 7= Strongly Agree) is used in study. Measurement items on each of the variables were adapted provided in the following table.

Table 1

Measurement Scales

Construct	Measurement Scale	Number of items
Technological Advancement	Pantano & Vannucci (2019), Trunfio, Lucia & Campana (2022). Grewal, Roggeveen & Nordfält (2017).	3
In Store and Online Integration	Verhoef, Kannan & Inman (2017), Juaneda Ayensa, Mosquera & Sierra Murillo (2016). Lazaris & Vrechopoulos (2014).	3
Engagement and Interactivity	Verhagen, van Nes, Feldberg & van Dolen (2014). Pantano & Timmermans (2014). McLean & Wilson (2016).	3

Construct	Measurement Scale	Number of items
Customer Satisfaction	Paul Williams, Geoffrey N. Soutar (2009)	4
Customer loyalty	Yoon Jung Jang, Woo Gon Kim, Hae Young Lee (2015)	
Word of mouth	Mihaela Simona Moise, Irene Gil Saura, Maja Seric´, Maria Eugenia Ruiz Molina (2019)	2
Willingness to pay	U. Akturan, (2020)	3

Population & Sampling

The study population is totality of entities or persons that are subject to a scientific investigation (Hossan et al., 2023). The population in current study comprises of civilized retail industry of Pakistan. The sampling frame was developed on basis of complete list of retail outlets in Pakistan through the digital technologies.

Through a strong sampling frame, the research obtained a sample that was representative of the structure of the retail sector as well as strategically placed to the analytical focus of the study. Final sample size exceeded the statistical threshold, thereby enhancing the robustness of Partial Least Squares Structural Equation Modeling (PLS SEM) analysis and supporting generalizability of findings within the context of Pakistan's retail sector.

This study used convenience sampling, and 226 valid questionnaires were collected. Data was collected through questionnaire survey from customers database provided by renowned shopping malls using either AR or VR or both technologies in Pakistan.

Analysis, Results & hypothesis testing

To investigate hypothesized model PLS SEM methodology as adopted by (Ringle et al., (2020) was applied.

Estimating of Measurement Model:

Non-Response bias and common method bias

Nevertheless, Common Method Variance (CMV) was also used to continue the measurement of the potential bias. Harman Single Factor Test (SFT) has been used with finding being that, the first factor had 47% variance, which falls short of the generally identified baseline of 50% (Podsakoff et al., 2003).Thus, one can draw a conclusion that the validity of the results was not likely to be affected by the data (Fuller et al., 2016).

Test of collinearity was conducted according to the methodology proposed by (Kock et al.,(2017) to check the CMB in PLS SEM. Collinearity testing returned VIF values that were less than recommended above 3.3 value in the study (Kock et al.,(2017) which proves that the common method bias was not a major issue in the study.

Reliability and validity

Construct reliability was measured using two stage approach outlined by (Hair Jr et al., 2019). In first stage, we tested the one dimensionality of the constructs through exploratory factor analysis (EFA).

Then, reliability was estimated using Cronbach alpha and composite reliability (CR) which are recommended by (Lai, 2021) (See Table 1). Findings indicated that all the Cronbach alpha and CR values were over 0.75 hence exceeding the recommended limit (Lai, 2021). This shows that the reliability of such measures in this study is guaranteed.

It is stated that these findings confirm that the constructs have a high convergent validity that is supported by (Lai, 2021) and (Fornell & Larcker, 1981; Hair et al., 2019)

Discriminant validity was used to ask questions relating to the square roots of AVE showing correlation coefficients that tend to be between plots and other constructs. correlation coefficients are lower than the square root of AVE, another evidence of the fact that discriminant validity is demonstrated (Table 2) (Fornell & Larcker, 1981)

Estimating Model:

This step includes the evaluation of following items: Factor loading, Composite reliability (CR), Average variance explained (AVE) and Cronbach's Alpha (Alpha).

Table 2

Measurement Model Properties

Variables	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Technological Aid to Customer	0.890	0.891	0.932	0.820
In Store & Online Integration	0.793	0.854	0.878	0.708
Engagement & Interactivity	0.883	0.885	0.928	0.811
Customer Loyalty	0.862	0.862	0.935	0.879
Customer Satisfaction	0.894	0.895	0.927	0.760
Willingness to pay	0.701	0.856	0.737	0.604
Word of Mouth	0.871	0.871	0.939	0.885

The reliability and validity assessment of the measurement model reveals strong psychometric properties across most constructs. Cronbach's alpha coefficients, which measure internal consistency, range from 0.701 to 0.894. Following established guidelines, values exceeding 0.70 indicate acceptable internal consistency, with values above 0.80 reflecting good reliability (Tavakol & Dennick, 2011). All constructs demonstrate adequate to excellent reliability, with Technological Aid to Customer (0.890), Engagement & Interactivity (0.883), Customer Loyalty (0.862), Customer Satisfaction (0.894), and Word of Mouth (0.871) showing particularly strong internal consistency. In Store & Online Integration (0.793) falls within the acceptable range, while Willingness to pay (0.701) meets the minimum threshold for reliability.

These findings are mostly confirmed by composite reliability measurements (both rho a and rho c) with most of values being over 0.85. Interestingly, Willingness to pay demonstrates higher variability among composite reliability measures (rhoa = 0.856, rhoc = 0.737), which might indicate fact that this construct has little less coherence of items than others. The range of average variance extracted (AVE) has a range of 0.604 to 0.885 with all constructs having a higher value than 0.50 which means that each latent variable accounts more variance in its indicators than measurement error. AVE is willingness to pay (0.604), which is, nevertheless, above required minimum level. All these findings can be interpreted as the fact that the measurement model exhibits a high level of reliability and convergent validity. The results of Willingness to pay warrant attention are a bit smaller even though the construct holds acceptable values. The reliability coefficients of the most constructs are high which means that measurement scales are always measuring the intended concepts of the theory.

Table 3

Discriminant Validity

Variables	Customer Loyalty	Customer Satisfaction	Engagement & Interactivity	In Store & Online Integration	Technological Aid to Customer	Willingness to pay	Word of Mouth
Customer Loyalty	0.937						
Customer Satisfaction	0.747	0.872					
Engagement & Interactivity	0.675	0.736	0.901				
In Store & Online Integration	0.606	0.660	0.836	0.842			
Technological Aid to Customer	0.594	0.653	0.703	0.727	0.905		
Willingness to pay	0.767	0.674	0.653	0.625	0.574	0.877	
Word of Mouth	0.853	0.744	0.729	0.658	0.647	0.719	0.941

Latent variables in model have been able to obtain Discriminant Validity as per the Fornell and Larcker criterion:

Evaluation of Measurement Model

The research model proposed hypothesized a relationship between variables and therefore this study utilized a PLS approach to determine these hypotheses. Specifically, path coefficients have been generated using PLS algorithm and tested using PLS bootstrapping, 5% level ($p < 0.05$).

This table displays the statistics of a statistical model, probably the examination of a structural equation modeling (SEM) or regression examination, or a comparable statistical test.

Table 4

Model Fit indices

	Saturated model	Estimated model
SRMR	0.000	0.044
d_ULS	0.000	0.054
d_G	0.000	0.117
Chi square	0.000	136.027
NFI	1.000	0.927

Model Fit Interpretation

Estimated model has a SRMR value of 0.044 and this is very low as compared to the generally quoted value of 0.08. This implies a good overall fit. As anticipated, the saturated model that fits all possible parameters indicates an SRMR of 0.000, indicating an ideal mathematical fit and a marker of reference and not a point of comparison.

Other additional fit measures, d ULS and d G, are also within an acceptable range . Small values of these indices mean that differences between observed and model implied variance covariance matrices are small and this provides further evidence to the sufficiency of the model.

The Chi square value of the saturated model is 0.000 and that of the estimated model is 136.027, considering restrictions that are imposed on structural model. In PLS SEM, Chi square significance is not rare, and is not generally considered as a key measure of model performance, because this technique gives greater emphasis on predictive power than on the replication of perfect covariance structure.

The NFI value 0.927 of estimated model is greater than general rule of 0.90 which means that

model is of significant improvement compared to the null model and it is in line with the underlying data structure. Taken together, these indices indicate that approximate model fits usual requirements of a satisfactory fit in PLS SEM and forms a firm foundation to the interpretation of the structural relationships analyzed in this research.

Quality Criteria R Square:

Table 5

R Square

	R square
Customer Loyalty	0.735
Customer Satisfaction	0.789
Willingness to pay	0.724
Word of Mouth	0.673

Interpretation of R square Values

Results of R square show that model describes a large percentage of variation in all four dependent variables. R square of Customer Satisfaction is largest (0.789) and this implies that almost 79 percent of variance in Customer Satisfaction is explained by predictors contained in study. This implies that three factors chosen technological aid, channel integration, and engagement are extremely applicable to context of satisfaction in retail scenario.

Customer Loyalty is also a good example showing a high R square value of 0.735 meaning that about 74 percent of behavior associated with loyalty is explicated by model. Even though level of satisfaction was not a strong predictor of loyalty, combined effect of or variables still provides a high level of explanatory power.

In case of Willingness to Pay, value of R square, 0.724, indicates that model explains about 72 percent of variation in willingness to pay more prices among customers. This indicates that factors investigated are highly interconnected with perception of value and financial reaction of customers to it.

R square of Word of Mouth is 0.673, which implies that independent variables can explain about 67 percent of intention of customers to recommend or talk about retailer in a positive way. Although this is a little below other results, it is a good degree of explanatory power. cumulative R Squared values indicate by and large that model is strong and includes key determinants of customer responses in retail industry.

Hypothesis Testing

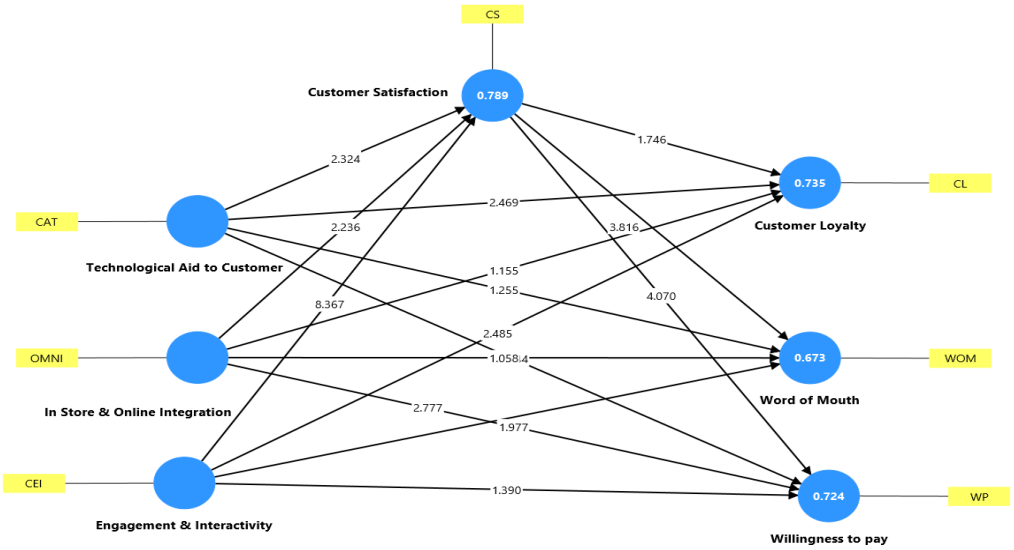
Table 6

Hypothesis testing

Hypothesis	Contract	Original sample (O)	T statistics (|O/STDEV|)	P values	Decision
H1	Technological Aid to Customer > Customer Satisfaction	0.161	2.324	0.020	Accepted
H2	In Store & Online Integration > Customer Satisfaction	0.182	2.236	0.025	Accepted
H3	Engagement & Interactivity > Customer Satisfaction	0.601	8.367	0.000	Accepted
H4	Customer Satisfaction > Customer Loyalty	0.200	1.746	0.081	Rejected

Hypothesis	Contract	Original sample (O)	T statistics (|O/STDEV|)	P values	Decision
H5	Customer Satisfaction > Word of Mouth	0.321	3.816	0.000	Accepted
H6	Customer Satisfaction > Willingness to pay	0.379	4.070	0.000	Accepted
H7	Technological Aid to Customer > Customer Loyalty	0.303	2.469	0.014	Accepted
H8	In Store & Online Integration > Customer Loyalty	0.129	1.155	0.248	Rejected
H9	Engagement & Interactivity > Customer Loyalty	0.296	2.485	0.013	Accepted
H10	Technological Aid to Customer > Word of Mouth	0.154	1.255	0.210	Rejected
H11	In Store & Online Integration > Word of Mouth	0.122	1.058	0.290	Rejected
H12	Engagement & Interactivity > Word of Mouth	0.286	2.777	0.006	Accepted
H13	Technological Aid to Customer > Willingness to pay	0.121	0.944	0.345	Rejected
H14	In Store & Online Integration > Willingness to pay	0.264	1.977	0.048	Accepted
H15	Engagement & Interactivity > Willingness to pay	0.149	1.390	0.165	Rejected

Figure 2



Discussion

These findings offer some significant insights on the way technology, channel integration, and customer engagement contribute to consumer responses within the Pakistani retail sector. Now that the industry is shifting off-line brick and mortar structures to hybrid and digitally enabled formats, the realization of such connections is more critical than ever. The results indicate that technological assistance, in-store/ online integration and engagement/ interactivity all increase customer satisfaction, but their strength

and subsequent impact vary significantly in meaningful ways.

A major trend is that engagement and interactivity, which had the most significant effect on satisfaction, were particularly prominent. This suits the evolving nature of the retail landscape in Pakistan where consumers, especially in urban centres are seeking more participatory and richer shopping experiences. Big chains and Mall-based stores in Karachi, Lahore and Islamabad are incorporating interactive screens, customized communication and staff who are more receptive. This high statistical correlation indicates that customers attach importance to experiential and social factors other than simple convenience. Retailers can differentiate themselves in a world where most of their stores are still a limited interactive experience by creating immersive and responsive engagements.

The effect of technological aid on satisfaction was also significant but less pronounced. The implementation of customer-facing technologies like self-checkout, mobile applications, and product retrieval via QR codes, and digital assistance is still unevenly distributed throughout Pakistan. The positive impact is that, under conditions where these tools are effective, they enhance the shopping experience. Nevertheless, the absence of a direct effect on word-of-mouth or intention to pay suggests that technology is not perceived as exciting or transformative, it is very functional, simplifying the process but not creating strong emotional resonance.

Similarly, the positive correlation between in-store/online integration and satisfaction is an indication of increasing omni-channel expectations. Even though Pakistan lags behind higher integration of markets, shoppers are becoming conversant with linked experiences via the top e-commerce applications and trendy stores. The importance of this route demonstrates that the customers value more continuity between online shopping and real delivery. Integration also increased willingness to pay indicating seamless transitions can be considered as an added service value. Nevertheless, there is no clear impact on loyalty and word-of-mouth, which suggests that integration can contribute to pragmatic satisfaction but does not need to establish stronger attachment.

Among the most notable results is that satisfaction was not a significant predictor of loyalty. This dispels the common belief that satisfied customers become repeat buyers automatically. This may be attributed to various conditions in Pakistan. Competition in retail is fierce and highly price oriented, where customers feel free to switch even in cases where they are satisfied. Similar products and experiences can also be found in a variety of retailers, and it is difficult to establish strong bonds solely through satisfaction. Loyalty programs remain in their infancy and tend to be impersonal and unworthy of rewards. Consequently, positive evaluation and perceived value may be enhanced, yet not commitment.

Conversely, both word-of-mouth and willingness to pay were highly correlated with satisfaction. Although the shoppers may not remain loyal, they do however recommend retailers who deliver as they expect and who are worth paying. This is in line with Pakistan socially related consumers who in many cases share experiences within networks and social media. The increased willingness to pay implies satisfaction increases perceptions of fairness and value- vital in a price-sensitive environment.

The immediate impact of engagement and interactivity on loyalty and word-of-mouth also underscores the strength of experience. Customers become more inclined to come back and recommend the retailer when they feel included, acknowledged, or entertained. This indicates a wider trend towards relationship oriented and experience-based retailing. The approaches of more educated employees, personalized communication, activity areas, or interactive functions can thus be more powerful loyalty creators than a mere rise in satisfaction.

Lastly, the insignificance of technological support and interaction in terms of willingness to pay points towards technological aid and interaction possibly being perceived as expected aspects of the contemporary service, rather than as premium features. To turn experience quality into increased expenditure, the retailers might be required to accompany these improvements with differentiated products, special benefits, or enhanced levels of service.

All in all, the results indicate a complex image: satisfaction is of importance, yet the strongest lever in the changing retail landscape in Pakistan is the experience. To gain more loyalty, advocacy, and value perceptions, the retailers must go beyond simple satisfaction fixes and invest in more interactive experiences that resonate with the local social and cultural shopping behaviors.

Conclusion

The study examined the influence of technological support, in-store/online integration, and engagement on customer satisfaction and corresponding customer behavior in the Pakistani retail sector. Satisfaction increased with all three factors, with engagement and interactivity being the most powerful, reflecting that shoppers respond most to experiences that are perceived to be active, responsive, and fun as retail slowly transitions to more than transactional formats. Word of mouth and willingness to pay were increased, but there was no significant change in loyalty. This indicates a very competitive, price-sensitive market where clients continue to compare alternatives in spite of favorable experiences. Nevertheless, the direct correlations between engagement and technological support and loyalty indicate that highly memorable experiences and convenience options could be more likely to promote repeat visits than satisfaction.

In general, the results indicate that Pakistani consumers demand convenience and engagement. To achieve long-term growth, retailers should intensify experience design with interactive service, intelligent technology, and less convoluted journeys by omni-channel, which contribute greater emotional value.

Theoretical Implications

This study reinforces theory in a number of manners. To begin with, the high effect of engagement and interactivity on satisfaction and behavior is an indication of the experiential consumption theory, which tends to focus on the emotional and physical involvement in customer judgments. Pakistan experience demonstrates that they are also manifested in the new markets, and it is possible to extend experience-based models even to the developing markets.

Second, the absence of meaningful relationship between satisfaction and loyalty is a challenge to the traditional paradigm according to which satisfaction is a natural source of repeat commitment. Low switching costs can result in a situation where satisfaction is not adequate. Loyalty frameworks have to take into consideration broader forces like market pressure, rewards, social identity, and unique experiences.

Third, the various functions of technological assistance and integration of the omni-channel provides some finer details on the functionality of digital change in developing economies. Despite the similar levels of satisfaction, weaker or disproportionate influences of the two on loyalty and advocacy indicate that convenience technologies do not necessarily result in an enduring attachment. The most successful aspects of digital features are where they are backed by more experience-centered values.

Lastly, the results indicate significance of testing both direct and indirect effects. The engagement can create loyalty and word of mouth via the satisfaction and in isolation, which implies that there are various paths of influence that the future model of the retail experience ought to better reflect.

Managerial Implications

Outcomes of this study are also of practical significance to the retailers in Pakistan. The highly close impact of engagement and interactivity means that companies ought to direct their attention toward experiences that facilitate involvement, dialogue and personal attention. It may be achieved through the training of the frontline staff to provide more interactive service, by providing experiential areas within the stores, and through the addition of sensory or gamified elements to make the visit more memorable.

Technological aid is increasing satisfaction and may justify loyalty, but on its own does not produce an image of strong advocacy or a premium image. Retailers need to incorporate the use of technology with human-based design and apply digital tools to support, but not eliminate personal interaction. Friction can be reduced by simple, conveniently available apps, product information with QR, and

assisted or quicker checkout but should be combined with a richer experience strategy.

There was also uplifted willingness to pay because of omni-channel integration and this implied the worth of consistency across channels. The retailers need to match the stock records, returns, customer care, and advertisements between online and brick-and-mortar stores as a means of reinforcing convenience and perceptions of reliability.

As satisfaction is not a guaranty to loyalty, retention must have additional screws like reward loyalty plan, special benefits, or experience loyalty plan. These may counter poor switching costs and price elasticity, which leads to retailers developing more emotional attachment over time.

Future Research Recommendations

This study provides a number of avenues of future research. To begin with, a qualitative study can be conducted to understand why satisfied customers in Pakistan do not necessarily turn into loyal ones to reveal the psychological factors or conditions in the situation that are not reflected in the quantitative scales. Second, the analysis of whether consumer heterogeneity is further defined by the presence of demographic variables like age, income and digital literacy could provide more insightful information on the fact that the observed relationships could be moderated by demographic factors.

Third, the expression of post pandemic changes in the expectations of retail could be evaluated in the future because the blistering development of e-commerce in Pakistan can redefine how people understand technology and integration. Longitudinal studies would be of special essence in learning whether the experience factors remain dominant as the market matures.

Lastly, the model may be extended with some constructs like perceived risk, trust, service authenticity, or brand attachment, which may provide further explanatory power. Comparisons with the other markets in South Asia could be used to understand whether the trends in Pakistan are because of the retail dynamic in the region or are because of the specifics of the country.

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Appendix 1

Questionnaire (Responses section)

A Seven-point Likert scale consisting of 7 options: 1 stands for "totally in disagreement", while 7 represents "totally in agreement".

Coding	Statement	Source / Citation
	Use of AI and Technology	
AIT1	The use of advanced technologies (such as AI or VR) by this retailer makes my shopping experience more enjoyable and convenient.	Pantano & Vannucci (2019). *Journal of Retailing and Consumer Services, 49*, 297–304.
AIT2	Technological tools provided by the store (such as mobile apps, self-checkout systems, or AR product visualization) make my shopping faster and easier.	Trunfio, Lucia & Campana (2022). *Technological Forecasting and Social Change, 174*, 121259.
AIT3	The retailer's use of technology helps me receive personalized recommendations and relevant information during my shopping.	Grewal, Roggeveen & Nordfält (2017). *Journal of Retailing, 93*(2), 119–122.
	In Store and Online Integration	
SOI1	I can easily switch between the store's online platform and physical store when searching for or purchasing products.	Verhoef, Kannan & Inman (2017). *Journal of Retailing, 93*(2), 174–181.
SOI2	The information (such as prices, promotions, and product details) is consistent across the store's online and offline channels.	Juaneda-Ayensa, Mosquera & Sierra Murillo (2016). *Frontiers in Psychology, 7*, 1117.
SOI3	I can start my shopping online and complete the transaction or pickup conveniently in-store.	Lazaris & Vrechopoulos (2014). *International Journal of Electronic Commerce, 18*(4), 1–23.
	Engagement & Interactivity	
EI1	The retailer provides interactive tools (such as kiosks, AR/VR, or chatbots) that make my shopping experience more engaging.	Verhagen, van Nes, Feldberg & van Dolen (2014). *Journal of Computer-Mediated Communication, 19*(3), 529–545.
EI2	I feel more involved in the shopping process due to the store's interactive technologies.	Pantano & Timmermans (2014). *Journal of Retailing and Consumer Services, 21*(5), 859–869.
EI3	Using the interactive features (e.g., AR product demos, live chat support, or online communities) enhances my connection and loyalty to the retailer.	McLean & Wilson (2016). *Computers in Human Behavior, 62*, 613–622.
	Customer Satisfaction	
Paul Williams, Geoffrey N. Soutar, Value, satisfaction and behavioral intentions in an adventure tourism context, Ann. Tour. Res. 36 (3) (2009) 413–438.		
CS1	Go to this supermarket was exactly what I needed.	
CS2	I was satisfied with decision of go to this supermarket.	
CS3	It was a wise choice go to this supermarket.	
CS4	It was a good experience go to this supermarket.	

	Loyalty
	Yoon Jung Jang, Woo Gon Kim, Hae Young Lee, Coffee shop consumers' emotional attachment and loyalty to green stores: the moderating role of green consciousness, Int. J. Hosp. Manag. 44 (2015) 146–156.
CL1	I would like to come back to this supermarket in the near future because it is environmentally friendly.
CL2	This supermarket would be my first choice over other supermarkets because it is environmentally friendly
	Willingness to Pay
	U. Akturan, Pay-premium for green brands: evidence from an emerging country, J. Glob. Responsib. 11 (3) (2020) 219–232.
WP1	I am willing to pay higher price in this supermarket than for others supermarket of product.
WP2	Even thought this supermarket seems comparable to other supermarkets I am willing to pay more.
	Word-of-mouth
	Mihaela-Simona Moise, Irene Gil-Saura, Maja Seric´, Maria Eugenia Ruiz Molina, Influence of environmental practices on brand equity, satisfaction and word of mouth, J. Brand Manag. 26 (2019) 646–657.
WOM1	I would recommend this supermarket to other people.
WOM2	I would tell other people positive things about this supermarket.

Appendix 2

Large Retailers in Pakistan using modern retail technologies (with evidence)

1. **Imtiaz Superstore** *Online store + mobile app; active e commerce presence.*
   Evidence: Imtiaz operates an online shopping portal and has a mobile app for ordering and home delivery. (shop.imtiaz.com.pk)
2. **Carrefour (Majid Al Futtaim) Carrefour Pakistan** *Full omnichannel retailer with online grocery platform and regional operator backing.*
   Evidence: Carrefour Pakistan runs Carrefour Online and is operated by Majid Al Futtaim, which explicitly promotes omnichannel experiences. (carrefour.pk)
3. **METRO Cash & Carry (Pakistan)** *Online ordering portal + "collect your order" / store pickup options.*
   Evidence: METRO Pakistan advertises METRO Online and explicitly mentions ordering online and picking up at store (click & collect). (Metro Online)
4. **Al Fatah (Al Fatah Online)** *Established department store with online store and mobile presence.*
   Evidence: Al Fatah operates an online shop and mobile app (Al Fatah Online). (Al Fatah)
5. **Chase/Chase Up (Chase Plus/chase.pk)** *Online ordering presence and web catalog; local online grocery options.*
   Evidence: Chase/Chase Plus offers online ordering and product catalogs. (Chase Jail Chowrangi)