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Empowering Women Entrepreneurs: An Empirical Study of Education, Credit Access, and Networking in the Textile Industry

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ABSTRACT

The study explores the sustenance of technology in determining perceived service quality in retail stores. The study widely considered the self-service kiosks, mobile payment systems, and online integration to forming sustenance of technology. Furthermore, the mediation effect of shopping experience of customers is explored. The study is formulated with a sample of 450 customers purchasing various products at retail stores in Tiruchirappalli district. Questionnaire is developed to collect data from the sample respondents. Purposive sampling procedure is administered to select sample. Causal research design is used to test the causal links among the research variables. Findings indicated that self-service kiosks, mobile payment systems, and online integration have strong impact on sustenance of technology. Sustenance of technology has significant and positive influence on perceived service quality. The mediation effect of shopping experience between sustenance of technology and perceived service quality confirmed a partial mediation. Additionally, demographic factors like age, income, and occupation significantly affect sustenance of technology and service quality perception.

KEYWORDS: Self-Service Kiosks, Mobile Payment, Online Integration, Sustenance of Technology, Shopping Experience, Perceived Service Quality.

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1. INTRODUCTION

In the retail industry, technology has become an indispensable element that develops customer experiences and influences how service quality is perceived. Retailers are increasingly dependent on technological systems to streamline operations, enhance customer interactions, and maintain a competitive edge. The concept of sustenance of technology refers to the long-term support and adaptability of these systems to ensure they continue delivering value in terms of service quality. As the retail environment becomes more digitized, the functionality, reliability, and cost-effectiveness of technology has main tasks in determining how customers perceive the service they receive. Technology adoption in retail stores has transformed the shopping experience, enhancing operational efficiency and customer satisfaction. Retailers are integrating advanced technologies like automated checkout systems, digital inventory management, and unique marketing techniques to streamline processes and meet evolving consumer expectations. The move towards a tech-driven retail environment is determined by the need to offer convenience, speed, and a seamless shopping experience, both in-store and online. Adoption of technology allows retailers to gather valuable data on consumer behavior, enabling more personalized service and better inventory control. However, the transition comes with challenges, such as the need for staff training, infrastructure investment, and ongoing system maintenance. Despite these hurdles, technology adoption in retail is critical for staying competitive in an increasingly digital marketplace. The continuing transformation marks a new era in retail, where technology boosts customer service and business success.

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Sustenance of Technology: The sustenance of technology in retail involves multiple aspects of support and adaptability to ensure that technological systems not only meet current needs but are also capable of evolving in response to future demands. The long-term system functionality support ensures that the technological solutions deployed in retail environments remain operational and efficient over an extended period. Retailers must invest in the regular maintenance and monitoring of these systems to prevent breakdowns that can lead to operational disruptions and negatively impact customer service. Point-of-sale systems and self-checkout kiosks must function without errors to facilitate a smooth shopping experience (Lyu et al., 2019). Regular updates in technology, especially in software ensure that the systems are secure, free from bugs, and capable of delivering improved performance. Moreover, these updates often introduce new features that enhance the shopping experience, such as faster checkout processes or improved product navigation interfaces. Ensuring that systems are regularly updated and maintained, retailers can prevent technical glitches and ensure a seamless interaction between technology and customers. Updates to inventory management systems can improve the accuracy of product availability information, directly contributing to the perceived service quality through timely and accurate information delivery (Aiolfi and Bellini, 2019).

Retailers must ensure that their technological systems are flexible enough to adapt to these changes, to remain competitive. It involves integrating new payment methods, adopting online customer service techniques, enhancing online shopping platforms, technology must evolve with the market. The ability to adapt quickly to these changes allows retailers to meet customer expectations and provide innovative solutions, ultimately improving the overall service quality. Retailers rely on strong infrastructure to ensure that systems can handle large volumes of transactions, particularly during peak shopping times (Tamboo, 2014). The failures in the technical infrastructure, such as network outages or system crashes, can lead to significant delays in service delivery, frustrating customers and diminishing their perception of the service provided. Therefore, investing in a reliable infrastructure that can scale with demand is vital to maintain service consistency. Cost efficiency in technology management helps to sustain their technological investments (Piotrowicz and Cuthbertson, 2014). Retailers must balance these costs with the value that technology brings to the business and to customer service. Efficiently managing these expenses ensures that retailers can maintain their technological systems without compromising the quality of service or incurring unsustainable operational costs.

Self-service kiosks have become an essential feature in modern retail stores, offering customers a quick and efficient way to complete their transactions. The availability of assistance near kiosks ensures that customers can receive help if they encounter any issues, improving the user experience. User satisfaction with kiosk reliability smoothly functioning kiosk develops trust in the technology. The integration of kiosks with payment systems ensures seamless transactions, while security of self-service kiosk transactions protects customer data, ensuring a safe purchasing process (Cho and Fiorito, 2012). Mobile payment options have streamlined the checkout experience for many shoppers. The ease of mobile payment setup allows customers to quickly begin using their devices to pay, while the security of mobile payment transactions ensures their personal data is protected. The speed of mobile transaction processing offers customers a fast checkout, and compatibility with various mobile devices enhances accessibility for a wide range of users (Saini and Khasa, 2023). Online integration links digital and physical stores, its connection provides consistency, ensuring customers can find the same products in both spaces. Real-time online order status tracking improves transparency, and the integration of loyalty programs online keeps customers engaged across all platforms (Wieland, 2021).

Shopping Experience: The shopping experience in retail stores significantly influences customer satisfaction and plays a mediating role between the sustenance of technology and perceived service quality. Effective integration of technology, such as through interactive digital maps or shelf-scanning systems, customers can quickly locate products, improve their overall shopping experience. The ease of navigation directly affects how customers perceive the store's service quality. Once technology is properly maintained, these systems ensure speed and reliability, further enhancing perceived service quality. Technology enables retailers to manage inventory better, ensuring a broad selection of products (Alexander and Kent, 2022). A well-maintained technological infrastructure ensures accurate stock levels, leading to improved customer satisfaction. The ambiance and comfort of the environment, influenced by

factors like store layout, lighting, and cleanliness, also contribute to a positive shopping experience. Retailers leveraging technology for billing purposes, customer-centric data analysis, and stock management, which cumulatively enhance the store environment and customer comfort. Convenience of store location proximity enhances the overall experience, while technology allows customers to search nearby stores for available products. The shopping experience serves as a vital link, mediating between technology sustenance and perceived service quality in retail settings (Bonfanti and Yfantidou, 2021).

The shopping experience mediates the relationship between the sustenance of technology and perceived service quality in retail stores. State-of-the-art technology improves various aspects of the shopping experience, like ease of product navigation and checkout efficiency. These enhancements develop customer satisfaction and contribute to their perception of service quality. Technology sustenance is reliable and well-maintained, it ensures smooth operations, such as consistently available product options and an inviting store environment (Triantafillidou et al., 2017). It creates a seamless shopping experience, which influences customers' views on the overall service provided. The shopping experience acts as a bridge, where the benefits of sustained technology are realized through an enhanced shopping environment, leading to improved perceptions of service quality. In essence, a positive shopping experience helps translate the advantages of technology into heightened customer satisfaction and perceived service excellence.

Perceived Service Quality: Perceived service quality in retail refers to how customers evaluate the service they receive based on various dimensions. Customers expect quick and efficient service, whether they are shopping online or in-store. Technology that streamlines processes, such as self-checkout systems or mobile payment options, can significantly enhance the speed of service, leading to higher customer satisfaction. Technology can aid retail stores in providing timely and accurate responses to customer questions, either through real-time inventory management systems or customer service platforms powered by artificial intelligence (Sharma et al., 2021). It contributes to a positive perception of service quality, as customers value prompt and accurate assistance. Customers rely on the information provided by retailers to make purchase decisions. Technological tools, such as real-time inventory systems or product information databases, ensure that the information customers receive is up-to-date and accurate. It reduces the likelihood of customer dissatisfaction caused by incorrect product details or availability issues.

The use of technology systems such as, automated process, inventory organization technologies, and digital displays contribute to a well-maintained and visually appealing retail environment, which enhances the overall shopping experience (Park et al., 2021). The speed of checkout and availability of products are the major expectation of customers while each time they visit. Technology ensures the consistency through automated processes that manage inventory, process transactions, and assist employees in delivering efficient service. Well-trained employees who are proficient in using technology to assist customers can greatly enhance the service experience. Technology processes, such as digital training platforms or real-time support systems, enable employees to stay better and provide professional, knowledgeable assistance to customers. The sustenance of technology is essential for maintaining and enhancing perceived service quality in retail stores. Through long-term support, adaptability, and cost-effective management, retailers can ensure that their technological systems continue to meet customer needs and improve overall service delivery (Guzana and Msosa, 2022).

2. PROBLEM STATEMENT

In the modern retail store environment, the use and sustenance of technology increases customer experiences and determines perceived service quality. Retailers rely on advanced technological solutions such as self-service kiosks, mobile payment systems, and online integration to enhance operational efficiency and improve customer satisfaction. However, the challenge lies in ensuring the long-term functionality and adaptability of these systems in an ever-evolving market. Failure to sustain these technologies can lead to negative customer experiences, diminishing perceived service quality. Moreover, the shopping experience acts as a mediator between the effectiveness of technology and how customers perceive the service quality in retail shops. Elements such as ease of product navigation, checkout

efficiency, and overall store ambiance are directly influenced by technology. So far, there is limited recognition of how these technological factors and the shopping experience interact to influence customer perceptions of service. The study aims to explore the relationship between the sustenance of technology and perceived service quality, while examining the mediating role of the shopping experience. A focus on such issue is vital for retailers to remain competitive, offers a seamless shopping experience that meets evolving consumer expectations.

3. LITERATURE REVIEW AND HYPOTHESES

The technological innovations are closely tied to the shopping experience and perceived service quality in retail stores. Self-service kiosks have revolutionized the in-store shopping experience by allowing customers to take control of their transactions. The convenience and speed offered by these systems help reduce waiting times, thereby improving customer satisfaction (Chiu et al., 2023). However, the effectiveness of self-service kiosks depends on their reliability and the availability of assistance when needed. Retailers must ensure that kiosks are integrated seamlessly with payment systems, allowing for secure and efficient transactions (Alpesh and Gajjar, 2020). Additionally, the kiosks must be maintained regularly to avoid malfunctions that could disrupt the customer experience. The integration of self-service kiosks with loyalty programs or personalized offers also enhances the value they provide, making them an essential tool in improving perceived service quality (Lee, 2015).

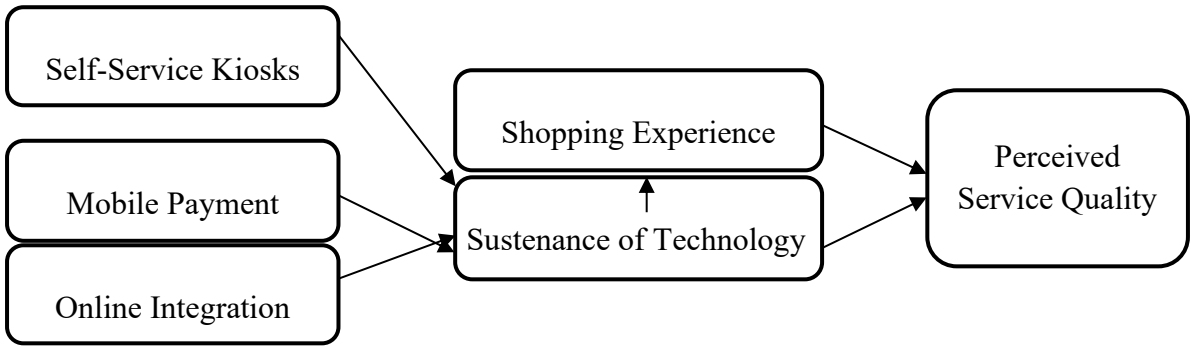
Mobile payment solutions have gained widespread acceptance due to their convenience, speed, and security. In retail settings, mobile payments allow customers to complete transactions quickly, bypassing traditional checkout lines (Falk et al., 2016). The ease of setting up mobile payment options, coupled with the high level of security involved in these transactions, enhances the shopping experience. Compatibility with various devices also ensures that a wide range of customers can benefit from mobile payments (Hellemans et al., 2023). However, ensuring the security of mobile transactions is paramount, as any breach of customer data could significantly damage the perceived service quality (Trivedi and Sanchiher, 2023). Mobile payment solutions also provide opportunities for retailers to integrate loyalty programs, offering seamless experiences across both online and offline platforms (Khan and Ali, 2018). The integration of online and offline retail channels is important for providing a consistent shopping experience, customers expect to move effortlessly between digital and physical platforms (Lazaris et al., 2021).

Online integration assists retailers to provide real-time updates on product availability, enabling customers to check stock levels before visiting a store. The smooth connection between online and offline channels improves the overall shopping experience and contributes to higher perceived service quality (Riegger et al., 2021). Retailers who successfully integrate their loyalty programs, inventory systems, and customer service tools across both platforms can create a unified brand experience that meets consumer expectations. Real-time online order tracking also enhances customer confidence and satisfaction (Briel, 2018). Sustaining technological infrastructure is essential for long-term operational success in retail stores. As the retail environment evolves, the technology that supports it must adapt to changing market conditions (Nanda et al., 2021). Long-term system functionality, regular software updates, and the ability to scale technological solutions to meet new demands are key factors in sustaining technology (Lyu et al., 2021). Retailers that successfully sustain their technology are better positioned to enhance perceived service quality through reliable and efficient systems (Perumal et al., 2022).

The shopping experience factors such as ease of product navigation, satisfaction with the checkout process, the variety of products available, and the ambiance of the store environment all contribute to the overall experience (Lopes et al., 2023). Technology directly influences these factors, from digital signage that guides customers through the store to automated checkout systems that reduce wait times (Ndengane et al., 2021). A positive shopping experience is essential in mediating the relationship between technology sustenance and perceived service quality. Customers are more likely to perceive high-quality service when them in-store experience is smooth, efficient, and enjoyable (Cruz et al., 2019). Perceived service quality is relied on timeliness of service, staff responsiveness, the accuracy of product information, cleanliness, and consistency in service delivery all play a role in shaping how customers perceive the

service they receive (Veloso and Sousa, 2022). Employee professionalism and knowledge also contribute significantly to perceived service quality (Migdadi and Abdel-Rahman, 2020). Technology boosts the shopping experience and improving perceived service quality in retail stores. Retailers can provide a superior shopping experience that translates into higher perceived service quality and customer loyalty, by continuously adapting and maintaining these technologies (Marso and Idris, 2022).

Figure 1: Conceptual Framework



Research Hypotheses

H1.1: Antecedents have significant effect on self-service kiosks, mobile payment, online integration, sustenance of technology, shopping experience, and perceived service quality.

H1.2: Self-service kiosks, mobile payment, and online integration have significant effect on sustenance of technology.

H1.3: Sustenance of technology has significant effect on perceived service quality.

H1.4: Shopping experience has mediating effect between sustenance of technology and perceived service quality.

H1.5: Demographic status has significant effect on self-service kiosks, mobile payment, online integration, sustenance of technology, shopping experience, and perceived service quality.

4. PURPOSE AND METHODS

The study initiated to investigate the sustenance of technology in determining perceived service quality among retail shops in Tiruchirappalli district, Tamil Nadu. Causal research design is involved its relationship. The effect of self-service kiosks, mobile payment, and online integration on sustenance of technology is analyzed. Further, shopping experience plays any mediating effect between sustenance of technology and perceived service quality is explored. The study is formulated with the use of 450 sample respondents; the samples are identified using purposive sampling. The data is collected through direct survey with questionnaire among the respondents. Demographic status is examined through percentage analysis. The causal relationship among research variables and the mediating effect of shopping experience is measured using SEM. One-way ANOVA is executed to assess the relationship between demographic status and research variables.

5. RESULTS

5.1. Demographic Status of Customers

The demographic status of customers is described in Table 1.

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Table 1: Customer Demography

Demography	Distribution	Frequency	Percent
Gender	Male	339	75.3
	Female	111	24.7
Age	Less than 25 years	104	23.1
	25 – 50 years	212	47.1
	More than 50 years	134	29.8
Academic Qualification	School	263	58.4
	Under Graduate	137	30.4
	Post Graduate	50	11.1
Monthly Income	Below Rs.30,000	163	36.2
	Rs.30,000 – 50,000	166	36.9
	Above Rs.50,000	121	26.9
Occupation	Businessmen	73	16.2
	Employee	156	34.7
	Agriculture	221	49.1

Table 1 reveals that among 450 sample customers, 75.3% of the customers are male, while females represent 24.7%. Age-wise classification shows that most participants fall within the 25-50 years range, constituting 47.1%, followed by 29.8% who are over 50 years old, and 23.1% who are under 25 years. In terms of academic qualification, 58.4% of respondents have completed school education, while 30.4% hold undergraduate degrees and 11.1% have postgraduate qualifications. Monthly income discloses that 36.9% of the customers earn between Rs.30,000 and Rs.50,000, 36.2% earn below Rs.30,000, and 26.9% make more than Rs.50,000. Occupation shows that 49.1% are engaged in agriculture, 34.7% are employees, and 16.2% are businessmen.

5.2 Sustenance Of Technology In Determining Perceived Service Quality

The sustenance of technology in determining perceived service quality in retail stores is tested through structural equation modeling. The variables like, Self-Service Kiosks (SSVK), Mobile Payment (MPAY), Online Integration (OLIG), Sustenance of Technology (STEC), Shopping Experience (SPEX), and Perceived Service Quality (PSQL) are used to test causal relationship. The observed, endogenous variables consist of SSVK1 – SSVK4, MPAY1 – MPAY4, OLIG1 – OLIG4, STEC1 – STEC5, SPEX1 – SPEX5, and PSQL1 – PSQL6. The unobserved, endogenous variables consist of STEC, SPEX and PSQL. The unobserved, exogenous variables consist of e1 – e31, SSVK, MPAY, and OLIG. The model is performed with 65 variables, including 28 observed, 37 unobserved, 31 endogenous and 34 exogenous variables. The structural equation model is depicted in Figure 2, and its path relationship values are represented in Table 2.

Figure 2: Structural Equation Model

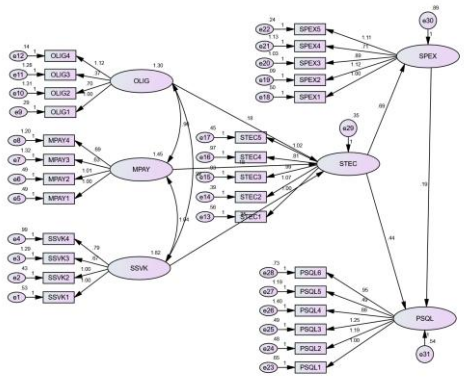

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Table 2: Path Analysis

Path			Unstd. Estimate	Std. Estimate	t	p
SSVK1 – Availability of assistance near kiosks	<---	SSVK	1.000	.880		
SSVK2 – User satisfaction with kiosk reliability	<---		1.001	.900	25.424	***
SSVK3 – Integration of kiosk with payment systems	<---		.675	.625	14.689	***
SSVK4 – Security of self-service kiosk transactions	<---		.789	.730	18.301	***
MPAY1 – Ease of mobile payment setup	<---	MPAY	1.000	.864		
MPAY2 – Security of mobile payment transactions	<---		1.009	.867	21.403	***
MPAY3 – Speed of mobile transaction processing	<---		.635	.553	12.140	***
MPAY4 – Compatibility with various mobile devices	<---		.695	.606	13.562	***
OLIG1 – Seamless connection between online and offline stores	<---	OLIG	1.000	.904		
OLIG2 – Consistency in online product availability	<---		.699	.571	13.557	***
OLIG3 – Real-time online order status tracking	<---		.374	.353	7.655	***
OLIG4 – Integration of loyalty programs online	<---		1.123	.960	29.887	***
STEC1 – Long-term system functionality support	<---	STEC	1.000	.795		
STEC2 – Software updates and system maintenance	<---		1.071	.859	20.301	***
STEC3 – Technology adaptability to market changes	<---		.991	.708	15.903	***
STEC4 – Reliability of technical infrastructure	<---		.811	.627	13.760	***
STEC5 – Cost-effectiveness in technology management	<---		1.022	.831	19.471	***
SPEX1 – Ease of product navigation in-store	<---	SPEX	1.000	.854		
SPEX2 – Satisfaction with checkout process efficiency	<---		1.120	.973	31.111	***
SPEX3 – Variety of product options available	<---		.886	.711	17.927	***
SPEX4 – Ambiance and comfort of environment	<---		.713	.613	14.590	***
SPEX5 – Convenience of store location proximity	<---		1.108	.935	28.873	***
PSQL1 – Timeliness of service delivery	<---	PSQL	1.000	.759		
PSQL2 – Staff responsiveness to customer inquiries	<---		1.191	.849	18.305	***
PSQL3 – Accuracy of provided product information	<---		1.246	.857	18.496	***
PSQL4 – Cleanliness and organization of store	<---		.883	.573	11.929	***
PSQL5 – Consistency in service performance	<---		.492	.389	7.947	***
PSQL6 – Employee knowledge and professionalism	<---		.945	.719	15.264	***
STEC	<---	OLIG	.179	.209	4.014	***
STEC	<---	MPAY	.175	.215	3.704	***
STEC	<---	SSVK	.346	.478	8.533	***
SPEX	<---	STEC	.688	.581	11.659	***
PSQL	<---	STEC	.439	.459	7.672	***
PSQL	<---	SPEX	.188	.233	4.300	***

*** Significance Level 1%

Consecutively, the fit indices are computed for the structural model. The CMIN/df value is 4.162, which is fall in the standard level of 3 – 5, confirms strong fit with data. Similar to that the RMSEA is 0.54, which is lower to the benchmark level of 0.06, it has strong fit. Goodness of fit indices like, GFI (0.908) and AGFI (0.911) are exceeded the value of 0.9. The baseline comparisons like, NFI (0.913), CFI (0.921), IFI (0.921), RFI (0.917) and TLI (0.918) are exceeded the value of 0.9. The results assure that the model has perfect fit with the data.

Table 2 confirms that the p-values connected with all paths of self-service kiosks, mobile payment, online integration, sustenance of technology, shopping experience, and perceived service quality are statistically significant at 1%. The result strongly validates the hypothesis (H1.1), therefore, antecedents have significant effect on self-service kiosks, mobile payment, online integration, sustenance of technology, shopping experience, and perceived service quality. In self-service kiosks, one-unit growth in availability of assistance near kiosks, user satisfaction with kiosk reliability, integration of kiosk with payment systems, and security of self-service kiosk transaction will gain self-service kiosks by 1.000-unit, 1.001-unit, 0.675-unit, and 0.789-unit respectively. User satisfaction with kiosk reliability is the main determinant, and integration of kiosk with payment systems is the least determinant in self-service kiosks. Mobile payment proves that one-unit growth in ease of mobile payment setup, security of mobile payment transactions, speed of mobile transaction processing, and compatibility with various mobile devices will boost mobile payment by 1.000-unit, 1.009-unit, 0.635-unit, and 0.695-unit respectively.

Security of mobile payment transactions is the leading factor and speed of mobile transaction processing is the lacking factor in mobile payment.

Online integration shows that one-unit growth in seamless connection between online and offline stores, consistency in online product availability, real-time online order status tracking, and integration of loyalty programs online will increase online integration by 1.000-unit, 0.699-unit, 0.374-unit, and 1.123-unit respectively. Integration of loyalty programs online is highly influential aspect and real-time online order status tracking is least influential aspect in online integration. Sustenance of technology exhibits that one-unit growth in long-term system functionality support, software updates and system maintenance, technology adaptability to market changes, reliability of technical infrastructure, and cost-effectiveness in technology management will enhance sustenance of technology by 1.000-unit, 1.071-unit, 0.991-unit, 0.811-unit, and 1.022-unit respectively. Software updates and system maintenance has higher effect and reliability of technical infrastructure has lower effect in sustenance of technology.

Shopping experience evidences that one-unit growth in ease of product navigation in-store, satisfaction with checkout process efficiency, variety of product options available, ambiance and comfort of environment, and convenience of store location proximity will enrich shopping experience by 1.000-unit, 1.120-unit, 0.886-unit, 0.713-unit, and 1.108-unit respectively. Satisfaction with checkout process efficiency has greater influence and ambiance and comfort of environment has lesser influence in shopping experience. Perceived service quality shows that one-unit growth in timeliness of service delivery, staff responsiveness to customer inquiries, accuracy of provided product information, cleanliness and organization of store, consistency in service performance and employee knowledge and professionalism will improve perceived service quality by 1.000-unit, 1.191-unit, 1.246-unit, 0.883-unit, 0.492-unit, and 0.945-unit respectively. Accuracy of provided product information has strong impact and consistency in service performance has little impact in perceived service quality of retail stores.

The p-values are significant at 1% for the path connecting self-service kiosks, mobile payment and online integration towards sustenance of technology. The hypothesis (H1.2) is validated, self-service kiosks, mobile payment, and online integration have significant effect on sustenance of technology. Result proves that one-unit rise in self-service kiosks, mobile payment and online integration will gain 0.179-unit, 0.175-unit, and 0.346-unit respectively in sustenance of technology. Self-service kiosks have strong impact and online integration has little impact on sustenance of technology. The p-value is significant at 1% for the hypothesis (H1.3), therefore, sustenance of technology has significant effect on perceived service quality. Results demonstrates that self-service kiosks, mobile payment and online integration actively forms sustenance of technology in retail stores. The nourishment of technology leads to establish favourable perception on service quality of retail stores.

5.3. Mediating Effect Of Spex On Stec And Psql

Shopping experience of customers has any mediation between sustenance of technology and perceived service quality of retail stores are investigated. The hypothesis (H1.4) states that shopping experience has mediating effect between sustenance of technology and perceived service quality.

Table 3: Mediation of SPEX on STEC and PSQL

Effect	Path			Estimate	p
Mediation – Path 1	SPEX	<---	STEC	.688	***
Direct	PSQL	<---	STEC	.439	***
Mediation – Path 2	PSQL	<---	SPEX	.188	***

*** Significance Level 1%

Table 3 exhibits that the direct impact of sustenance of technology on perceived service quality of retail store is 0.439. The coefficient value for mediation path 1 between sustenance of technology and shopping experience is 0.688. Then, the coefficient value for mediation path 2 between shopping experience and perceived service quality is 0.188. The mediation effect is calculated at 0.129344, the total effect is 0.568344. The variance for the effect is measured at 0.2276. Since, the variance surpasses 0.2,

which indicates existence of partial mediation. Therefore, shopping experience has partial mediating effect between sustenance of technology and perceived service quality.

5.4. Effect Of Demographic Status On Research Variables

The effect of demographic status such as, age, academic qualification, monthly income and occupation on research variables like self-service kiosks, mobile payment, online integration, sustenance of technology, shopping experience, and perceived service quality are tested using One-way ANOVA. The hypothesis (H1.5) asserts that demographic status has significant effect on self-service kiosks, mobile payment, online integration, sustenance of technology, shopping experience, and perceived service quality.

Table 4: One-way ANOVA

Variables	Age		Academic Qualification		Monthly Income		Occupation	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.
SSVK	39.121	.000***	36.450	.000***	54.941	.000***	50.345	.000***
MPAY	54.357	.000***	60.107	.000***	12.191	.000***	35.740	.000***
OLIG	42.488	.000***	59.495	.000***	17.169	.000***	24.420	.000***
STEC	34.372	.000***	62.932	.000***	23.942	.000***	37.689	.000***
SPEX	45.400	.000***	40.883	.000***	15.665	.000***	46.582	.000***
PSQL	46.288	.000***	41.175	.000***	14.184	.000***	38.699	.000***

*** Significance Level 1%

Table 4 shows that the f-values are significant at 1% level, it directly validates the hypothesis. Therefore, demographic status such as age, academic qualification, monthly income and occupation have significant effect on self-service kiosks, mobile payment, online integration, sustenance of technology, shopping experience, and perceived service quality. The significant values are tested with post-hoc test for formation of groups among the customers. In case of age of customers, Scheffe's post-hoc test created three similar groups such as, customers under less than 25 years in subset a; aged between 25 – 50 years in subset b; and those more than 50 years in subset c for self-service kiosks, mobile payment, online integration, sustenance of technology, shopping experience, and perceived service quality. For academic qualification, Tukey HSD post-hoc test formed two similar groups such as, customers under school education in subset a; and undergraduate and postgraduate in subset b for self-service kiosks, mobile payment, online integration, sustenance of technology, shopping experience, and perceived service quality. For monthly income, Scheffe's post-hoc test created three similar groups such as, customers under below Rs.30,000 in subset a; Rs.30,000 – 50,000 in subset b; and above Rs.50,000 in subset c for self-service kiosks, and sustenance of technology. It also created two similar groups such as, below Rs.30,000 and Rs.30,000 – 50,000 in subset a; and above Rs.50,000 in subset b for mobile payment, online integration, shopping experience, and perceived service quality. For occupation, Ryan-Einot-Gabriel-Welsch Range post-hoc test created two similar groups such as, businessmen in subset a; and employee and agriculture in subset b for self-service kiosks, and shopping experience. It also created three similar groups such as, businessmen in subset a; and employee in subset b; and agriculture in subset c for mobile payment, online integration, sustenance of technology, and perceived service quality.

6. DISCUSSION AND CONCLUSION

The findings highlight the critical task of technology in enhancing perceived service quality in retail environments. The technological factors such as self-service kiosks, mobile payment systems, and online integration are shown to have significant impacts on the overall customer experience and positive service quality perceptions. Specifically, user satisfaction with kiosk reliability and the security of mobile payments emerged as primary determinants, while the integration of payment systems and transaction speed ranked lower. The study also emphasizes the importance of sustaining technology through regular updates and reliable infrastructure, which directly contribute to service quality. Furthermore, results reveals that demographic factors such as age, academic qualifications, income levels, and occupation have a notable influence on how customers interact with and perceive technological elements in retail. Post-hoc tests suggest clear distinctions in how different demographic groups engage with these

technologies, highlighting the need for retailers to tailor their technology offerings based on customer profiles.

Shopping experience of customers partially mediates the relationship between technology sustenance and perceived service quality. It implies that while technology plays a significant role, the overall shopping experience still serves as a main factor in determining customer perception on service quality. Positive insights on service quality will enhance customer satisfaction about the retail stores, eventually it boosts customer fidelity. Retailers should, therefore, focus not only on integrating advanced technology but also on enhancing the in-store environment and customer interactions. To sum up, the study provides strong evidence that the continuous support and improvement of retail technology contribute to better service quality. Retailers must invest in technology that not only functions reliably but also meets the evolving needs of their diverse customer base. It assists them to create a more seamless and satisfying shopping experience that enhances customer loyalty and perceived service quality.

7. RESEARCH IMPLICATIONS

The study offers several implications for both academic and practical fields. Academically, it deepens understanding of the relationship between technological sustainability and customer perceptions, emphasizing how technology influences service delivery through the shopping experience. For retailers, the findings suggest that maintaining reliable technology systems, such as self-service kiosks and mobile payments and online integration, is essential for enhancing customer satisfaction. Additionally, retailers must focus on ensuring a seamless, enjoyable shopping experience, as this mediates the impact of technology on service quality perception. Retailers are encouraged to invest in long-term technological maintenance and adaptability to meet evolving market demands. The study also highlights the need for cost-effective technology management strategies that support both operational efficiency and customer-centric services. The study emphasizes the importance of integrating technology with a strong focus on customer experience.

REFERENCES

1. Aiolfi, S. and Bellini, S. (2019). Using mobile applications: A model of technology adoption in the grocery setting. International Journal of Business and Management, 14(12). https://doi.org/10.5539/ijbm.v14n12p42
2. Alexander, B. and Kent, A. (2022). Change in technology-enabled omnichannel customer experiences in-store. Journal of Retailing and Consumer Services, 65. https://doi.org/10.1016/j.jretconser.2020.102338
3. Alpesh, M. and Gajjar, R. (2020). Study of various digital technologies used by retailers in organized retail sector. Ijaema.Com, XII (0886).
4. Bonfanti, A. and Yfantidou, G. (2021). Designing a memorable in-store customer shopping experience: practical evidence from sports equipment retailers. International Journal of Retail and Distribution Management, 49(9). https://doi.org/10.1108/IJRDM-09-2020-0361
5. Briel, F. (2018). The future of omnichannel retail: A four-stage Delphi study. Technological Forecasting and Social Change, 132. https://doi.org/10.1016/j.techfore.2018.02.004
6. Chiu, Y. T. H., Nguyen, D. M. and Hofer, K. M. (2023). Self-recovery after self-service technology failures: Do motivations and self-efficacy matter? International Journal of Retail and Distribution Management, 51(9–10). https://doi.org/10.1108/IJRDM-10-2022-0411
7. Cho, H. and Fiorito, S. S. (2012). Self-service technology in retailing. The case of retail kiosks. Symphonya. Emerging Issues in Management, 1. https://doi.org/10.4468/2010.1.05cho.fiorito
8. Cruz, E., Orts-Escolano, S., Gomez-Donoso, F., Rizo, C., Rangel, J. C., Mora, H. and Cazorla, M. (2019). An augmented reality application for improving shopping experience in large retail stores. Virtual Reality, 23(3). https://doi.org/10.1007/s10055-018-0338-3
9. Falk, T., Kunz, W. H., Schepers, J. J. L. and Mrozek, A. J. (2016). How mobile payment influences the overall store price image. Journal of Business Research, 69(7). https://doi.org/10.1016/j.jbusres.2016.01.011

10. Guzana, M. and Msosa, S. K. (2022). The challenges in employing digital marketing as a tool for improving sales at selected retail stores in the transkei region. EUREKA: Social and Humanities, 3. https://doi.org/10.21303/2504-5571.2022.002389
11. Hellemans, J., Willems, K. and Brengman, M. (2023). Covid-19 and mobile payment in Belgium: Closing the digital divide or just for the young, social, and impulsive? Electronic Commerce Research, 23(3). https://doi.org/10.1007/s10660-022-09655-4
12. Khan, A. N. and Ali, A. (2018). Factors affecting retailer's adoption of mobile payment systems: A SEM-neural network modeling approach. Wireless Personal Communications, 103(3). https://doi.org/10.1007/s11277-018-5945-5
13. Lazaris, C., Sarantopoulos, P., Vrechopoulos, A. and Doukidis, G. (2021). Effects of Increased Omnichannel Integration on Customer Satisfaction and Loyalty Intentions. International Journal of Electronic Commerce, 25(4). https://doi.org/10.1080/10864415.2021.1967005
14. Lee, H. J. (2015). Consumer-to-store employee and consumer-to-self-service technology (SST) interactions in a retail setting. International Journal of Retail and Distribution Management, 43(8). https://doi.org/10.1108/IJRDM-04-2014-0049
15. Lopes, J. M., Gomes, S., Lopes, P., Silva, A., Lourenço, D., Esteves, D., Cardoso, M. and Redondo, V. (2023). Exploring the role of gamification in the online shopping experience in retail stores: An exploratory study. Social Sciences, 12(4). https://doi.org/10.3390/socsci12040235
16. Lyu, F., Lim, H. A. and Choi, J. (2019). Customer acceptance of self-service technologies in retail: A case of convenience stores in China. Asia Pacific Journal of Information Systems, 29(3). https://doi.org/10.14329/apjis.2019.29.3.428
17. Lyu, J., Krasonikolakis, I. and Vrontis, D. (2022). A systematic literature review of store atmosphere in alternative retail commerce channels. Journal of Business Research, 153. https://doi.org/10.1016/j.jbusres.2022.08.050
18. Marso. M. and Idris, R. (2022). Impact of Store Atmosphere on Customer Loyalty through Perceived Quality and Satisfaction: An Evidence from Boutique Industry in Tarakan. Petra International Journal of Business Studies, 5(2). https://doi.org/10.9744/ijbs.5.2.186-197
19. Migdadi, Y. K. A. A. and Abdel-Rahman, E. H. A. (2020). The impact of grocery retail superstores location on the customer's perceived quality of servicescape in Jordan. Quality Management Journal, 27(2). https://doi.org/10.1080/10686967.2020.1722045
20. Nanda, A., Xu, Y. and Zhang, F. (2021). How would the COVID-19 pandemic reshape retail real estate and high streets through acceleration of E-commerce and digitalization? Journal of Urban Management, 10(2). https://doi.org/10.1016/j.jum.2021.04.001
21. Ndengane, R. M., Mason, R. B. and Mutize, M. (2021). The influence of store atmospherics on customers' satisfaction at selected South African retail outlets. Innovative Marketing, 17(1). https://doi.org/10.21511/IM.17(1).2021.03
22. Park, J. S., Ha, S. and Jeong, S. W. (2021). Consumer acceptance of self-service technologies in fashion retail stores. Journal of Fashion Marketing and Management, 25(2). https://doi.org/10.1108/JFMM-09-2019-0221
23. Perumal, S., Qing, Y. R. and Jaganathan, M. (2022). Factors influencing attitudes and intentions towards smart retail technology. International Journal of Data and Network Science, 6(2). https://doi.org/10.5267/j.ijdns.2021.11.005
24. Piotrowicz, W. and Cuthbertson, R. (2014). Introduction to the special issue information technology in retail: Toward omnichannel retailing. International Journal of Electronic Commerce, 18(4). https://doi.org/10.2753/JEC1086-4415180400
25. Riegger, A. S., Klein, J. F., Merfeld, K. and Henkel, S. (2021). Technology-enabled personalization in retail stores: Understanding drivers and barriers. Journal of Business Research, 123. https://doi.org/10.1016/j.jbusres.2020.09.039
26. Saini, L. and Khasa, S. (2023). Behavioural intention to use mobile payments in the light of the UTAUT2 Model. Asian Journal of Management and Commerce, 4(1).
27. Sharma, P., Ueno, A. and Kingshott, R. (2021). Self-service technology in supermarkets – Do frontline staff still matter? Journal of Retailing and Consumer Services, 59. https://doi.org/10.1016/j.jretconser.2020.102356

28. Tambo, T. (2014). Collaboration on technological innovation in Danish fashion chains: A network perspective. Journal of Retailing and Consumer Services, 21(5). https://doi.org/10.1016/j.jretconser.2014.02.016
29. Triantafillidou, A., Siomkos, G. and Papafilippaki, E. (2017). The effects of retail store characteristics on in-store leisure shopping experience. International Journal of Retail and Distribution Management, 45(10). https://doi.org/10.1108/IJRDM-07-2016-0121
30. Trivedi, H. and Sanchiher, S. (2023). Challenges in digital payment adoption in India. International Journal of Education, Modern Management, Applied Science & Social Science, 882(02).
31. Veloso, C. M. and Sousa, B. B. (2022). Drivers of customer behavioral intentions and the relationship with service quality in specific industry contexts. International Review of Retail, Distribution and Consumer Research, 32(1). https://doi.org/10.1080/09593969.2021.2007977
32. Wieland, T. (2021). Spatial shopping behavior in a multi-channel environment: A discrete choice model approach. Region, 8(2). https://doi.org/10.18335/region.v8i2.361