CHAPTER I
INTRODUCTION

1.1 Background of the problem

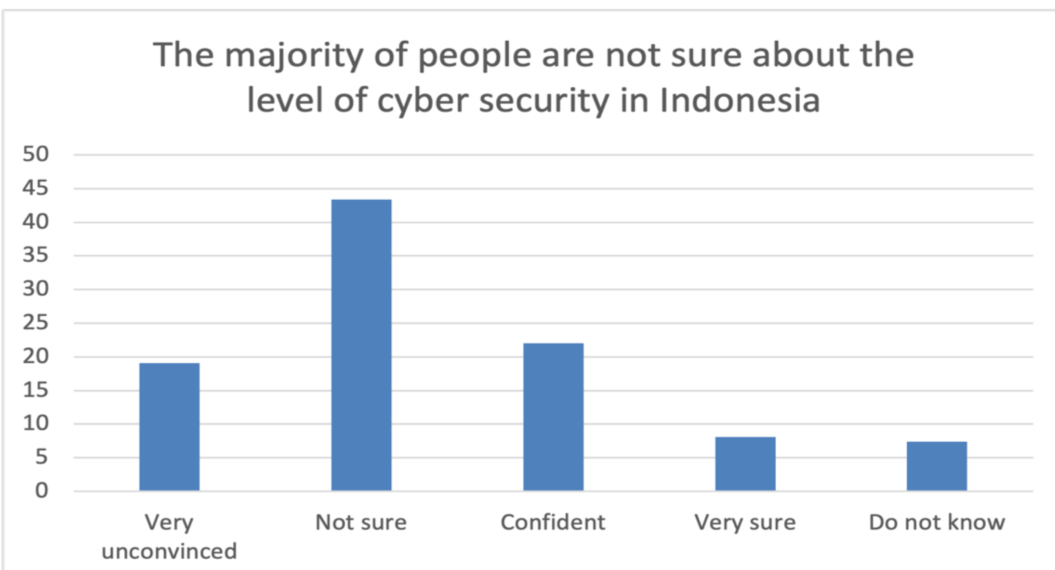
In an increasingly advanced digital age, cyberattacks have become a serious threat to organizations and individuals. Cyberattacks can result in huge losses, both financially and reputationally. In Indonesia, cyberattacks are also on the rise with reports of a significant number of attacks. According to a CNN Indonesia report (CNNIndonesia.com, 2022), Indonesia is reported to have experienced around 700 million cyberattacks in 2022. These attacks come from various modes, including the increasingly dominant mode of extortion. This shows that cyberattacks have become a serious threat to digital infrastructure in Indonesia. Ministry of Communication and Information Technology of the Republic of Indonesia also revealed the importance of joint efforts to improve systems and prevent cyber-attacks (aptika.kominfo.go.id, 2022). Protection efforts against cyberattacks are an important concern for various sectors, including the financial sector such as banking.

Based on the Kurious-Katadata Insight Center (KIC) survey, the majority or as many as 62.6% of respondents expressed uncertainty about the cybersecurity owned by the Indonesian government's data storage center. Of the details, as many as 19.1% of respondents answered very unconvinced and 43.4% answered not sure. On the other hand, 30% of respondents said they were confident in the level of cyber security of the Republic of Indonesia. Consisting of 22% of respondents are confident and 8.1% of respondents are very sure. Another 7.4% of respondents who answered did not know. Meanwhile, data compiled from Katadata shows that throughout the first half of 2023 there are suspected to be four leaks of government-owned databases, with the following details:

1. Data leakage of BPJS Kesehatan users as much as 19.5 million BPJS Employment user data;
2. Cyberattack on Bank Syariah Indonesia (BSI) by LockBit;
3. Data leak of 34 million Indonesian passports, until the latest;
4. Data leak of 337 million population and civil registration (Dukcapil) originating from the Ministry of Home Affairs (Kemendagri).

The so-called leaked data consists of name, residence identification number (NIK), Family Card number, date of birth, address, father's name, mother's name, mother's NIK, birth certificate number, marriage certificate number, and others. The survey conducted by Kurious-KIC involved 633 respondents from various regions in Indonesia, with a proportion of 55% female respondents and 45% male respondents.

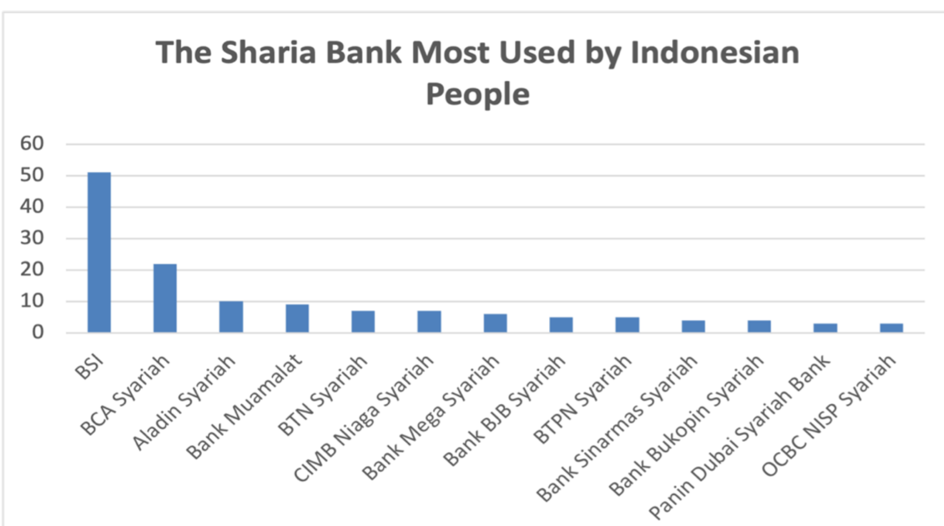
Table 1.1 The Level of Cyber Security



Source : databoks.katadata.co.id, 2023

In the context of banking, cyber-attacks can threat the security of customer data and personal information. Events such as data leaks caused by cyberattacks can have a detrimental impact on customers and the image of the bank itself. Therefore, it is important for banks to understand the impact of cyberattacks and develop effective strategies to protect customers and maintain their trust. Cyberattacks have become an increasingly real and complex threat in the banking world and the financial sector at large. Financial institutions, including banks, are prime targets for cyberattacks seeking to steal sensitive data, damage system infrastructure, or disrupt banking services. Cyberattacks can have a significant impact on a bank's reputation, customer trust, and customer loyalty. One of the banks that suffered a cyber-attack was Bank Syariah Indonesia (BSI), which is one of the largest Islamic banks in Indonesia. According to Populix's survey, Bank Syariah Indonesia (BSI) is the most widely used Islamic bank in Indonesia. As many as 51% of respondents admitted to using the services of Islamic banks. The most commonly used Islamic bank is BSI, while the most common financial product they use is Islamic savings, because it is in accordance with sharia principles. This survey was conducted through the Populix application in March 2023 among 1,014 Muslim respondents throughout Indonesia. The majority of respondents were workers with middle-class economic status.

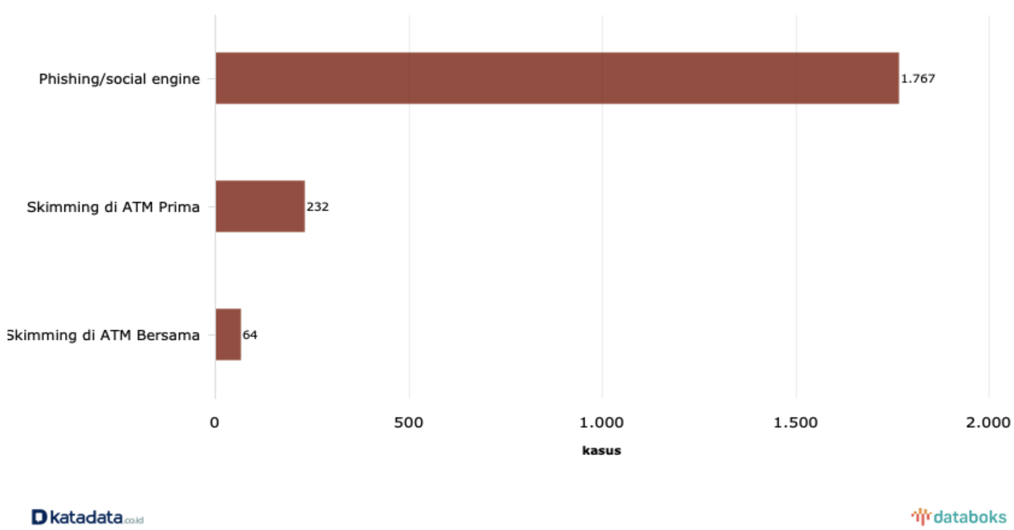
Table 1.2 The Sharia Bank Most Used by Indonesia People



Source: populix.co.id, 2023

The cyberattack on Bank Syariah Indonesia (BSI) reflects the challenges faced by the banking sector in maintaining customer security and trust in the digital era. The incident of the cyberattack on BSI disclosed through references provided highlights the complexity of the cyber threats faced by banks as well as their impact on customers and the banking industry as a whole. In addition, the discovery of thousands of cyber threats in 2022 by BSI confirms the complexity and escalation of cyberattacks occurring in the banking industry. Although customer data is claimed to remain secure, this illustrates that cyberattacks are not only a potential threat, but have also had a real impact on banks

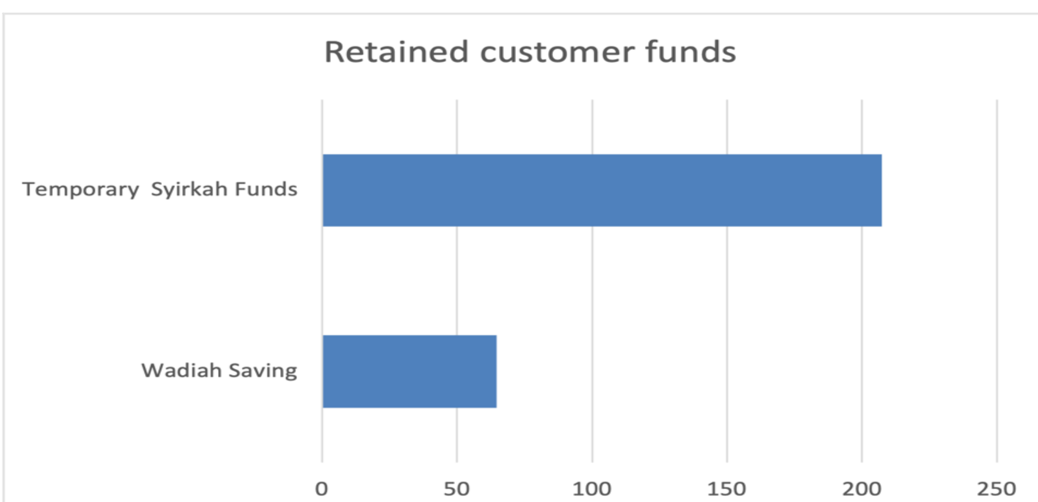
Figure 1.1 Threats of Cybercrime against BSI customers 2022



Source: katadata.com, 2022

Currently, BSI does have many customers from various regions of Indonesia, with the total value of funds under management reaching hundreds of trillions of rupiah. According to the company's financial report, until the end of the first quarter of 2023, during the cyber-attack occurs BSI holds wadiah savings of IDR 64.7 trillion. Wadiah deposits are funds deposited by customers to Islamic banks with the aim of maintaining the security/integrity of these funds. Wadiah deposits can be taken by customers at any time, similar to ordinary savings in conventional banks. In addition to wadiah, BSI also manages temporary shirkah funds amounting to Rp207.41 trillion. Temporary shirkah funds are funds received by Islamic banks from customers, where the bank has the right to manage and invest these funds, with time period restrictions and provisions for profit/loss sharing of investments based on agreements. The temporary shirkah fund managed by BSI uses a mudharabah contract, where the customer has the status of the capital owner (shahibul maal), while the bank as the fund manager (mudharib). At the end of the first quarter of 2023, BSI managed temporary shirkah funds in the form of mudharabah demand deposits worth IDR 29.3 trillion, mudharabah savings of IDR 72.08 trillion, mudharabah deposits of IDR 103.9 trillion, subordinated mudharabah sukuk of IDR 1.37 trillion, and mudharabah term financing of IDR 749.7 billion. Of all these funds, BSI as the fund manager (mudharib) received profit sharing rights worth IDR 4.07 trillion in the first quarter of 2023.

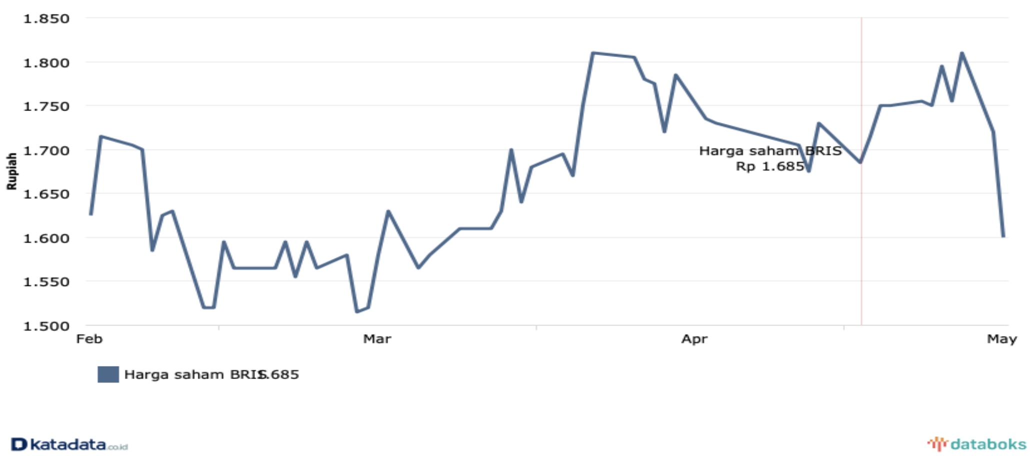
Table 1.3 Retained Customer Funds during the Cyber-Attack



Source: ir.bankbsi.co.id, 2023

According to references from databoks.katadata.co.id, on May 16, 2023, BSI's stock immediately declined after a data leak on the dark web. This indicates concern and uncertainty from investors and markets about BSI's security and reliability after the cyberattack.

Figure 1.2 PT Bank Syariah Indonesia Share Movement Mei 2023

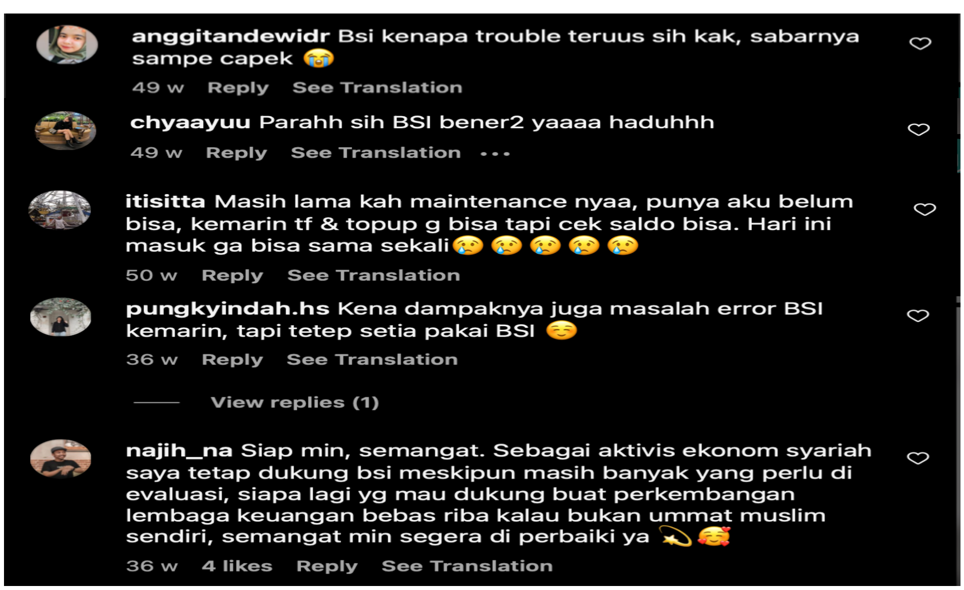


Source: katadata.com, 2023

Other references from CNN Indonesia describe the chronology of the alleged cyber-attack on BSI, which caused the paralyzing of transactions. This shows how serious the impact of the cyber-attack is on the banking services provided by BSI to its customers. Liputan6.com also provided information about the cyberattack that hit BSI by the Lock Bit ransomware group, which adds to the understanding of the complexity and level of threats faced by BSI. In addition, references from Tempo.co highlight the challenges and difficulties faced by BSI in dealing with cyberattacks. BSI was seen as stuttering in the face of the attack, indicating the need for improvements in security governance and data protection at the bank.

Articles from The Conversation also highlight the importance of good data governance and strong cyber defences for companies, including banks, in the face of cyberattacks. The cyber-attack on BSI is a reflection of the vulnerability of the cyber defence level in Indonesia as a whole. Considering the above background information, this study will look at the impact of cyberattacks on BSI on risk perception, service quality, and customer trust, as well as how these factors affect customer loyalty. The results of this study are expected to provide valuable insights for BSI and other financial institutions in overcoming cyberattacks, increasing customer trust, and maintaining customer loyalty after cyberattacks. The references that have been given indicate that a cyberattack on BSI has serious consequences for the bank. The cyber-attack on BSI caused leakage of customer data, obstruction of banking access and transactions, and financial losses. This reflects weaknesses in cyber defense and data protection at BSI. In the banking world, stability and service quality are the main keys in maintaining customer trust and loyalty. However, when a financial institution faces challenges, such as those experienced by Bank Syariah Indonesia (BSI) in the face of cyber attacks, customer response is a reflection of the complexity of the interaction between perceived risk, service quality, customer trust, and customer loyalty variables.

Figure 1.3 The Phenomenon of Customer Response during Cyberattack



Source: Instagram.com/lifewithbsi, 2023

The phenomenon of customer response to disruptions experienced by Bank Syariah Indonesia (BSI) reflects the dynamics between perceived risk, service quality, customer trust, and customer loyalty variables. When BSI experiences a system disruption that causes services to go down, customers experience disappointment and frustration, feel the risk of losing funds and the security of personal information increases. This disruption also indicates the low quality of services provided by the bank. The responsiveness of banks in handling such disruptions can affect perceptions about service quality, so the slow recovery can reduce customer confidence in the bank. However, some customers still show loyalty and support to BSI despite experiencing disruptions, showing preformed trust and loyalty. However, ongoing disruptions or unsatisfactory responses from the bank can disrupt customer trust and loyalty. Therefore, this phenomenon illustrates the complexity of the interaction between these variables in the context of customer responses to disruptions experienced by BSI.

Consumer behaviour, as elucidated by experts such as Schiffman and Kanuk (2006) and Kotler and Keller (2008), encompasses the multifaceted process of searching, selecting, buying, using, and evaluating products or services to fulfil consumer needs and desires. It reflects the intricate interplay between individuals, groups, or organizations as they engage in selecting, purchasing, and utilizing goods or services to satisfy their needs. This process involves evaluating various factors, including perceived risk, service quality, trust, and loyalty, which ultimately influence consumer decision-making and behaviour. Thus, understanding consumer behaviour is essential in comprehending how individuals respond to disruptions and challenges faced by organizations like BSI.

In this context, research on the effect of perceived risk, service quality, and customer trust on customer loyalty after a cyberattack on BSI is very relevant.

Perceived risk refers to a customer's perception of the risks that arise after a cyberattack, such as the risk of personal data leakage or misuse of information. Service quality covers aspects of the quality of services provided by BSI, including the bank's ability to overcome the impact of cyber-attacks and restore banking services. Customer trust reflects the level of customer loyalty in BSI, both in terms of data security and the bank's ability to protect customers from cyberattacks. An in-depth understanding of how cyberattacks might impact customer risk perception, perceived service quality, and consumer trust in BSI will result from analysis of these variables.

Previous research conducted by Hennig-Thurau, Gwinner, and Gremler (2002) in the article "Understanding relationship marketing outcomes: An integration of relational benefits and relationship quality" made a substantial addition to our knowledge of how, in a marketing setting, the advantages of relationships relate to the quality of those relationships. This study emphasizes how crucial it is for businesses and their clients to have solid, win-win partnerships. Relational benefits were cited by Hennig-Thurau et al. (2002) as a significant factor in promoting client loyalty. The advantages that customers gain from a long-term relationship with the business, such as trust, dedication, contentment, and individualized support, are referred to as relational advantages. their study indicate that strong relational advantages have a beneficial impact on relationship quality, which in turn affects consumer loyalty.

This study is pertinent to the context of this study on the elements that affect customer loyalty following a cyberattack. Cyberattack incidents can leave clients with mistrust, anxiety, and fear about the security of their data. Therefore, retaining customer loyalty requires repairing damaged relationships with customers and providing enough relational advantages. This study, which draws on the work of Hennig-Thurau et al. (2002), examines how variables including perceived risk, service quality, and customer trust can influence the nature of relationships and, ultimately, customer loyalty following cyberattacks. In the context of cyberattacks, this study will provide us a better understanding of the mechanics driving the link between these variables and consumer loyalty.

The research "Exploring Factors Affecting Customer Loyalty in the Banking Industry: The Mediating Role of Customer Satisfaction" by Saleem and Sadiq (2016) a pertinent reference in the context of BSI's experience following cyberattacks. This study first looks into what affects client loyalty in the banking sector. The cyberattack that BSI faced may have an effect on customer loyalty and faith in the bank. Because of this study, we now have a better understanding of the variables that can influence consumer loyalty, especially in the aftermath of a cyberattack.

The study also highlights the significance of customer satisfaction as a mediator in the relationship between several variables and customer loyalty. Satisfaction with customers can play a crucial role in preserving consumer loyalty following a cyberattack. A clearer knowledge of the relationship between variables including service quality, customer trust, perceived value, and customer loyalty can be gained from this research. Finally, this study sheds light on marketing tactics that can be employed in the banking sector to raise client happiness and reinforce client loyalty. The results of this study can be used as a guide by BSI to create responsive, efficient, and customer-focused marketing and service plans following cyberattacks. Overall, the context faced by BSI in the wake of a cyberattack is highly relevant to our research. The results and insights from this study can help BSI better understand the variables that affect customer loyalty and create effective ways to increase client loyalty following cyberattacks.

Research on the effects of perceived risk, service quality, and customer loyalty following a cyberattack on BSI becomes pertinent in this situation. Customers' decisions to stick with BSI or choose another bank are significantly influenced by their perception of risk. Customers' perceptions of bank security may be impacted by the possibility of data leakage and the misuse of personal information during a hack. The quality of service perceived by customers is also a key factor in maintaining loyalty after a cyberattack. Service disruptions, deterioration in service quality, or delays in recovery from attacks can affect customer satisfaction and their perception of the bank. If BSI can provide good service, repair losses incurred due to cyber-attacks quickly, and provide an adequate experience for customers, then this can strengthen customer trust and increase their loyalty.

Perceived risk is the perceived risk perceived by customers related to the security of their data and personal information after a cyberattack. Events such as data leaks disclosed through references from databoks.katadata.co.id can give the impression of a high risk for customers. Customers may be concerned that their personal information could be misused or become the target of other cyberattacks. High perceived risk can influence customers' decisions to remain loyal to BSI or switch to other banks that are considered safer. Perceived risk is very important because it can influence consumer behaviour and decisions. When consumers feel that there is a high risk associated with a product or service, they tend to feel insecure and hesitant. Perceived risk can include financial risk, security risk, quality risk, reputation risk, and so on. Perceived risk has a significant influence on consumer decisions, especially in the context of purchases and customer loyalty. If consumers feel a high risk, they may be reluctant to make a purchase or use the service. They can look for other alternatives that are considered safer or can reduce interaction with the organization.

In addition, perceived risk can also affect brand image and consumer trust. If consumers perceive high risk associated with a brand or organization, this can undermine their trust and loyalty. Consumers may choose other brands or organizations that are perceived as more trustworthy and reduce perceived risk. In the banking and finance industry, where the security of personal data and information is critical, perceived risk is a key factor influencing customer decisions. If customers feel that there is a high risk related to the security of their data, they may be inclined to switch to another financial institution that is considered more reliable and secure.

Service quality is another important component in retaining client loyalty following a cyberattack, in addition to perceived risk. According to reports from CNN Indonesia and BBC Indonesia, service interruptions can provide customers a bad experience. Customer discontent may result from BSI's inability to handle the situation and immediately resume service. Therefore, it is critical that BSI offer competent, quick, and efficient services while handling post-cyber-attack scenarios. Superior customer service can increase client confidence and increase their commitment to the bank. Service quality is very important because it has a direct impact on customer satisfaction and loyalty. When customers experience a good, responsive, and effective service experience, they are more likely to feel satisfied and fulfilled with their interactions with the bank. Service quality covers various aspects such as reliability, responsiveness, security assurance, empathy, and physical proof of service. BSI's success in providing quality services will create a positive experience for customers, increase their satisfaction, and strengthen the relationship between customers and the bank. Service quality also plays an important role in building customer trust. When BSI provides reliable, responsive, and effective services, customers feel that the bank cares about their needs and is ready to help in any situation, including post-cyber-attacks. This can help build customer trust in the bank and strengthen long-term relationships.

In addition, service quality can also distinguish BSI from its competitors. In the competitive banking industry, high service quality becomes an important differentiation factor. Customers tend to choose banks that provide superior and quality services over other banks that do not provide a satisfactory service experience. With cyberattacks and service disruptions occurring, it is important for BSI to remain focused on delivering quality and responsive services. This will help maintain customer loyalty, build trust, and overcome the negative impact of the cyberattack.

Customer trust is also an important factor in maintaining customer loyalty after a cyberattack. Customers need to feel confident that BSI has adequate expertise, competence, and ability to maintain the security of their data. Customer confidence is also linked to their confidence in BSI's ability to prevent similar attacks in the future. If customers feel distrust or doubt BSI's ability to maintain the security of their data, this can erode customer trust and loyalty. Customer trust is very important because it is the basis for a strong relationship between customers and BSI. When customers have high trust in the bank, they tend to feel comfortable and confident in making transactions and sharing personal information with the bank. Customer trust includes their confidence in the integrity, competence, honesty and security of the bank. Customers need to feel confident that the bank has a strong security system, a clear privacy policy, and compliance with applicable regulations. If customers doubt a bank's ability to protect their data, it can destroy their trust and affect loyalty.

In the context of cyberattacks, customer trust becomes more important. Customers should be confident that BSI has the ability to prevent similar attacks in the future and properly cope with their consequences. If customers feel that the bank cannot keep their data safe properly, they may lose trust and look for other alternatives that are considered safer. Therefore, building and maintaining customer trust after a cyberattack is crucial. BSI needs to commit to improving security systems, providing transparent information on data protection efforts, and demonstrating expertise and competence in addressing cyber-attack threats. With strong trust, customers will tend to remain loyal to the bank and maintain their loyalty.

It is possible to gain a more thorough understanding of the variables that affect customer attitudes and decisions in the aftermath of a cyberattack on BSI by analysing the impact of perceived risk, service quality, and customer trust on customer loyalty. This study will give BSI and other financial institutions helpful information for creating risk mitigation plans, enhancing customer satisfaction, and enhancing consumer trust.

BSI and other financial institutions can effectively respond to the challenges of cyberattacks and uphold positive customer relationships by thoroughly understanding the relationship between perceived risk, service quality, and customer trust and loyalty after a cyberattack. The findings of this study will be crucial in developing better methods to safeguard clients' interests, boost customer satisfaction, and increase public confidence in the banking sector, which is becoming more intricate and open to cyberattacks.

Customer loyalty may be significantly impacted by cyberattacks on financial institutions, such as those that Bank Syariah Indonesia (BSI) has recently faced. It's critical for BSI to comprehend in a post-cyberattack scenario the elements that influence customer loyalty, such as perceived risk, service quality, and customer trust. Customer trust involves customer confidence in BSI's ability to uphold data security and avert such attacks in the future. Perceived risk pertains to customers' worries about the security of their data, while service quality is related to the quality of services offered by BSI. According to previous research by Yoon, Y., & Suh E. (2003). Customer loyalty is very important because it has a significant impact on the long-term success of a company, including BSI.

Therefore, retaining loyal customers is very important for BSI. In the face of cyberattacks or other challenges, maintaining customer loyalty can be a competitive advantage and help BSI survive and grow in the long run. In the context of cyber-attacks experienced by BSI, this study aims to analyse the impact of perceived risk, service quality, and customer trust on customer loyalty. The relationship between these variables may be better understood, allowing BSI to create risk mitigation plans that are more successful, boost the quality of its services, and increase client confidence. The results of this research will provide valuable insights for BSI and other financial institutions in facing the challenges of cyberattacks and maintaining positive relationships with their customers.

In an era where cyberattacks are becoming more frequent and threat complexity is increasing, data protection and customer information security are top priorities for financial institutions. This research is expected to make an important contribution in understanding the impact of cyber-attacks on customer loyalty in the banking industry, especially at Bank Syariah Indonesia. With a better understanding of the factors affecting customer loyalty, BSI can take appropriate measures to strengthen relationships with customers, maintain their trust, and ensure sustainable business continuity. The study is therefore highly pertinent to the banking industry's concerns about client relations, information security, and data protection. The findings of this study are supposed to help BSI and other financial institutions enhance service quality, foster client trust, and uphold loyalty in the face of the increased threat of cyberattacks.

1.2 Problem Statement

Based on the background that has been described, this study will ask some relevant research questions. The formulation of the problem to be discussed in this study is as follows:

1. Does perceived risk influence customer trust following a cyber-attack on BSI?
2. Does service quality influence customer trust following a cyber-attack on BSI?
3. Does perceived risk influence customer loyalty following a cyber-attack on BSI?
4. Does service quality influence customer loyalty following a cyber-attack on BSI?
5. Does customer trust influence customer loyalty following a cyber-attack on BSI?

6. Does perceived risk influence customer loyalty toward customer trust following a cyber-attack on BSI?
7. Does service quality influence customer loyalty toward customer trust following a cyber-attack on BSI?

In this study, the independent variables to be tested are perceived risk, service quality, and customer trust, while the dependent variable to be measured is customer loyalty. This study attempts to provide a greater understanding of the impact of these factors on customer loyalty following the cyberattack on BSI by providing the answers to the questions above. The study's findings should help BSI and other financial institutions understand how to combat the effects of cyberattacks and keep their connections with clients robust.

1.3 Research Purposes

The purpose of this study is to investigate the impact of a cyber-attack on Bank Syariah Indonesia (BSI) on customer loyalty, with a specific focus on the mediating roles of perceived risk, service quality, and customer trust. The objectives of the research are as follows:

1. To examine how perceived risk influence customer trust in the aftermath of a cyber-attack on BSI.
2. To examine how service quality influence customer trust in the aftermath of a cyber-attack on BSI.
3. To examine how perceived risk influence customer loyalty in the aftermath of a cyber-attack on BSI.
4. To examine how service quality influence customer loyalty in the aftermath of a cyber-attack on BSI.

5. To examine how customer trust influence customer loyalty in the aftermath of a cyber-attack on BSI.
6. To explore the mediating effect of customer trust on the relationship between perceived risk and customer loyalty after the BSI cyber-attack.
7. To assess the extent to which customer trust mediates the relationship between service quality and customer loyalty after the cyber-attack on BSI.

Through these objectives, the study aims to provide insights into the intricate interplay between perceived risk, service quality, customer trust, and customer loyalty in the context of a cyber-attack on BSI. Ultimately, the research seeks to offer valuable implications for enhancing customer loyalty and organizational resilience in the face of cybersecurity threats in the banking sector.

1.4 Research Benefits

This research is expected to provide significant benefits both for practitioners in the banking industry, especially Bank Syariah Indonesia (BSI), as well as for academics and researchers in the fields of management, finance, and cyber security. Some of the benefits of this study include:

1. Theoretical Contribution: The body of knowledge addressing how perceived risk, superior customer service, and customer trust impact customer loyalty in the wake of hacks will gain theoretical depth from this study. By looking at them all together, this study will provide a more full understanding of how these variables interact with one another and effect consumer loyalty.
2. Business Strategy Guidelines: The findings of this study can help BSI and other financial institutions develop business strategy guidelines for addressing the effects of cyberattacks. Understanding how perceived risk, service quality,

and customer trust affect customer loyalty allows BSI to create risk mitigation strategies that are more effective, boost service quality, and increase customer trust. By doing this, BSI can draw in new clients, keep its current ones, and establish a solid reputation in the industry.

3. Customer Protection: The findings of this study will help to strengthen client protection against cyberattacks. With the aid of a deeper understanding of how factors like perceived risk, service quality, and customer trust affect customer loyalty, BSI can take the required actions to protect the interests of its customers, improve data security, and prevent future assaults. As a result, customers will feel trusted and safe when using their banking services.
4. Improved Banking Security: Additionally, this study may help to increase general banking security. In light of the banking sector's increasingly complex cyberattack concerns, this research can offer useful insights by illuminating the elements that affect client loyalty following a cyberattack. The findings of this study can serve as a guide for the creation of more efficient and organized banking security measures.

Therefore, the banking industry, clients, and the advancement of science in the fields of management and cyber security stand to gain greatly from this research. The findings of this study should significantly advance our understanding of how cyberattacks affect consumer loyalty and assist financial institutions in addressing these difficulties.

1.5 Literature Review

In today's digitally advanced landscape, cyberattacks pose a significant threat to both organizations and individuals, leading to substantial financial losses and reputational damage. Despite the efforts by the Ministry of Communication and

Information Technology of the Republic of Indonesia to fortify systems and thwart cyber threats, financial institutions, particularly banks, remain vulnerable targets for cybercriminals. The recent cyberattack on Bank Syariah Indonesia (BSI) serves as a poignant example of the challenges faced by banks in safeguarding customer data and preserving trust in an increasingly digital environment.

The incident not only disrupted banking services but also had profound implications for customer trust and loyalty. The decline in BSI's stock value following the breach underscores the erosion of market confidence and the need for swift and decisive action to mitigate the fallout from cyberattacks. However, rebuilding trust and delivering tangible benefits to customers in the aftermath of such incidents is paramount. Research by scholars such as Hennig-Thurau, Gwinner, and Gremler emphasizes the importance of relational benefits in fostering customer loyalty.

Similarly, studies by Saleem and Sadiq highlight the mediating role of customer satisfaction in bolstering loyalty, particularly following adverse events like cyberattacks. Perceived risk, service quality, and customer trust emerge as critical factors influencing customer loyalty in the wake of cyberattacks. Customers' perceptions of risk, exacerbated by incidents such as data leaks, can prompt them to seek safer alternatives. Service disruptions and delays in recovery efforts can further erode satisfaction and trust, underscoring the imperative for banks to prioritize service excellence and responsiveness.

In the context of cyberattacks, customer trust becomes more important than ever. BSI and other financial institutions must demonstrate competence, transparency, and commitment to data security to rebuild trust and retain customer loyalty post-attack. By comprehensively analyzing the interplay between perceived risk, service quality, and customer trust, this study seeks to provide actionable insights for BSI and other financial institutions. Understanding these dynamics is essential for devising effective risk mitigation strategies, enhancing service delivery, and fostering enduring customer relationships in an increasingly volatile cybersecurity landscape.

This literature review aims to not only summarize existing research but also present arguments for the importance of prioritizing customer trust and loyalty in the face of cyber threats. It underscores the need for proactive measures to safeguard customer data, restore confidence in banking services, and uphold long-term relationships with customers amidst evolving cybersecurity challenges.

1.6 Theoretical Framework

A theoretical framework is a conceptual construct used to describe the relationship between variables in a study. The theoretical framework serves as a basis or conceptual foundation that assists researchers in understanding the phenomenon under study and formulating the hypothesis tested. The main purpose of the theoretical framework is to provide guidance in organizing relevant concepts and describing the relationships between the variables to be studied.

Researchers benefit from the theoretical framework in a number of ways. The theoretical framework, in the first place, offers an organized way of thinking about the topic being studied. This makes it easier for researchers to concentrate on aspects of the data that are crucial and pertinent to the study. The theoretical framework, in addition, enables researchers to develop study hypotheses based on the anticipated interactions between the variables it contains. As a result, the theoretical framework helps researchers create empirical investigations and test the put forth assumptions.

1.6.1 Consumer Behaviour

Consumer behaviour encompasses a multifaceted process involving various stages from searching and selecting to buying, using, and evaluating products or services to fulfill individual needs and desires. As described by Schiffman and Kanuk

(2006), it's the actions exhibited by consumers as they navigate through these stages in pursuit of satisfaction. Kotler and Keller (2008) broaden this definition, emphasizing the study of how individuals, groups, or organizations engage in selecting, purchasing, using, and disposing of goods or services to fulfill needs, often influenced by ideas or experiences. This intricate process, as highlighted by various experts, is shaped by both environmental and individual factors, as articulated by Mulyana (2019). Environmental factors such as culture, social class, family dynamics, values, and societal norms interplay with individual factors to shape consumer behaviour.

Within this complex interplay of influences, certain variables stand out in their impact on consumer loyalty. Perceived risk, for instance, plays a pivotal role. When consumers perceive a high level of risk associated with a product or service, they may hesitate to commit fully, impacting their loyalty. Conversely, service quality emerges as a crucial determinant. High-quality service not only meets but exceeds consumer expectations, fostering trust and loyalty in return. Moreover, customer trust, built on notions of integrity, competence, and reliability, forms the bedrock of enduring relationships between consumers and brands. When customers trust a brand or company, they're more likely to exhibit loyalty, continuously engaging with and advocating for the brand. Thus, understanding and effectively managing perceived risk, service quality, and customer trust are essential for cultivating customer loyalty, a cornerstone of sustained success in today's competitive marketplace.

1.6.2 Perceived Risk

In the context of banking, perceived risk is an individual's perception of potential losses or uncertainties that may occur in a transaction or interaction with an organization. Perceived risk in banking can include the risk of loss of funds, the risk of personal information security, the risk of quality of service, and the risk of the reputation of the organization. Previous research has shown that perceived risk has a significant influence on consumer behavior, including consumer loyalty (Hennig-Thurau, Gwinner, & Gremler, 2002).

High risk perception in the banking context may discourage customers from actively selecting and using certain banking services. For example, when a customer feels that there is a high risk associated with the security of their personal information, they may be reluctant to use online banking services or use credit cards. Likewise, if customers feel that the risk of losing their funds is high due to financial instability or the performance of a financial institution, they may seek other alternatives or reduce engagement with the institution.

1.6.3 Service Quality

Service quality, as defined, serves as a metric for evaluating how effectively service providers meet customers' expectations throughout their interactions. This encompasses various dimensions, including responsiveness, reliability, security, empathy, and tangible evidence of service. Extensive research has highlighted the substantial positive impact of service quality on consumer loyalty (Cronin & Taylor, 1992; Parasuraman, Zeithaml, & Berry, 1988).

When customers perceive the service quality to be high and their expectations are consistently met or exceeded, they tend to exhibit greater loyalty towards the organization. This loyalty stems from a sense of satisfaction derived from the quality of service received. Therefore, service quality emerges as a critical determinant influencing both customer satisfaction and loyalty, underscoring its pivotal role in shaping long-term customer relationships.

1.6.4 Customer Trust

Customer trust is fundamental in fostering enduring relationships between businesses and consumers, representing the confidence or faith consumers have in a business or product. It serves as a cornerstone for developing long-term connections. Previous research has consistently demonstrated the significant positive impact of customer trust on customer loyalty (Morgan & Hunt, 1994; Sirdeshmukh, Singh, & Sabol, 2002). Consumers who trust a brand are more likely to exhibit devotion, repurchase products, and recommend them to others. The establishment of enduring relationships between customers and businesses hinges on the foundation of customer trust. This trust is gauged by a customer's confidence in a company's integrity, competence, and willingness to meet their needs and expectations

1.6.5 Customer Loyalty

Customer loyalty is a crucial aspect of consumer behavior, often measured using the Loyalty scale developed by Yoon and Suh (2003). This scale encompasses various statements designed to gauge the degree of consumers' inclination to continue purchasing products or utilizing services from a specific organization, predicated on their past experiences. The statements in this scale encapsulate aspects such as repeat purchase intent, recommendations to others, and commitment to the organization.

By aggregating consumer responses to these statements, customer loyalty can be effectively measured. This composite measurement provides insights into the extent to which consumers exhibit loyalty towards a particular brand or organization based on their cumulative experiences and perceptions.

1.6.6 Factors Affecting Customer Loyalty

1.6.6.1 Perceived Risk on Customer Loyalty

Perceived risk is an individual's perception of potential losses or uncertainties that may occur in a transaction or interaction with an organization. In the context of banking, perceived risk can include the risk of loss of funds, the risk of personal information security, the risk of quality of service, and the risk of organizational reputation. Previous research has shown that perceived risk has a significant influence on consumer behaviour, including consumer loyalty (Hennig-Thurau, Gwinner, &; Gremler, D. D. 2002). High perceived risk tends to reduce consumer loyalty, while low perceived risk tends to increase consumer loyalty. An important term in the study of consumer behaviour is perceived risk. It deals with a person's impression of possible losses or uncertainty that might occur in a deal or other relationship with a company. The term "perceived risk" in the context of this study refers to the risk that Bank Syariah Indonesia clients feel following a cyberattack. The perceived risks can include several aspects, including:

1. Risk of Loss of Funds: Bank customers may be concerned about the possibility of losing their funds due to a cyberattack. In the case of a cyber attack on Bank Syariah Indonesia, there is a possibility of unauthorized access to customer accounts, fraud, or theft of financial information that may result in financial losses. Customers may be aware of these risks and may consider reducing their involvement with the bank.
2. Personal Information Security Risks: Cyberattacks may result in unauthorized access to or misuse of customers' personal information, such as identity, account numbers, or credit card data. Customers' trust in the bank may be

impacted by this sense of danger, which may prevent them from using online banking services or giving the bank their personal information.

3. Quality of Service Risk: Cyberattacks that disrupt the banking system can have a negative impact on the quality of services provided by banks. Customers may experience disruption of access to online banking services, transaction delays, or inability to perform certain transactions. The perception of low service quality risk can make customers lose confidence in the bank's ability to provide reliable and quality services.
4. Organizational Reputation Risk: A successful cyberattack can damage Bank Syariah Indonesia's reputation as a safe and trusted financial institution. Customers may be concerned that similar attacks may occur in the future or that banks do not have adequate security measures in place to protect their data and funds. The perception of high reputational risk can reduce customer trust in the bank and affect their loyalty.

In this study, an analysis will be conducted on the effect of perceived risk on customer loyalty after a cyber attack on Bank Syariah Indonesia. With a deeper understanding of the factors that influence the risks perceived by customers, this research will provide valuable insights in managing and mitigating risks arising from cyberattacks, as well as formulating effective strategies to maintain customer loyalty in the midst of difficult conditions.

1.6.6.2 Service Quality on Customer Loyalty

Service quality is a measure of how well service providers are meeting customers' expectations throughout interactions. The concept of service quality can include aspects such as responsiveness, reliability, security, empathy, and physical evidence of service. Previous research has shown that service quality has a significant positive influence on consumer loyalty (Cronin &; Taylor, 1992; Parasuraman, Zeithaml, & Berry, 1988). When consumers are satisfied with the quality of service provided, they tend to be more loyal to the organization. Service quality, or service quality, is a critical factor in influencing customer satisfaction and loyalty.

Quality of service refers to the extent to which an organization is able to meet customer expectations and needs through the provision of quality services. In the context of this study, service quality refers to the ability of Bank Syariah Indonesia to provide services that meet customer expectations after a cyberattack. Some dimensions that are important to understand service quality are as follows:

1. Responsiveness: This dimension includes the bank's ability to respond quickly, effectively, and adequately to customer requests, questions, or complaints. After a cyberattack, customers may have urgent needs or concerns that need to be addressed immediately. The responsive quality of the bank in overcoming problems and providing adequate solutions can affect customer perceptions of service quality.
2. Reliability: Reliability refers to a bank's ability to provide consistent, accurate, and reliable service. Customers expect that the transactions and banking services they use will run smoothly and without obstacles. After a cyberattack, banks' reliability in protecting customer data and maintaining a smooth transaction process becomes critical. If the bank can maintain a high level of reliability, customers will be more likely to feel satisfied and remain loyal.

3. Assurance: This dimension relates to the bank's ability to build customer trust and confidence in their competence and integrity. After a cyberattack, customers may doubt their security and trust in the bank. Therefore, it is important for banks to provide assurance and proof that they have taken the necessary steps to protect customers and provide quality services.
4. Tangibles: Physical evidence includes all aspects that can be physically observed or perceived by a customer, such as physical facilities, equipment, or documents related to banking services. Although cyberattacks are not directly related to physical evidence, their impact on customer perceptions of banks can affect overall service quality. Banks need to ensure that existing physical evidence still reflects professionalism and trustworthiness.

This study will assess the degree to which Bank Syariah Indonesia's service quality influences customer loyalty following a cyberattack by analyzing these aspects of service quality. This research will help banks improve their service quality and sustain strong connections with clients under difficult circumstances by giving them a better grasp of the significance of service quality in creating customer loyalty.

1.6.6.3 Customer Trust on Customer Loyalty

Customer trust is the confidence or faith that consumers have in a business or a product. For businesses and customers to develop enduring connections, trust is a key component. Customer trust has a strong positive impact on customer loyalty, according to prior studies (Morgan & Hunt, 1994; Sirdeshmukh, Singh, & Sabol, 2002). Consumers who trust brands are more likely to be devoted, to repurchase products, and to suggest them to others. A enduring relationship between customers and businesses depends on customer trust. A customer's confidence in a company's integrity, competence, and readiness to meet their needs and expectations is measured by their level of trust in that company.

In the context of this study, customer trust refers to the level of trust customers have in Bank Syariah Indonesia after a cyber attack. Some important aspects that need to be understood in the context of customer trust are as follows:

1. Data and Information Security: Customer trust in banks is related to the security of their data and personal information. After a cyberattack, customers may doubt a bank's ability to protect their personal information from misuse or unauthorized access. Customer trust will be affected by security measures taken by banks to reduce the risk of cyberattacks and protect the integrity of customer data.
2. Service Reliability: Trust also relates to the reliability of services provided by the bank. Customers want consistent, accurate, and reliable service. After a cyberattack, customers may doubt a bank's ability to provide services with an adequate level of reliability. Banks need to build and maintain customer trust by demonstrating that they are able to overcome difficult situations and maintain quality of service.
3. Communication and Transparency: It is important for banks to communicate clearly and transparently to customers regarding the cyberattacks that occur and the steps taken to address the situation. Open and honest communication will help build customer trust. Customers need to feel that they are being provided with timely and accurate information regarding cyberattacks and the efforts made by banks to protect their interests.
4. Compliance with Sharia Principles: For Bank Syariah Indonesia customers, trust is also related to the bank's compliance with sharia principles. Customers expect that banks will comply with sharia rules and principles in all their

operations. Customer confidence may be affected if there is doubt about the bank's compliance with sharia principles after a cyberattack.

Through customer trust analysis, this study will identify factors that influence the level of customer trust in Bank Syariah Indonesia after a cyberattack. With a deeper understanding of the importance of trust in building long-term relationships with customers, this research will provide valuable insights for banks in developing effective strategies to restore customer trust and maintain their loyalty.

1.7 Previous Research

No	Title	Variable	Method	Unit Analysis	Result
1	Hennig-Thurau, T., Gwinner, K. P., & Gremler, D. D. (2002). Understanding relationship marketing outcomes: An integration of relational benefits and relationship quality. Journal of Service Research, 4(3), 230-247. .	Effect of Perceived Risk on Customer Loyalty	The research method used in the study is an experimental analytical approach. This research is based on data collection through surveys involving customer respondents. In the survey, researchers may have asked respondents to rate their perceptions of perceived	The unit analyzed in this study is "consumer loyalty". This research seeks to understand how the perceived risk perceived by consumers can affect the level of customer loyalty to a particular company or brand. Thus, respondents who participated in this study were	Hennig-Thurau, Gwinner, and Gremler's (2002) earlier research demonstrated that perceived risk has a detrimental impact on customer loyalty. In their study, they discovered that consumer loyalty to the company decreased as perceived risk by

			risk in interacting or transacting with a brand or company. In addition, data on customer loyalty is also collected through surveys.	consumers who had interacted or transacted with the company or brand studied.	consumers increased. This demonstrates that customers have a tendency to be less devoted to a brand when they perceive a high level of risk in their interactions or transactions with it.
2	Suh, J., & Yi, Y. (2006). When brand attitudes affect the customer satisfaction-loyalty relation: The moderating role of product involvement. Journal of Consumer Psychology, 16(2), 145-155.	Effect of Perceived Risk on Customer Loyalty	The research method used in the study is an experimental analytical approach. This research might use surveys as a means of data collection to assess consumer attitudes towards brands, customer satisfaction levels, customer loyalty levels,	The units analyzed in this study are "consumer satisfaction," brand attitudes, customer loyalty, and product involvement. This research sought to understand how attitudes towards brands might affect the relationship between customer satisfaction	Another study conducted by Suh and Yi (2006) also supports these findings. They found that perceived risk has a negative influence on the relationship between customer satisfaction and loyalty. In this study, they found

			and product engagement levels.	and customer loyalty, and whether product engagement plays a role as a moderating variable in this relationship. Thus, respondents participating in the study may be consumers who have interacted with the brand or product under study.	that when consumers experience high levels of perceived risk, the relationship between consumer satisfaction and loyalty becomes weaker. This shows that perceived risk can hinder the formation of consumer loyalty.
3	Cronin, J. J., & Taylor, S. A. (1992). Measuring service quality: A reexamination and extension. Journal of Marketing, 56(3), 55-68.	Effect of Service Quality on Customer Loyalty	The research method used in the study is an analytical approach that includes surveys. This research may use questionnaires to collect data on customer perceptions of the quality of services provided by a company. In	The units analyzed in this study are "customer loyalty" and "service quality". This research seeks to understand how customer perception of the quality of service provided by a company can affect the level of	The results of earlier studies by Cronin and Taylor (1992) and Parasuraman, Zeithaml, and Berry (1988) demonstrated the link between service quality and customer loyalty. According to the study's findings,

	this study, researchers may have analyzed data obtained from respondents to find out the relationship between service quality and customer loyalty.	customer loyalty. Thus, the respondents who participated in this study were consumers who had interacted with the company or organization studied, and they were asked to give their assessment regarding the quality of their services and level of satisfaction.	customers are more likely to be satisfied and show loyalty to a company when they receive high-quality service. Five aspects of service quality—reliability, responsiveness, security, empathy, and tangibles—are measured by the SERVQUAL scale, which Cronin and Taylor created in 1992. According to their research, customers who are very satisfied with an organization's level of customer service are more likely to stay devoted

					to that company.
4	Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. Journal of Retailing, 64(1), 12-40.	Effect of Service Quality on Customer Loyalty	The research method is an analytical approach that includes the development and measurement of service quality using the SERVQUAL scale. This study uses surveys as a means of data collection to measure consumer perceptions of the quality of services provided by an organization. The SERVQUAL scale created by Parasuraman, Zeithaml, and Berry in 1988 was used to measure five aspects of service quality: reliability,	The units analyzed in this study are "customer loyalty" and "service quality". This research seeks to understand how customers perceive the quality of services provided by an organization can affect the level of customer loyalty. Thus, the respondents who participated in the study were consumers who had interacted with the organization or company studied, and they were asked to provide their	Research conducted by Parasuraman, Zeithaml, and Berry (1988) shows a positive relationship between service quality and customer loyalty. They found that when consumers experience good service quality, they tend to have a higher tendency to maintain a relationship with the organization and remain loyal customers.

			responsiveness, security, empathy, and tangibles.	assessment regarding the quality of their services and level of satisfaction.	
5	Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. Journal of Marketing, 58(3), 20-38.	Effect of Customer Trust on Customer Loyalty	The method His research is an analytical approach that includes the development of a theory of commitment and trust in relationship marketing. This research may use a literature approach and conceptual analysis to develop and formulate the theory. In addition, the study may also include a comprehensive literature review to support and strengthen the argument regarding the relationship between customer	The units analyzed in this study are "customer trust" and "customer loyalty". This research seeks to understand how customer trust in a company or brand can affect customer loyalty levels. Thus, this study involves analyzing the relationship between customer trust and customer loyalty as well as the role of commitment in building sustainable connections between	Customer trust positively affects customer loyalty, according to earlier studies by Morgan and Hunt (1994) and Sirdeshmukh, Singh, and Sabol (2002). A notion of commitment and trust in relationship marketing was created by Morgan and Hunt in their 1994 research. The findings of their study demonstrate the importance of trust in creating enduring connections between

			trust and customer loyalty.	companies and customers. Respondents participating in the study may be consumers who have interacted with the company or brand studied.	businesses and customers. Customers that have a high level of trust in the company are more likely to be devoted to the connection and to be loyal to it.
6	Sirdeshmukh, D., Singh, J., & Sabol, B. (2002). Consumer trust, value, and loyalty in relational exchanges. Journal of Marketing, 66(1), 15-37.	Effect of Customer Trust on Customer Loyalty	The research method is an experimental analytical approach or survey. This research may use surveys as a means of data collection to assess the level of consumer trust in a business, the perceived value provided by that business, and the level of customer loyalty. In the survey, it may also be asked about	The units analyzed in this study are "consumer trust", "value" or value provided by businesses, and "customer loyalty" or customer loyalty. This research seeks to understand how levels of consumer trust can affect levels of customer loyalty, and whether perceptions of value	Sirdeshmukh, Singh, and Sabol (2002) concluded that trust has a favorable impact on customer loyalty in their additional study. They demonstrate that customers who have a high level of trust in a business are more likely to make subsequent purchases and recommend

			consumer repurchase behavior and business recommendations to others.	provided by businesses also play a role in those relationships. Respondents participating in the study may be consumers who have interacted with the businesses studied, and they are asked to provide ratings and responses regarding their trustworthiness, value, and level of loyalty to those businesses.	the business to others.
7	Suh, J., & Yi, Y. (2006). When brand attitudes affect the customer satisfaction-loyalty relation: The moderating role of	Effect Perceived Risk, Service Quality and Customer Trust on Customer Loyalty	The research method is an experimental analytical approach or survey. This research might use surveys as a means of data collection to assess consumer	The units analyzed in this study are "customer satisfaction", "brand attitudes", "customer loyalty", and "product involvement". This research	Suh and Yi's (2006) study demonstrates that brand attitudes, which moderate product participation, have a favorable impact on the link between

product involvement . Journal of Consumer Psychology, 16(2), 145-155.		attitudes towards brands, customer satisfaction levels, customer loyalty levels, and product engagement levels. In the survey, it may also be asked about the level of product engagement that consumers have with the brand studied.	sought to understand how attitudes towards brands can affect the relationship between customer satisfaction and customer loyalty, and whether product engagement plays a role as a moderating variable in this relationship. Respondents participating in the study may be consumers who have interacted with the brand or product under study, and they were asked to provide their ratings regarding attitudes towards the brand, customer	customer happiness and customer loyalty. In this study, it was discovered that the association between consumer happiness and customer loyalty increases greater when customers have a favorable attitude toward a brand and have a high level of participation with the product. This demonstrates how psychologica l elements like brand attitudes and consumer engagement can affect customer loyalty.

				satisfaction, customer loyalty, and level of product engagement.	
8	Yoon, Y., & Suh, E. (2003). Factors affecting trust in e-marketplace : A study of online shopping behavior in Korea. Journal of Organizational Computing and Electronic Commerce, 13(2), 81-95.	Effect Perceived Risk, Service Quality and Customer Trust on Customer Loyalty	The research method is an experimental analytical or survey approach. The study may use surveys as a means of data collection to identify factors influencing consumer confidence in shopping in the electronics market. In the survey, it may also be asked about online shopping behavior and the level of consumer confidence in the electronic market.	The units analyzed in this study are "trust in e-marketplace", "online shopping behavior", and possibly also factors that influence consumer confidence Such as transaction security, seller reputation, product quality, and so on. Respondents who Participated in this study may be consumers who have shopped online at the electronic market in Korea, and they were	According to Suh and Yi's (2006) research, brand attitudes can moderate product participation and hence have a favorable impact on the link between customer happiness and customer loyalty. According to this study, the relationship between consumer happiness and customer loyalty is strongest when consumers have a favorable opinion about a brand and are highly

				asked to provide their ratings regarding the level of trust, online shopping behavior, and factors affecting their trust.	engaged with the product. This demonstrates how psychological aspects like views toward brands and customer involvement can affect consumer loyalty.
9	Saleem and Sadiq (2016) "Exploring Factors Affecting Customer Loyalty in the Banking Industry: The Mediating Role of Customer Satisfaction".	Effect Perceived Risk, Service Quality and Customer Trust on Customer Loyalty	The research method is an experimental analytical approach or survey. The study may use surveys as a means of data collection to identify factors influencing customer loyalty in the banking industry. In addition, in the survey, it may also be asked about the level of customer satisfaction with banking	The unit analyzed in this study is "customer loyalty" or customer loyalty in the banking industry. This research seeks to understand how factors such as customer satisfaction, service quality, customer trust, and perceived value can affect customer loyalty levels. Thus,	These findings support the theory which states that customer satisfaction is an important factor in influencing customer loyalty. Factors such as service quality, customer trust and perceived value also play a role in shaping customer satisfaction, which in turn influences

	services, their perception of service quality, the level of customer trust in the bank, and the value they feel from the services provided.	respondents participating in the study may be consumers who have used banking services from the banks studied, and they were asked to provide their ratings regarding the level of satisfaction, loyalty, and other factors that affect the relationship between customer satisfaction and loyalty in the banking industry.	customer loyalty. This research provides a deeper understandin g of the factors that can influence customer loyalty in the banking industry. These findings can provide valuable insights for banks in developing marketing strategies aimed at increasing customer satisfaction and strengthening customer loyalty.

1.8 Hypothesis

Hypotheses are predictive statements put forward based on certain theories or assumptions, which will be tested through research or data collection. The purpose of the hypothesis is to test the relationship between the variables studied and provide a basis for drawing conclusions about whether there is a relationship or influence between these variables.

1.8.1 H1: The influence of Perceived Risk on Customer Trust

Perceived risk plays a significant role in shaping customer trust. When consumers perceive a high level of risk in their interactions or transactions with a brand, it tends to diminish their trust in that brand. Previous studies have consistently shown a negative correlation between perceived risk and customer trust (Hennig Thurau, Gwinner, &; Gremler, D. D. 2002). In simpler terms, the more risk consumers perceive in their engagements with a brand, the less likely they are to trust it.

1.8.2 H2: The influence of Service Quality on Customer Trust

Service quality has a direct and positive impact on customer trust. Businesses or brands that consistently deliver high-quality services not only meet but often exceed customer expectations (Cronin & Taylor, 1992). As a result, customers tend to place greater trust in these businesses. Essentially, the better the quality of service provided by a company, the higher the level of trust customers are likely to have in that company.

1.8.3 H3: The influence of Perceived Risk on Customer Loyalty

This claim focuses on the relationship between service quality and client loyalty. Service quality is determined by how well customers' expectations are met when interacting with service providers. Prior research (Cronin & Taylor, 1992; Parasuraman et al., 1988) has shown that service quality has a considerable positive impact on customer loyalty. In other words, customer loyalty rises directly in line with the level of service. The posited hypothesis is that service quality has a strong beneficial impact on customer loyalty.

1.8.4 H4: The influence of Service Quality on Customer Loyalty

The main focus of this hypothesis is how customer loyalty is affected by service quality. Service quality refers to how well customers' expectations are satisfied when they interact with service providers. According to past studies (Cronin & Taylor, 1992; Parasuraman et al., 1988), service quality has a considerable beneficial impact on customer loyalty. In other words, consumer loyalty and service excellence are mutually exclusive. The idea put forth in light of this is that service quality considerably boosts customer loyalty.

1.8.5 H5: The influence of Customer Trust on Customer Loyalty

The hypothesis focuses on how customer trust affects consumer loyalty. The belief or confidence that customers have in a business or a product is known as customer trust. Previous studies (Morgan & Hunt, 1994; Sirdeshmukh et al., 2002) have found that consumer trust has a considerable positive impact on customer loyalty. Customers are more inclined to stick with brands, make repeat purchases, and give positive recommendations if they have faith in them. In light of this, it is hypothesized that consumer trust has a major positive impact on customer loyalty.

1.8.6 H6: The influence of Perceived Risk on Customer Loyalty Towards Customer Trust

The hypothesis aims to explore how perceived risk influences customer loyalty concerning customer trust. Perceived risk refers to the subjective assessment customers make regarding the potential negative consequences associated with a purchase decision. It encompasses factors such as uncertainty about the product's quality, its performance, or the credibility of the seller. Previous research (Bauer, 1960; Featherman & Pavlou, 2003) suggests that higher perceived risk tends to decrease customer loyalty as it introduces hesitation and doubt in customers' minds.

1.8.7 H7: The influence of Service Quality on Customer Loyalty Towards Customer Trust

This hypothesis explores the relationship between service quality and customer loyalty, focusing on the intermediary role of customer trust. Service quality refers to the extent to which a company's offerings meet or exceed customer expectations. It encompasses various dimensions such as reliability, responsiveness, assurance, empathy, and tangibles (Parasuraman et al., 1988).

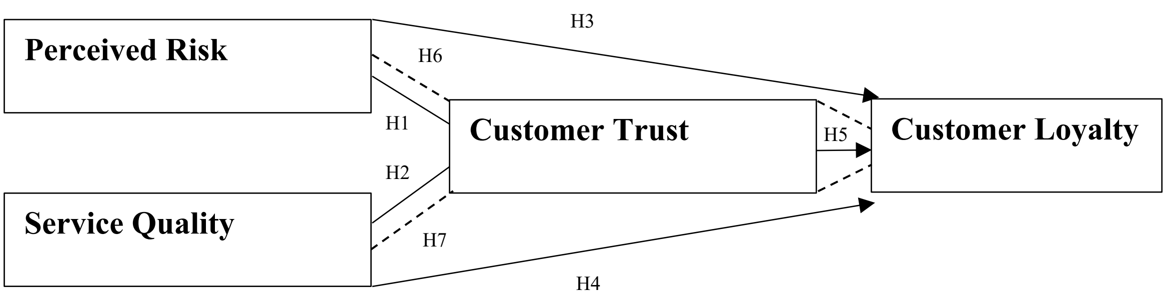


Figure 1.3 Hypothesis Model

H1 : Perceived risk affects Customer Trust

H2 : Service Quality affects Customer Trust

H3 : Perceived Risk affects Customer Loyalty

H4 : Service Quality affects Customer Loyalty

H5 : Customer Trust affects Customer Loyalty

H6 : Perceived Risk affects Customer Loyalty toward Customer Trust

H7 : Service Quality affects Customer Loyalty toward Customer Trust

In this study, seven hypotheses will be tested to understand the relationships among the variables under investigation. Firstly, Hypothesis 1 (H1) posits that customer trust is influenced by perceived risk and service quality. The findings indicate a significant influence of perceived risk and service quality on customer trust. This aligns with the predictions posited within the hypothesis, where customer trust is affected by these factors.

Secondly, Hypothesis 2 (H2) assumes that perceived risk affects customer loyalty. The findings confirm that perceived risk indeed has a significant influence on customer loyalty. This suggests that customers who perceive risk in their interactions with a brand tend to exhibit lower loyalty.

Thirdly, Hypothesis 3 (H3) focuses on the impact of service quality on customer loyalty. Although this hypothesis did not garner support in the research findings, indicating that service quality does not have a significant influence on customer loyalty, it suggests a need for a revaluation of the initial assumptions or the presence of other variables affecting this relationship.

Fourthly, Hypothesis 4 (H4) asserts that customer trust significantly positively impacts customer loyalty. The findings affirm that customer trust indeed has a significant influence on customer loyalty. This implies that customers with higher levels of trust in a brand tend to exhibit greater loyalty.

Fifthly, Hypothesis 5 (H5) suggests that customer trust mediates the relationship between perceived risk and service quality with customer loyalty. The research findings confirm that customer trust indeed plays a mediating role in this relationship, linking perceived risk and service quality with customer loyalty.

Sixthly, Hypothesis 6 (H6) emphasizes that perceived risk has a direct impact on customer trust. The findings indicate that perceived risk indeed has a direct effect on customer trust, consistent with the proposed hypothesis.

Lastly, Hypothesis 7 (H7) examines the mediating effect of service quality in the relationship between service quality and customer loyalty. The research findings affirm that service quality indirectly influences customer loyalty through the enhancement of customer trust, indicating that customer trust serves as a mediator in this relationship.

1.9. Concept Definition

1.9.1 Perceived Risk

Perceived Risk refers to an individual's perception of potential losses or uncertainties that may occur in a transaction or interaction with an organization. (Hennig-Thurau, Gwinner, &; Gremler, 2002).

1.9.2 Service Quality

The level to which customer expectations are met during interactions with service providers is gauged by the term "service quality." These include being available, trustworthy, secure, empathetic, and providing tangible proof of service (Cronin & Taylor, 1992).

1.9.3 Customer Trust

Customer Trust is the trust that consumers have in an organization or brand. Consumers who trust organizations tend to be more loyal, more likely to make repeat purchases, and give positive recommendations to others. (Morgan & Hunt, 1994; Sirdeshmukh, Singh, & Sabol, 2002).

1.9.4 Customer Loyalty

Customer loyalty is the propensity of customers to continually make purchases from or use the services of a business over an extended period of time. (Suh, J., & Yi, Y. 2006).

1.10 Operational Definition

Operational definition is the elaboration of more specific and measurable concepts in the context of research. Here are operational definitions for each of the concepts associated with this study, based on previous research:

1.10.1 Perceived Risk

Perceived Risk is measured using the Likert scale which consists of several statements that describe consumer perceptions of potential risks in transacting with organizations. This scale may include statements about the risk of loss of funds, personal information security risks, quality of service risks, and organizational reputation risks. The level of perceived risk is measured by taking the average of consumer responses to these statements.

The indicators that affect Perceived Risk based on research by Hennig-Thurau, Gwinner, & Gremler (2002) are as follows:

1. Uncertainty of product or service: This indicator includes the degree of uncertainty felt by consumers regarding the products or services offered by the organization. The higher this level of uncertainty, the higher the perceived risk felt by consumers.
2. Financial Risk: This indicator includes consumer perception of the risk of loss of funds or unexpected expenses resulting from transactions with certain organizations.
3. Personal Information Security Risk: This indicator includes consumers' perception of the risk of leakage or misuse of their personal information when interacting with the organization.
4. Service Quality Risk: This indicator includes consumers' perception of the risk of receiving services that are less than satisfactory or do not meet their expectations.

5. Organizational Reputation Risk: This indicator includes consumer perception of the risk of bad reputation of a particular organization or brand.

In research by Hennig-Thurau, Gwinner, & Gremler (2002), the above aspects become factors that influence Perceived Risk from the point of view of consumers in conducting transactions with certain organizations or brands. This risk perception is then measured using the Likert scale in the form of statements that describe consumer perceptions of these potential risks.

1.10.2 Service Quality

Operational Definition of Service Quality is a way or method used to measure or operationalize the abstract concept of "Service Quality" into variables that can be measured empirically. In the context of a particular research or study, operational definitions serve to clearly explain how the variable "Service Quality" will be measured or observed.

Research by Suh and Yi (2006) on Service Quality presents indicators that affect Service Quality, including:

1. Responsiveness: This indicator reflects the degree to which employees or service providers respond quickly and efficiently to consumer requests, questions, or concerns.
2. Assurance: This indicator relates to consumer confidence in the competence, skills, and reliability of employees or service providers in providing services.
3. Empathy: This indicator reflects the extent to which employees or service providers show empathy, concern, and understanding of consumer needs and problems.

4. Tangibles: These indicators relate to the physical appearance of the service environment, equipment, and employees, which can affect consumers' perception of service quality.
5. Reliability: This indicator reflects the ability of employees or service providers to provide services consistently, accurately, and on time.

In research by Suh and Yi (2006), these indicators are used to measure Service Quality from a consumer perspective. Such measurements help operationalize the abstract concept of Service Quality into variables that can be measured and analyzed empirically. This allows researchers or organizations to understand and improve the quality of services provided to consumers.

1.10.3 Customer Trust

The Trust scale created by Morgan and Hunt in 1994 or the Consumer Trust scale created by Sirdeshmukh, Singh, and Sabol in 2002 are both used to gauge customer trust. This scale consists of a number of statements that indicate how confident customers are in the company. Aspects like honesty, integrity, dependability, and organizational competency are all covered by the statements on this scale. By averaging the consumer reactions to these claims, the degree of customer trust is determined.

Based on references from Morgan and Hunt (1994), here are some indicators that affect Customer Trust:

1. Honesty: The level of consumer trust in an organization is determined by the extent to which the organization behaves honestly, does not deceive, and does not deceive consumers.

2. Integrity: Consumers believe in organizations that have high integrity, that is, consistent in their values, principles, and actions.
3. Dependability: The level of consumer trust in the organization is influenced by the degree to which the organization can reliably provide products or services in accordance with their promises and commitments.
4. Organizational Competency: Consumer trust is also influenced by their perception of the organization's ability and competence in delivering quality products or services.
5. Customer Orientation: The level of consumer trust increases when the organization demonstrates attitudes and actions that focus on customer satisfaction and meeting their needs.
6. Transparency: Consumers tend to have a higher level of trust in organizations that are transparent in their business operations, including policies, pricing, and service processes.

The Trust scale developed by Morgan and Hunt (1994) or the Consumer Trust scale developed by Sirdeshmukh, Singh, and Sabol (2002) is used to measure the level of consumer trust by including statements describing the above factors. Measurement is done by taking the average consumer response to these statements to determine the level of customer trust in the company.

1.10.4 Customer Loyalty

Customer Loyalty is measured using the Loyalty scale developed by Yoon and Suh (2003). This scale consists of several statements that measure the degree of propensity of consumers to still buy products or use services from a particular organization, based on their previous experience. Statements on this scale include aspects such as repeat purchase intent, recommendations to others, and commitment to the organization. Customer loyalty is measured by taking the average of consumer responses to these statements.

Based on research by Yoon and Suh (2003) on Customer Loyalty, here are some indicators that affect Customer Loyalty:

1. Repeat Purchase Intent: This indicator reflects the extent to which consumers intend to purchase products or use services from that organization again in the future.
2. Recommendations to Others: The level of consumer loyalty can be measured by how often they recommend products or services from that organization to others.
3. Commitment to the Organization: This indicator reflects the extent to which consumers feel attached and loyal to the organization, so they are likely to continue transacting with the organization.
4. Satisfaction with Previous Experience: The level of consumer satisfaction with an organization's previous experience with an organization's product or service impacts their level of loyalty.
5. Trust in the Organization: The level of consumer trust in the organization is also a factor that affects loyalty. Consumers who trust organizations tend to be more loyal.

The Loyalty Scale developed by Yoon and Suh (2003) is used to measure the level of consumer loyalty by including statements that describe the above factors. Measurement is done by taking the average consumer response to these statements to determine the level of customer loyalty to the organization.

1.11 Research Methodology

1.11.1 Research Type

This study used a type of quantitative research. This type of quantitative research aims to collect numerically measurable data and apply statistical analysis methods to test hypotheses and answer research questions.

1.11.2 Population and Sample

1.11.2.1 Population

Population is an area consisting of objects / subjects that have certain qualities and characteristics determined by researchers to be studied and then drawn conclusions (Sugiyono, 2018). In this study, the population is all customers of Bank Syariah Indonesia who have conducted banking transactions.

1.11.2.2 Research Sample

Sample is part of a number of populations that become an object of research. This sample is a way to collect data by taking some members of the population to be studied later (Saptutyningsi & Setyaningrum, 2019). Hair et al (2010) stated that the minimum sample size is 5 times the indicator of what was done and the number of good sample is more than 100 respondents. Therefore the researcher will use 100 respondent.

1.11.2.3 Sampling Techniques

In conducting this research, researchers will use a sampling technique in the form of non-probability sampling. This non-probability sampling is a sampling technique where each member in a population does not have the same opportunity as the other members (Saptutyningsi & Setyaningrum, 2019). Then the sampling in this study will use the purposive sampling method, which is a method that determines the participants to be made into samples based on a number of predetermined criteria

(Siregar, 2013). The reason for using this method is to determine a sample that logically represent the population. In this study, a researchers have determined the criteria used to determined the sample, namely:

1. Respondent are customers of Bank Syariah Indonesia, with at least 1 month use.
2. Respondent are customer aged minimum of 17 years
3. Responses are willing to fill out a questionnaire for research purposes.

1.11.3 Data Types and sources

1.11.3.1 Data Types

Primary data are the kind of information that will be gathered for this project. Data acquired directly by researchers for specific research aims is referred to as primary data. This information has never been used before and is pertinent to the study's objectives. Researchers will be able to get information that is precise and in line with the research objectives by using internal and primary data from Bank Syariah Indonesia. A solid theoretical framework and support for the interpretation of the research findings will also be provided by the literature data.

1.11.3.2 Data Source

The data sources to be used in this study are:

1. Questionnaire: The researcher will use the questionnaire as a data collection instrument. The questionnaire will be designed with questions related to the variables studied, namely perceived risk, service quality, customer trust, and customer loyalty. The questions will be designed based on constructs and dimensions that have been set out in a theoretical framework.

2. Literature data: Researchers will also use relevant literature data from previous research, journal articles, books, and other reliable sources. Literature data will be used to support theoretical arguments, compare previous research findings, and present a solid theoretical framework.

1.11.4 Data Collection Methods

In this study, a data collection method will be used that involves a combination of surveys and secondary data analysis. Here is a full explanation of the data collection methods used:

1. Survey: Primary data will be gathered from respondents who are Bank Syariah Indonesia clients using the survey method. Respondents will be given a questionnaire to complete as part of the survey. The questionnaire will ask about perceived risk, service quality, customer loyalty, and trust as well as other research-related variables. Surveys can be carried out offline by handing out questionnaires to respondents or online using survey platforms.

Table 1.1 Scale Likert

Answers	Scale
Strongly agree	5
Agree	4
Neutral	3
Disagree	2
Strongly disagree	1

Surveys can involve the use of the Likert scale to measure the degree of agreement or disagreement of respondents to statements related to research variables. Surveys can also involve open-ended or semi-structured questions that allow respondents to give their responses or opinions in more detail.

2. Secondary Data Analysis: In addition to primary data collected through surveys, researchers will also use existing secondary data to support research analysis. The secondary data used can be in the form of historical data on the performance of Bank Syariah Indonesia, financial statements, customer data, or scientific publications related to research topics. This secondary data will be used to gain a more comprehensive understanding of the research context, see trends, and support statistical analysis to be carried out.

Through a combination of survey methods and secondary data analysis, this study will obtain the necessary data to answer the research questions and test the hypotheses proposed. This method allows for comprehensive data collection and analysis that can support research findings.

1.11.5 Analysis Technique

1.11.5.1 Partial Least Square (PLS)

Using SmartPLS software version 3, the partial least squares (PLS) approach was used to analyze the data. One approach for resolving structural equation modelling (SEM), PLS is in this case more effective than other SEM approaches. The rate for SEM is frequently utilized by researchers that concentrate on social sciences due to its greater flexibility in research that integrates theory and data and its ability to do route analysis with latent variables. Due to the fact that it is not predicated on numerous assumptions, partial least squares (PLS) is a reasonably potent analytical technique. Indicators with scale categories, ordinals, intervals, and ratios can all be utilized in the same model without the data needing to be normally multivariate distributed, and the sample size is not required (Gozali, 2012).

PLS may both validate the theory and provide an explanation for the existence or lack of connections between latent variables. PLS is also utilized to support hypotheses, making it more appropriate for data analysis in prediction-based research. Additionally, the existence or lack of correlations between latent variables may be described using partial least squares (PLS). PLS may examine constructs created with both formative and reflexive indicators at the same time. A covariance-based SEM is unable to accomplish this since it would be using an undetermined model.

The decision to use the partial least square (PLS) technique was made in light of the fact that there were four latent variables in this study that were created using reflexive and variable indicators and assessed using a second order factor reflexive approach. The reflexive model presupposes that latent variables have an impact on indicators, and it is necessary to validate this link in order to determine the direction of the causation relationship from construct to indicator or manifest (Ghozali, 2012).The hierarchical component model, often known as the repeated indicators approach, is one method for assessing the second order factor. The benefit of this method is that it may be estimated using common PLS methods, despite the fact that it repeats the number of manifest variables or indicators (Ghozali, 2012).

1.11.6 Measurement Model or Outer Model

1.11.6.1 Validity Test

a. Convergent Validity Test

Convergent validity determines the value of the relationship between constructs and latent variables by looking at the values of standardized loading factor and AVE (Average Variance Extracted). If the individual value is above 0.70 it can be considered higher than the construct you want to calculate. However, a loading factor of 0.50 to 0.60 is still acceptable at the scale development stage research (Ghozali, 2015)

b. Discriminant validity test

Discriminant validity can be observed through *cross loading* between indicators and constructs. A higher construct correlation with the indicator than with others, indicates that the latent construct is considered a better indicator of one block than another block indicator. Another method of measuring discriminant validity is by comparing the square root of the AVE for other constructs with the model and each construct with the relationship between the constructs. If the AVE root for each construct exceeds the relationship between the construct and other constructs, then the model is considered to have good discriminant validity (Fornell & Larcker, 1981). Ghozali & Latan (2015) explain the test by knowing the AVE score to measure the validity of a construct. If the AVE score on each construct exceeds 0.50, it indicates that the model can be said to be good.

c. Average Variance Extracted (AVE)

Average Variance Extracted (AVE), which is used in validity tests in Partial Least Squares (PLS) analysis, assesses the convergent validity of question items or indicators of a variable. The average percentage of variation extracted between question items or indicators that are a summary of convergent indicators is measured by the AVE. The amount of variance indicators can contribute to the latent variable they reflect is described by AVE.

The indicator more accurately measures the hidden variable and has higher convergent validity the higher the AVE value. Every question item or indication must have an AVE value greater than 0.5 as a general rule. This implies that the hidden variables that the indicators assess may account for at least 50% of the variation in the indicators. Through convergent validity evaluation using AVE, researchers can ensure that the indicators used in PLS analysis validly measure the intended latent variable. This helps ensure the reliability of accurate analysis and interpretation results.

1.11.6.2 Reliability Test

Reliability tests aim to show the accuracy, consistency, accuracy of instruments useful for calculating constructs. In SEM-PLS, to assess the reliability of a construct with indicators can use methods including Cronbach's Alpha and Composite Reliability. If the Cronbach alpha or composite reliability score exceeds 0.70, then the construct is considered reliable (Ghozali &; Latan, 2015).

1.11.7 Structural Model or Inner Model

The Inner Relation model describes the relationship between latent variables based on the substantive theory underlying the study. In this case, the structural model will describe the relationship between the latent variable consisting of Perceived Risk, Service Quality, and Customer Trust to the dependent latent variable, namely Customer Loyalty.

Next, the Structural Model is evaluated using several metrics to measure the quality of the model and the significance of the structural path parameter coefficient. Some of the commonly used evaluation metrics in PLS analysis are as follows:

1. R-square: The amount of variance in the dependent latent variable that the independent latent variable in the model can explain is expressed as a percentage using R-square. The R-square in PLS is interpreted similarly to the R-square in regression analysis: the larger the R-square value, the more significantly the independent variable influences the dependent variable.
2. F Square Test: The value of f square in this study shows that the magnitude of the influence of endogenous variables on exogenous variables. Endogenous

variables in this study are lifestyle and perception, while exogenous variables in this study are purchasing decisions. The assessment criteria for f square according to Henseler (2009) are as follows: $0.02 \leq f \leq 0.15$ = weak effect, $0.15 \leq f \leq 0.35$ = moderate effect, $f \geq 0.35$ = strong effect.

3. Estimate For Path coefficients

   This test uses bootstrapping method through coefficient and significant number T statistic as a way to determine the significance of influence between variables (Ghozali &; Latan, 2015).

4. Testing the effect of mediation in PLS analysis uses a procedure (Ghozali and Latan, 2015) with the following stages. The first model examines the effect of exogenous variables on endogenous variables and should be significant at t-statistics > 1.96. The second model examines the effect of exogenous variables on mediating variables and should be significant at t-statistics > 1.96. The third model simultaneously examines the influence of exogenous variable and mediation on endogenous variables. In the final stage of testing, if the influence of exogenous variables on endogenous variables is not significant while the influence of mediating variables on endogenous variables is significant in t-statistics > 1.96, then variable mediation is proven to mediate the influence of exogenous variables on endogenous variables.

5. Hypothesis testing is carried out by looking at the path parameter in the path coefficient and the significant level of T-statistics (Ghozali and Latan, 2015). Hypothesis testing using bootstrapping technique with 5000 subsamples. The significance test of the path coefficient (Path) is used through division between *the t-statistic* score and the T-statistic score at the level of sig. 5% or worth 1.96. Hypothesis testing has several conditions, namely:

a. If the P value obtained < 0.05 and the T-statistic > 1.96, it can be stated that the hypothesis is accepted or the relationship between the two variables is significant.

b. If the P value obtained > 0.05 and T-statistic < 1.96, it can be stated that the hypothesis is rejected or the relationship between the two variables is not significant.

1.11.8 Descriptive Statistical Test

Descriptive statistical tests function in describing the objects studied from population data and samples as they are, analyzing and concluding those that apply to the public (Sugiyono, 2016).