

## CUSTOMER LOYALTY IN INDONESIAN SHARIA BANKS: INTEGRATING FINANCIAL ASPECTS, FINTECH APPLICATIONS, AND THE CARTER MODEL

Helmi Muhammad<sup>1</sup>, Niki Puspita Sari<sup>2</sup>

<sup>1,2</sup> Faculty of Economics and Business, Universitas Islam Raden Rahmat,  
Raya Mojosari Street, Malang, East Java, 65163, Indonesia

✉ Corresponding Author:

Nama Penulis: Helmi Muhammad

E-mail: [helmimuhammad@uniramalang.ac.id](mailto:helmimuhammad@uniramalang.ac.id)

### Abstract

*As a competitive strategy, Bank Syariah Indonesia (BSI) is interested in emphasizing service quality, with a focus on customer loyalty and referral. The CARTER model is becoming increasingly popular among researchers as a tool for evaluating the quality of services provided by Islamic banks. This study seeks to investigate the effects of financial aspects, FinTech use, and CARTER model dimensions on BSI customer loyalty. The study included all customers of BSI Malang across three areas: Malang City, Batu City, and Malang Regency, with a sample size of 100 respondents. The data were analyzed using multiple linear regression. The findings indicate that the financial aspects, FinTech use, and CARTER model dimensions have a significant effect on BSI customer loyalty. Compliance (adherence to Sharia principles) was the most important factor in the CARTER dimension, followed by assurance, reliability, empathy, and responsiveness. Although the financial aspects and tangibility are considered part of the service quality dimension, they do not significantly contribute to BSI customer loyalty. In addition to cultivating technical skills in its workforce, BSI relies on the practical implications of Sharia compliance to enhance its competitive strategy.*

**Keywords:** Financial Aspects; FinTech Applications; CARTER Dimensions

### Abstrak

Bank Syariah Indonesia (BSI) berkepentingan untuk fokus pada kualitas layanan sebagai strategi bersaing. Fokus utamanya adalah loyalitas pelanggan serta bagaimana mereka merekomendasikan orang lain. Dukungan para peneliti semakin besar terkait evaluasi kualitas layanan perbankan syariah menggunakan model CARTER. Penelitian ini bertujuan menguji pengaruh Aspek Finansial, Aplikasi FinTech dan dimensi model CARTER terhadap loyalitas nasabah BSI. Populasi penelitian ini adalah seluruh nasabah BSI area Malang yang meliputi tiga wilayah yaitu Kota Malang, Kota Batu dan Kabupaten Malang dengan jumlah sampel 100 responden. Analisis data menggunakan linier regresi berganda setelah penyebaran kuesioner dilakukan. Hasil penelitian menunjukkan bahwa secara simultan aspek keuangan, aplikasi FinTech dan dimensi model CARTER berpengaruh signifikan terhadap loyalitas



nasabah BSI. Dalam Dimensi CARTER, compliance (kepatuhan pada prinsip syariah) menjadi faktor dominan diikuti dimensi lain seperti assurance, reliability, empathy dan responsiveness. Aspek keuangan dan dimensi tangible tidak memberikan kontribusi signifikan terhadap loyalitas nasabah BSI meskipun tetap diperhatikan sebagai bagian dari dimensi kualitas layanan. Implikasi praktis berkaitan kepatuhan kepada syariah di BSI menjadi acuan utama selain pengembangan kemampuan sumber daya insani terkait keterampilan teknis.

**Kata kunci:** Aspek Keuangan; Aplikasi FinTech; Dimensi CARTER

## INTRODUCTION

Service quality is recognized as a competitive strategy in a competitive business environment (Fauzi & Suryani, 2019; Gandhi et al., 2019). Service quality aims to increase market growth and profits (Rust & Zahorik, 1993), as well as establish a sustainable competitive advantage (Olorunniwo et al., 2006). Empirical evidence demonstrates that companies that prioritize service quality are more likely to increase sales, profits, and efficiency (Kassim & Asiah Abdullah, 2010). This implies that customer satisfaction serves as an effective promotional medium, particularly for the dissemination of positive information. This has a positive impact on attracting new customers (Bolton & Drew, 1991).

Service quality holds significant sway in service sectors, such as banking, and is acknowledged as the foremost competitive advantage (Stafford, 1996). The focus is on customer satisfaction and loyalty, as well as how they recommend others. Studies have shown that service quality has a positive impact on reducing customer complaints and increasing customer trust (Misbach et al., 2013; Pakurár et al., 2019). Previous researchers have described service standards as the key to increasing income (Hollis & Verma, 2015). Service quality, which focuses on customer satisfaction, is a significant achievement in the new banking world, and serves as a crucial marketing strategy (Lenka et al., 2010). Given the dynamic nature of the banking industry, there is a critical need to prioritize attracting and retaining potential customers.

The service quality measurement model emphasizes the importance of customer perceptions and expectations of reality and needs (Gayatri & Chew, 2013). Similarly, other researchers have assessed service quality based on customer behavior (Farrell et al., 2001). Consequently, the service quality perceived by the service provider differs from the customer's perception.

In contrast, Kashif et al. (2015) argue that measuring service quality is a cultural phenomenon unrelated to perceptions and marketing strategies. As a result, marketers have been advised to consider the sociocultural context of their customers. For example, before offering service products, consider



various challenges and sensitive scales owing to cultural and religious differences (Hossain & Leo, 2009; Kueh & Ho Voon, 2007; Malhotra et al., 2005). Given these differences, experts are yet to identify an appropriate measure of service quality in existing measurement models.

In the development of measurement models, researchers have added financial aspects as a new dimension that profoundly affects service quality (Sharma, 2016). The financial aspect prioritizes customers as a key factor in financial gains. This has a positive effect on customer satisfaction. Competitive savings and loan interest rates significantly impact customer choice. Customers compare the fees charged by different banks and choose the most suitable option (Chochol'áková et al., 2015). Profit-sharing policy refers to the price offered by Islamic banks that do not recognize interest. Islamic banks offer competitive profit-sharing margins for deposits and loan products. Furthermore, Islamic bank customers consider other factors such as penalty determination and customer treatment. Consequently, the financial aspect shapes customer behavior and satisfaction, ultimately reflecting a bank's profitability.

Volatile market conditions make it difficult for Islamic banks to win consumers' hearts if they do not provide good services. This can only be accomplished by offering them the most recent technological applications and services available (Alnsour, 2022). The most recent advancement, SERVQUAL, as a financial service quality model, was conducted in conjunction with fintech applications (Verma, 2023). Islamic banks face challenges in delivering high-quality services to customers because of the need for fintech technologies. Several aspects of fintech must be considered, including technological innovation in financial business models (Gomber et al., 2018; Schindler, 2017). Service providers should pique consumers' attention and shift their perceptions in a favorable direction by providing satisfactory services. The goal is to consistently increase service quality, while remaining technologically oriented.

Researchers have used the CARTER model to assess the quality of Islamic banking services (Dandis & Wright, 2020; Fauzi & Suryani, 2019). This model is a modification of the SERVQUAL model (Parasuraman et al., 1988), which does not account for cultural factors. Other researchers argue that the SERVQUAL model's dimensions, namely assurance, reliability, tangibility, empathy, and responsiveness, focus on measuring perceived quality but make no distinction between attitudes, religion, regionalism, and culture (Cronin & Taylor, 1992). Others argue that religion frequently influences consumer attitudes and decisions (Kotler & Armstrong, 2018). Consequently, the CARTER model was developed by adding dimensions to the SERVQUAL model (Othman & Owen, 2001). This dimension relates to religious beliefs that



influence purchasing decisions. Compliance, assurance, dependability, tangibility, empathy, and responsiveness are the CARTER dimensions.

Research has focused on evaluating Islamic banking services by using the CARTER model. In Saudi Arabia, the unique compliance dimension is not an absolute factor that drives satisfaction (Lone et al., 2017), whereas reliability is the primary driver of Indonesian Islamic banking customer satisfaction (Fauzi & Suryani, 2019). Other findings indicate that assurance is a service quality dimension that drives customer satisfaction in Islamic banking in Bahrain (Janahi & Al Mubarak, 2017). The study of service quality is likely to continue because of the disparities in findings across countries. It is especially important to conduct research on service quality and loyalty. Experts consider loyalty to be the most important relationship marketing factor (Abdullah et al., 2014; Callarisa Fiol et al., 2009). Islamic banks should focus on maintaining long-term relationships through service quality to gain customer loyalty.

Assessing financial aspects and fintech in service quality has never been scientifically verified, let alone relate to the CARTER dimension. Dandis and Wright (2020) investigated the CARTER model components of attitudinal loyalty. The findings indicate that empathy, assurance, and compliance have the greatest influence on attitudinal loyalty, whereas other factors are not significant. Fauzi and Suryani (2019) used the CARTER model to evaluate the quality of Sharia banking services, and all factors had significant effects. However, a new study (Jawaid et al., 2023) contradicts this, with CARTER service quality indicators showing a positive and significant relationship with customer satisfaction in the external customer model. However, several CARTER indicators have no significant impact on internal customers. The findings of previous studies show that investigations on service quality utilizing the CARTER model provide diverse results and are amenable to further investigation with numerous developments.

There is an urgent need to fill this area for further research. This study bridges this gap by investigating financial aspects and fintech applications connected to the CARTER dimension at Bank Syariah Indonesia (BSI). As Indonesia's largest Sharia bank, BSI is interested in sustaining its relationship with customer loyalty through financial advice, fintech applications, and the CARTER model.

The objectives of this research are to determine whether financial aspects, fintech applications, and CARTER model dimensions influence loyalty and to explore which dimensions contribute the most. This approach is expected to identify the extent to which customers use Sharia banking. In addition, compliance with Sharia principles provides a competitive advantage that conventional banking lacks, thereby seeking strategic recommendations for the advancement of Sharia banking in Indonesia.



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## LITERATURE REVIEW

### Theory of Planned Behavior

Studies have used the theory of planned behavior (TPB) to predict individuals' behavioral intentions and actual conduct (Arkorful et al., 2020). Individual behavior is heavily influenced by behavioral intentions in various activities. TPB predicts the intention to carry out a behavior based on three antecedents: attitude, subjective norms, and perceived behavioral control (Ajzen, 2020). TPB theory is regarded as a valuable model because it provides a suitable conceptual framework for addressing the complexities of human behavior, elaborating on attitudes, subjective norms, and perceived behavioral control. Collectively, these important TPB variables generate consumer intent, which drives customer behavior. This theory was established to analyze particular actions in diverse contexts such as Internet banking, e-commerce, and intends to use technology (Aldammagh et al., 2021; Apau & Koranteng, 2019; Karniawati et al., 2021).

Attitude is a psychological construct generated by a variety of components, including cognitive appraisal (thinking process), beliefs and values, and emotional attachment to any object (Dossey et al., 2015). Behavioral beliefs shape attitudes toward a behavior, which reflects whether the conduct is positive or negative. The link between attitudes toward an activity and intention is clear and favorable. The TPB states that if someone has a positive attitude toward an action, their intentions will also be positive, and vice versa (Ajzen, 1991). Subjective norms include normative beliefs and reveal how others perceive and care about real action. This creates societal pressure to perform specific behaviors (Ajzen, 1991, 2020). Perceived control is the outcome of control beliefs combined with internal control elements, such as emotions, and external control factors, such as market opportunities and threats.

### Service Quality

According to Parasuraman et al. (1988), service quality is a comparison of expectations and perceptions of the service received. Internal management at the company is interested in retaining and attracting customers by achieving service quality as a market-entry strategy (Fararah & Al-Swidi, 2013). Service quality not only maintains customer satisfaction and loyalty but also helps reduce risk (Rauyruen & Miller, 2007). Experts concur that while the service sector is substantial, research on service quality lags behind that of product quality (Douglas & Fredendall, 2004; Zeithaml et al., 2018). The service sector encompasses tangible and intangible elements, with subjective customer perceptions making it a more complex concept than assessing product quality (Silvestro, 1998).



To meet the needs of customers, businesses must provide quality services. Although it is difficult to establish universal service quality standards, Parasuraman et al. (1988) proposed the SERVQUAL model, which includes five dimensions of service quality: assurance, reliability, tangibility, empathy, and responsiveness. This model has gained widespread acceptance during its evolution, and it is now used not only in the banking sector but also in the health sector, supply chain, business schools, and restaurants (DeMoranville & Bienstock, 2003). The SERVQUAL model, on the other hand, does not link the dimensions of attitude, religion, regionalism, and culture (Cronin & Taylor, 1992). Others argue that religion frequently influences consumer attitudes and decisions (Kotler & Armstrong, 2018). As a result, the CARTER model is developed by adding dimensions to the SERVQUAL model (Othman & Owen, 2001). This dimension is related to religious beliefs that influence purchasing decisions. Meanwhile, other researchers modified SERVQUAL and included financial aspects as a new dimension that influences service quality (Sharma, 2016).

### **Service Quality in the Islamic Banking Sector**

According to Othman and Owen (2001), research on service quality in the Islamic banking sector is distinct because of the influence of varying cultural norms in different regions or countries. The development of instruments, such as the compliance dimension, stems from these cultural and religious variations. Empirical evidence suggests that Muslim communities prefer services consistent with their Islamic faith (Gayatri & Chew, 2013). The Islamic banking industry's fierce competition requires an increase in service quality to differentiate itself from its competitors. Financial aspects have a favorable influence on consumer behavior and happiness, which reflects a bank's profitability and increases loyalty. Furthermore, fluctuating market conditions make it difficult for Islamic banks to compete. This can only be accomplished by offering clients the most up-to-date technological applications and the greatest services possible via fintech applications. Furthermore, the development of the dimensions of the CARTER model substantially adds to measuring the quality of Sharia banking services in various parts of the world. Moreover, the financial aspect, as a modification of service quality, is significant in this study.

### **Carter**

The CARTER model was employed to assess the quality of Sharia banking services (Dandis & Wright, 2020; Fauzi & Suryani, 2019). The CARTER model is an extension of the SERVQUAL paradigm (Parasuraman et al., 1988), which lacks consideration for cultural factors. SERVQUAL's development has been the



subject of numerous complaints. First, the SERVQUAL model, which includes assurance, reliability, tangibility, empathy, and responsiveness, only measures perceived quality and makes no distinction between attitudes, religion, regionalism, or culture (Cronin & Taylor, 1992). Second, another school of thought holds that religion frequently influences consumer attitudes and decisions (Kotler & Armstrong, 2018). The CARTER model was built by including elements that influence decision making (Othman & Owen, 2001). Compliance, assurance, reliability, tangibility, empathy, and responsiveness are the CARTER dimensions. Many studies have suggested employing the CARTER model to assess service quality. Most people believe that the dimensions of the CARTER model determine quality (Othman & Owen, 2001; Souiden & Rani, 2015), however, other people dispute (Fauzi & Suryani, 2019).

### **Financial Applications**

Financial technology (fintech) refers to innovative services provided by firms using information and communication technology to add value and assist customers (Lăzăroiu et al., 2020). Fintech has significantly aided financial inclusion, particularly in underdeveloped countries. The most recent SERVQUAL research as a financial service quality model was conducted in partnership with Fintech applications (Verma, 2023). The Sharia banking sector desperately needs efficient Fintech application implementation to meet service quality challenges. According to Alnsour (2022), a dynamic market necessitates Islamic banks to win clients' hearts by providing them with cutting-edge technology applications and services. Fintech is an excellent technique for service providers to pique their clients' attention and transform the opinions of banks in a favorable direction by providing good services. To improve services and sustainability, Islamic banking must focus on technological innovation in its financial business models (Gomber et al., 2018; Schindler, 2017). Fintech qualities such as ease of use, perceived value, consumer assistance, guarantees, speed of service, and innovation (Alnsour, 2022; Barbu et al., 2021) have a vital role in improving services (Le, 2021).

### **Loyalty**

Customer loyalty is characterized by a continuous commitment to a particular brand, driven by the influence of significant individuals, resulting in an enduring relationship (Mascarenhas et al., 2006). This is a long-term, committed, and influential relationship between a company and its customers. Several questions about loyalty include how much customers choose a particular company, how committed they are to the company, how likely they are to recommend it to others, and how positive they believe the company is in comparison to competitors (Dick & Basu, 1994). Customers' loyalty reflects



their positive or negative evaluative feelings toward the company, so they repurchase or recommend it to others.

Loyalty has a long-term positive impact on companies. Dick and Basu (1994) explain that loyalty reduces costs. The basic argument is that acquiring new customers is far more expensive than retaining existing customers. Another advantage of loyalty is that it increases company revenue through cross-selling and customer penetration (Hennig-Thurau et al., 2002). In this context, loyal customers spend more money on goods and use company services. The selected company embedded itself in the customer's subconscious, ensuring that it remained memorable and difficult to forget. The increase in company revenue as a result of loyalty is also due to loyal customers who are less price-sensitive. When a price is raised, customers do not reduce their purchases (Mao, 2009). Thus, identifying and comprehending the key factors that influence loyalty is critical. According to researchers, service quality, in addition to customer satisfaction, is the most important predictor of customer loyalty (Estiri et al., 2011). In the context of Islamic banking, satisfied customers are prone to establish enduring relationships with their banks or exhibiting loyalty (Amin et al., 2013).

## **HYPOTHESIS**

### **Financial Aspect**

Sharma (2016) introduced the financial aspect as a component of service quality, emphasizing its role in prioritizing customers as a financial asset. Financial aspects, including competitive savings and loan interest rates, positively influence customer satisfaction, demonstrating a significant impact. Customers will also compare the reasonableness of the fees charged by different banks and select the most appropriate fees (Chochol'áková et al., 2015). Profit-sharing policy refers to the price offered in the case of Islamic banks that do not recognize interest. Islamic banks offer competitive profit-sharing margins for both deposits and loan products. Furthermore, Islamic bank customers consider other factors such as penalty determination and treatment. As a result, the financial aspect influences customer behavior and satisfaction, which reflects a bank's profitability. Based on the aforementioned description, the following hypothesis is proposed.

H1: The financial aspect has a positive effect on loyalty.

### **Fintech Applications**

Financial technology (Fintech) is an assortment of innovative services provided by businesses using information and communication technologies. It is a combination of finance and technology used to add value and serve





customers (Lăzăroiu et al., 2020). Fintech has contributed significantly to financial inclusion, particularly in underdeveloped countries. Fintech financial services have provided new experiences for communities and small, non-bankable businesses (Asad et al., 2021). Sharia banking must strengthen its efforts to increase client trust. Several researchers have studied fintech and customer behavior; however, there is a considerable gap in the literature on consumer satisfaction and loyalty to Islamic banks (Ali & Raza, 2017; Janahi & Al Mubarak, 2017). In addition, the fintech issue of service quality, as it relates to consumer loyalty, remains an intriguing matter of debate. Fintech's characteristics play an essential role in improving services (Le, 2021). These features include ease of use, perceived value, consumer support, guarantees, service speed, and innovation (Alnsour, 2022; Barbu et al., 2021).

H2: Fintech applications have a positive effect on loyalty

### **Compliance**

Compliance in Islamic banking refers to adherence to Islamic principles in business operations (Janahi & Al Mubarak, 2017). All products and services in Sharia Bank must adhere to Islamic law to be considered ethical and halal (Muhammad, 2020; Muhammad & Sari, 2021). Through this halal principle, Islamic banking can improve customer relationships based on Sharia principles. Several studies of adherence have yielded conflicting results. One of the most important determinants of service quality in Islamic banking is compliance (Othman & Owen, 2001). Other empirical studies have shown a strong relationship between religion and customer attitudes (Souiden & Rani, 2015). Other findings are contradictory, such as compliance with the least importance (Fauzi & Suryani, 2019). While certain findings may contradict one another, none have attained universal acceptance. There are still opportunities for further research. Hence, we formulate the following hypothesis:

H3: Compliance has a positive effect on loyalty.

### **Assurance**

Assurance is defined as Islamic banking staff's knowledge and courtesy, as well as verbal and written communication skills to provide customers with trust and confidence (Othman & Owen, 2001). According to this understanding, Islamic bank employees must be courteous and competent (Janahi & Al Mubarak, 2017). As a result, Islamic bank management must ensure that their staff is properly trained to answer customer questions as a key to service. Several studies show that assurance is an important aspect of service quality in Islamic banking (Abdul Rehman, 2012; Khamis & AbRashid, 2018). This empirical study support is a suggestion for submitting this research hypothesis as follows:



H4: Assurance has a positive effect on loyalty.

### **Reliability**

According to Othman & Owen (2001), reliability is related to the ability of a company to provide services to customers. It is the ability of Islamic banks to provide the promised services on time (Zeithaml et al., 2018). A major factor in marketing is the concept of promises, which must be fulfilled by banking management as part of the service. According to Parasuraman et al. (1988), service reliability is the "core of service," and bank management should seize every opportunity to cultivate the right attitude. In the banking industry, transaction speed is regarded as the most important factor that influences customer satisfaction (Armstrong & Boon Seng, 2000). Several studies of service reliability have shown significant differences. On the one hand, the most influential dimension felt by Islamic banking customers is dependability (Amin et al., 2013; Fauzi & Suryani, 2019; Osman et al., 2009). While the findings of Kashif et al. (2015) revealed that reliability has no significant effect on loyalty. Thus, we propose the following hypothesis:

H5: Reliability has a positive effect on loyalty.

### **Tangibility**

Tangibility refers to the physical appearance of items such as equipment, staff, communication methods, location convenience, facility design, and which contribute to the quality of Islamic banking services (Janahi & Al Mubarak, 2017; Othman & Owen, 2001). Because services are intangible, customers must rely on tangible cues to evaluate them before transacting. It refers to the environment in which the service process occurs between the company and customer via tangible components (Zeithaml et al., 2018). This process encompasses all tangible and visible services that contribute to service quality. Tangible empirical studies yield varying results. Some studies have found that tangibility has no effect on loyalty (Badara et al., 2013), whereas others have found a positive relationship (Choudhury, 2014; Kashif et al., 2015). Thus, we propose the following hypothesis:

H6: Tangibility has a positive effect on loyalty.

### **Empathy**

Empathy shows personalized care Islamic banks extend to their customers (Othman & Owen, 2001). According to Zeithaml et al. (2018) and Parasuraman et al. (1994), the care provided by Islamic banks to customers makes them feel valued and special. This dimension embodies the profile of Islamic bank employees capable of offering personalized attention to customers, aiming to cultivate relationships and ensure longevity rather than

merely promoting product sales. A strong mutual relationship between Islamic banks and their customers is a key factor for service quality. Customers appreciate the service interactions provided if Islamic bank staff respond sympathetically. Empirical evidence supports empathy as the primary driver of the quality of Islamic banking services (Fauzi & Suryani, 2019). Other evidence supports the conclusion that a sympathetic relationship between service members and customers significantly affects loyalty (Butcher et al., 2001). As a result, the author suggests the following hypothesis:

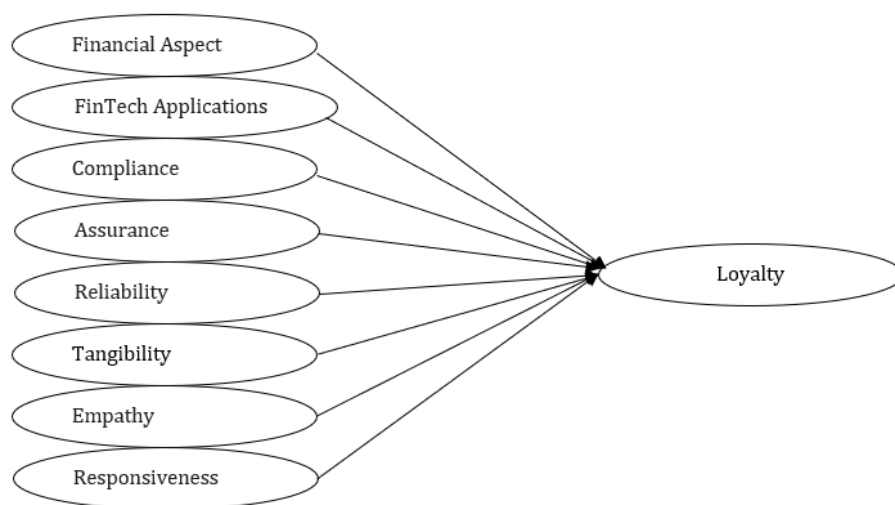
H7: Empathy has a positive effect on loyalty.

### Responsiveness

According to Othman and Owen (2001), responsiveness is related to the willingness to assist customers and provide prompt services. The availability of bank branches and ATMs is an example of a good response in the practical dimension (Janahi & Al Mubarak, 2017). To assess this dimension, Islamic banks must consider responsiveness from the customer's perspective rather than the bank's perspective (Zeithaml et al., 2018). Experts agree that responsiveness is one of the factors that influence service quality and customer loyalty. Several empirical studies support this argument, stating that responsiveness is the most significant predictor of customer satisfaction (Kant & Jaiswal, 2017). Badara et al. (2013) discovered a link between responsiveness and customer loyalty. As a result, the author suggests the following hypothesis:

H8: Responsiveness has a positive effect on loyalty.

Figure 1 illustrates the conceptual framework of this study.



**Figure 1. Conceptual Framework**

**Source: Author (2023)**



## METHOD

### Instrument Development

Several steps were taken during the development of research instruments. First, an exploratory review of the literature from previous empirical studies was conducted. At this point, it was concluded that the research instrument was trustworthy and valid. However, a pilot project was conducted with a small sample size to ensure the reliability and validity of the instruments used in the previous research. Prior to conducting the pilot study, all the instruments were translated into Indonesian because they were designed for the intended respondents. It was discovered that all the instruments in the study were valid and reliable. The financial aspect instruments were adapted from Sharma (2016), the Fintech application instrument from Alnsour (2022) and Barbu et al. (2022), the CARTER service quality instrument from Othman & Owen (2001) and Fauzi & Suryani (2019), and the loyalty instrument from Fauzi & Suryani (2019), for a total of 38 items. The scale used a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

### Data and Sample Collection

The study population consisted of all customers of Bank Syariah Indonesia (BSI) in the Malang area, which includes three regions: Malang City, Batu City, and Malang Regency. These locations were chosen as the research sites because they are the most appealing areas in East Java for BSI development. Based on data from the BSI, the Malang area has 274,655 customers, and sampling from this population is performed using the Slovin technique with the formula  $n = N \div (1 + Ne^2)$ , where  $n$  is the number of samples,  $N$  is the total population, and  $e$  is the error tolerance. Because the behavior of the population is unknown, the sample was chosen using the Slovin formula (Ellen, 2020). The study sample was selected using a random sampling technique, including individual consumers who used BSI products and/or services, as evidenced by account ownership. A sample of 100 customers was drawn from this population, using an error tolerance of 10%. The magnitude of error tolerance was determined because the sample in this study was homogeneous, and the amount of error tolerance utilized could still represent the population (Watson, 2015). Data were collected by distributing questionnaires to BSI customers between October and November.

### Analysis

This study employs a quantitative approach, systematically investigating social phenomena through measurements and assuming that the phenomena under study can be quantified (Watson, 2015). Multiple linear regression was



used in data analysis to examine the relationship between a single dependent variable (loyalty) and several independent variables, including financial aspects (X<sub>1</sub>), FinTech Applications (X<sub>2</sub>), and CARTER dimensions such as Compliance (X<sub>3</sub>), Assurance (X<sub>4</sub>), Reliability (X<sub>5</sub>), Tangibility (X<sub>6</sub>), Empathy (X<sub>7</sub>), and Responsiveness (X<sub>8</sub>) (Moore et al., 2006). These variables are manifest variables (variables that may be measured directly) and single constructs (measures). Classical assumption tests ensure parameter validity, unbiasedness, and model significance. Tests for multicollinearity, autocorrelation, heteroscedasticity, and normality were employed for this purpose.

**RESULTS AND DISCUSSION**

**Test for Validity and Reliability**

The research instrument must demonstrate validity. As a result, validity test is required to determine whether an instrument meets the valid value criteria if it is used as a data or information digging tool (Taherdoost, 2016). If the correlation coefficient value  $r_{count} > r_{table}$ , the research instrument is declared valid, and vice versa. Meanwhile, a reliability test was used to assess the research instrument's dependability using Cronbach's alpha (Taherdoost, 2016). If the Cronbach's alpha value was greater than 0.60, the instrument was considered reliable, and vice versa. Table 1 summarizes the findings of this research instrument's validity and reliability.

**Table 1. Test Results for Validity and Reliability**

Variable	Item	Corrected Item-Total Correlation	Cronbach's Alpha
Financial Aspect (X <sub>1</sub> )	X <sub>1.1</sub>	0.396	0.626
	X <sub>1.2</sub>	0.475	
	X <sub>1.3</sub>	0.440	
FinTech Applications (X <sub>2</sub> )	X <sub>2.1</sub>	0.580	0.855
	X <sub>2.2</sub>	0.624	
	X <sub>2.3</sub>	0.768	
	X <sub>2.4</sub>	0.559	
	X <sub>2.5</sub>	0.768	
	X <sub>2.6</sub>	0.559	
Compliance (X <sub>3</sub> )	X <sub>3.1</sub>	0.625	0.766
	X <sub>3.2</sub>	0.665	
	X <sub>3.3</sub>	0.639	
	X <sub>3.4</sub>	0.350	

Table 1 Continued

Assurance ( $X_4$ )	X <sub>4.1</sub>	0.653	0.817
	X <sub>4.2</sub>	0.710	
	X <sub>4.3</sub>	0.582	
	X <sub>4.4</sub>	0.594	
	X <sub>4.5</sub>	0.507	
Reliability ( $X_5$ )	X <sub>5.1</sub>	0.527	0.764
	X <sub>5.2</sub>	0.713	
	X <sub>5.3</sub>	0.567	
Tangibility ( $X_6$ )	X <sub>6.1</sub>	0.515	0.627
	X <sub>6.2</sub>	0.462	
	X <sub>6.3</sub>	0.341	
	X <sub>6.4</sub>	0.320	
Empathy ( $X_7$ )	X <sub>7.1</sub>	0.635	0.810
	X <sub>7.2</sub>	0.640	
	X <sub>7.3</sub>	0.651	
	X <sub>7.4</sub>	0.587	
Responsiveness ( $X_8$ )	X <sub>8.1</sub>	0.802	0.786
	X <sub>8.2</sub>	0.827	
	X <sub>8.3</sub>	0.829	
	X <sub>8.4</sub>	0.718	
Loyalty (Y)	Y <sub>.1</sub>	0.589	0.759
	Y <sub>.2</sub>	0.608	
	Y <sub>.3</sub>	0.634	
	Y <sub>.4</sub>	0.434	
	Y <sub>.5</sub>	0.375	

Source: Author's analysis (2023)

The corrected item-total correlation values for each instrument are listed in Table 1 ( $r_{\text{count}}$ ). This value is greater than the table value of 0.2017 ( $df=93$ ,  $\alpha=0.025$ ). This indicates that all data collection instruments were valid. Similarly, to demonstrate that the research instrument is truly reliable as a measuring tool, all Cronbach's alpha values were greater than the set value of 0.60.

### Analysis of Multiple Linear Regression

A multiple regression analysis was used to determine the most accurate and unbiased estimation parameters. In this context, classical assumption testing was performed including multicollinearity, autocorrelation,



heteroscedasticity, and normality. Furthermore, multiple regression analysis was performed to determine the relationship and influence of the variables Financial Aspect ( $X_1$ ), Fintech Applications ( $X_2$ ), Compliance ( $X_3$ ), Assurance ( $X_4$ ), Reliability ( $X_5$ ), Tangibility ( $X_6$ ), Empathy ( $X_7$ ), and Responsiveness ( $X_8$ ) on the Loyalty ( $Y$ ). Table 2 displays the results of the multiple regression analysis.

**Table 2. Analysis of Multiple Linear Regression**

Model	$\beta$ -value	Std. Error	t	Sig	Results
(Constant)	0.792	0.536	1.476	0.143	
Financial Aspect ( $X_1$ )	0.119	0.650	1.825	0.075	Not Supported
FinTech Application ( $X_2$ )	0.575	0.052	11.101	0.000	Supported
Compliance ( $X_3$ )	0.199	0.041	4.854	0.000	Supported
Assurance ( $X_4$ )	0.189	0.050	3.790	0.002	Supported
Reliability ( $X_5$ )	0.150	0.055	2.735	0.007	Supported
Tangibility ( $X_6$ )	0.084	0.054	1.568	0.079	Not Supported
Empathy ( $X_7$ )	0.138	0.061	2.278	0.008	Supported
Responsiveness ( $X_8$ )	0.201	0.100	2.009	0.048	Supported
F-value = 45.447					
Sig = 0.000					
R Square = 0.800					
n = 99					

Source: Author's analysis (2023)

### Discussion

This study seeks to determine how financial aspects, FinTech applications, and CARTER dimensions affect customer loyalty in Bank Syariah Indonesia (BSI). The financial aspect parameters, FinTech applications, and CARTER dimensions have high significance values, as shown in Table 2. The BSI customer loyalty variable is significantly influenced by financial aspect variables, FinTech applications, compliance, assurance, reliability, tangibility, empathy, and responsiveness. The discovery of this influence supports the claims of Othman and Owen (2001) and Sharma (2016) that the CARTER model adds significantly to gauging the quality of banking services. In this case, BSI focuses on and emphasizes financial aspects, FinTech applications, and CARTER dimensions as inseparable components of increasing customer service quality.

The financial aspect plays a critical role in service quality. Table 2 shows that the statistical results are significant at the 0.10 level. In this context, BSI customers believe that the financial aspect has no significant influence on loyalty. This means that BSI customers disregard administrative costs and profit-sharing on loans and deposits. These findings suggest that BSI customers prioritize the CARTER dimensions over the financial aspects. The fee set does not affect loyal customers' decision to remain loyal to BSI, because the quality of services provided is more valuable than the amount of money.



This finding is worthy of further investigation because it contradicts the previous argument. According to Sharma (2016), financial aspect is an important dimension of service quality. This BSI customer behavior also debunked the previously held belief that customers would prefer a bank with reasonable fees (Chochol'áková et al., 2015). Customer fanaticism toward BSI appears to have reduced rationality on a material (financial) basis and emphasizes the new hope of BSI providing quality services.

Fintech apps in Sharia banking services have been proven to have a significant effect. Table 2 clearly shows that the coefficient value is 0.575, which is less than 0.05. Fintech has made significant improvements to financial inclusion, particularly in Sharia banks. These findings imply that fintech, which is a combination of financial applications and technology, can be used to expand Sharia banking services. These findings imply that Fintech, which is a combination of financial applications and technology, can be used to expand Sharia banking services. This finding is consistent with the claims of Lăžăroiu et al. (2020), who argue that, in addition to FinTech, it contributes new experiences for clients. Despite disagreements with the conclusions of prior FinTech studies, such as Ali & Raza (2017) and Janahi & Al Mubarak (2017), these studies have added fresh treasures linked to the quality of Islamic financial services. As a result, Islamic banking must pay close attention to FinTech qualities such as ease of use, perceived value, customer assistance, guarantees, speed of service, and innovation. Following the findings of Barbu et al. (2021) and Alnsour (2022), this study stresses FinTech support as a component of service quality that promotes customer loyalty.

Compliance, as a CARTER dimension, demonstrate a significant effect on customer loyalty at Bank Syariah Indonesia (BSI). Table 2 shows that the coefficient value is 1.99 and the -value is less than 0.05. This phenomenon suggests that sharia implementation in BSI is an important factor in retaining customer loyalty. The findings of this study corroborate previous empirical studies showing that compliance is one of the most important determinants of service quality in Islamic banking (Othman & Owen, 2001). Furthermore, other empirical studies show a strong relationship between religion and customer attitudes (Souiden & Rani, 2015). However, other findings are known to be contradictory, indicating that compliance has the least significance (Fauzi & Suryani, 2019). Sharia compliance at BSI is consistent with the company's goal of establishing an ethical financial system that adheres to the rule of law. According to this law, the product being marketed must be in accordance with Sharia, the transaction process must also be in accordance with Sharia, and the goal must be in accordance with Sharia. Sharia compliance in these various areas ensures that every financial transaction is





halal (Muhammad, 2020). As a result, as part of a competitive strategy, BSI should remain committed to the principle of compliance.

The following CARTER dimension is assurance. The regression analysis results in Table 2 show that assurance significantly affects BSI customer loyalty. In this context, BSI customer loyalty stems from the knowledge, skills, and friendliness and polite attitudes provided. Some empirical evidence has bolstered the argument that Islamic bank employees must be courteous to customers and skilled and competent in their fields (Janahi & Al Mubarak, 2017). As a result, Islamic bank management must ensure and persuade customers through the ability of staff to properly answer customer questions as a key to service (Othman & Owen, 2001). Several studies show that assurance is an important aspect of service quality in Islamic banking (Abdul Rehman, 2012; Khamis & AbRashid, 2018).

Reliability also plays an important role in customer loyalty. According to the findings of the analysis, customers' perceptions of BSI's ability to provide reliable and appropriate services are generally positive. They believe that BSI is dedicated to fulfilling its obligations and delivering promises. Customer loyalty has been fueled by BSI's quick, integrated services and the availability of a wide range of products and services. This empirical phenomenon supports on their promises. As a result, BSI should make service reliability the "core of service" and seize every opportunity to instill the proper mindset. This study's empirical evidence supports previous research findings that reliability is an important dimension for Islamic banking customers (Amin et al., 2013; Fauzi & Suryani, 2019; Osman et al., 2009). Nonetheless, Kashif et al. (2015) discovered that reliability had no significant effect on loyalty.

Service tangibility did not affect customer loyalty at a significance level of 0.05, but it was significant at 0.10. This suggests that BSI customers do not perceive tangibility as a driver of loyalty. Physical appearances such as buildings and offices, good interior design, and operating hours accuracy are instruments that are automatically embedded in the service aspect. Customers of BSI believe that all banks, conventional and Sharia, have the same physical standards and that there is no need to differentiate. Previous research supports the findings of this study (Badara et al., 2013; Baumann et al., 2007; Jamal & Naser, 2002), though other studies have produced different results. Because services are intangible, customers will see real and visually appealing cues to evaluate them before making a transaction (Zeithaml et al., 2018), which will benefit the bank (Choudhury, 2014; Kashif et al., 2015).

A strong reciprocal relationship between BSI and customers fosters empathy. Empathy is a critical component of service quality and has a significant effect on BSI customer loyalty. The significance of the empathy variable is shown in Table 2 at a significance level of 0.05. Customers feel



valued and special when they receive empathy or care from BSI. The findings of this study are consistent with those of Fauzi & Suryani (2019) and Butcher et al. (2001), who argued that empathy/caring is the primary driver of Islamic banking quality, which leads to the development of loyalty. Other findings support the notion that empathy is an important CARTER dimensions (Abdul Rehman, 2012). According to Kashif et al. (2015), personal, flexible, and adaptable services to customer needs can lead to customer satisfaction. This argument points to empathy as an important component of service quality that influences loyalty.

The analysis also reveals that responsiveness has a significant effect on BSI customer loyalty. They believe that BSI is excellent at meeting customer service needs quickly. The argument of Zeithaml et al. (2018), which underpins the implementation of BSI responsiveness, is that Islamic banks must consider responsiveness from the customer's perspective rather than the bank's. According to Othman & Owen (2001), responsiveness is related to a willingness to assist customers and provide quick services. The findings of this study are consistent with those of Fauzi & Suryani (2019), who found that responsiveness is one of the important dimensions of the CARTER model that Islamic bank customers perceive. This demonstrates that BSI employees are eager to assist customers and respond quickly to their needs and complaints. Other research findings support this claim, indicating a positive relationship between responsiveness and customer loyalty (Badara et al., 2013).

## **CONCLUSION**

Bank Syariah Indonesia (BSI) is highly focused on enhancing customer loyalty by leveraging financial aspects, FinTech applications, and emphasizing the dimensions of the CARTER model as part of its competitive strategy. The results of this study indicate that the financial aspect, FinTech applications, and the characteristics of the CARTER model are reliable and positively influence loyalty. Compliance (adherence to Sharia principles) is the dominant aspect in the CARTER dimension, followed by other aspects such as assurance, reliability, empathy, and responsiveness. Even if the financial and tangibility dimensions do not contribute significantly, they must be recognized as part of the service quality dimensions.

This study confirms that BSI can increase customer loyalty by increasing customer trust. To achieve this goal, BSI must ensure compliance with Sharia, aligning business transactions with ethical principles, and the rule of law to establish an ethical financial system. According to the law, both the marketed product and the transaction process must comply with Sharia principles, aligning with the overarching goal of Sharia compliance. In this context, BSI must develop human resource capabilities related to banking skills, as well as



an understanding of Sharia principles. A structured Sharia executive development program, beginning with directors and progressing to branch heads, is critical for preparing talented Sharia banking leaders in Indonesia. Networking with Islamic banking-focused universities is critical to scientific dissemination and development.

The results of this study have limitations and may not yet be representative on a national scale. Additionally, the simple development model has not sufficiently captured broader variable relationships, necessitating the use of structural equation modeling and the quota sampling technique for model refinement. The main goal was to collect sufficient samples from various regions of Indonesia and thoroughly test the relationship between the variables.

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