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Understanding Customer Expectations in the Digital Retail Era: A Study of Mobile Store Apps

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KEYWORDS

customer expectation, customer satisfaction, customer satisfaction index, importance-performance analysis, mobile retail apps

ABSTRACT

This paper examines customer expectations and experiences with mobile retail apps within the modern retail industry, aiming to fill gaps in the existing literature by thoroughly evaluating factors impacting customer satisfaction. Employing a survey-based methodology with 226 respondents, data analysis utilizes the Customer Satisfaction Index (CSI) and Importance-Performance Analysis (IPA) methods. Findings reveal discrepancies between customer-perceived importance and actual performance of features like post-sale service and discounts, highlighting areas where customer expectations are not met. The study's novelty lies in its focus on the critical role of mobile apps in meeting customer expectations, offering valuable insights for businesses navigating the digital retail landscape. Theoretical implications extend to structured approaches for evaluating customer assessments and the application of service quality theories to mobile retailing. Practical implications guide e-retailing practitioners in optimizing resource allocation to enhance customer satisfaction

1. INTRODUCTION

In the current scenario, there is a noticeable transformation in consumer consumption patterns, as highlighted by Cruz-Cárdenas et al. (2021) and Sun et al. (2022). This shift corresponds to the adjustment to a variety of customer lifestyles, particularly among individuals with middle to higher incomes who prioritize convenience and flexibility in their spending habits. According to data from the Indonesian Ministry of Communication and Information, the market for online goods and e-commerce platforms witnessed a substantial surge, reaching approximately 29 billion USD in 2020. This marks a remarkable 400% increase from the 8 billion USD recorded in 2017. The surge reflects a clear preference among contemporary customers for online shopping platforms, offering promising opportunities for businesses to embark on digital transformation initiatives. However, the retail sector faces challenges such as declining in-store sales and a reduction in physical storefronts (Gibson et al., 2022).

Recent trends indicate a growing transition among retailers from traditional retail processes to mobile apps for online platforms. In the domain of online retailing, customer satisfaction is contingent upon various factors, including competitive pricing, product quality, timely delivery, guaranteed product availability, retailer transparency, and feedback from existing customers. According to Končar et al. (2021), the customer purchasing process involves three stages: initial interaction with the mobile retail app, product selection, and post-transaction usage.

Despite the numerous challenges, e-commerce has become a global phenomenon (Yoo & Jang, 2019). Previous studies have explored consumer behavior and retail performance (Tian et al., 2021), customer experience and repeat intentions (Gibson et al., 2022; M. Liu et al., 2023), continuous purchase intentions (Lin et al., 2021), online shopping behavior patterns (Li et al., 2020; Uhm et al., 2022), personalized price discrimination (Hufnagel et al., 2022), and the antecedents and consequences of non-adoption of e-commerce (Mainardes et al., 2020). Iranmanesh et al. (2022) suggest that current research primarily focuses on two main streams. The first stream seeks to comprehend the motivations driving the adoption of retail applications, as demonstrated by studies conducted by McLean et al. (2020) and Newman et al. (2018). The second stream, explored by Marinković et al. (2020)) and Rodríguez-Torrico et al. (2019), investigates factors influencing post-adoption and ongoing usage of retail applications.

A notable gap in understanding persists regarding how businesses can enhance their retail applications. This research aims to contribute to the retailing literature by developing and experimentally testing retail applications based on customer preferences. It addresses the challenges encountered by the retail industry in the evolving retail landscape, especially the transition to mobile retail apps, building upon prior research such as "Importance-Performance Analysis on the Digital Platform Features of Food Convenience Stores in Indonesia" (Wahyudin et al., 2023). The study underscores significant information gaps concerning customer expectations of mobile retail applications and the lack of a comprehensive measurement technique. By providing insights to help retailers develop and test retail applications aligned with customer preferences, the study seeks to bridge these gaps. Furthermore, it acknowledges the substantial increase in online sales and shifts in consumer behavior, particularly among middle- and upper-class customers. Businesses now have a significant opportunity to transition to digital operations. Emphasizing the importance of ensuring that established retail app features align with customer interests and preferences can enhance the overall shopping experience and mitigate disappointment

2. LITERATURE REVIEW

2.1 Emerging Mobile Retail Apps

Mobile technologies are radically altering and rethinking the retail value chain, influencing customer interactions, fulfillment, delivery choices, and even the back office and production (Zhang & Hänninen, 2022). Expanding mobile technologies are transforming businesses by increasing access to information, supporting customers in obtaining personalized services, and enabling marketers to conduct targeted communications (Sharma et al., 2023; R. Wang et al., 2023). Since the inception of the Internet, numerous retailers have adopted an omni-channel retail approach, leveraging multiple service delivery channels including in-store, online, and mobile applications. The term "omni" originates from Latin, meaning "every," highlighting the strategy's comprehensive reach (Piotrowicz & Cuthbertson, 2014; McLean et al., 2018).

The emergence of mobile retail applications has revolutionized the retail industry, transforming the online channel from an "alternative" to a brick-and-mortar store into an essential component (Nanda et al., 2021). Retail apps provide a range of advantages, such as store locations, reviews, product details, and location-based services, enhancing the interaction between customers and retailers (Grewal et al., 2017). With retail apps, customers can search for products and services, compare prices, read reviews, make purchase decisions, and complete transactions (Newman et al., 2018; Iranmanesh et al., 2022).

Previous studies have illustrated the effectiveness of retail applications in driving customer purchases from retailers (Dinner et al., 2015). Similar studies have discovered that the cost of building online apps, as well as the performance of online retailing, influence the use of e-commerce (Kurnia et al., 2015; Sila, 2013). By continuing enhancement of retail app offerings, an increased number of customers prefer to purchase through the apps (Zhou et al., 2022). As a result, numerous product producers offer their products to resellers via retail apps besides their traditional channels of sales to diversify distribution channels (Yan et al., 2020)

2.2 Features of Mobile Retail Apps

Compared to using a mobile browser to access an online retailer's website, utilizing a retail app offers a distinct buying experience (Iranmanesh et al., 2022). Retail apps are preferable to mobile websites because they are made specifically for mobile interfaces (Natarajan et al., 2017). Almarashdeh et al. (2020) backed up this claim and claimed that retail apps offer customers more convenient shopping platforms such as searching, accessing information, and service recovery. Additionally, Hillman et al. (2012) found that customers favor using mobile applications over mobile websites when making transactions. Adoption is a necessary step for retail applications to succeed and to encourage customers to make purchases (Ye et al., 2019).

Although mobile applications provide a more flexible way to explore and buy things, little is known about the factors that affect how customers interact with such software (Pousttchi et al., 2015). They argued that a few factors can alter how customers perceive products and services both offline and online. In connection with it, Kotler et al. (2010) categorize service quality into five variables: visible, feelings, accuracy, adaptability, and certainty. The visible factor demonstrates appeal for the customer. Feeling refers to a concern that attempts to figure out what customers desire. The accuracy demonstrates professionalism, credibility, precision, and unity. Adaptability outlines how well services are provided. To provide the study

with further theoretical understanding, the following Table 1 will provide categorization of the variables and features outlined as influencing the customer experience during use of the retail apps.

Table 1. Variables and features of a retail apps used in this study

Variable	Feature	Reference
Tangible	Uniqueness	Prahalad & Ramaswamy, 2004; Chien et al., 2015; Hsu & Tang, 2020
	User-friendly interface	(Chien et al., 2015) Almarashdeh et al., 2020; McLean et al., 2020
Empathy	Purchase discount	Park & Bae, 2020; H. Liu et al., 2021; Q. Wang & Chen, 2022
	Delivery discount	Azali et al., 2020; H. Liu et al., 2021;
Accuracy	Simple to locate the store	McLean & Wilson, 2016; Azali et al., 2020
	Easy to select the product	McLean & Wilson, 2016; Azali et al., 2020
	Product details	Bauer *et al.,* 2012; Končar et al., 2021
	Payment options	Azali et al., 2020; Jebarajakirthy & Shankar, 2021
Responsiveness	Delivery service	McLean & Wilson, 2016; P. Sellappan & Shanmugam, 2021; Zhang & Hänninen, 2022; Sadesh et al., 2023
	Post-sale service	Alam & Noor, 2020; A. Wong, 2021; Sadesh et al., 2023
Certainty	User data privacy	Parasuraman & Colby, 2015; (Chien et al., 2015); Pigatto et al., 2017; Ruddell et al., 2020

3. METHODS

3.1 Sampling method

To assess customer experience with mobile retail store apps, the study was conducted using an instrument. The instrument was completed by 226 participants between February and June of 2021. The participants who answered the question had purchased products through the mobile retail apps in the previous 12 months. The selection of participants was carried out through purposive sampling, ensuring a confidence level of 95% with a margin of error of 10%. %. The instrument comprised two sections: the first section collected demographic information of the participants, while the second section included questions pertaining to the importance and performance evaluation of the mobile retail apps (refer to Table 2).

Table 2. Characteristics of the participants

Characteristic		N	%
Age	17 - 25 year	159	70.4
	26 - 35 year	62	28.4
	36 - 56 year	5	2.2
Gender	Female	156	69.0
	Male	70	31.0
Occupation	Student	139	61.6
	Entrepreneur	22	9.7

Characteristic		N	%
	Housewife	22	9.7
	Professional worker	43	19.0
Purchase frequency a year	1 - 2 times	109	48.2
	3 - 4 times	88	39.0
	> 4 times	29	12.8

3.2 Data and Analysis

In this study, customer expectation levels were assessed using a Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied). The Customer Satisfaction Index (CSI) is a quantitative analysis that calculates the percentage of customers who are satisfied with the performance or quality of a product or service. The CSI method is conducted through four stages as follows (Aritonang, 2005):

a. Determining the Mean Importance Score (MIS), which represents the average expectation level of each variable.

$$MIS = \frac{\sum_{i=1}^{n} Y_i}{n} \quad (1)$$

b. Calculating the Weight Factor (WF), which is a function of the MIS for each variable expressed as a percentage of the total MIS for all variables.

$$WF = \frac{MIS_i}{\sum_{i=1}^{n} MIS_i} \quad (2)$$

c. Establishing the Mean Satisfaction Score (MSS), representing the average performance level of each feature.

$$MSS = \frac{\sum_{i=1}^{n} X_i}{n} \quad (3)$$

d. Computing the Weight Score (WS), a function of MSS multiplied by WF for each feature.

$$WS = MSS\ x\ WF \quad (4)$$

e. Calculating the Weight Total (WT), which sums up all Weight Scores (WS) from feature 1 (α1) to feature n (αn).

$$WT = WSa_1 + WSa_2 + \cdots + WSa_n \quad (5)$$

f. Determining the Customer Satisfaction Index (CSI), calculated as the Weight Total (WT) divided by the Highest Scale (HS), expressed as a percentage. The maximum scale is derived from the Likert scale used to weight importance and performance levels, with a maximum scale of five in this study.

$$CSI = \frac{WT}{HS}\ x\ 100\% \quad (6)$$

g. Finally, the level of customer satisfaction index is categorized into five criteria:

1) Index 0.0 to 0.20 indicates very poor satisfaction;
2) Index 0.2 to 0.40 indicates poor satisfaction;
3) Index 0.4 to 0.60 indicates borderline satisfaction;
4) Index 0.6 to 0.80 indicates good satisfaction;

5) Index 0.8 to 1.00 indicates excellent satisfaction.

Furthermore, to assess the significance and functionality of the features provided by Mobile Retail Apps, this study applied the importance-performance analysis (IPA) approach invented by Martilla and James (1977). This approach generates a metric of customer evaluation of the functioning of a significant feature of the mobile retail apps. The IPA method equips management to identify priority areas, it can maximize the business outcome by diverting resources (O'Neill & Palmer, 2004). It is quite accurate and significant in explaining the service quality of the food industry (Tzeng & Chang, 2011). Importance and performance indexes were measured using a Likert scale of 1-5 points. Therefore, information about the level of conformity with their expectations will be obtained by the Equation (7).

The IPA method enables management to identify priority areas and maximize business outcomes by allocating resources (O'Neill & Palmer, 2004). The information is fairly precise and helpful in illustrating the standard of hospitality (Tzeng & Chang, 2011). As a result, Equation (7) will provide the details regarding the degree of conformity against their expectations.

$$Expectation\ confirmatory = \frac{\sum Perfomance\ index}{(\sum Importance\ index)x100}\% \quad (7)$$

The IPA diagram delineates four distinct categories (Martilla & James, 1977; Sever, 2015; Sellappan and Shanmugam, 2020; Wahyudin et al., 2023) as follows:

1. Maintain performance

These features represent the core strengths of the product or service, consistently exceeding customer expectations. Maintaining these qualities is imperative for sustaining customer satisfaction and loyalty.

2. High priority

Characteristics falling short of customer expectations necessitate heightened attention and resource allocation for improvement. Given their pivotal role in product/service development, these aspects are elevated to the highest priority by the business.

3. Low priority

Features categorized here are considered optional, with performance below anticipated levels. Upgrades are only warranted if high-priority aspects have been adequately addressed, allowing for selective enhancements within this quadrant.

4. Overdone performance

Despite being perceived as relatively insignificant, features in this category demonstrate exceptional performance. These attributes possess desirable traits, positioning them as potential focal points for optimization. Businesses must streamline resources efficiently within this group.

3.3 Features of Retail Mobile Apps

The most significant shift triggered by the appearance of mobile retail apps is the degree of customer satisfaction, which is linked to the degree of performance of mobile retail apps. As a result, the primary characteristics must be discovered through app customer feedback. This study utilized the 18 features listed in Table 1. Furthermore, all features' validity and reliability are evaluated at the 5% significance level (Wahyono, 2012; Nugraha et al., 2019). The results of the validity and reliability tests can be seen in Table 3. Based on the findings presented in Table 3, it is observed that the Pearson correlation coefficient (r) for all features falls below 0.36, which is the critical value (r table). Thus, it is determined that all features are deemed valid. Additionally, the Cronbach's Alpha values for all features exceed 0.70, indicating a high level of reliability (Budiastuti & Bandur, 2018). Therefore, it is concluded that all features demonstrate both validity and reliability, thereby making them suitable instruments for assessing the importance and performance of the retail's mobile apps.

Table 3. Features of retail mobile apps

No	Features	Pearson-Correlation	Cronbach's Alpha
1	Uniqueness	0.731	0.943
2	User-friendly interface	0.457	0.943
3	Purchase discount	0.793	0.943

No	Features	Pearson-Correlation	Cronbach's Alpha
4	Delivery discount	0.648	0.943
5	Simple to locate the store	0.720	0.943
6	Easy to select the product	0.429	0.943
7	Product details	0.627	0.943
8	Payment options	0.819	0.943
9	Delivery service	0.703	0.943
10	Post-sale service	0.826	0.943
11	User data privacy	0.794	0.943

4. FINDINGS

4.1 Customer Satisfaction Index

The Customer Satisfaction Index (CSI) is used to measure customer expectation of the Mobile Retail Apps. In general, higher CSI index values indicate greater customer expectation. This method will determine the level of importance (weight factor, WF) and satisfaction (weight score, WS) for each feature associated with the Mobile Retail Apps. It is necessary to assess the overall level of customer satisfaction by considering the importance of product or service features. The user satisfaction index for mobile retail apps can be seen in Table 4 as follows:

Table 4. Customer satisfaction index of mobile retail apps features

No	Features	MIS	WF	MSS	WS
1	Uniqueness	4.20	0.08	3.58	0.29
2	User-friendly interface	4.27	0.08	3.71	0.31
3	Purchase discount	4.48	0.08	3.80	0.31
4	Delivery discount	4.41	0.08	3.68	0.31
5	Simple to locate the store	4.40	0.08	3.70	0.31
6	Easy to select the product	4.37	0.08	3.77	0.31
7	Product details	4.36	0.08	3.72	0.31
8	Payment options	4.37	0.08	3.77	0.31
9	Delivery service	4.40	0.08	3.83	0.31
10	Post-sale service	4.42	0.08	3.71	0.31
11	User data privacy	4.48	0.10	4.01	0.38
Total		48.16	0.94	41.28	3.49

MIS = mean importance score; WF = weight factor;

MSS = mean satisfaction factor; WS = weight score.

Table 5. Assessment of mobile retail apps features

No	Features	Importance index	Performance index	Expectation conformity
1	User data privacy	4.48	4.01	90%
2	Delivery service	4.46	3.86	87%
3	Post-sale service	4.42	3.71	84%
4	Purchase discount	4.41	3.68	84%
5	Delivery discount	4.40	3.70	84%
6	Simple to locate the store	4.37	3.77	86%
7	Payment options	4.37	3.77	86%
8	Easy to select the product	4.36	3.72	85%
9	Product details	4.34	3.82	88%
10	User-friendly interface	4.27	3.71	87%
11	Uniqueness	4.20	3.58	85%
Average		48.08	41.33	86%

Based on the findings presented in Table 5, the CSI value can be calculated using Equation (6). As a result, the CSI value is 69.84 %. This indicates that customers have become satisfied with the performance of the mobile retail apps they use. However, retailers still need to improve every variable and feature associated with the application to achieve complete customer satisfaction.

4.2 Customer Expectation Mapping

This study identified five features with importance indices exceeding the average score of 4.38, namely user data privacy, delivery service, post-sale service, purchase discount, and delivery discount (as indicated in Table 5). However, concerning performance, three out of these five features demonstrated performance indices below the average score of 3.76, specifically post-sale service, purchase discount, and delivery discount. This implies that while customers prioritize these three features, they do not consistently meet customer expectations. The overall conformity level of mobile apps to customer expectations was calculated using Equation (7), revealing that, on average, mobile retail apps only fulfill 86% of customer expectations. Performance expectancy, as demonstrated in prior studies (Suki and Suki, 2017; Iranmanesh et al., 2022), emerges as the primary driver of usage intention, exerting a positive influence.

The categorization of the four tiers is determined by the importance and performance index values, which are visualized in a Cartesian diagram depicted in Figure 1. The Y-axis position denotes the degree of importance, while the X-axis signifies the level of performance. At the intersection of the Y and X axes lies the coordinates 4.38 (Y) and 3.76 (X), representing the average levels of significance and performance, respectively.

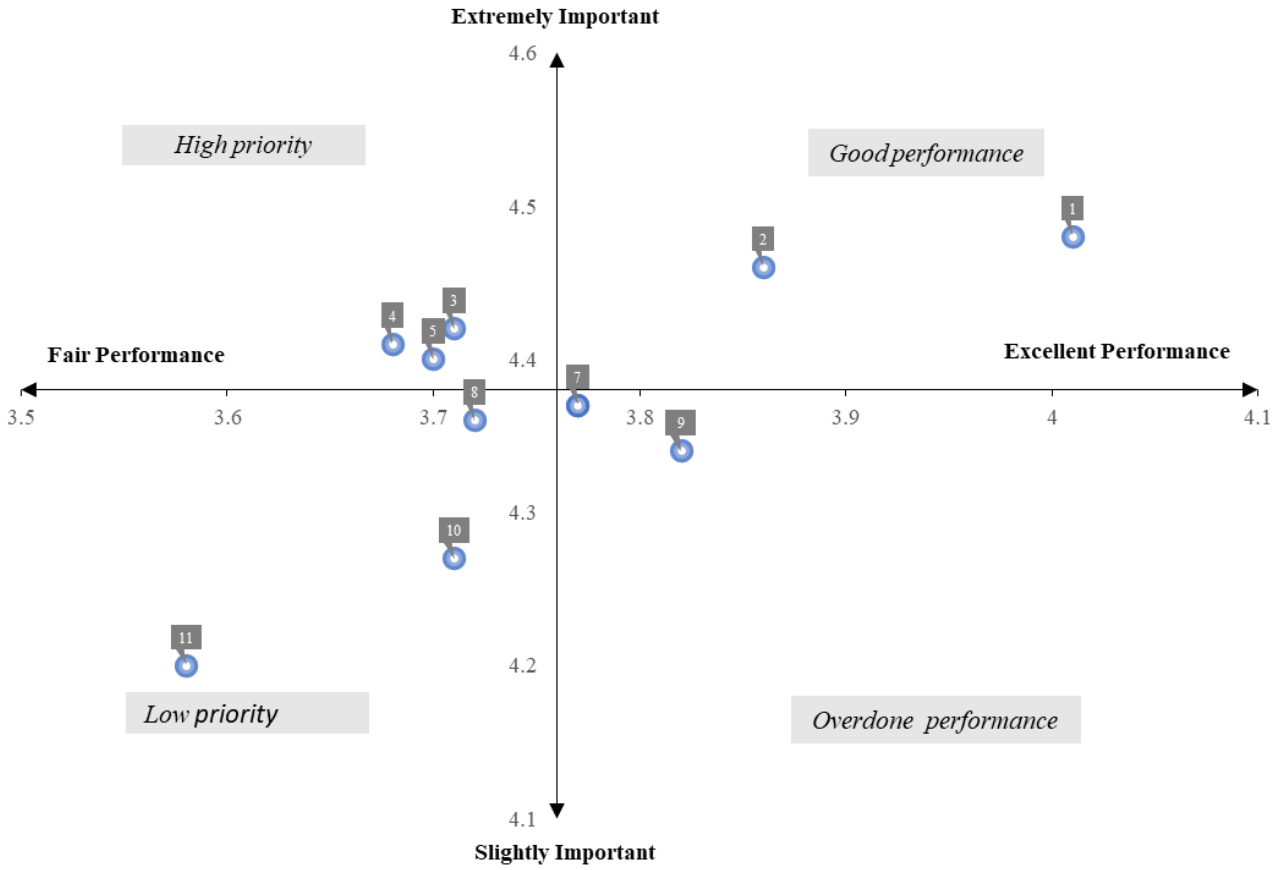

Figure 1. Customer expectation mapping on mobile retail apps

5. DISCUSSIONS

Businesses can provide features and services that go above and beyond what customers expect in order to please them (Li & Fumagalli, 2022). Customer expectations are outlined as the odds that certain acts will result in certain good and bad outcomes (Oliver, 1981). When a company consistently offers high-quality service in previous years, its clients develop the expectation that the company will continue to give this high-quality service in years to come (Zeithaml et al., 1993).

Within the scope of this investigation, customer expectations regarding features within mobile retail apps are segmented into four distinct levels, as outlined in Table 6. The initial tier, labeled as "High-performance" features, comprises features deemed highly significant by customers and exhibit exceptional performance. User data privacy and delivery service are encompassed within this category. Both of these features are deemed critical by customers, and their performance aligns with or surpasses their expectations. Thus, sustaining these features in the future is imperative to enhance customer attraction.

Table 6 Customer expectation on mobile retail apps

Features	Customer expectation
1. User data privacy	Good performance
2. Delivery service	
3. Post-sale service	High priority
4. Purchase discount	
5. Delivery discount	
6. Simple to locate the store	Low priority

Features	Customer expectation
7. Easy to select the product	
8. User-friendly interface	
9. Uniqueness	
10. Payment options	Overdone performance
11. Product details	

This study aligns with the research conducted by (M. S. Wong et al., 2011), which highlighted that User data privacy is considered a top priority feature in digital apps for e-government services in Japan. However, recent findings by Ruddell et al. (2020) suggest that legislation concerning customer data privacy currently struggles to find a balance between usability and privacy principles, failing to ensure secure data distribution for public benefit. Consequently, customers express concerns (Jebarajakirthy & Shankar, 2021), prompting businesses to establish regulations for safer and ethically sound collection and release of utility customer data. Another significant concern revolves around delivery service, which customers expect to perform satisfactorily in e-commerce apps (Tannady, 2018).

Moving on, the subsequent level of customer expectations is classified as "high priority" features, where features are deemed extremely important by customers but fall short of meeting their expectations. Post-sale service, purchase discount, and delivery discount are categorized under "high priority." To optimize mobile app performance, companies must allocate resources to improve these three features, enhancing customer satisfaction motivation (Sellappan & Shanmugam, 2020). Concentrated efforts on improving post-sale service, purchase discount, and delivery discount are crucial to meeting customer expectations, as evidenced by research in fashion apparel retail, where service became a significant customer concern (Selvabaskar & Karthika, 2015). Similarly, studies have emphasized the critical importance of customer service in e-commerce (Tannady, 2018).

The third tier encompasses "low priority" features, which customers consider slightly important with mediocre performance. These include ease of finding a store, ease of finding a product, user-friendly interface, and unique app design. Although deemed low priority, companies should still focus on improving these features. A user-friendly interface significantly impacts the ease of shopping via mobile retail apps, saving time and enhancing user experience (Chiu et al., 2014;Yeo et al., 2017). Furthermore, to encourage repeat usage, mobile applications must offer usability and distinctive value (Hsu & Tang, 2020).

The final tier represents features with "overdone performance," meaning customers perceive them as slightly important but with excellent performance. Payment options and product details fall into this category. Sellappan and Shanmugam (2020) suggest that features in this tier serve fundamental functions without necessarily motivating users. This aligns with previous research suggesting that payment options are typically available during registration or when making a purchase (Pingali et al., 2023). Similarly, product details are considered fundamental for customers, with Vojvodić (2019) highlighting their importance even in physical store shopping. Despite their lack of differentiating power, maintaining a high level of satisfaction with payment options and product details is crucial (Sellappan and Shanmugam, 2020). Thus, developers of mobile retail apps should focus resources on maintaining rather than extensively repairing these features.

6. CONCLUSIONS

The research clarifies key facets of customer expectations for mobile apps of retail. Price, quality, quick delivery, and transparent information have all contributed to a substantial shift in the retail scene in favor of digital platforms. Despite this shift, there has been a glaring gap in knowledge of customer expectations due to the absence of a thorough measuring instrument. By offering a thorough study of factors affecting customer experience, our research effectively fills this gap.

The results of the survey show that several characteristics, such delivery service, and User data privacy, are functioning admirably and are valued highly by customers. These aspects must be maintained and enhanced to continue attracting and retaining customers. Contrarily, features like post-sale assistance, purchase discounts, and shipping reductions are thought to be of the highest significance even when they are currently failing. Businesses should prioritize these changes to meet customer expectations and increase satisfaction.

Finally, the research emphasizes the importance of features linked to usability, originality, and product details. Despite being less significant, these characteristics are nonetheless quite essential in determining customer happiness. To provide customers with a flawless and distinctive purchasing experience, they demand care and improvement. Furthermore, while they don't

really stand out as significant differentiators, fundamental features like payment options and product details should nevertheless be kept up to par to satisfy customers.

7. IMPLICATIONS

7.1 Theoretical Implications

This research makes numerous important contributions to the current retail literature. First, by concentrating on the customer expectation viewpoint on mobile retail apps, this study fills a significant vacuum in the existing literature on retailing. It highlights characteristics that are important to customers and offers a thorough assessment method, improving our comprehension of customer preferences in the context of digital shopping. Second, to evaluate the significance and performance of qualities in mobile retail applications, the study applies the Importance-Performance Analysis (IPA) approach, which was first created by (Martilla & James, 1977). Utilizing this well-established theoretical framework, the study offers a systematic method for assessing customer opinions in the context of digital shopping. Finally, this research enhances Service Quality Understanding by (Kotler et al., 2010) as a theoretical foundation for categorizing features in mobile retail apps, i.e., tangible, empathy, reliability, responsiveness, and assurance. This deepens our understanding of the variables affecting the customer experience and expands the application of well-established service quality theories to mobile commerce apps.

7.2 Practical Implications

This research provides some insightful information and helpful suggestions for professionals working in the e-retailing sector. Retailers can strategically deploy resources by first improving resource allocation by identifying features in several performance categories (maintain, high priority, low priority, and overdoing performance). This makes it possible to focus changes on areas that are most important for enhancing customer satisfaction. Retailers should prioritize improvement efforts by analyzing customer expectations and feature performance levels, which leads to the second point. To close the gap between importance and performance, the emphasis should be on qualities designated as "high priority," which will eventually increase customer satisfaction.

Third, creating retail apps focused on the customer's needs by highlighting the significance of matching them with customer preferences and interests. Retailers should invest in aspects like user data privacy, delivery service, and post-sale support that have a direct influence on the customer experience. Fourthly, avoiding disproportionate resource allocation discovered the qualities classified as "overdone performance" highlight places where performance surpasses customer expectations while being deemed less significant. Instead of spending excessively in these areas, retailers should distribute their resources more wisely. Lastly, keeping track of client preferences is important considering how quickly consumer behavior may change. Retailers must constantly review and modify their mobile retail applications to reflect changing customer preferences and routines. It involves keeping abreast of new developments in technology and market trends for mobile retailing.

8. LIMITATIONS AND RECOMMENDATIONS

8.1 Research limitations

This research contains some flaws. First, the survey largely focuses on Indonesian customers, with 69% of respondents being women. The findings may not be as generalizable to other demographic groups or geographic areas with differing patterns of consumer behavior. Second, the study only uses a standardized questionnaire from a customer survey. Although this strategy offers insightful data, it could not fully represent the range of customer experiences and perspectives, leaving out principal elements. Third, purposive sampling, which was used to choose the respondents, may have resulted in some selection bias. Additionally, social desirability bias, where respondents may give responses, they think is socially acceptable rather than representing their genuine thoughts, might affect self-reporting in surveys. Fourth, the study primarily looks at mobile retail apps. Other businesses or types of retail applications could not immediately benefit from the findings since they might have distinctive characteristics and customer expectations. Finally, the primary focus of this study is on characteristics of the mobile retail app itself. It does not give much thought to outside variables that can also affect customer behavior, such general economic developments, the competitive environment, or technology improvements.

8.2 Research Recommendations

Insights on customer expectations and views of mobile retail apps in the modern retail industry have been provided by this study, however there are still more areas that might be explored. First, adding qualitative data—such as in-depth interviews or focus groups—to the quantitative data might provide researchers with a better understanding of the subtleties of how customers use mobile retail applications and what they anticipate from them. By doing so, hidden preferences and motives would be revealed. Second, a thorough knowledge of the function and influence of mobile retail applications in the larger retail ecosystem might be gained by expanding the research to compare customer expectations and perceptions between physical stores, online platforms, and mobile apps. Third, it would be advantageous to investigate how innovative

technologies (such augmented reality, virtual reality, and artificial intelligence) may affect customer expectations and experiences in mobile retail applications given the speed at which technological innovation is occurring. Fourth, expanding the study to several retail industries (such as fashion, electronics, and grocery) may show sector-specific differences in how customers see and use mobile retail applications. Lastly, companies would benefit from learning more about the relationship between customer satisfaction with mobile retail applications and long-term indicators like brand loyalty, customer retention, and lifetime value.

AUTHORS DECLARATION

The authors assert that have no competing interests.

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