

THE IMPACT OF CORPORATE BRAND COMPETITIVENESS AND SERVICE QUALITY ON CUSTOMER LOYALTY IN USING SMART CLASSROOM PRODUCTS: A CASE OF BEIJING ORIENTAL ZHONGYUAN DIGITAL TECHNOLOGY CO., LTD.

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Received: 14 September 2024 / Revised: 12 November 2024 / Accepted: 17 December 2024

ABSTRACT

Purpose – This study examines the impact of corporate brand competitiveness and service quality on customer loyalty in the smart classroom products industry. The research aims to fill the gap in the literature by identifying specific factors influencing customer loyalty in this rapidly evolving technological sector.

Methodology – The research employed a descriptive design, gathering data with convenience random sampling technique from 400 participants, including teachers, students, and administrative staff. Data was collected via a structured questionnaire that measured corporate brand competitiveness, service quality, and customer loyalty, using a five-point Likert scale. The data was analyzed using descriptive and inferential statistical methods, including regression analysis. Reliability and validity were ensured through rigorous testing of the research instruments.

Results – The findings indicate that demographic factors such as gender, age, and education do not significantly impact customer loyalty. However, corporate brand competitiveness, particularly in areas of competitive intelligence, pivotal merits, and communicative capacities, has a substantial influence on customer loyalty. Additionally, service quality, especially in terms of reliability, empathy, and assurance, was found to significantly drive customer loyalty in the smart classroom product market.

Implications – The study suggests that companies in the smart classroom sector should focus on enhancing brand competitiveness through market intelligence, strategic communication, and providing high-quality service. These factors are crucial for fostering customer loyalty in a technology-driven educational environment. The insights provided can guide companies in developing strategies that strengthen customer satisfaction and retention.

Originality/Value – This research provides new insights into the underexplored area of customer loyalty in the smart classroom products industry, offering valuable recommendations for both academic researchers and industry practitioners.

Keywords: Corporate brand competitiveness, Service quality, Customer loyalty, Smart classroom products

Paper Type: Research Article

INTRODUCTION

The use of smart classrooms has become increasingly widespread in educational institutions around the world due to rapid advances in technology. Smart classroom solutions provide sophisticated teaching tools and resources that enhance the learning experience for teachers and

Citation:

Yan, L., & Trisakhon, C. (2024). The impact of corporate brand competitiveness and service quality on customer loyalty in using smart classroom products: a case of Beijing oriental Zhongyuan digital technology co., ltd. RMUTT Global Business Accounting and Finance Review, 8(2), 32-45. <https://doi.org/10.60101/gbafr.2024.276325>

students (Al-Bataineh et al., 2008; Harrell, & Bynum, 2018). In China, smart classrooms are gaining prominence with initiatives particularly targeting the integration of multimedia, interactive whiteboards, and tablet computers to enhance the dynamism and interactivity of learning environments. From 2015 to 2020, the expenditure on smart education in China maintained a steady growth rate between 7% and 8% (China Association for Educational Instrument Industry, 2023). Research conducted by Dai et al. (2023) emphasizes the usage of smart classrooms to improve student happiness and learner engagement by using a multi-screen interactive learning system. Separate research highlights the significance of intelligent classrooms in fostering independent, contextual, and collaborative learning, in accordance with the recently implemented national curriculum standards (Huang, 2023). China's smart classroom programme is a component of a comprehensive national plan aimed at updating education, positioning it as a frontrunner in the development and use of smart classroom technology. The current trend is fundamentally transforming conventional education and establishing China as a prominent participant in the worldwide educational technology arena. With the increasing integration of smart classroom technologies, it is critical for organizations to differentiate themselves through the competitiveness of their corporate brand and service quality to drive customer loyalty. Examining the impact of corporate brand competitiveness and service quality on customer loyalty when using smart classroom goods is an important research topic that has not yet been thoroughly investigated. While there is research on customer loyalty in various industries such as retail and hospitality, there is a lack of information on the specific factors that influence customer loyalty in the smart classroom products industry (Li, 2013; Yeboah-Asiamah, et al., 2016 Ramanathan et al., 2017).

A significant research gap in this area is the inadequate investigation of the impact of brand competition on customer loyalty in the smart classroom products industry. Corporate brand competitiveness refers to a company's ability to differentiate itself from its competitors through the implementation of successful brand strategies, new product launches, and strategic positioning in the marketplace (Azizan & Yusr, 2019). In the dynamic field of smart classroom goods, it is critical for organizations to have a strong brand identity that not only appeals to their target audience of educators, students, and institutional decision makers, but also sets them apart from their competitors. This differentiation is critical to fostering brand preference and loyalty among consumers who are increasingly looking not only for practical utility, but also for brand compatibility with their educational goals and principles. Although the importance of brand competition in influencing consumer preferences and decisions is widely recognized, there is a lack of academic research on how corporate brand competitiveness directly impacts customer loyalty in this dynamic business and in global competition. This discrepancy underscores the urgent need for extensive research to investigate these interactions that could influence strategic decisions for companies engaged in the production and diffusion of smart classroom technology (Tunç, 2022; Mwazuna, & Museve, 2023).

Another major gap in the existing research is that not enough attention is paid to the importance of service quality for customer retention in the smart classroom industry. Service quality plays a crucial role in determining consumers' opinions and their overall satisfaction with a company and its offerings (Panda & Das, 2014; Obi et al., 2022). When it comes to smart classroom products, service quality includes various factors such as prompt and useful customer support assistance, ease and effectiveness of product installation and maintenance, reliability and accessibility of technical support, and proactive communication of updates and solutions. The aforementioned service components are crucial in educational institutions as they play an important role in ensuring the seamless integration and functioning of technology, which is necessary for the uninterrupted flow of learning activities (Lebedeva et al., 2021). In addition, educators and administrators often rely on excellent service quality to ensure that technology enhances, rather than hinders, the educational process. Although the influence of service quality on customer satisfaction and loyalty is widely recognized, there is a lack of empirical research that specifically examines how various aspects of service quality influence the loyalty of educational institutions and individuals towards smart classroom vendors. The lack of a focused study points to an important area that requires additional investigation. This research could provide important insights into how specific methods can be developed to improve customer

service and support in the technology-driven industry (Prihanto, & Annas, 2023; Ramovš, & Milfelner, 2023).

Furthermore, previous research on customer loyalty in the smart classroom products industry primarily emphasizes general factors such as product quality and pricing, rather than thoroughly examining the intricate details and multi-layered elements of customer loyalty in this specific context (Nareswari et al., 2023; Mwazuna, & Museve, 2023). Due to the unique characteristics of the smart classroom industry, such as the rapid development of technology, the incorporation of modern teaching methods, and the increasing importance of digital learning solutions, it is imperative to conduct more detailed studies. These studies should consider the industry-specific aspects that impact customer loyalty, such as the impact of technical innovations, user interface design, software and hardware reliability, and how well these products align with educational standards and outcomes. In addition, the sector's unique environment of many end-user groups, including students, faculty and institutional administrators, requires a specialized approach to understanding how each group views value and cultivates loyalty. In education, the factors that typically drive loyalty in consumer electronics or enterprise software may not be fully applicable. This is because in an educational context, desired outcomes include not only usefulness and reliability, but also effectiveness in promoting education and consistency with educational goals (Rahayu et al., 2023; Wong et al., 2023). A more thorough investigation of the influence of these specific characteristics, such as the flexibility of smart goods in meeting changing educational needs, the level of support offered during the transition, and the actual educational benefits derived from the use of these products, could therefore provide valuable insights into their impact on loyalty. These insights would not only address a serious lack of information in the current body of knowledge, but also provide guidance to product manufacturers and educational institutions to make well-informed decisions that improve customer enjoyment quality and loyalty over a long period of time.

Thus, there is a clear need for further research on the influence of corporate brand competitiveness and service quality on customer loyalty when using smart educational items. Researchers can offer valuable insights to companies in the smart classroom products sector by examining the specific drivers of customer loyalty and filling the gaps in the existing literature. This research can help these companies improve their competitive advantage and build strong customer relationships. Accordingly, the research objectives include: 1) to study customer loyalty in the use of smart products in the classroom, categorized by personal information; 2) to investigate the influence of corporate brand competitiveness on customer loyalty when using smart classroom products; and 3) to investigate the influence of service quality on customer loyalty when using smart classroom products. The study helps global businesses in accounting and finance understand the importance of investing in brand and service quality to enhance customer loyalty, which results in stable revenue, increased business value and reduced risk of losing customers to competitors.

LITERATURE REVIEW

Corporate Brand Competitiveness

Corporate brand competitiveness is widely recognized as a critical determinant of a company's success, yet scholars debate its dimensions and the mechanisms through which it drives competitiveness. On one hand, Veselinova et al. (2016) argue that corporate brand competitiveness hinges on a company's ability to leverage its brand as an intangible asset, capable of delivering a sustained competitive advantage. This aligns with Lučić and Radnović's (2015) assertion that a strong corporate brand fosters distinctiveness in a saturated market, enabling firms to influence consumer choices and enhance market success. However, this perspective is challenged by Biaowen (2014), who emphasizes the evolving role of corporate branding in the Web 2.0 era, arguing that digital platforms now play a pivotal role in brand competitiveness, pushing organizations to innovate continually in online spaces. While competitive intelligence is crucial for understanding market trends and gaining a strategic edge (Jasima et al., 2020), some scholars contend that communicative capacities are equally vital. Khanlarov et al. (2020) suggest that effective communication—particularly through digital mediums—boosts brand loyalty and satisfaction, which are essential for sustaining competitiveness. Meanwhile, pivotal merits such

as resource allocation and differentiation strategies (Hosseini et al., 2014) are viewed as foundational by some researchers, yet others like Lopes and Duguid (2010) argue that intangible assets, such as corporate branding, have become the primary drivers of competitiveness in an increasingly digital and globalized marketplace. Organizational capacities further complicate the debate, with scholars like Baruel Bencherqui and Kefi (2014) highlighting the importance of aligning corporate branding with organizational learning to enhance competitiveness. However, as companies grapple with fluctuating market conditions and consumer preferences, the role of corporate brand competitiveness remains contentious. Although there is consensus on its importance, scholars differ on which sub-dimensions—competitive intelligence, pivotal merits, communicative capacities, or organizational capacities—are most decisive in sustaining competitive advantage (Lučić & Radnović, 2015; Hosseini et al., 2014).

Service Quality

Service quality, a critical factor in organizational success, has been extensively studied with varying definitions and models emphasizing its importance across industries. Some scholars, such as Udayalakshmi and Sridevi (2023), argue that service quality is primarily determined by how well a business meets consumer expectations, while Jashireh et al. (2016) and Tănăsă et al. (2014) emphasize the role of service performance in relation to those expectations. Central to the discussion of service quality are five sub-dimensions: reliability, responsiveness, assurance, empathy, and tangibility. The debate on the significance of these dimensions suggests that reliability, the consistency and dependability of a service, is often seen as foundational, with scholars like Alizadeh et al. (2022) highlighting its financial and operational benefits in sectors such as distribution and telecommunications. On the other hand, responsiveness, the promptness in addressing customer needs, is equally critical, especially in industries where timely intervention directly impacts customer satisfaction, as demonstrated by Yusefi et al. (2022) in retail and healthcare settings. However, while responsiveness may foster immediate customer gratification, assurance, which pertains to trust and confidence in the service, is pivotal for long-term client relationships, particularly in sensitive fields like banking and pharmaceuticals (Patil et al., 2023; Schönberger et al., 2022). Empathy, the ability to understand and care for customer needs, also plays a vital role, with Cadet and Sainfort (2023) arguing that it not only enhances customer satisfaction but also mitigates employee burnout, especially in healthcare. Yet, some debate that the impact of empathy might vary depending on customer expectations and the context of service interactions, as suggested by Tashtoush (2022). Tangibility, the physical elements of service, while often undervalued, is crucial in industries like hospitality and healthcare, where the physical environment directly influences customer perceptions (Hasan et al., 2008; Panda & Das, 2014).

Customer Loyalty

Customer loyalty is a critical determinant of business success, comprising two key dimensions: behavioral loyalty and attitudinal loyalty. Behavioral loyalty refers to repeat purchases and the continuous use of a company's services, and it is often cited as a direct reflection of customer satisfaction with factors like service quality, security, and privacy (Ikhsan et al., 2022). Some researchers argue that behavioral loyalty is the most tangible measure of a customer's commitment to a brand, as it involves concrete actions like repurchases or service usage (Imtiaz et al., 2022). However, others contend that attitudinal loyalty—defined as the emotional attachment and positive perception a consumer holds towards a brand—is equally, if not more, important, as it is an essential precursor to behavioral loyalty (Suresh & Bhavadharani, 2021). Attitudinal loyalty fosters a deeper connection between customers and brands, which in turn influences their future behaviors, such as continued patronage and brand advocacy (Keeling et al., 2022). Critics of a sole focus on attitudinal loyalty point out that positive attitudes do not always translate into repeat purchases, particularly in sectors where switching costs are low or competition is high (Agha et al., 2021). On the other hand, behavioral loyalty without attitudinal loyalty may result in customers leaving the brand as soon as a competitor offers better incentives or lower prices (Carmen & Marius, 2016). Therefore, scholars like Zhou (2021) emphasize the need for a dual focus that integrates both dimensions, as strong attitudinal loyalty can enhance

behavioral loyalty, leading to sustained engagement and long-term brand success. Measuring both dimensions is crucial, as relying solely on one could provide a misleading view of customer loyalty. Moreover, the role of customer satisfaction, trust, technology adoption, and service quality is pivotal in shaping both behavioral and attitudinal loyalty, as satisfied and committed customers are more likely to make repeat purchases and recommend the brand to others (Salleh et al., 2018; Khairawati, 2020; Gautam, & Sah, 2023; Shariffuddin et al., 2023). Additionally, customer loyalty in ed-tech may be influenced by national education policies that determine technology adoption and implementation effectiveness. Policies that promote digital transformation in education, such as government programs supporting smart classrooms, may help foster both behavioral and attitudinal loyalty by ensuring quality and continuity of technology use, which in turn helps build trust and long-term user engagement.

Conceptual Framework and Hypothesis Development

There is evidence suggesting that individual factors such as age, education, and occupation can affect loyalty to technological products like smart classrooms (Alfoudari et al., 2023). However, some argue that these variations in personal data may not have a significant impact, as loyalty could be more influenced by overall satisfaction with the product itself rather than demographic differences (Li, 2024). Thus, while personal information might offer some explanatory power in understanding loyalty, it could be secondary to other factors such as product quality and user experience. In addition, some studies suggest that companies with strong brands can differentiate themselves in the marketplace, which leads to increased customer trust and loyalty (Jacksen et al., 2021; Pham et al., 2019). Critics might argue that corporate brand competitiveness alone cannot guarantee loyalty, as other elements like pricing and technological capabilities may have a greater influence. Nonetheless, the importance of a competitive brand is well-established in fostering an emotional connection with consumers, making this hypothesis compelling. Finally, superior service quality—manifested in elements such as reliability, responsiveness, and assurance—has been shown to significantly affect customer loyalty in various sectors (Esmaeilpour et al., 2016; Nobar & Rostamzadeh, 2018). Critics may argue that while service quality is important, it may not be the sole driver of loyalty, especially in technology-driven environments where product features and innovation are crucial. Accordingly, the hypothesis as well as the conceptual framework can be developed as follows.

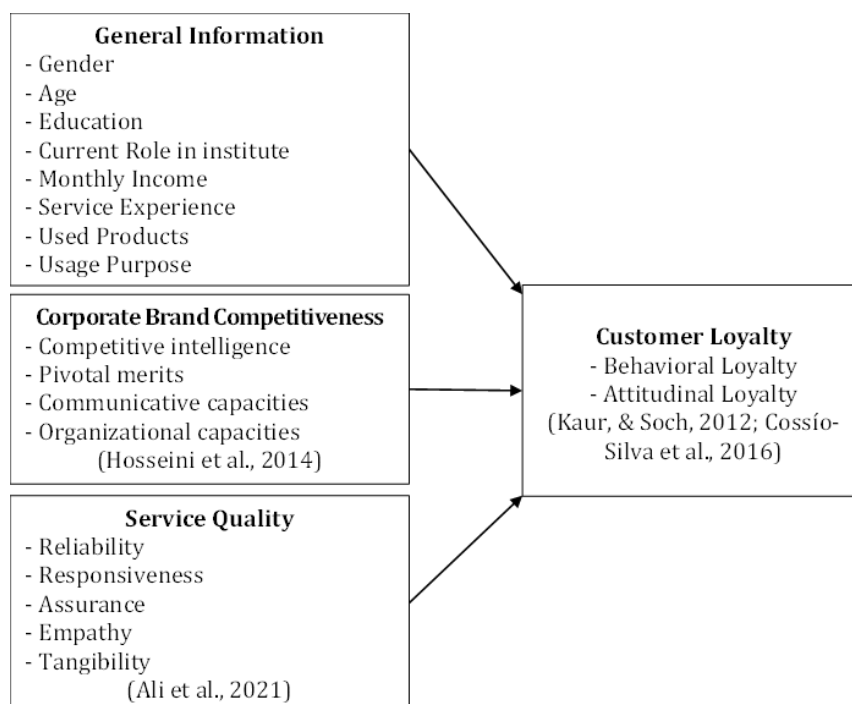


Figure 1. Conceptual Framework

Hypothesis Development

Hypothesis 1: Customers with different personal information have a different customer loyalty when using smart classroom products.

Hypothesis 2: Corporate brand competitiveness has an influence on customer loyalty when using smart classroom products.

Hypothesis 3: Service quality has an influence on customer loyalty when using smart classroom products.

METHODOLOGY

The research adopts a descriptive design, focusing on evaluating smart classroom products by gathering data from three key stakeholder groups: teachers and educators, students, and administrative staff. These groups are selected to provide a comprehensive understanding of how these technologies are utilized and perceived in educational settings. A sample size of 400 participants was determined using Cochran's formula, ensuring a statistically significant representation of the population. The convenience sampling method is employed due to its practicality, allowing for easy access to participants, although it introduces potential biases as it may not represent the entire population. This method is chosen due to resource limitations, acknowledging the possibility that participants might share characteristics that could skew the results.

Data is collected through a structured questionnaire, designed systematically to capture detailed insights on corporate brand competitiveness, service quality, and customer loyalty in the context of smart classroom technologies. The questionnaire includes multiple-choice questions for general demographic data and employs a five-point Likert scale to measure variables related to corporate brand competitiveness, service quality, and customer loyalty, allowing for nuanced responses across a range of attitudes. The instruments undergo a rigorous validation process using the Index of Item Objective Congruence (IOC), as suggested by Jusoh (2018), with a panel of three experts reviewing the relevance of the items. Reliability is further tested through Cronbach's alpha, with values exceeding the recommended threshold of 0.70, indicating strong internal consistency across variables (Amirrudin, Nasution, & Supahar, 2021). Data collection involves distributing questionnaires to teachers, students, and administrative staff to gather diverse perspectives on the usage, effectiveness, and challenges of smart classroom products. Before the full deployment, a pilot test with 30 participants ensures clarity and reliability of the instrument.

Once data is collected, it is subjected to a cleaning process to eliminate any incomplete or inaccurate responses. The cleaned data is then coded for analysis using descriptive and inferential statistical methods. Descriptive statistics, such as mean and standard deviation, provide a summary of respondent characteristics and average perceptions. Inferential statistics, including independent sample t-tests, One-way ANOVA, and regression analysis, are used to explore relationships between variables, such as the impact of service quality on customer loyalty. The regression analysis also includes diagnostic tests like Tolerance and Variance Inflation Factor (VIF) to check for multicollinearity, ensuring the reliability of the model. The study thus employs a robust methodological framework, combining rigorous instrument validation, reliable sampling techniques, and comprehensive data analysis to draw meaningful conclusions about the effectiveness of smart classroom technologies in educational environments.

RESULTS

Profile of Respondents

Summary of the analysis of respondents' general data revealed that the majority of respondents were male, accounting for 205 individuals (51.25 %). The predominant age group was between 31 and 40 years, comprising 132 respondents (33.00 %). A significant portion of the respondents held a bachelor's degree, totaling 195 individuals (48.75 %). The majority were employed as teachers or educators, with 199 respondents (49.75 %). Regarding income, 195 respondents (48.75 %) reported an average monthly income exceeding 5,000 CNY. In terms of service

experience, 161 respondents (40.25 %) had 3-4 years of experience. The most frequently used product was the Interactive Whiteboard (Smart Board), utilized by 89 respondents (22.25 %). The primary purpose for using the service was to enhance efficiency and productivity in both studying and working, as indicated by 102 respondents (25.50 %).

Service Quality, Corporate Brand Competitiveness, and Customer Loyalty

Table 1. Mean, Standard Deviation and Interpretation of Service Quality, Corporate Brand Competitiveness, and Customer Loyalty

Variables	Mean	Standard Deviation	Interpretation
Corporate Brand Competitiveness	3.71	0.73	High
- Competitive intelligence	3.72	1.01	High
- Pivotal merits	3.73	1.01	High
- Communicative capacities	3.62	1.05	High
- Organizational capacities	3.78	0.98	High
Service Quality	3.65	0.75	High
- Reliability	3.65	1.08	High
- Responsiveness	3.53	1.12	High
- Assurance	3.65	1.10	High
- Empathy	3.72	1.05	High
- Tangibility	3.69	1.02	High
Customer Loyalty	3.70	0.85	High
- Behavioral Loyalty	3.65	1.12	High
- Attitudinal Loyalty	3.75	0.99	High

Table 1 shows that all variables across these three categories are rated as “high.” For corporate brand competitiveness, the mean scores range from 3.62 to 3.78, with “organizational capacities” receiving the highest score. The overall mean for corporate brand competitiveness is 3.71. Service quality also shows consistently high ratings, with individual dimensions like “empathy” and “tangibility” receiving the highest scores, and a total mean of 3.65. Customer loyalty is similarly high, with “attitudinal loyalty” scoring 3.75 and “behavioral loyalty” scoring 3.65, leading to an overall mean of 3.70. All variables indicate strong performance in their respective areas.

Hypothesis Testing

Hypothesis 1: Customers with different personal information have a different customer loyalty when using smart classroom products.

Table 2. Hypothesis testing results of different personal information on customer loyalty

Personal Information	Customer Loyalty	
	t-value / F value	Sig.
Gender	t = 1.598	Sig. = .111
Age	F = 0.348	Sig. = .845
Education	F = 0.450	Sig. = .638
Current Role in Institute	F = 0.156	Sig. = .856
Average Monthly Income	F = 1.345	Sig. = .259
Service Experience	F = 0.478	Sig. = .698
Used Products	F = 0.832	Sig. = .545
Usage Purpose	F = 0.816	Sig. = .539

Table 2 indicates hypothesis testing results which show that none of the personal information factors, such as gender, age, education, current role, income, service experience, used products,

or usage purpose, significantly affect customer loyalty. All the significant values are above the .05 threshold, indicating no meaningful relationship between these variables and customer loyalty in this study.

Hypothesis 2: Corporate brand competitiveness has an influence on customer loyalty when using smart classroom products.

Table 3. Hypothesis testing results of corporate brand competitiveness on customer loyalty

Corporate Brand Competitiveness	b	Std. Error	β	t	Sig.	Tolerance	VIF
Constant	.821	.148		5.545	.000		
- Competitive intelligence	.456	.035	.543	13.030	.000	.635	1.574
- Pivotal merits	.158	.036	.188	4.403	.000	.604	1.655
- Communicative capacities	.085	.029	.106	2.942	.003	.859	1.165
- Organizational capacities	.076	.031	.088	2.430	.016	.845	1.183
R = .751, R ² = .564, Adjusted R ² = .559, SE _{EST} = .562, F = 127.570, Sig. = .000							

Table 3 indicates that corporate brand competitiveness, specifically competitive intelligence, pivotal merits, communicative capacities, and organizational capacities, has a statistically significant influence on customer loyalty in using smart classroom products of Beijing Oriental Zhongruan Digital Technology Co., Ltd. at the .05 level, with a predictive power of 55.9% (Adjusted R² = 0.559) and a standard error of 0.562 (SE_{EST} = 0.562). Furthermore, the results of the multicollinearity test revealed that the Tolerance values ranged from 0.604 to 0.859, which is above the 0.100 threshold, and the VIF values ranged from 1.165 to 1.655, which is well below the 10.000 threshold, indicating that the independent variables did not exhibit multicollinearity issues. Among the dimensions of corporate brand competitiveness, competitive intelligence (β = .543) was found to have the most substantial influence on customer loyalty in using smart classroom products of Beijing Oriental Zhongruan Digital Technology Co., Ltd. This was followed by pivotal merits (β = .188), communicative capacities (β = .106), and organizational capacities (β = .088), in descending order of their impact.

Hypothesis 3: Service quality has an influence on customer loyalty when using smart classroom products.

Table 4. Hypothesis testing results of service quality on overall customer loyalty

Service Quality	b	Std. Error	β	t	Sig.	Tolerance	VIF
Constant	1.256	.170		7.375	.000		
- Reliability	.211	.038	.268	5.575	.000	.690	1.450
- Responsiveness	.066	.035	.087	1.857	.064	.731	1.368
- Assurance	.096	.036	.125	2.699	.007	.747	1.339
- Empathy	.197	.038	.244	5.194	.000	.722	1.384
- Tangibility	.097	.037	.117	2.636	.009	.815	1.227
R = .608, R ² = .370, Adjusted R ² = .362, SE _{EST} = .676, F = 46.214, Sig. = .000							

From Table 4 indicates that service quality, specifically reliability, assurance, empathy, and tangibility, has a statistically significant influence on customer loyalty in using smart classroom products of Beijing Oriental Zhongruan Digital Technology Co., Ltd. at the .05 level, with a predictive power of 36.2% (Adjusted R² = 0.362) and a standard error of 0.676 (SE_{EST} = 0.676). Furthermore, the results of the multicollinearity test revealed that the Tolerance values ranged from 0.690 to 0.815, which is above the 0.100 threshold, and the VIF values ranged from 1.165 to 1.655, which is well below the 10.000 threshold, indicating that the independent variables did

not exhibit multicollinearity issues. Among the dimensions of service quality, reliability ($\beta = .268$) was found to have the most substantial influence on customer loyalty in using smart classroom products of Beijing Oriental Zhongruan Digital Technology Co., Ltd. This is followed by empathy ($\beta = .244$), assurance ($\beta = .125$), and tangibility ($\beta = .117$) in descending order of their impact.

DISCUSSION AND IMPLICATIONS

From the study, the result indicated that customers with different personal information, including gender, age, education, current role in institute, average monthly income, service experience, used products, and usage purpose, do not have a different loyalty when using smart classroom products. This is because customer loyalty is driven more by service quality and satisfaction rather than personal demographic factors. Also, loyalty can be influenced by the emotional connection customers develop with the product or service rather than demographic variables (Kaligis et al., 2023). However, some scholars argued that personal information such as gender, age, and income may have minimal impact on loyalty due to the overarching influence of factors like competitive intelligence, pivotal merits, communication skills, and organizational capabilities, as previously highlighted. For instance, research by Veselinova et al. (2016) and Lučić and Radnović (2015) emphasizes that loyalty is more directly influenced by a company's ability to differentiate itself and offer strong customer service, independent of customers' demographic differences. In line with this, Esmaeilpour et al. (2016) argue that customer satisfaction—driven by competitive intelligence and key merits—is a universal factor in building loyalty, unaffected by the individual's specific background. However, opposing viewpoints suggest that demographic factors can indeed influence customer loyalty. For example, Hosseini et al. (2014) noted that customers with different roles or experiences might respond differently to a brand's strategic initiatives, especially regarding innovation and market adaptability. Nobar and Rostamzadeh (2018) found that customers from higher-income brackets or those with extensive service experience might expect more from product quality and customer service, influencing their loyalty. Furthermore, Pham et al. (2019) highlighted that users' specific roles or purposes of product usage could impact their level of satisfaction, subsequently affecting their loyalty to the brand.

In addition, the study indicated that corporate brand competitiveness, including competitive intelligence, pivotal merits, communicative capacities, and organizational capabilities, highly influences customer loyalty in using smart classroom products is well-supported but warrants a nuanced debate. Competitive intelligence, as found by Hosseini et al. (2014), has the greatest influence on customer loyalty, as it enables a company to innovate and meet market demands. This aligns with findings from Veselinova et al. (2016) that brands utilizing competitive intelligence build customer trust and loyalty by staying ahead of market trends. Esmaeilpour et al. (2016) further support this by noting that competitive intelligence enhances brand equity, which in turn influences loyalty. However, some argue that while competitive intelligence is crucial, it is not always the most dominant factor. For example, Lučić and Radnović (2015) claim that pivotal merits, like excellent customer service, also play a vital role in fostering loyalty. In highly competitive markets, brands that differentiate through exceptional service gain a competitive edge and boost customer satisfaction, as Nobar and Rostamzadeh (2018) observed in the hotel industry. Furthermore, communication capacities significantly influence loyalty by promoting trust and satisfaction. Khanlarov et al. (2020) found that consistent and effective communication builds emotional connections with customers, thus fostering behavioral loyalty. However, critics may argue that communication is only effective when accompanied by strong product quality or innovative services. Lastly, organizational capacities, though often perceived as less impactful by customers, can indirectly influence loyalty through efficient management and resource allocation (Veselinova et al., 2016). This operational efficiency, while not as visible to consumers, instills confidence in the brand's ability to adapt to market changes, thereby promoting long-term loyalty (Esmaeilpour et al., 2016). While organizational capacity may not be as immediately influential as competitive intelligence or customer service, it remains a vital element in sustaining brand trust and fostering loyalty. Ultimately, the combined effects of these factors highlight the multifaceted nature of brand competitiveness, with each element playing a significant yet varying role in influencing customer loyalty.

Lastly, the study revealed that service quality, including reliability, responsiveness, assurance, empathy, and tangibility, has a high influence on customer loyalty when using smart classroom products. This is because good service quality can ensure that the service consistently meets expectations, building trust and encouraging continued use. Indeed, the study result can be well-supported by several grounds. For example, reliability, often considered the cornerstone of service quality, is widely mentioned to have the greatest impact on customer loyalty, particularly in industries that depend on continuous and reliable service. Parasuraman et al.'s (1991) SERVQUAL model emphasizes reliability as critical for building customer trust, as brands that consistently meet service promises are more likely to retain customers through repeated purchases and recommendations (Tănăsă et al., 2014). Moreover, reliability's direct link to loyalty is evident in many sectors, including fast food (Esmaeilpour et al., 2016). Yet, empathy is equally significant, as it fosters long-term attitudinal loyalty by ensuring customers feel understood and valued, which is vital in the educational technology industry (Tashtoush, 2022). While reliability emphasizes consistent performance, empathy emphasizes personal connection, a critical factor in industries requiring trust and tailored support, such as smart classroom products (Vargo & Lusch, 2004). However, assurance, which relates to customer confidence in employees' expertise and courtesy, has also been proven to enhance trust and loyalty, especially when customers rely on professionals for solutions (Zeithaml, 2000). Studies from various industries, including hospitality and education, affirm that assurance strengthens long-term customer trust and satisfaction (Jacksen et al., 2021). Nonetheless, tangibility or the physical aspects of service are often viewed as secondary in impact. Although customers appreciate modern facilities and accessible platforms, they tend to consider these as baseline expectations, limiting their long-term influence on loyalty (Pham et al., 2019). While tangibility may be fundamental, it does not inspire the same emotional attachment or trust as reliability or empathy. Thus, while all five service quality dimensions influence loyalty, reliability and empathy emerge as the most critical for ensuring both behavioral and attitudinal loyalty, with assurance reinforcing trust through employee competence.

In alignment with result discussion, the study can provide policy and practical recommendations. To enhance corporate brand competitiveness, companies should improve competitive intelligence by forming dedicated teams to collect and analyze market data, enabling quicker innovation and product development. Emphasizing the key benefits of the brand, such as exceptional customer service and strong market positioning, is essential for building customer loyalty. Companies should also focus on improving brand communication through faster, customized interactions using modern tools, while ensuring employees are well-trained in communication skills. Additionally, organizations should continuously invest in developing human resources and processes, fostering innovation, adaptability, and long-term customer trust and loyalty. Meanwhile, to ensure high service quality, companies should focus on reliability by developing consistent standards and quickly addressing customer issues to build trust and loyalty. Empathy is crucial, requiring employees to listen carefully and respond to individual customer needs, fostering strong relationships. Assurance involves training employees to be professional and knowledgeable, ensuring they can resolve queries efficiently, which enhances trust in their capabilities. Lastly, tangibility emphasizes maintaining up-to-date, user-friendly facilities and platforms, particularly online, to improve customer experience and encourage repeat business. These strategies collectively promote customer satisfaction and long-term loyalty.

LIMITATIONS AND FUTURE RESEARCH POSSIBILITIES

The limitations in the existing research on brand competitiveness and customer loyalty include a lack of focus on the impact of emerging digital technologies such as AI and Big Data analytics, as well as insufficient comparative studies across different industries. Additionally, there is a gap in understanding how proactive customer service, particularly in technology-driven sectors, influences customer loyalty. Similarly, the relationship between corporate sustainability and customer loyalty remains underexplored, particularly in terms of how sustainable business practices influence consumer behavior. These gaps highlight several future research possibilities. For example, future studies could explore how AI and Big Data analytics impact brand

competitiveness and customer loyalty by examining the role of personalized digital interactions. Comparative studies across industries could offer insights into sector-specific loyalty drivers, while research into proactive customer service could reveal its influence on customer retention in complex technological products. Furthermore, future research should focus on the relationship between corporate sustainability and customer loyalty, exploring how eco-friendly and socially responsible practices align with customer values and affect repurchase behavior. These areas of exploration would provide a deeper understanding of brand loyalty in an evolving market landscape.

CONCLUSION

The study concludes that both corporate brand competitiveness and service quality significantly influence customer loyalty in the smart classroom products industry. Key findings reveal that factors such as competitive intelligence, pivotal merits, communicative capacities, and organizational capacities are pivotal drivers of loyalty, with competitive intelligence having the most substantial impact. Additionally, service quality dimensions such as reliability, empathy, assurance, and tangibility were found to play crucial roles in fostering both behavioral and attitudinal loyalty, with reliability and empathy emerging as the most influential. Contrary to expectations, demographic factors such as gender, age, and occupation did not significantly affect customer loyalty, emphasizing the overarching importance of product satisfaction and service quality. The research highlights the growing significance of brand differentiation and excellent customer service in the rapidly evolving smart classroom industry. These findings contribute to the broader understanding of how brand strategies and service quality shape customer loyalty, particularly in technology-driven educational environments, offering valuable insights for organizations aiming to enhance their competitive advantage and customer retention.

CONFLICTS OF INTEREST

The author declares that there are no conflicts of interest found in this research.

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