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THE CONCEPTUAL FRAMEWORK: CUSTOMERS PERCEIVED VALUE, SATISFACTORY AND LOYALTY ON THE ROLE OF CHINESE SMARTPHONE BRAND IMAGE IN THE PEOPLE'S REPUBLIC OF CHINA

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Abstract— This study investigates the influence of smartphone brand image on customer perceptions of value, satisfaction, and loyalty in China's rapidly evolving market. It seeks to fill the existing research void by exploring the influence of smartphone brand image on the interplay among customer perceived value, satisfaction, and loyalty. It also hypothesizes that customer satisfaction acts as a mediator between perceived value and loyalty, with brand image significantly influencing this relationship. The study aims to dissect the intricate consumer-brand dynamics in China, focusing on the role of brand image in shaping customer loyalty through perceived value and satisfaction. By examining these relationships, the research seeks to provide valuable insights for strategic decision-making in the smartphone industry, emphasizing the importance of brand image in enhancing customer loyalty. This investigation highlights the critical role of brand image in the consumer decision-making process, offering a comprehensive understanding of how brand image, perceived value, and satisfaction contribute to loyalty in China's fast-paced smartphone market. The findings aim to clarify the complex relationships shaping consumer preferences for smartphone brands, contributing to the strategic planning within the smartphone sector.

Index Terms—*Customers Perceived Value, Customer Satisfactory, Customer Loyalty, Chinese Brand Smartphone, Brand Image.*

INTRODUCTION

Background and Importance of the Research Problem

With the rapid development of the economy, society, and mobile internet technology, smartphones have become a crucial communication device in the global economic transformation. The speed of mobile internet technology is also rapidly increasing, and people are changing their mobile phones more frequently to meet the needs of work, business, family, and daily life. The smartphone market continues to grow robustly in the digital environment.

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Currently, mobile phone manufacturers are trying to expand their market share by launching new brands, reducing prices, and offering special promotions. In the past, owning a smartphone might have been seen as a symbol of social status, meaning that individuals with smartphones were considered to have status and identity. However, nowadays, smartphones have become a "must-have" device to improve work efficiency and cope with the massive influx of information and news, as smartphones have become an integral part of people's daily lives [1].

The demand for smartphones is increasing dramatically worldwide, according to data from 2022, the number of mobile phone users increased from 73.3% to 88.2%. Therefore, it can be seen that the smartphone industry is currently developing products at a rapid pace, whether it's in processing systems, data storage capabilities, or other aspects like cameras or styluses, to meet diverse and increasingly complex usage requirements, almost completely replacing personal computers.

In the year 2022, there are nearly 1.04 billion smartphone users in the People's Republic of China. According to projections, this number is expected to increase to about 1.18 billion by the year 2026. Globally, there are approximately 6.6 billion smartphone users. China's user base accounts for more than 15% of global users. Over the past decade, smartphone manufacturers in China have evolved from offering low-cost options to becoming globally recognized brands. In the early 2010s, the market was still dominated by traditional mobile phone vendors like Nokia and Sony. By mid-decade, Chinese manufacturers like Huawei, Xiaomi, and OPPO gained popularity among domestic consumers and became significant players in the global industry [2]. Apart from the growing user base, the importance of smartphones in the daily lives of Chinese people has also increased. Nowadays, Chinese consumers use smartphones for everything from mobile payments for food, ordering food delivery, to hailing taxis. During the COVID-19 pandemic, the Chinese government introduced digital health codes via smartphones to monitor the risk status of citizens.

China has announced its Made in China 2025 (MiC 2025) strategy, aiming to transition from a mass production-oriented country to a global industrial leader focusing on the quality of goods and services. Therefore, China's structural changes in manufacturing due to future industrial developments will transform trade, investment, and supply chains within the region. The current smartphone models in the Chinese market are changing according to advancing technology and consumer needs, mainly under the competitive conditions of various smartphone brands in China. It is expected to grow rapidly and continuously until around the year 2029, especially brands like Xiaomi, OnePlus, Oppo, Realme, Huawei, Honor, Vivo, and iQOO.

By acknowledging the multifaceted value of brands, consumers are enabled to understand products more comprehensively, considering aspects such as functional, social, emotional, monetary, convenience, and symbolic values. Consequently, the construction of brand identity has emerged as a significant phenomenon, garnering the attention of both academic scholars and industry researchers. It is imperative for brand managers to implement meticulously crafted strategies to enhance the overall performance of the brand [3]. Given the importance of these values, the smartphone industry heavily focuses on and dedicates efforts towards gaining market

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share through strategic brand promotion.

In the dynamic business environment of today, characterized by evolving consumer behaviors, a slowing global economy, and intensifying competition, the development of differentiation strategies to attract the primary target audience to products or services is of paramount importance. Central to this endeavor is brand awareness. Brands significantly influence consumer psychology by enhancing memorability. This aspect of memorability is crucial in contemporary marketing efforts, as it empowers consumers to make informed decisions when selecting among various brands' products and services in the market.

The aim of this research is to examine the influence of smartphone brand image on perceived value, customer satisfaction and brand loyalty among mobile phone users, a topic that has not been thoroughly investigated in existing literature. Drawing on the study by Hult et al., which posits that customer satisfaction is a precursor to customer loyalty, this research also seeks to explore satisfaction as a mediating factor that channels the effect of customer-perceived value to loyalty, influenced by brand image [4]. Given the significant role of brand image in shaping customer perceptions, it is hypothesized that a strong brand image leads to heightened satisfaction, which in turn fosters customer loyalty. This relationship could potentially lead to cost reductions in the smartphone industry.

Research Objectives

1) To evaluate the levels of customer perceived value, satisfaction, loyalty, and brand image within the smartphone industry in the People's Republic of China, aiming to understand the consumer-brand relationship dynamics in this market.
2) To investigate the influence of customer perceived value and satisfaction on loyalty, particularly focusing on the role of brand image within the smartphone industry in the People's Republic of China, to discern how these factors interconnect.
3) To explore the extent to which satisfaction acts as a mediating factor in transmitting the impact of customer perceived value to loyalty, under the influence of brand image in the smartphone industry in the People's Republic of China, thereby understanding the intermediary role of satisfaction in the value-loyalty chain.

LITERATURE REVIEW

The Contemporary Landscape of Smartphone

The global smartphone market's quarterly share is distributed by leading production companies. These companies distribute smartphones worldwide based on market share and in the millions in quantity.

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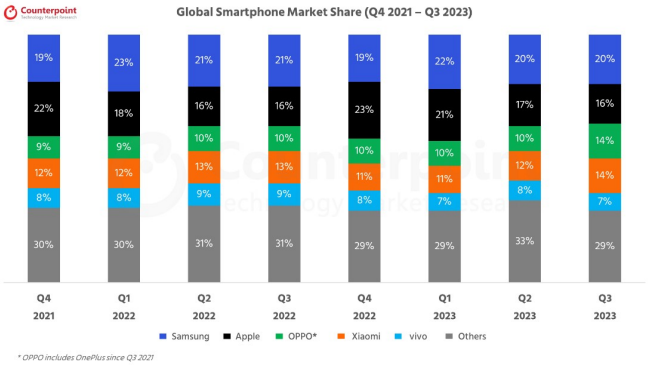

Source: Market Monitor Service, "Global smartphone market share (Q4 2021-Q3 2023)", https://www.counterpointresearch.com/insights/global-smartphone-share/#

Fig. 1. A bar graph showing the global smartphone market share by quarter.

This figure shows a 1% year-over-year (YoY) decline in the global smartphone market, with total shipments reaching 299.8 million units in Q3 2023. A specific section highlights Samsung's 8% YoY decline, counterbalanced by an 11% quarter-over-quarter (QoQ) growth, maintaining its status as the market leader in Q3 2023. The chart uniquely identifies Xiaomi as the only top-five brand to record YoY growth, with shipments of 41.5 million smartphones. Chinese smartphones have demonstrated a strong growth momentum in the international market.

With the continuous development of smartphones, network technology is also rapidly evolving. Currently, the global community is vigorously advancing 5G technology. China is a global leader in the adoption of 5G, with rapid implementation especially in the year 2022. China Mobile said that a total of 360,000 5G base stations were deployed in 2023. The penetration of 5G technology in China is expected to reach 90% as of the end of 2023.According to the report, China Mobile had already deployed a total of 1.7 million 5G base stations across the Asian nation, with an penetration rate of more than 85%. China's three main telecom operators have announced their subscriber totals for the month of November 2023, including a combined net increase of approximately 26 million 5G package subscribers, boosting their combined 5G package subscriber base to nearly 1.348 billion. As of the end of November, 5G package subscribers accounted for 78.6% and 77.3% of China Mobile's and China Telecom's total mobile subscriber bases, respectively. China's fourth 5G network operator, China Broadnet, had a total of 20 million 5G subscribers as of the end of October, according to previous reports. Broadnet officially launched 5G services in June 2022. China is forecasted to reach 1 billion 5G subscribers by 2025, while the number of 5G users by 2030 is expected to reach 1.6 billion, according to a previous report by the GSMA. According to the report, 5G technology will add $290 billion to the Chinese economy in 2030, with benefits spread across industries [5].

The development of 5G networks has also promoted the growth of Chinese brand smartphones. As smartphone usage continues to rise, China now boasts the largest mobile phone user base globally. From Figure 2, we can observe that Chinese smartphone brands currently hold a significant advantage in market share, OPPO, VIVO, HONOR, XIAOMI, HUAWEI, REALME, these are all domestic brands originating from China. Huawei' s smartphone sales increased 41% YoY from a low base. Its mid-end Nova 10 series and premium Mate 50 series found popularity

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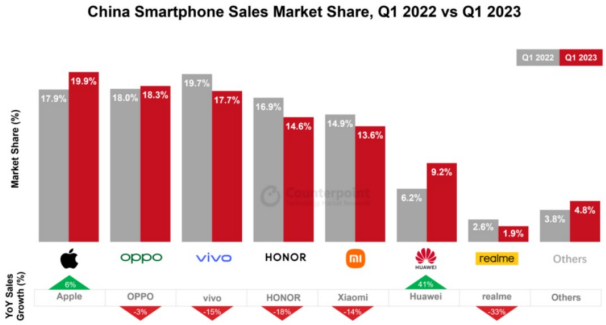
even though they still cannot support 5G. Huawei said that its product launch cycle had resumed to normal after US sanctions that were imposed more than three years ago [6].



Source:Counterpoint Market Pulse Service, "China Smartphone Sales Market Share, Q1 2022 vs Q1 2023", https://www.counterpointresearch.com/insights/china-smartphone-sales-fall-5-yoy-in-q1-2023-apple-on-top-with-highest-sales-share/

Note: OPPO includes OnePlus: Xiaomi includes Redmi; vivo includes iQOO; Figures may not add up to 100% due to rounding.

Fig. 2. China Smartphone Sales Market Share, Q1 2022 vs Q1 2023

In the current landscape of the mobile phone industry, we discern that several factors contribute significantly to fostering brand loyalty among customers. These factors encompass innovation, product quality, and exceptional customer service. Brands that excel in addressing customer needs and surpassing expectations across these dimensions are apt to establish enduring and steadfast customer loyalty. Moreover, there exists a distinct subset of customers characterized by their propensity to switch brands frequently. These individuals are often swayed by the influence of key opinion leaders or influencers. Consequently, it is of paramount importance to create a positive and memorable experience for this particular customer segment.

Customer Perceived Value

Three decades ago, Zeithaml defined "perceived value" is the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given [7]. This comes from the consumer's own evaluation of what is received and the utility they derive from that product or service. This can be said to be a component of "receiving" and "giving," where the product or service stands out in terms of functionality or value compared to other products. This is assessed in relation to customer expectations and the actual benefits of the product that can stimulate the motivation to make a purchase decision.

The concept of perceived value started to emerge since the year 1988 and has been continuously developed by scholars. For instance, Woodruff's research focuses on understanding customer needs and value perceptions, contributing significantly to the concept of customer value [8]. Michael Porter is Known for his work on competitive strategy, Porter discusses value in terms of the value chain, which indirectly contributes to understanding customer perceived value [9]. Perceived value can be regarded as a 'consumer's overall assessment of the utility of a product (or service) based on perceptions of what is received and what is given." She referred to this assessment as a comparison of a product or service's 'get' and 'give' components. If the

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product or service has greater value than what the customer loses, the customer will perceive the value of the product or service [7]. Perceived value is not just one-sided; it has multiple aspects and is more complex than simply measuring quality and price alone [10].

Several scholars have proposed a theory suggesting that consumer-perceived value encompasses various dimensions. Such as Sweeney and Soutar have concentrated their research on the values that influence consumer attitudes and behaviors in retail environments. They have distilled these concepts into a model termed "PERVAL" (Perceived Value), which they have streamlined to encompass three primary dimensions [10]:

1) Emotional Value: This dimension pertains to the benefits derived from the emotional responses elicited by a product. It is particularly significant in industries such as luxury goods and entertainment, where the emotional resonance or experiential aspect forms an integral part of the product's appeal.
2) Social Value: This aspect relates to the enhancement of an individual's self-concept or social status through product usage. Products that are perceived as high-status or exclusive can impart this form of value, engendering feelings of respect or admiration within the consumer's social milieu.
3) Utilitarian Value: This dimension is bifurcated into:

3.1) Price/Monetary Value: This encompasses the practical benefits such as affordability and cost-effectiveness.

3.2) Performance/Quality: This focuses on the perceived efficacy and quality of the product, including attributes like durability, reliability, and efficiency.

Consequently, the framework proposed by Sweeney and Soutar elucidates the distinction between Customer Perceived Value (Perceived Value) and Satisfaction. Notably, Customer Perceived Value can manifest at various stages of the consumer's purchasing journey, commencing even before the actual purchase.

Customer Satisfaction

Customer satisfaction is a measure of how products and services supplied by a company meet or surpass customer expectation. Customer satisfaction is defined as "the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified satisfaction goals [11]. "Oliver conceptualizes satisfaction as a response that encapsulates customer knowledge and intentions. It is characterized as the customer's evaluative judgment formed on the basis of their experiences with a product or service [12]. Kotler articulates that satisfaction is the degree of a person's feelings experienced when comparing the value perceived from a product or service against their expectations [13]. Thus, satisfaction can be described as the sense of contentment and approval expressed by an individual.

Kotler's theory also posits that satisfaction emerges from a comparison between a customer's expectations and the actual performance of a product or service. Dissatisfaction arises when performance fails to meet expectations, while satisfaction occurs when performance aligns with expectations. Furthermore, when performance surpasses expectations, the customer is likely to

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experience high satisfaction and may recommend the service or product to friends and family [13]. Measuring satisfaction serves as a holistic indicator that captures the customer's response, encompassing both cognitive and emotional aspects, to the consistent service they experience. Evaluating satisfaction facilitates the strategic focus on retaining the existing customer base, which is crucial for the sustained success of the service business [14].

According to Roland Rust, Anthony Zahorik, and Timothy Keiningham, consumer satisfaction is comprised of three principal components [15]:

1) Product or Service Quality: This refers to the consumer's assessment of quality, which is derived either from their current use of the product or service or from an accumulation of past experiences. Such quality has a direct and positive impact on consumer satisfaction. The quality perceived by consumers is influenced by two key factors:

1.1) The degree of customization of the product or service to meet diverse consumer needs.

1.2) The reliability level of the product or service, which hinges on its standard of trustworthiness and the absence of defects.

2) Perceived Value: This component relates to the consumer's comparative perception of value, involving an assessment of the product or service's quality relative to its price. It serves to standardize the price variations across different products and services, thereby addressing the disparities in income levels and purchasing capacities of consumers. Thus, it enables the comparison of products or services with varying price points. The perceived value is positively associated with both the quality of the product or service and the level of consumer satisfaction.

3) Customer Expectations: These are shaped by past experiences and the information gathered from various sources, such as advertising or word-of-mouth, as well as expectations regarding the manufacturer's quality capabilities. Therefore, these expectations represent a summary of past experiences related to the product or service's quality up to the present. Concurrently, consumer expectations are projections about the quality that will fulfill the consumer's needs. These expectations are directly linked to both the received quality and the perceived value of the product or service.

Brand Loyalty

The importance of customer loyalty in business cannot be overstated. The higher the level of loyalty customers have towards a brand, the more likely it is to achieve long-term profitability. Entrepreneurs understand that there are various strategies to cultivate customer loyalty, but the primary focus should always be on the quality of products and services. Without this foundational element, a brand may only attract fleeting customers who make one-time purchases, leaving the brand in a constant cycle of seeking new customers. It's important to note that attracting new customers is significantly more expensive than retaining existing ones. Therefore, ensuring that customers have a memorable and positive experience when purchasing a product or service is crucial [16].

Brand loyalty refers to a consumer's favorable attitude towards a brand, coupled with a commitment to consistently purchase that brand's products and/or services, despite any

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shortcomings, competitive alternatives, or environmental changes. This loyalty is not only evident in repeat purchases but can also manifest in other behaviors, such as advocating for the brand through positive word-of-mouth [18].

Zeithaml, Berry, and Parasuraman (1996) define customer loyalty as the emotional bond consumers form with a service provider, evident through their consistent use of the provider's services or regular purchasing of their products. This loyalty, stemming from a positive disposition towards the provider, increases the likelihood of customers returning and recommending the service to others, thereby enhancing the provider's operational efficiency and success. The concept encompasses five key elements: Satisfaction with the service or product, the Intention to Repurchase, being the Top of Mind choice for consumers, engaging in Positive Word of Mouth Communications, and maintaining a Positive Attitude towards the brand [19].

Brand loyalty occurs when consumers develop a favorable perception of a specific brand, resulting in consistent repeat purchases. This loyalty can stem from factors such as trust in the brand, ease of recalling the product or service, or overall consumer satisfaction. Additionally, it is noteworthy that the expense involved in acquiring a new customer is typically 5 to 10 times greater than the cost of retaining an existing one [20]. As the variety of branded products expands and marketing strategies become more sophisticated in persuading consumers to switch or try new brands, the cultivation of brand loyalty emerges as an increasingly critical component of marketing strategy. Synthesizing the discussions of numerous scholars, brand loyalty can be comprehended through two distinct lenses: one focusing on purchase behavior and the other on the psychological aspect, as elaborated below:

1) From the perspective of Purchase Behavior, Reichheld emphasizes that brand loyalty can be observed and measured through customers' repeat purchasing behaviors. Loyal customers are more likely to continue buying from the same brand, and this behavior is crucial for sustainable business growth and profitability. Reichheld also analysis extends beyond mere repeat purchases to include the likelihood of customers recommending the brand to others, which is another important aspect of purchase behavior indicating loyalty [21].
2) From the Psychological perspective, brand loyalty is characterized by the development of a positive attitude in consumers, leading to a strong bond with the brand. This positive attitude is derived from three key elements:

Confidence: Consumers tend to develop a favorable view of a brand when they feel confident about it. If consumers lack prior confidence in a brand when considering a purchase, they typically seek out information to build this confidence before deciding to buy. Once a brand has secured a consumer's trust, they are less likely to spend time seeking additional information for future purchases [22].

Belief: Brand loyalty arises when a brand resonates with a consumer's beliefs, fostering trust and affinity towards the brand. For instance, if men hold the belief that women prefer a certain style of perfume, and a perfume manufacturer recognizes and caters to this belief, they can create a product that aligns with the male consumer's perceptions, thereby cultivating brand loyalty [23].

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Accessibility: Brand loyalty emerges when a brand is readily accessible in the consumer's mind, facilitated by ease of purchase and consistent communication from the brand [24].

Essentially, brands that effectively build confidence, relevance, and ease of access in the minds of consumers reduce the need for these consumers to seek additional information when making a purchase. Consumers naturally gravitate towards brands they have positive associations with, cultivating a sense of loyalty. This loyalty not only secures a stable customer base but can also lead to its expansion, as loyal customers often recommend the brand to their social circles, thereby increasing its reach.

If businesses can effectively utilize loyalty programs to build relationships with their customers, it creates a distinct competitive advantage, especially in the digital age. In a landscape where customers can effortlessly access and compare information online, those with strong ties to a business or brand are more likely to continue purchasing from it. Moreover, providing exceptional benefits through loyalty programs and valuable sales promotions is key to attracting and retaining customers, thereby establishing a unique standing against competitors in the market [25].

Brand Image

Brand image is the perception of a brand that reflects consumer memory of its association with the brand [26] This image includes recognizable but intangible elements such as symbols, specific fonts, color designs, and the perceptions customers hold about the brand's products or services. Therefore, brand image is not just an impression stored in the consumer's memory; it also plays a significant role in shaping consumer behavior. One measure to maintain and improve market share is customer satisfaction with the same product or brand and loyalty to the brand [26].

The brand image represents consumers' current perceptions of a brand, characterized by a distinct set of associations within the minds of the target consumers. This concept encapsulates what the brand stands for, encompassing various beliefs that are specifically tied to the brand. Nowadays, consumers frequently form opinions about different brands based on the attributes of their products. Consequently, these perceptions about the brand evolve into its future image, connecting consumers to the brand's name. Moreover, in the digital era, consumers often seek brands that resonate with or reflect their own personalities. Hence, a brand image that aligns with the identity of its consumer base is likely to achieve success [27].

Aaker concluded that brand image creates value in various ways to assist consumers in processing information, establishing brand differentiation, providing reasons for purchase, eliciting positive emotions, and ultimately serving as the basis for brand loyalty [28]. A strong product brand image not only mirrors the business's operational efficiency, product excellence, and service quality but also plays a crucial role in fostering trust among consumers. It aids in guiding consumer decision-making processes and cultivates brand loyalty.

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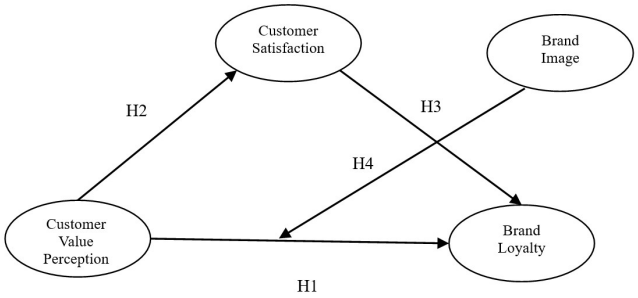
CONCEPTUAL FRAMEWORK AND HYPOTHESE



Hypothesis 1: The impact of customer value perception on brand loyalty.

Customer value perception exerts a direct and significant influence on brand loyalty, primarily by shaping the customer's comprehension and assessment of the brand's inherent value. This pivotal relationship is underscored in the scholarly work of Keller, who posits that the perception of a brand is a critical determinant in shaping consumer behavior, notably in the context of brand loyalty. Keller's assertion highlights the integral role of customer value perception in the formation and sustenance of brand loyalty [29]. Previous research widely acknowledges that the customer value perception plays a crucial role in shaping consumer purchasing decisions, which often leads to repeated buying and fosters brand loyalty [30].

Hypothesis 2: The impact of customer value perception on customer satisfaction.

Woodruff and Gardial emphasize the importance of understanding customer value perception in determining satisfaction. They argue that satisfaction is influenced by how well a product or service aligns with customer needs and expectations [31]. Customer satisfaction arises from a comparison between the perceived quality of a product or service and the customer's prior expectations. When the perceived quality meets or surpasses these expectations, customers are typically satisfied. Conversely, if the perceived quality fails to meet expectations, customers may experience dissatisfaction. In today's competitive landscape, many organizations prioritize maximizing customer satisfaction, understanding that satisfied customers are more likely to remain loyal and less inclined to switch to competitors.

Hypothesis 3: The impact of customer satisfaction on brand loyalty.

The impact of customer satisfaction on brand loyalty is a well-studied area in marketing research, highlighting the crucial role that satisfied customers play in the ongoing success and loyalty towards a brand. According to Oliver , customer satisfaction is a precursor to brand loyalty, and it significantly influences the likelihood of a customer's repeat purchase behavior and commitment to a brand [32]. Oliver defines brand loyalty as "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior" [33].

Brakus, Schmitt, and Zarantonello introduce the concept of brand experience, examining how satisfying brand experiences across sensory, affective, intellectual, and behavioral dimensions contribute to brand loyalty. They posit that satisfaction derived from these comprehensive brand experiences fosters deeper loyalty [34].

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In addition, customer satisfaction is influenced by the value delivered to customers and significantly affects customer loyalty and their intentions to repurchase, which ultimately impacts the profitability and growth of the brand [35].

Hypothesis 4: Satisfaction serves as an intermediary factor that conveys the impact of customer value perception on brand loyalty through the role of brand image.

Customer satisfaction is a pivotal element that mediates the connection between the perception of customer value and the development of brand loyalty, with brand image serving as a significant influencing factor. This notion is underpinned by the research of various academics who have delved into the interplay among customer satisfaction, perceived value, brand image, and their combined effect on fostering brand loyalty.

Aaker argues that brand equity, which is closely related to brand image, is a key driver of customer satisfaction and loyalty. The brand image, as part of brand equity, enhances the customer's perception of value, which in turn, positively affects satisfaction and loyalty. Aaker's framework suggests that a strong brand image can enhance perceived value, leading to higher customer satisfaction and, ultimately, greater brand loyalty [36].

Kotler and Keller further elaborate on this relationship by stating that customer satisfaction is the result of the customer's perception of the value received in a transaction or relationship, where value equals perceived benefits minus perceived costs. They emphasize that a positive brand image can significantly enhance perceived benefits, thereby increasing customer satisfaction and fostering loyalty [37].

In summary, the four hypotheses outline the relationships among customer value perception, customer satisfaction, brand image, and brand loyalty. There is a direct impact of customer value perception on brand loyalty, indicating that how customers perceive the value offered by a brand directly influences their loyalty to the brand. Customer value perception affects customer satisfaction, meaning that the value customers perceive in a product or service offerings contributes to their overall satisfaction with the product or service. Customer satisfaction has a direct impact on brand loyalty, suggesting that satisfied customers are more likely to remain loyal to a brand. Satisfaction acts as a mediator between customer value perception and brand loyalty, with brand image playing a significant role. It suggests that the perception of value influences satisfaction, which in turn affects loyalty, and that this process is influenced by the brand's image.

RESEARCH METHODOLOGY

Population and sample group

Population

Selecting Beijing, Shanghai, and Shenzhen for geographical analysis underscores their significance within the context of China's economic landscape and salary standards (as figure 3). Below is a detailed overview of the geographical coordinates for each city:

Beijing: As the capital of China, situated in the northern part of the country, Beijing serves as the epicenter for national politics, cultural heritage, educational excellence, and international

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communication.

Shanghai: Positioned on China's eastern seaboard, Shanghai stands as a pivotal economic hub, renowned globally for its financial prowess.

Shenzhen: Located in Guangdong Province in the south of China, Shenzhen is celebrated for its meteoric rise in economic development, especially in the realms of technology and manufacturing.

Source：Teamed UP China, “Top 10 Highest-Paying Cities In China (2023)”, https://teamedupchina.com/top-10-highest-paying-cities-in-china/, Beau Parrish, January 22, 2024.

Fig. 3. Top 10 Highest-Paying Cities in China (2023)

Beijing, Shanghai, and Shenzhen are chosen for mobile phone sales research due to their economic prosperity, technological innovation, and high consumer purchasing power. These cities represent China's leading markets for new technology adoption, including smartphones, making them ideal for analyzing trends, consumer preferences, and market potential in the mobile phone industry.

The target demographic for this study comprises Chinese consumers residing or employed in three key regions: Beijing, Shanghai, and Shenzhen, within the People's Republic of China. This selection is predicated on the higher average incomes of these populations and the liberal economic policies that render these locales appealing for employment and living. ble participants for this research are those who have utilized or have experience with various mobile smartphone brands for a minimum duration of three years in the People's Republic of China.

Sample group

In adherence to the principles of purposive sampling, and drawing upon the most recent data regarding consumer preferences within the Chinese market, the research will focus on the five leading Chinese-owned smartphone brands. These brands are selected based on their market share, representing the most favored choices among consumers. As the figure 4 demonstrates, the top 5 Chinese brand is Huawei, Xiaomi, Honor, OPPO, and Vivo. Hence, for the selection of the sample size in this study, the researcher opted for a total of 1,200 participants. This decision aligns with the guidelines for determining sample sizes in Structural Equation Modeling (SEM),

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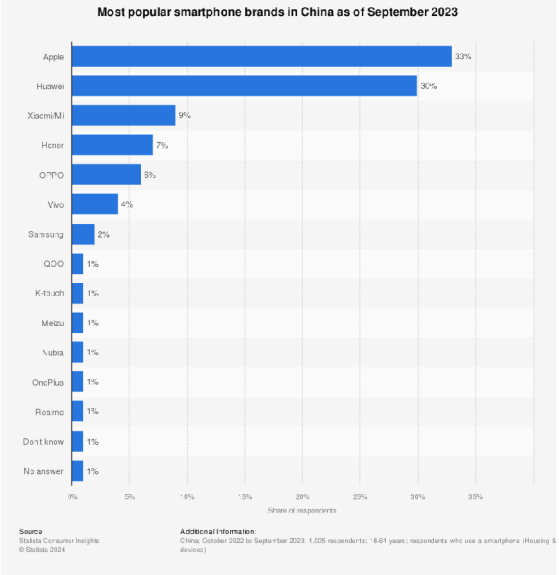
which suggest a range of 10 to 30 times the quantity of indicators. Given that the survey comprises 40 items, the choice to utilize a multiplier of 30 times the number of indicators is in accordance with the recommendations set forth by Hair et al., [38], ensuring the research's adherence to established methodological standards.



Source: Statista, "Most popular smartphone brands in China as of September 2023", https://www.statista.com/forecasts/1371012/most-popular-smartphone-brands-in-china, 2024.

Fig. 4. Most popular smartphone brands in China as of September 2023.

Research Instrument

The research instrument employed is an online survey, incorporating metrics developed from the theoretical underpinnings and frameworks identified through a review of relevant literature. The survey is divided into two main sections:

Section 1: Demographic and Usage Information - This section gathers personal data from individuals who have either purchased or have experience with smartphones from the top 5 distinguished brands in the People's Republic of China. It seeks information on various demographic and usage-related aspects, including gender, age, marital status, level of education, profession, average monthly income, province of residence, current smartphone brand, duration of smartphone use, and the factors influencing their brand choice. This section is structured as a series of multiple-choice questions, totaling 10 questions, where respondents may select one or several appropriate answers.

Section 2: Open-Ended Questions on Measuring Variables - The second section consists of open-ended questions aimed at exploring the respondents' views on the significance of brand loyalty towards smartphones. It focuses on measuring variables such as (1) Customer Perceived Value (CPV), (2) Satisfaction (Sat), (3) Brand Loyalty (Lo), and (4) Brand Image (BI). For each variable underpinning the hypotheses, construct a series of ten questions utilizing a 5-point Likert scale. These questions are to be crafted to encompass a spectrum of five response options, each reflecting varying degrees of engagement with smartphone products and services. The aim

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is to facilitate a more nuanced and precise measurement of the constructs from the perspective of the respondents.

Data Collection

Data collection for this study is conducted through online questionnaires. In designing the data collection methodology, the researcher has opted for online platforms to ensure that the data gathered accurately represents the target population, adhering to the criteria set forth by Gaiseric and Schreiner [39]. The questionnaire will be simultaneously published on the four most active survey websites in China, which are: Wenjuanxing, https://www.wjx.cn/ ; Wenjuanwang, https://www.wenjuan.com/ ; Yibiaoda, https://www.yibiaoda.com/ ; and Jinshuju, https://jinshuju.net/. The approach is outlined as follows:

1) Sampling Approach: The lack of random sampling capabilities among internet users necessitates the use of nonprobability sampling methods for distributing the online questionnaire. This method is deemed most fitting for this research context [40]. Literature reviews suggest that employing random sampling within nonprobability frameworks can lead to more dependable data, with strategies in place to address potential non-response bias [40].
2) Validation and Analysis of Data: To ensure the integrity of the data, it will be subjected to content validation and reliability checks. Confirmatory factor analysis will also be performed to validate the constructs measured.
3) Criteria for Sample Inclusion: The researcher has defined clear criteria for respondent inclusion, incorporating two screening questions to verify the consistency of responses. Only those providing coherent answers will be deemed eligible for further analysis.

This methodology is designed to ensure that the research findings are both reliable and representative of the broader population, in line with established academic standards.

Data analysis

Data analysis in this study will encompass both descriptive and inferential statistical techniques to thoroughly examine the dataset. Descriptive statistics, such as means and standard deviations, will be utilized to summarize the data, offering a snapshot of the respondents' characteristics and their responses. This step will provide an initial insight into the distribution and central tendencies of the dataset.

In addition to descriptive analysis, inferential statistics will play a crucial role in this research. Specifically, structural equation modeling (SEM) will be utilized to investigate the complex causal relationships between the variables under study. SEM is a powerful statistical technique that allows for the analysis of multiple regression equations simultaneously, making it possible to assess direct and indirect effects among the investigated components. This method will enable the researcher to test theoretical models and hypotheses about the relationships between customer perceptions, brand loyalty, satisfaction, and other relevant factors in the context of smartphone brand preferences.

By integrating descriptive and inferential statistical analyses, the research aims to offer a comprehensive examination of the data, revealing patterns and relationships that could inform

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strategic decision-making in the smartphone industry. This dual approach ensures a detailed and nuanced understanding of consumer behaviors and preferences within the Chinese smartphone market, facilitating a deeper insight into the factors driving these dynamics.

CONCLUSION

In the context of smartphone brand development, this paper underscores the crucial significance of comprehending and evaluating the direct and indirect influences pertaining to consumer perception, brand loyalty, satisfaction, and other pertinent factors. Through the examination of theoretical models and hypotheses, this research aims to unveil the intricate relationships underpinning consumer preferences for smartphone brands. Employing a combination of descriptive and inferential statistical analysis methodologies not only enables a comprehensive scrutiny of data but also unveils discernible patterns and associations that can serve as guiding principles for strategic decision-making within the smartphone industry.

For the realm of smartphone brand establishment, delving deep into consumer behavior and preferences empowers brands to craft more compelling marketing strategies and products, consequently bolstering brand loyalty and market presence. This holds paramount importance in successfully navigating brand development and enhancing competitive positioning in the contemporary digital era.

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