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Driving Sustainable Loyalty: Does Green Quality Mediate the Impact of Green Banking in Sharia Banks?

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Abstract

Research Purpose: This study aims to analyze the influence of green banking practices, namely digital banking, green financing, green infrastructure, and green services, on customer loyalty at Bank Syariah Indonesia, with green service quality as a mediating variable.
Method: The research method uses a quantitative approach with a purposive sampling technique involving 160 BSI customers in Yogyakarta City. The data were analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS) with the help of WarpPLS 8.0 software.
Research Findings: The results show that all dimensions of green banking have a positive and significant effect on customer loyalty, with digital banking having the most dominant influence ($\beta = 0.390$, $p < 0.001$). Furthermore, green service quality is proven to mediate the relationship between green infrastructure and green services on customer loyalty, but it does not mediate the relationship between digital banking and green financing.
Recommendations and Novelty: These findings emphasize the importance of optimal implementation of green banking in enhancing customer loyalty in Islamic banking in a sustainable and competitive manner. This study takes a relevant approach and strengthens it by introducing a mediating variable, namely green service.

Abstrak

Tujuan penelitian: Penelitian ini bertujuan untuk menganalisis pengaruh praktik perbankan hijau, yaitu perbankan digital, pembiayaan hijau, infrastruktur hijau, dan layanan hijau, terhadap loyalitas nasabah di Bank Syariah Indonesia, dengan kualitas layanan hijau sebagai variabel mediasi.
Metode: Metode penelitian menggunakan pendekatan kuantitatif dengan teknik purposive sampling yang melibatkan 160 nasabah BSI di Kota Yogyakarta. Data dianalisis menggunakan Structural Equation Modeling-Partial Least Squares (SEM-PLS) dengan bantuan software WarpPLS 8.0.
Temuan penelitian: Hasil penelitian menunjukkan bahwa semua dimensi perbankan hijau memiliki pengaruh positif dan signifikan terhadap loyalitas nasabah, dengan perbankan digital memiliki

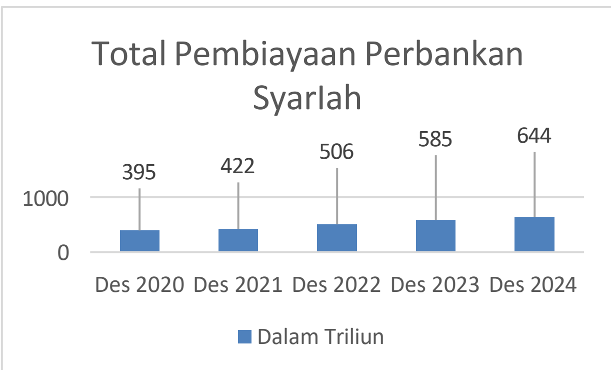
pengaruh paling dominan (β = 0,390, p < 0,001). Selain itu, kualitas layanan hijau terbukti memediasi hubungan antara infrastruktur hijau dan layanan hijau terhadap loyalitas nasabah, tetapi tidak memediasi hubungan antara perbankan digital dan pembiayaan hijau
Kontribusi dan Kebaruan: Temuan ini menekankan pentingnya penerapan perbankan hijau secara optimal dalam meningkatkan loyalitas pelanggan di perbankan Islam secara berkelanjutan dan kompetitif. Studi ini menggunakan pendekatan yang relevan dan memperkuatnya dengan memperkenalkan variabel mediasi, yaitu layanan hijau.

INTRODUCTION

The increasing environmental impact due to human activities encourages the banking sector to implement sustainable practices through green banking to support Corporate Social Responsibility (CSR) and the achievement of Sustainable Development Goals (SDGs) (Escobar et al., 2020; Syarifuddin & Sakti, 2021). Green banking is an environmentally friendly banking practice aimed at minimizing negative impacts on the environment and is an important strategy in promoting sustainable development (Shaumya & Arulrajah, 2017; Mishra & Aithal, 2021). In Indonesia, the implementation of sustainable finance is reinforced through POJK No. 51/POJK.03/2017 which mandates the integration of sustainability principles in the operations of financial service institutions (Nurmalia & Kurniawan, 2021). Islamic banking is considered aligned with this concept because it is based on principles of ethics, justice, and social responsibility, and plays a role in managing environmental risks from financing activities (Firdiansyah, 2020; Ardiansyah et al., 2025; Anggita Putri et al., 2022; Harja et al., 2022).

In this context, PT Bank Syariah Indonesia Tbk (BSI) was chosen as the research subject because it is one of the largest Islamic banks in Indonesia that has integrated sustainability principles into its business model. This commitment is demonstrated through the issuance of sustainability sukuk worth IDR 3 trillion in 2024, the establishment of an ESG Working Group, and a net zero emission target by 2033 (BSI, 2024). In addition, BSI also has a financing and investment portfolio that supports sustainable finance, such as green and social financing, which shows a positive growth trend. This confirms that the implementation of green banking is not only a regulatory compliance but also a strategy to enhance competitiveness and support the sustainability of the banking industry (Adhikari et al., 2025; Cindi et al., 2022).

Figure 1. Report on the development of islamic finance in indonesia 2024



Source : Data processed by the author (KNEKS.go.id)

Based on the image above, it can be seen that the total Islamic banking financing in December 2020 was IDR 395 trillion, then in December 2024 increased to IDR 643.55 trillion. In addition, according to BSI's sustainability report, the distribution of sustainable financing was IDR 66.49 trillion or 23.88% of the total portfolio, covering social financing of IDR 52.4 trillion and green financing of IDR 14.1 trillion. This indicates that Islamic banking continuously strives to support the existence of a sustainable financial system to improve overall business performance and growth.

BSI continues to innovate in promoting public awareness of environmental sustainability, one of which is by facilitating tree planting donations through the BYOND By BSI application, which integrates banking transactions and environmental donation services into a single digital platform. This initiative demonstrates BSI's commitment to the implementation of ESG in order to provide benefits for society and the environment while strengthening its role as a financial, social, and spiritual partner. In addition, in every operational activity and decision-making process, BSI is based on the principles of Maqashid Sharia, particularly Hifdz Al-Bi'ah (protecting the environment), as the basis for implementing sustainability (Achmad, 2025; BSI, 2024). With the integration of Sharia values and green initiatives, supported by a broad customer base and documented sustainability reports, BSI becomes a relevant context to study the relationship between green banking and customer loyalty in Islamic banking.

In Islamic banking, green banking presents strategic opportunities through regulatory support and government incentives that strengthen the green financial ecosystem and encourage synergy between economic and environmental goals (Yusrifalda & Nurcahyo, 2025). The development of instruments such as green sukuk and green financing also increases attractiveness for sustainability-oriented investors while strengthening the global competitiveness and reputation of Islamic banking (Fauziah et al., 2023). This approach aligns with Stakeholder Theory, which emphasizes the importance of balancing the interests of various parties in achieving sustainability (Freeman, 1984). In this context, customer loyalty becomes an important factor influenced by service quality, innovation, and commitment to the environment (Pawar & Munuswamy, 2022; Banerji & Singh, 2024). Various studies show that green banking practices can enhance the reputation, satisfaction, and loyalty of customers (Ghaffar et al., 2024; Ettinger et al., 2021). In addition, digital banking as part of innovation also plays a role in increasing customer loyalty, although research results show varied findings depending on the level of optimization of its implementation (Yusuf et al., 2023; Alfianita, 2021).

In supporting sustainability, Islamic banking adopts green banking through green infrastructure and green financing to improve energy efficiency and support environmentally friendly sectors (Rabbani & Fasa, 2025; Bansal et al., 2023). However, the influence of green infrastructure on customer loyalty is not always directly significant, thus requiring a mediating role such as green service quality (Mir et al., 2025). Green services and green service quality become important factors in building trust, satisfaction, and customer loyalty through technological innovations and environmentally friendly services, although previous research results still show inconsistencies (Ahmad et al., 2023; Rehman et al., 2022; Elansari et al., 2024; Supriyanto et al., 2021). Therefore, this study focuses on a research object at one of Indonesia's well-known banks, namely Bank Syariah Indonesia in Yogyakarta. This location was chosen because it is considered strategic for taking a closer look at the impact of green banking on customer loyalty in the context of sustainability, as well as to observe national banking within a regional scope.

From the description above, the researcher wants to fill the gap in previous research by adding green service quality as a mediating variable and focusing on Bank Syariah Indonesia. A quantitative approach is used to analyze how green banking practices such as digital banking, green loans, green infrastructure, and green services affect customer loyalty through green service quality. The results are expected to provide practical insights for Indonesian Sharia banks and support sustainable development goals. Therefore, the researcher presents the title "The Effect of Green Banking Practices on Customer Loyalty in Sharia Banks with Green Service Quality as a Mediating Role"

LITERATURE REVIEW

Stakeholder Theory

Stakeholder theory explains that a company's success is greatly influenced by its ability to manage and balance the interests of various stakeholders such as employees, investors, the government, and the environment (Freeman, 1984; Freeman & McVea, 2001). Good relationships with stakeholders, based on trust and cooperation, can improve performance and create competitive advantage (Mardikanto, 2014). In the context of green banking, this theory emphasizes that banks must pay attention to the impact of their operations on the environment and society through the implementation of sustainable practices as a form of social responsibility (Bukhari et al., 2020).

Green Banking

Green banking is a banking concept that focuses on environmental sustainability through efficient resource management, the use of environmentally friendly technology, and financing of sustainable projects (Aslam & Jawaid, 2023; Rai et al., 2019; Gupta, 2015). This concept includes two main approaches, namely environmentally friendly financing and bank operations that minimize environmental impact (Awatara & Fatonah, 2017). In Indonesia, its implementation is supported by regulations such as Law No. 32/2009, PBI No. 14/15/PBI/2012, and POJK No. 51/POJK.03/2017 (Handajani et al., 2019). In addition, its indicators can be measured through the Green Coin Rating (GCR), which includes carbon emissions, green rewards, green building, paperless practices, and green investment (Nath et al., 2014).

Green Banking Practises

Green banking practices are efforts by banks to implement sustainability principles through resource efficiency, the use of environmentally friendly technology, and financing that supports the environment (De Silva, 2020). This concept encompasses two main approaches, namely the transformation of internal operations such as digitalization and going paperless, as well as financing environmentally friendly projects (Uddin & Ahmed, 2018). In this study, the dimensions of green banking include digital banking, green infrastructure, green financing, and green services which play a role in increasing efficiency, reducing environmental impact, and supporting customer loyalty (Bhatt et al., 2024; Rehman et al., 2022; Kurniawan & Fasa, 2025; Hasibuan, 2020).

Green Service Quality

Service quality is an important factor in increasing customer satisfaction and loyalty, because satisfaction arises from the comparison between expectations and service performance (Ahmed et al., 2017). Environmentally friendly service quality (green service quality) assesses customer interactions with technology-based sustainable services (Bhatnagr & Rajesh, 2023). Its measurement can use the SERVQUAL model, which includes reliability, responsiveness, tangible evidence, assurance, and empathy (Parasuraman et al., 1985; 1994). These dimensions reflect the bank's ability to provide accurate, responsive services and to build customer trust (Demir et al., 2020; Koay et al., 2022).

Customer Loyalty

Customer loyalty is the attitude and behavior of customers to continue using the same service repeatedly based on positive experiences (Arslan, 2020; Almohaimmeed, 2019). In banking, loyalty is reflected in long-term relationships, the use of additional products, and the willingness to recommend to others (Banerji & Singh, 2024). Loyalty also includes commitment, positive attitude, and even tolerance for higher prices (Wu et al., 2019; Suhartanto et al., 2020). In general, loyalty can be measured through the tendency to speak positively, recommend services, and continue using services in the future (Moosa & Kashiramka, 2023).

HYPOTHESIS

Based on the problem formulation and the review of previous research, the researcher has compiled a series of hypotheses which are elaborated through the following explanation:

H1 : Digital banking has a positive and significant effect on the loyalty of Bank Syariah Indonesia customers.

H2 : Green infrastructure has a positive and significant effect on the loyalty of Bank Syariah Indonesia customers.

H3 : Green financing has a positive and significant effect on the loyalty of Bank Syariah Indonesia customers.

H4 : Green services have a positive and significant effect on the loyalty of Bank Syariah Indonesia customers.

H5 : The quality of green services has a positive and significant effect on the loyalty of Bank Syariah Indonesia customers.

H6 : Digital banking has a positive and significant effect on the quality of green services at Bank Syariah Indonesia.

H7 : Green infrastructure has a positive and significant effect on the quality of green services at Bank Syariah Indonesia.

H8 : Green financing has a positive and significant effect on the quality of green services at Bank Syariah Indonesia.

H9 : Green services have a positive and significant effect on the quality of green services at

Bank Syariah Indonesia.

H10 : Green service quality significantly mediates the relationship between digital banking and customer loyalty at Bank Syariah Indonesia

H11 : Green service quality significantly mediates the relationship between green infrastructure and customer loyalty at Bank Syariah Indonesia

H12 : Green service quality significantly mediates the relationship between green services and customer loyalty at Bank Syariah Indonesia

H13 : Green service quality significantly mediates the relationship between green financing and customer loyalty at Bank Syariah Indonesia

METHOD

This study uses a quantitative approach that focuses on the objective measurement of social phenomena (Priadana & Sunarsi, 2021) with descriptive statistical analysis to test hypotheses (Aisya & Astuti, 2019). This approach allows researchers to identify patterns, causal relationships, and make measurable generalizations (Hardani et al., 2020). The research variables consist of exogenous variables (X), endogenous variables (Y), and mediation (Z). The study population includes all customers of Bank Syariah Indonesia in Yogyakarta City, with a non- probability sampling technique using purposive sampling according to certain criteria. The determination of the sample size refers to Hair's guidelines for Structural Equation Modeling–Partial Least Squares (SEM-PLS) analysis.

The data source comes from primary data obtained through questionnaires filled out by respondents digitally using a Likert scale (Abdullah, 2015; Sani & Paramita, 2024). Data analysis was conducted using the SEM-PLS method with WarpPLS 8 software through two stages, namely the outer model and the inner model (Hair et al., 2017). The outer model test assesses the validity and reliability of the constructs through convergent validity, discriminant validity, Cronbach's Alpha, and composite reliability. Furthermore, the inner model test evaluates the relationships between variables using path coefficients, p-values, as well as goodness of fit indicators, R-square, and Q-square. Hypothesis testing is conducted through analysis of direct and indirect effects (mediation) with a significance level of ≤ 0.05.

RESULTS AND DISCUSSION

In this study, the results of the relationship between variables can be seen based on Figure 1 below:

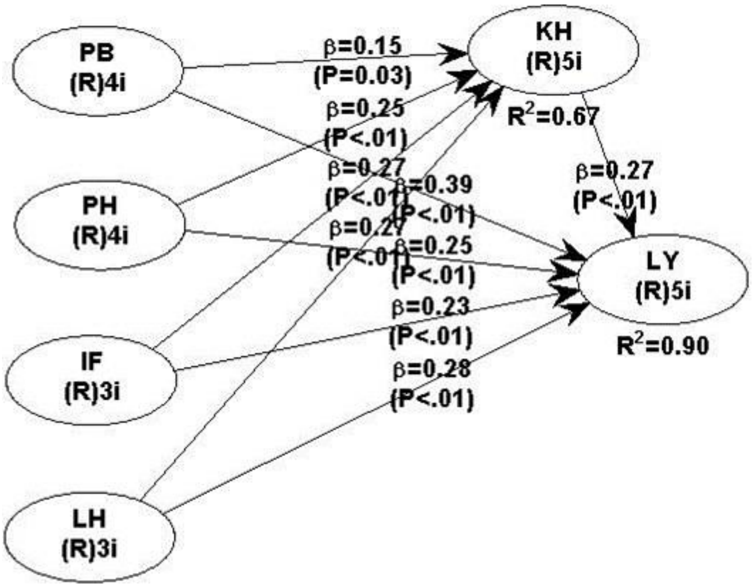


Figure 1. SEM Analysis Test Results

Table 1. R Square test

Varaiable	*R-square*	%	Information
Kualitas Layanan Hijau (Z)	0.672	67,2 %	Moderate
Loyalitas Nasabah (Y)	0.900	90 %	Strong

Source: data processed by the author, 2025

The coefficient of determination (R^2) test results show that digital banking, green financing, green infrastructure, and green services can explain 67.2% of the green service quality variable, which is considered moderate. Meanwhile, the R^2 value for customer loyalty is 90%, indicating that digital banking, green financing, green infrastructure, and green services have a strong influence on customer loyalty.

Table 2. Q Square test

Varaiable	*Q-square*	%	*Information*
Kualitas Layanan Hijau (Z)	0.610	61 %	Tall
Loyalitas Nasabah (Y)	0.593	59,3 %	Tall

Source: data processed by the author, 2025

The Q^2 test results indicate that the model has strong predictive relevance for Green Service Quality (61%) and Customer Loyalty (59.3%). This finding confirms that the research model has good predictive ability and high predictive validity in the context of green banking implementation at Bank Syariah Indonesia.

Table 3. Path Coefficient Values (Direct Effect)

Variable	*Path Coeficien*	*P-values*	Hypothesis
PB -> LY	0.390	<0.001	Accept

PH -> LY	0.250	<0.001	Accept
IF -> LY	0.229	0.001	Accept
LH -> LY	0.278	<0.001	Accept
KH -> LY	0.272	<0.001	Accept
PB -> KH	0.151	0.025	Accept
PH -> KH	0.247	<0.001	Accept
IF -> KH	0.275	<0.001	Accept
LH -> KH	0.270	<0.001	Accept

Note: ***significant at p-value <0.01
Source: data processed by the author, 2025

Based on the results of the direct effect test, all hypotheses on endogenous variables (H1–H5) and mediation (H6–H9) are proven to be accepted with positive coefficients and p-values <0.05. Digital banking (0.390; <0.001), green financing (0.250; <0.001), green infrastructure(0.229; 0.001), green services (0.278; <0.001), and green service quality (0.272; <0.001) have a significant positive effect on customer loyalty. In addition, digital banking (0.151; 0.025), green financing (0.247; <0.001), green infrastructure (0.275; <0.001), and green services (0.270; <0.001) also have a significant positive effect on green service quality.

Tabel 4. Nilai *Path coefficient* Pada *Indirect Effect*

Variable	*Path Coeficient*	*P-values*	Hypothesis
PB -> KH -> LY	0.041	0.231	Rejected
PH -> KH -> LY	0.067	0.112	Rejected
IF -> KH -> LY	0.075	0.089	Accept
LH KH -> LY	0.073	0.092	Accept

Source: Data processed by the author, 2025

Based on the results of the mediation effect test, it shows that green service quality (Z) significantly mediates the relationship between green infrastructure with a p-value of 0.089 (0.075) and green services with a p-value of 0.092 (0.073) on customer loyalty. Therefore, it can be concluded that hypotheses H12 and H13 are accepted as they have a significant effect. Meanwhile, green banking has a p-value of 0.231 (0.041) and green financing has a p-value of 0.112 (0.067), which are not significantly influential, and green service quality does not mediate the relationship between these variables on customer loyalty, hence H10 and H11 are rejected.

The Influence of Digital Banking on Customer Loyalty at Bank Syariah Indonesia

The results of the path coefficient test show that digital banking has a positive and significant effect on customer loyalty, with a coefficient value of 0.390 and a p-value of < 0.001. This means that the better the implementation of digital banking services, the higher the customer loyalty. This is supported by the majority of respondents who stated that they strongly agree that BSI's digital services provide ease, speed, and convenience in transactions, thereby encouraging continuous use of the services and strengthening the long-term relationship between customers and the bank.

Digital banking also contributes to sustainability through operational efficiency and the reduction of resource usage (Tara et al., 2015; Gustya et al., 2023). These findings are in line with Stakeholder Theory, which emphasizes the importance of fulfilling stakeholder needs (Freeman, 1984). In addition, the results of this study are supported by previous studies which state that the convenience and benefits of digital services significantly affect customer loyalty (Monika & Indana, 2025; Lauren & Handrian, 2023). Thus, hypothesis H1, which states that digital banking has a positive effect on customer loyalty at Bank Syariah Indonesia, can be accepted.

The Influence of Green Financing on Customer Loyalty at Bank Syariah Indonesia

The path coefficient test results show that green financing has a positive and significant effect on customer loyalty, with a coefficient value of 0.250 and a p-value < 0.001. This means that the better the implementation of green financing, the higher the customer loyalty. This is supported by respondents' perceptions, who rate positively the implementation of environmentally friendly infrastructure, such as reducing paper usage and energy efficiency, with the average response in the agree category. These perceptions enhance the bank's image and customer trust, thereby strengthening long-term attachment.

Green financing also reflects the bank's commitment to sustainability through support for environmentally friendly projects and social responsibility (Herath, 2019). These findings are in line with Stakeholder Theory, which emphasizes the importance of considering the interests of stakeholders, including the environment (Freeman, 1984). In addition, previous research shows that green financing can increase customer trust and loyalty (Illahi et al., 2023; Lalan, 2024). Thus, hypothesis H2, which states that green financing has a significant effect on customer loyalty at Bank Syariah Indonesia, can be accepted.

The Influence of Green Infrastructure on Customer Loyalty at Bank Indonesia

The results of the path coefficient test indicate that green infrastructure has a positive and significant effect on customer loyalty, with a coefficient value of 0.229 and a p-value of 0.001. This means that the better the implementation of environmentally friendly infrastructure, such as the use of renewable energy, green buildings, and carbon footprint reduction, the higher the customer loyalty. This is supported by the majority of respondents who gave an agree rating (average score of 4), indicating that the bank's sustainability efforts are perceived as aligned with customers' social and ethical values, thereby being able to enhance trust and long-term engagement.

The implementation of green infrastructure has also been proven to improve the bank's image and reputation, which impacts long-term relationships with customers (Ibe-Enwo et al., 2019). These findings are in line with Stakeholder Theory, which emphasizes the importance of considering the interests of stakeholders, including the environment (Freeman, 1984). In addition, previous research shows that the implementation of green banking can strengthen loyalty through a positive image and operational efficiency (Rahmadani & Fasa, 2025). Thus, hypothesis H3, which states that green infrastructure has a significant effect on the loyalty of customers of Bank Syariah Indonesia, can be accepted.

The Influence of Green Services on Customer Loyalty at Bank Indonesia

The path coefficient test results show that green services have a positive and significant effect on customer loyalty, with a coefficient of 0.278 and a p-value <0.001. This means that the better the implementation of green services, the higher the customer loyalty. The implementation of green banking through digitalization, such as mobile banking and internet banking, is able to improve convenience, speed, and service efficiency, which is supported by positive customer responses in the agree to strongly agree categories.

Theoretically, this finding aligns with stakeholder theory (Freeman, 1984), which emphasizes the importance of meeting environmental and social expectations. Green services also enhance customer image and trust, thereby strengthening long-term relationships. Previous research (Budiasa et al., 2023) also supports that green services have a significant effect on loyalty, thus hypothesis H4 can be accepted.

The Influence of Green Service Quality on Customer Loyalty at Bank Indonesia

The path coefficient test results show that green service quality has a positive and significant effect on customer loyalty, with a coefficient value of 0.272 and a p-value < 0.001. This means that the higher the customers' perception of green service quality, the stronger their loyalty to the bank. This is supported by the majority of respondents who chose the strongly agree category, indicating that the green service quality of Bank Syariah Indonesia is already rated as good, particularly in terms of reliability, responsiveness, and environmental care.

Green service quality reflects a bank's ability to meet customer expectations through services that are both efficient and sustainability-oriented (Subawa & Sulistyawati, 2020; Bhatnagar & Rajesh, 2023). This finding aligns with Stakeholder Theory, which emphasizes the importance of meeting stakeholder expectations, as well as the SERVQUAL concept, which includes reliability, responsiveness, assurance, empathy, and tangibles (Parasuraman et al., 1994). Previous research also shows that service quality has a positive effect on customer loyalty (Sustiyatik & Jauhari, 2025; Safriani & Siregar, 2024). Therefore, hypothesis H5, which states that green service quality has a significant effect on the customer loyalty of Bank Syariah Indonesia, can be accepted.

The Influence of Digital Banking on the Quality of Green Services

The results of the path coefficient test show that digital banking has a positive and significant effect on the quality of green services, with a coefficient of 0.151 and a p-value of 0.025. This means that the higher the implementation of digital banking, the higher the quality of green services perceived by customers. The majority of respondents also stated that they agree that digitalization, such as mobile banking and paperless transactions, can increase efficiency, reduce physical activity, and support more environmentally friendly services.

Theoretically, this finding aligns with stakeholder theory (Freeman, 1984) which emphasizes environmental responsibility, as well as the SERVQUAL model (Parasuraman et al., 1988) on the dimensions of reliability and responsiveness. Previous studies (Malaquias & Hwang, 2016; Mbama & Ezepue, 2018; Akob & Sukarno, 2025) also support that digital services enhance service quality, satisfaction, and loyalty, thus hypothesis H6 is accepted.

The Influence of Green Financing on Green Service Quality

The path coefficient test results show that green financing has a positive and significant effect on the quality of green services, with a coefficient value of 0.247 and a p-value < 0.001. This means that the higher and more consistent the implementation of green financing, the greater the customers' perception of green service quality. This is supported by the majority of respondents who agree that environmentally friendly practices, including green infrastructure, are able to improve the comfort and effectiveness of services, thereby strengthening positive assessments of the bank's service quality.

Green financing has become an important strategy in supporting sustainability through the allocation of funds to environmentally friendly projects as well as sustainable investments (Bank Indonesia Response, 2014). This finding is in line with Stakeholder Theory, which emphasizes the importance of responsibility towards stakeholders, including the environment (Freeman, 1984). Previous research also shows that green financing can enhance the image, trust, and service quality of financial institutions (Weber, 2017; Bansal et al., 2023). Therefore, hypothesis H7, which states that green financing has a significant effect on green service quality, can be accepted.

The Influence of Green Infrastructure on the Quality of Green Services

Green infrastructure has a significant positive effect on green service quality. This is shown by the path coefficient test results with a coefficient value of 0.275 and a p-value < 0.001. This means that the more optimal the implementation of green infrastructure, the higher customers' perception of green service quality. This is supported by the majority of respondents who stated that they agree that environmentally friendly practices, including green financing and facilities, are able to improve service quality. The implementation of infrastructure such as green buildings, energy efficiency, environmentally friendly digital systems, and waste management not only enhances operational effectiveness but also creates a more comfortable and high-quality service experience.

These findings are in line with Stakeholder Theory, which emphasizes the importance of environmental responsibility in enhancing customer trust and positive perceptions (Freeman, 1984). In addition, the SERVQUAL concept shows that green infrastructure strengthens the tangibles, reliability, and assurance dimensions of service quality (Parasuraman et al., 1994). Previous research has also proven that the implementation of green infrastructure contributes to improving service quality and customer satisfaction (Mir et al., 2025; Dev & Akram, 2024; Yasir et al., 2024). Thus, hypothesis H7, which states that green infrastructure has a significant effect on green service quality, can be accepted.

The Influence of Green Services on Green Service Quality

The path coefficient test results show that green services have a positive and significant effect on the quality of green services, with a coefficient of 0.270 and a p-value <0.001. This means that the better the implementation of green services, the higher the customers' perception of service quality. The majority of respondents who agreed indicated that services such as a paperless system and mobile banking can improve efficiency, convenience, and comfort of services.

Theoretically, this finding aligns with stakeholder theory (Freeman, 1984) and the SERVQUAL model (Parasuraman et al., 1988) which emphasize the importance of responsiveness, reliability, and empathy in improving service quality. Additionally, the studies by Fida et al. (2020), Ahmed et al. (2017), Saad (2021), and Kularatne et al. (2019) also support that green services enhance trust and perceived service quality, thus hypothesis H9 is accepted.

The role of green service quality mediation significantly affects the relationship between digital banking and customer loyalty

The results of the indirect effect test indicated that green service quality does not mediate the relationship between digital banking and customer loyalty, with a p-value of 0.231 (>0.05) and an insignificant path coefficient of 0.041. This is supported by respondent answers, where digital banking and customer loyalty scored high (4–5), while green service quality fell into the agree category. These findings suggest that customer loyalty is more directly influenced by digital banking rather than through green service quality.

Theoretically, the SERVQUAL model (Parasuraman et al., 1988) emphasizes that reliability, security, and convenience are more dominant in digital services compared to environmentally friendly aspects. From the perspective of stakeholder theory (Freeman, 1984), digital efficiency has not yet been perceived as a green banking practice. In line with Rahman and Reynolds (2019), green service quality is only considered an added value and therefore cannot mediate the relationship. In line with Rahman and Reynolds (2019), green service quality is only considered as an added value, so it is unable to mediate the relationship between digital banking and customer loyalty.

The role of Green Service Quality Mediation significantly affects the relationship between green financing and customer loyalty

The results of the indirect effect test showed that green service quality does not mediate the relationship between green financing and customer loyalty, with a p-value of 0.112 (>0.05) and a path coefficient of 0.067, which is still weak. This value is considered almost significant, but not yet statistically strong enough. These findings indicate that customer loyalty is more influenced by the direct benefits of green financing compared to service quality, so service quality only acts as a supporting factor.

Theoretically, green financing is a product, not a service process (Lovelock & Wirtz, 2016), so it does not directly affect the perception of service quality. In SERVQUAL (Parasuraman et al., 1988), service quality is more determined by the process, while in stakeholder theory (Freeman, 1984), not all customers prioritize green aspects. Consistent with Pawar and Munuswamy (2022) as well as Agustina and Miranti (2024), green service quality is unable to mediate this relationship so hypothesis rejected

The role of green service quality mediation significantly affects the relationship between green infrastructure and customer loyalty

The results of the indirect effect test indicate that green infrastructure has an indirect effect on customer loyalty through green service quality, with a path coefficient value of 0.075 and a p-value of 0.089 (<10%), which means it is significant. This suggests that the better the implementation of green infrastructure, the higher the perception of green service quality, which in turn strengthens customer loyalty. Respondents' answers, which tended to be at a value of 4 (agree), also indicate that loyalty is formed through improvements in service quality first, rather than directly from green infrastructure.

Theoretically, this aligns with stakeholder theory (Freeman, 1984), which emphasizes that environmentally friendly practices increase trust and positive image. In the SERVQUAL model (Parasuraman et al., 1988), green infrastructure strengthens the dimensions of tangibles, reliability, and responsiveness, thereby enhancing the perception of service quality. This finding is also supported by Han and Kim (2010), that direct experience with eco-friendly facilities enhances perceived service quality and impacts loyalty, thus hypothesis (H12) is accepted.

The role of Green Service Quality Mediation significantly affects the relationship between Green Services and customer loyalty

The results of the indirect effect test showed that green services indirectly affect customer loyalty through green service quality, with a path coefficient value of 0.073 and a p-value of 0.092 (<10%), which means it is significant. This indicates that green service quality acts as a mediator, although its effect is moderate. Respondents' answers tending toward a value of 4 (agree) also indicate that loyalty is not formed directly from green services, but rather through an increased perception of green service quality such as comfort and efficiency.

Theoretically, these findings are in line with stakeholder theory (Freeman, 1984) which emphasizes the importance of environmental responsibility in building trust. In the SERVQUAL model (Parasuraman et al., 1988), green services strengthen the dimensions of reliability, assurance, and empathy, thereby enhancing service quality. Consistent with Park and Jeong (2019), service quality acts as a mediator between green services and loyalty, thus hypothesis (H13) is accepted.

CONCLUSION AND RECOMENDATIONS

This study aims to analyze the influence of digital banking, green financing, green infrastructure, and green services on customer loyalty with green service quality as a mediating variable. The results of the study indicate that all of these variables, including green service quality, have a positive and significant effect on customer loyalty. In addition, digital banking, green financing, green infrastructure, and green services are also proven to have a positive significant effect on green service quality, which means that the better the implementation of these aspects, the higher the perceived service quality experienced by customers.

However, in the role of mediation, green service quality is unable to mediate the relationship between digital banking and customer loyalty because loyalty is more influenced by the direct benefits of digital services. Green service quality also does not strongly mediate green financing, as its effect is still weak and not statistically significant. On the other hand, green service quality has been proven to mediate the relationship between green infrastructure and green services with customer loyalty at a 10% significance level. This indicates that direct experience with environmentally friendly facilities and services can enhance the perception of service quality, which in turn impacts the increase in customer loyalty.

Based on the findings and limitations of the study, it is recommended that future research expand the regional coverage across various areas of Indonesia and include respondent characteristics such as digital literacy levels and environmental awareness. In addition, subsequent researchers can incorporate additional variables such as trust, customer satisfaction, and green brand image as mediating variables to gain a more comprehensive understanding of the formation of customer loyalty. For Bank Syariah Indonesia, it is recommended to continue improving the quality of digital banking services such as BSI Mobile and BYOND by BSI to make them more user-friendly, secure, and responsive, as well as to develop innovative green financing products. Furthermore, enhancing green infrastructure across all branches and strengthening education and communication regarding green banking practices need to be carried out to sustainably increase customer trust and loyalty.

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