The Influence Of Product Quality, Shopping Environment, And Promotional Activities On Consumer Behavior In Offline Shopping At X Supermarket Chain, Fuzhou City

Wenfu Chen
Daranee Pimchangthong
Department of Management Science,
Institute of Science Innovation and
Culture, Rajamangala University of
Technology Krungthep, Bangkok,
Thailand

daranee.p@mail.rmutk.ac.th

Abstract—This study aimed to assess the effects of demographic factors and the influences of product quality, shopping environment, and promotional activities on consumer behavior in offline shopping at X supermarket chain in Fuzhou City. The research framework was developed based on perceived quality, service scape, and consumer behavior theory. The convenience sampling method was used to collect data from 400 respondents across six X supermarket branches. Data were analyzed using descriptive statistics, including frequency, percentage, mean, and standard deviation. The inferential statistics used were the independent sample t-test, one-way ANOVA, and multiple linear regression, all at a statistical significance level of 0.05. The analysis results indicate that the age difference has a different effect on consumer behavior in offline shopping at X supermarket chain. For product quality, brand has the highest influence, followed by freshness and packaging. In the shopping environment, music and scent have the most significant influence, followed by cleanliness, comfort, and spatial layout. For promotional activities, discount price is the most influential, followed by gift and membership points. The research recommends a comprehensive approach to enhance consumer satisfaction and loyalty, including optimizing product quality management to strengthen trust, enhancing the shopping environment for a better experience, and refining promotional strategies to drive engagement. Additionally, the study emphasizes the importance of adopting age-based targeting, implementing differentiated marketing strategies, and integrating these efforts to establish a competitive advantage for offline supermarkets in Fuzhou.

Keywords— Product quality, shopping environment, promotional activities, consumer behavior, supermarket chain.

I. INTRODUCTION

Against the backdrop of global economic integration and China's rapid development, supermarkets have become key components of modern retail. China's GDP reached 134.91 trillion yuan in 2024, a 5% year-over-year increase, which improved household income and drove upgrades in consumption. Despite the convenience and variety of ecommerce, physical supermarkets continue to hold a strong presence in essential categories such as food, fresh produce, and daily necessities, thanks to their reliable quality, immediate access, and sensory shopping experience. During the COVID-19 pandemic, their value was reaffirmed as consumers prioritized food safety and real-time accessibility (Sun & Xing, 2023).

While online shopping offers speed and cost advantages, offline shopping delivers unique value through product interaction, store ambiance, and social engagement. Research suggests that consumer behavior is shaped not only by convenience but also by more profound influences such as culture, trust, and setting (Rakholiya et al., 2024). Store ambiance—including lighting, scent, and music—can significantly influence decisions, particularly in fresh sections (Chen & Wu, 2023). Likewise, product quality—especially in terms of food safety, freshness, and brand reputation—plays a central role in fostering loyalty (Kim et al., 2022). Promotions

such as limited-time discounts and loyalty programs also help drive traffic and enhance consumer urgency (Johnson & Lee, 2024).

Fuzhou, as a provincial capital, has experienced rapid growth, with GDP reaching 1.42 trillion yuan in 2024 (+6.1%). Rising urbanization and increasing incomes have spurred retail development; however, online competition and fragmented consumer demand present significant challenges. By 2023, Fuzhou's permanent population had reached 8.469 million, with 73.91% of the population residing in urban areas, reflecting a complex consumer base. Middle-aged consumers prioritize practicality and affordability, while Generation Z values experiences, uniqueness, and high-quality products.

Notably, Gen Z exhibits a strong preference for health-conscious, fresh food items, such as additive-free, low-sugar, or ready-to-eat products (Chen, Ma, & Jia, 2024; Zhang et al., 2024). Despite being digital natives, they rely on offline channels to inspect fresh items physically, building trust through direct sensory evaluation (Cui et al., 2023). Demographic factors, such as income, education, and occupation, further shape health food choices, with food safety and authenticity remaining key considerations (Wang & Li, 2024).

In conclusion, demographic characteristics, product quality, store environment, and promotional strategies jointly influence offline consumer behavior. Investigating these interrelated factors in Fuzhou's supermarkets is crucial for developing effective marketing strategies and enhancing competitiveness.

Research Questions

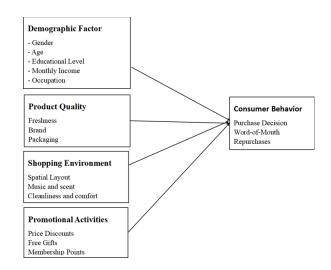
- 1. What are the characteristics of the consumers who prefer to shop at the supermarket offline?
- 2. 2. How do product quality, shopping environment, and promotional activities affect the behavior of consumers who prefer to shop at the supermarket offline?

Research Hypotheses

- The difference in demographic factors, including gender, age, educational level, monthly income, and occupation, affects offline consumer behavior in offline shopping differently.
- Product quality, shopping environment, and promotional activities influence consumer behavior in offline shopping.

The framework shown in Figure 1.1, built around research goals and questions, draws on the SOR model, perceived quality theory, and servicescape theory to explore connections between key variables. It treats demographic factor, product quality, shopping environment, and promotional activities as

independent variables, with consumer behavior as the dependent variable.



II. LITERATURE REVIEW

A. SOR Model (Stimulus-Organism-Response Model)

The SOR model, developed by Mehrabian and Russell (1974), stands as a foundational framework in consumer behavior research. Grounded in environmental psychology, it illustrates a transparent chain: external stimuli shape consumers' internal psychological states, which in turn drive observable behavioral responses.

Stimulus (S) includes a range of external factors that interact with consumers. The shopping environment, for instance, encompasses layout (ease of navigation), lighting (warmth or brightness), background music (tempo and genre), and scent (freshness in produce sections). Product quality factors, such as the freshness of fruits, brand reputation, and packaging design, also act as stimuli, while promotions—such as flash sales or free samples—create immediate triggers. A well-organized store with clear signage, for example, reduces frustration and encourages exploration, while vibrant displays of fresh vegetables signal quality and attract attention.

Organism (O) serves as the psychological mediator, translating external stimuli into internal reactions. Emotions play a key role here: a pleasant scent or upbeat music might evoke pleasure, leading to more extended stays, while a limited-time discount could spark excitement, driving impulsive decisions. Motivations also come into play—rational needs (e.g., buying milk) or emotional desires (e.g., enjoying a leisurely shopping trip with friends). Attitudes, such as trust in a store's commitment to freshness, also influence how consumers perceive these stimuli.

Response (R) refers to concrete actions: whether a purchase is made, how long a customer lingers, the total amount spent, or their likelihood of returning. A store that combines a welcoming atmosphere with high-quality products

and strategic promotions, for example, often sees customers spending more and visiting more frequently.

This model is compelling for offline supermarkets, as it connects tangible environmental details to psychological processes and real-world behavior. By refining stimuli such as adjusting lighting in fresh sections or highlighting product freshness, retailers can directly influence consumer psychology to boost engagement and loyalty.

B. Perceived Quality Theory

Zeithaml (1988) introduced Perceived Quality Theory, emphasizing that consumers' judgments of quality are subjective and shaped by more than just a product's objective features. Instead, they depend on a mix of cues and experiences:

Intrinsic cues are inherent to the product itself, such as the color of apples, the texture of meat, or the ingredients in a packaged snack. For fresh food, consumers often rely on visual or sensory clues—e.g., bright colors in vegetables signal freshness.

Extrinsic cues are external signals, including brand name, packaging, and price. A well-known brand might be trusted without direct experience, while sleek, eco-friendly packaging can elevate perceived quality, even if the product inside is similar to a cheaper alternative.

Past experiences also play a role: a history of consistent quality builds trust, while a single instance of spoilage can erode it.

Marketing messages, such as labels claiming "organic" or "locally sourced," reinforce quality perceptions by addressing consumer concerns about safety or sustainability.

Perceived quality has a direct impact on purchase decisions and loyalty. Consumers are often willing to pay more for products they perceive as superior, which explains why brands invest in premium packaging or organic certifications. These efforts shape how quality is perceived, driving preference and repeat purchases.

C. Servicescape Theory

Bitner (1992) proposed Servicescape Theory, which explores how the physical environment of a service setting—its "servicescape"—shapes consumer behavior, employee performance, and brand perception. It encompasses three key elements:

Ambient conditions: Subtle factors like temperature, scent, music, and lighting. A cool, well-ventilated produce section, for example, preserves freshness and signals care, while soft music in the bakery area can create a cozy mood.

Spatial layout & functionality: How the space is organized—aisle width, shelf height, or the placement of checkout counters. A logical layout that minimizes crowding and

makes products easy to find reduces stress, encouraging more extended visits.

Signs, symbols & artifacts: Visual cues like clear signage (e.g., "Organic Produce"), brand logos, or decorative elements (e.g., seasonal displays). These guide behavior (e.g., helping customers navigate) and reflect brand identity (e.g., a focus on sustainability).

Unlike theories that focus solely on sensory stimuli, Servicescape Theory offers a holistic view, linking physical design to emotional and behavioral outcomes. A well-designed servicescape—clean, organized, and aligned with brand values—builds trust, enhances satisfaction, and fosters loyalty.

D. Promotional Marketing Theory

Promotional Marketing Theory posits that promotions are a core element of retail strategy, influencing both short-term sales and long-term brand loyalty. Promotions fall into two main categories:

Price promotions include discounts, buy-one-get-one deals, or threshold offers (e.g., "¥30 off over ¥150"). These appeal to price-sensitive shoppers by creating a sense of "value," encouraging immediate purchases. They work because consumers judge transactions not just by the product's worth but by how "good a deal" they feel they are getting.

Non-price promotions focus on emotional engagement, such as free samples, membership points, in-store tastings, or contests. A free bite of a new cheese, for example, reduces uncertainty and encourages trial, while a loyalty program rewards repeat visits, building long-term connections. These strategies strengthen brand attitudes, making them more effective than price cuts for fostering lasting loyalty.

Balancing both types of promotions allows retailers to drive immediate sales while nurturing long-term relationships, aligning with diverse consumer needs and brand goals.

E. Situated Learning Theory

Consumer behavior in Chinese supermarkets has unique characteristics compared to Western markets. According to a report by the China Chain Store & Franchise Association (2022), Chinese consumers visit supermarkets more frequently but spend less per visit compared to their Western counterparts. They also attach great importance to the quality of fresh food and are more sensitive to promotional activities. With the rise of middle-class consumers in China, a noticeable shift has occurred from price-oriented to quality-and experience-oriented consumption. This trend is particularly evident in first-tier and second-tier cities, such as Fuzhou, making it necessary to reevaluate the factors influencing consumer behavior in these markets.

III. RESEARCH METHODS

This study examines how demographic traits influence offline consumer behavior at X supermarket chain in Fuzhou, Fujian, while analyzing the influences of product quality, shopping environment, and promotional activities on such behavior. Guided by the Stimulus-Organism-Response (SOR) model, alongside perceived quality theory and servicescape theory, the research framework identifies core variables and their interactions.

The target population includes all offline shoppers at X supermarket chain in Fuzhou, with a sample size of 400 determined using Cochran's formula to account for the unknown population size. Data was collected through on-site questionnaire surveys distributed via QR codes at checkout counters across six branches, with small incentives provided to boost response rates.

To ensure the questionnaire's validity, three field experts evaluated its content using Item-Object Consistency (IOC), with items revised or retained based on acceptable thresholds. A pre-test with 30 samples confirmed reliability, as Cronbach's alpha coefficients for all variables exceeded 0.7. Data analysis employed descriptive statistics (frequency, percentage, and mean) and inferential methods (independent samples t-test, one-way ANOVA, LSD post-hoc test, and multiple linear regression), with a statistical significance level of 0.05.

IV. RESULT AND DISCUSSION

A total of 400 valid questionnaires were collected. Among them, the proportion of female respondents was the highest, accounting for 52.7%. In terms of age, the 20-25 age group had the most significant proportion, reaching 32.8%. For educational level, the largest group was those with a college education, making up 37.8%. Regarding monthly income, the highest proportion was those with an income under 3,000 yuan, accounting for 26.5%. In terms of occupation, corporate employees formed the largest group, comprising 33.0% of the total.

The respondents' opinions on product quality, shopping environment, promotional activities, and consumer behavior were analyzed using frequency and percentage, as shown in Table 2.

TABLE I. THE DESCRIPTIVE STATISTICS OF PRODUCT QUALITY, SHOPPING ENVIRONMENT, PROMOTIONAL ACTIVITIES, AND CONSUMER BEHAVIOR

Product quality	Level of Opinion (Frequency and Percentage)									
1 roduct quanty	1	2	3	4	5	Mean	SD	Meaning	Rank	
Freshness	18 4.5	-		226 56.5		3.87	1.0096	Agree	3	
Brand	13 3.3	34	20	239	94	3.92	.956	Agree	1	

Packaging	13 3.3	_	24 6.0		104 26.0	3.90	1.003	Agree	2		
Overview of Product Quality	6 1.5	47 11.8	4 1.0	293 73.2		3.84	.845	Agree	4		
Shopping	Level of Opinion (Frequency and Percentage)										
Environment	1	2	3	4	5	Mean	SD	Meaning	Rank		
Spatial Layout	17 4.3	32 8.3	40 10.0	220 55.0	91 22.7	3.84	1.003	Agree	3		
Music and Scent	12 3.0	42 10.5	31 7.8	220 55.0	95 23.7	3.86	0.994	Agree	1		
Cleanliness and Comfort	18 4.5	33 8.3	31 7.7	229 57.2	89 22.3	3.85	1.007	Agree	2		
Overview of Shopping Environment	12 3.0	43 10.8	10 2.5	278 69.5		3.81	0.913	Agree	4		
	L	evel	of O	pini	on (I	requ	ency a	nd Percei	ntage)		
Promotional Activities											
	1	2	3	4	5	Mean	SD	Meaning	Rank		
Price Discounts	16 4.0	35 8.8		237 59.2	82 20.5	3.97	.957	Agree	1		
Free Gifts	4 1.0	49 12.3	10 2.5		124 31.0	3.88	1.023	Agree	4		
Membership Points	6 1.5	38 9.5	32 8.0		116 29.0	3.92	0.978	Agree	2		
Overview of Promotional Activities	4 1.0	51 12.8	2 0.5	267 66.7	76 19.0	3.90	.887	Agree	3		
	L	evel	of O	pini	on (I	requ	ency a	nd Percei	ntage)		
Consumer Behavior				l	ı						
	1	2	3	4	5	Mean	SD	Meaning	Rank		
Purchase Decisions	34 8.5	35 8.8	31 7.7	83 20.8	217 54.2	3.83	0.982	Agree	4		
Word of mouth	16 4.0	36 9.0	35 8.8		102 25.5	4.01	0.958	Agree	1		
Repurchase	9 2.3	42 10.5	27 6.7		108 27.0	3.97	0.942	Agree	2		
Overview of Consumer Behavior	3 0.8	49 12.2	7 1.8	262 65.5	79 19.7	3.91	.876	Agree	3		

Respondents generally held positive views toward product quality in the supermarket. Brand received the highest agreement with a mean value of 3.92, followed by Packaging (3.90), Freshness (3.87), and Overview of Product Quality (3.84). All indicators fall within the "agree" range.

Respondents generally viewed the shopping environment in a positive light. Music and Scent received the highest agreement (mean = 3.86), followed by Cleanliness and Comfort (3.85), Spatial Layout (3.84), and Overview of Shopping Environment (3.81). All indicators fall within the "agree" range.

Respondents generally agreed with the promotional strategies used. Price Discounts received the highest mean score (3.97), followed by Membership Points (3.92), Overview of Promotional Activities (3.90), and Free Gifts (3.88). All indicators fall within the "agree" range.

Respondents generally held favorable views toward consumer

behavior outcomes. Word of Mouth received the highest score (4.01), followed by Repurchase (3.97), Overview of Consumer Behavior (3.91), and Purchase Decisions (3.83). All indicators fall within the "agree" range.

H1: The difference in demographic factors affects consumer behavior differently.

Independent sample t-tests and one-way ANOVA were performed to test Hypothesis 1. As shown in Table 3, the analysis results indicate that gender, educational level, monthly income, and occupation have no significant impact on offline consumer behavior in X supermarket chain. However, age differences have a statistically significant effect on such behavior, which is significant at p = 0.008.

TABLE II. ANALYSIS RESULTS ON THE EFFECTS OF DEMOGRAPHIC FACTORS

Demographic factors	Consumer behavior	Analysis Results
Gender	ochavioi	t(398) =053, p = 0.783
Gender	-	t(398) =033, p = 0.783
Age	✓	F(4, 395) = 3.528, p = 0.008*
		0.008*
education level	_	F(5, 394) = 0.883, p = 0.
		474
monthly income		F(4, 395) = 1.590, p =
	-	0.176
occupation		F(5, 394) =2.214, p =
	-	0.052

- No different effects at the statistically significant level of 0.05 \checkmark having different effects at the statistically significant level of 0.05

H2: The influence of product quality on consumer behavior. Multiple linear regression was used to analyze the data and develop the forecasting equation at a 95% confidence level. The analysis results, as shown in Table 3, indicate that the model has strong explanatory power for the factors influencing consumer behavior. The multiple correlation coefficient (R) is 0.813, and the determination coefficient (R²) is 0.661. The adjusted R² is 0.659, indicating that the model can explain 65.9% of the variation in consumer behavior. The tolerance values for all predictors were above 0.4, suggesting no multicollinearity among the independent variables.

TABLE III. MULTIPLE LINEAR REGRESSION COEFFICIENTS FOR THE PRODUCT QUALITY INFLUENCE CONSUMER BEHAVIOR

	2	andardi zed ficients	Stano	lardized	Collinearity Statistics				
	В	Std. Error	Bet a	Т	Sig.	Tole		VIF	
(Consta	.76			6.55	0.00				
nt)	2	.116	-	4	0*				
Brand	.30		.33	7.56	0.00				
(X2)	8	.041	6	7	0*	.43	35	2.300	
Freshne	.25		.29	6.48	0.00				
ss (X1)	3	.039	1	0	0*	.42	23	2.363	
Packagi	.24		.28	6.41	0.00				
ng (X3)	8	.039	4	1	0*	.43	35	2.299	
R = 0.81	R = 0. 813, R2 = 0. 661, Adjusted R2 = 0. 659, Standard Error = 0. 512								

Dependent Variable: consumer behavior

The prediction equation for consumer behavior was developed as follows:

$$YT = 1.020 + 0.153X1 + 0.296X2 + 0.217X3$$

(0.001) (0.001) (0.000) (0.000)

The analysis results indicate that Brand, Freshness, and Packaging incentives have a significant and positive influence on consumer behavior, with values of 0.000, 0.000, and 0.000, respectively, in the context of this study. Among the three predictors, brand framework was the most influential variable, followed by freshness and packaging.

H3 The Shopping environment influences consumer behavior in offline shopping.

TABLE IV. MULTIPLE LINEAR REGRESSION COEFFICIENTS FOR THE SHOPPING ENVIRONMENT INFLUENCE CONSUMER BEHAVIOR

	iz Coefi	andard ed ficient s	Standardized Coefficients				Collinearity Statistics		
	В	Std. Erro r	Bet a	t	Sig.	Tole	eran e	VIF	
(Constant)	0.8 46	0.11 4		7.4 20	.00 0*				
Music (X2)	0.2 89	0.04	0.3 28	7.2 14	.00 0*	0.4	17	2.396	
Cleanliness (X3)	0.2 79	0.03 9	0.3 21	7.0 61	.00 0*	0.4	18	2.390	
Spatial (X1)	0.2 29	0.03 7	0.2 62	6.1 68	.00 0*	0.4	177	2.096	

R = 0.811, R2 = 0.658, Adjusted R2 = 0.656, Standard Error = 0.514

Dependent Variable: consumer behavior The prediction equation for consumer behavior was developed

$$YT = 0.846 + 0229X1 + 0.289X2 + 0.279X3$$

(0.000*) (0.000*) (0.000*) (0.000*)

as follows:

Multiple linear regression was used to analyze the data and develop the forecasting equation at a 95% confidence level. The analysis results, as shown in Table 5, indicate that music, cleanliness, and spatial layout have a significant positive influence on consumer behavior, with significant values of 0.000, 0.000, and 0.000, respectively, in the context of this study. Among the three predictors, music was the most influential variable, followed by cleanliness and spatial layout.

H4: Promotional activities influence consumer behavior in offline shopping.

Multiple linear regression was used to analyze the data and develop the forecasting equation at a 95% confidence level. The analysis results shown in the Table indicate that the model has strong explanatory power for factors influencing consumer behavior. The multiple correlation coefficient (R) is 0.817, and the determination coefficient (R²) is 0.667. The adjusted R² is 0.665, indicating that the model can explain 66.5% of the variation in consumer behavior. The tolerance values for all predictors were above 0.4, suggesting no multicollinearity among the independent variables.

TABLE V. MULTIPLE LINEAR REGRESSION COEFFICIENTS FOR THE PRODUCT QUALITY INFLUENCE CONSUMER BEHAVIOR

	Z	ndardi ed icients	Standardized Coefficients				Collinearity Statistics		
	В	Std. Erro r	Bet a	t	Sig.	Toleran ce		VIF	
(Constan t)	0.7 08	0.11		6.0 51	.00 0*				
price (X1)	0.3 43	0.04	0.3 75	8.5 47	.00 0*	0.4	137	2.290	
free (X2)	0.2 48	0.03	0.2 90	6.6 43	.00 0*	0.4	143	2.260	
members hip (X3)	0.2 25	0.03	0.2 51	5.7 38	.00	0.4	138	2.283	

Dependent Variable: consumer behavior

The prediction equation for consumer behavior was developed as follows:

R = 0. 817, R2 = 0. 667, Adjusted R2 = 0. 667, Standard Error = 0. 507

$$YT = 1.020 + 0.153X1 + 0.296X2 + 0.217X3$$

(0.001) (0.001) (0.000) (0.000)

The analysis results indicate that Brand, Freshness, and Packaging incentives have a significant and positive influence on consumer behavior, with values of 0.000, 0.000, and 0.000, respectively, in the context of this study. Among the three predictors, brand framework was the most influential variable, followed by freshness and packaging.

DISCUSSION

Findings show that age is the only significant demographic factor influencing offline consumer behavior at X supermarkets. The 20-25 age group, representing Generation Z, scores highest in purchase decisions, word-of-mouth, and repurchase behavior. Despite their digital orientation, Gen Z actively prefers offline shopping for fresh, healthy foods, using in-person sensory checks to validate quality (Cui et al., 2023). Their strong interest in food safety, nutrition, and brand experience drives deeper engagement. In-store ambiance, promotional design, and product presentation enhance their satisfaction and loyalty (Chen & Wu, 2023). Their tendency to share experiences further boosts word-of-mouth influence. In contrast, older generation consumers focus more on price and practicality. These insights suggest that age-based targeting, particularly for younger shoppers, is crucial for enhancing offline supermarket strategies.

All product quality aspects positively impact behavior, with brand the strongest, followed by freshness and packaging. These findings align with the Perceived Quality Theory, which suggests that intrinsic factors, such as freshness, and extrinsic ones, like brand shape and quality judgments, drive trust and impulse, consistent with earlier work by Zeithaml and Keller.

In shopping environments, music and scent have the most significant influence, followed by cleanliness/comfort and layout. Aligned with Bitner's Servicescape Theory, ambient factors influence mood and time perception, thereby lengthening visits and enhancing satisfaction. A clean, comfortable space builds trust; a good layout eases navigation, encouraging unplanned purchases.

For promotions, price discounts have the most substantial effect, with gifts and membership points also contributing. Consumers respond sharply to immediate savings, while gifts add value and points foster loyalty, showing that well-designed promotions are key to driving purchases.

While online shopping—with its convenience, vast choices, and easy price comparisons—has reduced the need for offline shopping, offline stores, especially those specializing in fresh produce, remain competitive. This is because consumers value in-person checks for freshness, and an online sensory experience cannot be replicated.

However, challenges still exist. The convenience and personalization of online shopping have raised consumer expectations, prompting offline supermarkets to compete harder on quality, environmental sustainability, and promotions. Catering to diverse groups, younger shoppers prioritizing experiences, and older ones valuing practicality, makes one-size-fits-all strategies ineffective. Additionally, limited offline data hinders personalized promotions and real-time behavior analysis, making it challenging to adapt to

changing preferences or measure the success of promotions. To stay competitive amid digital shifts, supermarkets must address demographic diversity, meet higher expectations, and overcome data gaps.

CONCLUSION

Based on the findings, the following recommendations are suggested to improve offline consumer behavior at X supermarket chain in Fuzhou.

1 Optimize Product Quality to Strengthen Trust

Brand collaboration: Focus on partnering with reputable brands to improve perceived quality and promote privatelabel products through quality certification and transparent sourcing, using brand influence as the most potent product factor

Freshness management: Implement strict cold chain logistics and inventory turnover systems for perishables, with clear display of production dates and freshness indicators to reinforce consumer confidence in the freshness of products. Packaging innovation: Utilize eco-friendly, practical packaging designs, such as resealable options with attractive visuals, to meet consumer demands for sustainability and style.

2 Enhance the Shopping Environment for a Better Experience Sensory Optimization: Curate background music, such as soft instrumentals, and introduce subtle scents, like bakery aromas, in relevant sections to enhance the environment and create a relaxed atmosphere.

Cleanliness and Comfort: Maintain high hygiene standards, especially in fresh food and checkout areas. Adjust the temperature and ventilation for optimal comfort, and consider adding rest areas to encourage longer shopping stays.

Spatial Layout Refinement: Enhance navigation with clear signage, widen aisles to reduce congestion, and organize products logically to boost efficiency, thereby improving the effectiveness of the spatial layout.

3 Refine Promotional Strategies to Drive Engagement

Targeted price discounts: Offer significant discounts on seasonal or slow-moving items and run limited-time flash sales during peak hours to capitalize on the substantial impact of price reductions.

Customized gifts: Offer practical, product-related gifts (e.g., kitchen tools with cooking oil) to increase appeal, ensuring gifts meet consumer needs.

Membership points have been enhanced with lower redemption thresholds and expanded reward options (e.g., discounts, free products) to increase the loyalty impact of membership points.

4 Adopt Age-Based Targeting

Youth-focused initiatives: Create campaigns targeted at the 20-25 age group, such as social media integration (in-store photo spots, hashtag challenges), student discounts, and trendy product displays to tap into their higher engagement in purchase decisions, word of mouth, and repeat business.

Support for older consumers: Provide personalized services (e.g., in-store assistance), clear price tags, and consistent availability of familiar brands to meet their preference for practicality and lower purchase barriers.

By following these recommendations, X supermarket chain can effectively influence offline consumer behavior, improve satisfaction, foster lasting loyalty, and boost competitiveness in the changing retail landscape.

REFERENCES

- [1] Anderson, E. W., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. Marketing Science, 12(2), 125–143.
- [2] Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees. Journal of Marketing, 56(2), 57–71. https://doi.org/10.1177/002224299205600206
- [3] Chen, L., Wu, Y., & Liu, J. (2021). Factors influencing consumer choice of supermarkets in urban China. Journal of Retailing and Consumer Services. https://www.toutiao.com/article/7008464393184739871/?upstream_b iz=doubao&source=m_redirect&wid=1753939546141
- [4] Chen, X., & Wu, Y. (2023). The impact of store ambiance on consumer behavior in offline supermarkets. Journal of Retail Studies, 15(2), 45– 62
- [5] Chen, W., Ma, G., & Jia, Z. (2024). Consumer behavior and healthy food consumption: quasi-natural experimental evidence from Chinese household participation in long-term care insurance. Frontiers in Sustainable Food Systems. https://doi.org/10.3389/fsufs.2024.1364749
- [6] Cui, N., Dong, J., Fan, X., Zhao, D., Liang, M., & Shi, J. (2023). The influence of online information on consumers' channel migration behavior of fresh agricultural products. Frontiers in Sustainable Food Systems. https://doi.org/10.3389/fsufs.2024.1349607
- [7] Johnson, L., & Lee, S. (2024). Promotional strategies and offline shopper engagement. Marketing Research Review, 8(1), 22–35.
- [8] Kim, J., Park, H., & Lee, K. (2022). Product quality perceptions and loyalty in brick-and-mortar supermarkets. Food Retail & Consumer Behavior, 28(3), 112–128.
- [9] Li, M. (2020). Consumer preferences for fresh produce in Chinese supermarkets. British Food Journal, 122(5), 1617–1632.
- [10] Li, X., Chen, J., Zhan, G., & Niu, L. (2021). What kind of food can win Gen Z's favor? A mixed-methods study from China. Journal of Food Preference. https://www.researchgate.net/publication/357563826
- [11] Mehrabian, A., & Russell, J. A. (1974). An approach to environmental psychology. MIT Press. https://mitpress.mit.edu/books/approachenvironmental-psychology
- [12] Pishu Research Institute. (2023). 2023 Report on Generation Z's healthy consumption trends. https://www.pishu.com.cn/
- [13] Rakholiya, D., Ramani, U., & Vidani, D. (2024). Gaps in online vs. offline grocery shopping research. International Journal of Retail & Distribution Management, 52(4), 33–50.
- [14] Sun, L., & Xing, H. (2023). The role of physical supermarkets during public health crises. Chinese Journal of Retail, 12(1), 18–29.
- [15] Thaler, R. H. (1985). Mental accounting and consumer choice. Marketing Science, 4(3), 199–214. https://doi.org/10.1287/mksc.4.3.199
- [16] Turley, L. W., & Milliman, R. E. (2000). Atmospheric effects on shopping behavior: A review of the experimental evidence. Journal of Business Research, 49(2), 193–211.

- [17] Wang, H. (2019). The impact of store environment on customer satisfaction in Chinese supermarkets. International Journal of Retail & Distribution Management, 47(9), 823–838.
- [18] Wang, Q., & Li, S. (2022). The challenges and opportunities for offline retail in the era of e-commerce in China. Journal of Business Research, 136, 465–474.
- [19] Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. Journal of Marketing, 52(3), 2–22. https://doi.org/10.1177/002224298805200302
- [20] Zhang, L., & Chen, J. (2021). The effectiveness of promotional activities in Chinese retail markets. Journal of Consumer Marketing, 38(2), 273–284.
- [21] Zhang, Y., Fan, Y., Liu, P., Xu, F., & Li, Y. (2024). Cyber food swamps: investigating the impacts of online-to-offline food delivery

platforms on healthy food choices. arXiv. https://doi.org/10.48550/arXiv.2409.16601