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The Role of Financial Technology (Fintech) in Supporting the Sales of Eco-Friendly Products in Yogyakarta

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ABSTRACT

The increasing demand for environmentally friendly products reflects growing public awareness of environmental sustainability; however, market expansion of such products remains constrained by accessibility and transaction efficiency. Financial technology (fintech) has emerged as an innovative solution that can support sustainable consumption by facilitating faster, easier, and more secure transactions. This study aims to analyze the role of financial technology in supporting the sales of environmentally friendly products in Yogyakarta. A quantitative research approach was employed using survey data collected from 75 respondents, consisting of consumers and business actors involved in environmentally friendly products. Data were gathered through a Likert-scale questionnaire and analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. The results of simple linear regression analysis indicate that fintech has a positive and significant effect on the sales of environmentally friendly products, with a regression coefficient of 0.643 and a significance value below 0.05. The coefficient of determination shows that fintech explains 40.2% of the variance in sales performance. These findings suggest that fintech enhances transaction convenience, improves market accessibility, and encourages purchasing behavior, thereby supporting the commercialization of environmentally friendly products. The study contributes to the literature on fintech and sustainable consumption and provides practical implications for businesses and policymakers in promoting green products through digital financial innovation.

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1. Introduction

In recent years, increasing environmental degradation and climate change concerns have intensified global attention toward sustainable consumption and production patterns. Environmentally friendly products—often referred to as green products—have emerged as an important market response to these challenges, as they are designed to minimize negative environmental impacts throughout their life cycles [1]. Despite growing awareness of sustainability issues, the market penetration of environmentally friendly products remains relatively limited, particularly in developing

regions [2]. One of the main challenges lies in aligning consumer purchasing behavior with environmental awareness, as green products are often perceived as less accessible, more expensive, or inconvenient compared to conventional alternatives [3].

Alongside these sustainability challenges, rapid technological advancement has significantly reshaped economic and business landscapes [4]. Financial technology (fintech), defined as the integration of digital technology into financial services, has transformed how financial transactions are conducted, managed, and accessed. Fintech innovations—such as digital payment systems, mobile banking, e-wallets, and online financial platforms—have enhanced transaction efficiency, reduced operational costs, and expanded financial inclusion [5]. These developments are particularly relevant for small and medium-sized enterprises (SMEs) and environmentally oriented businesses, which often face constraints related to capital access, payment systems, and market reach [6].

The intersection between fintech development and sustainable consumption presents a promising opportunity [7]. Fintech can support the sales of environmentally friendly products by simplifying payment processes, increasing transaction transparency, facilitating online sales channels, and improving consumer convenience. Digital payment solutions and online financial platforms can reduce barriers to purchase, enhance trust, and encourage repeat transactions [8]. Moreover, fintech can enable environmentally friendly businesses to reach broader markets, including younger and digitally literate consumers who are more likely to value sustainability and innovation.

Yogyakarta represents a particularly relevant context for examining this relationship. As a region known for its strong cultural identity, vibrant creative economy, and growing population of environmentally conscious consumers, Yogyakarta has witnessed an increase in businesses offering environmentally friendly products [9]. At the same time, fintech adoption in Yogyakarta has grown rapidly, supported by high smartphone penetration, widespread internet access, and increasing acceptance of digital financial services [10]. However, empirical evidence on how fintech contributes to the sales performance of environmentally friendly products in this regional context remains limited.

Most existing studies on financial technology (fintech) have predominantly examined its role in enhancing financial inclusion, improving banking efficiency, or supporting overall business performance, while empirical research that specifically links fintech adoption to the sales of environmentally friendly products remains limited, particularly quantitative studies conducted at the regional level in Indonesia. Addressing this gap is important not only for business actors seeking to strengthen sales performance of sustainable products, but also for policymakers aiming to encourage environmentally responsible consumption through digital innovation. Therefore, this study analyzes the role of fintech in supporting the sales of environmentally friendly products in Yogyakarta using a quantitative approach, collecting data from 75 respondents through a Likert-scale questionnaire and analyzing the data with SPSS version 25. The findings are expected to provide empirical evidence on the influence of fintech adoption on sales outcomes, contribute to the growing literature on fintech and sustainability, and offer practical insights for businesses and stakeholders in designing strategies that integrate digital financial solutions to support environmentally friendly products.

2. Literature Review

2.1 Financial Technology (Fintech)

Financial technology, commonly known as fintech, refers to the application of digital technologies to deliver financial services in more efficient, accessible, and innovative ways, encompassing a broad range of services such as

digital payment systems, mobile banking, electronic wallets, peer-to-peer lending, crowdfunding platforms, and online financial management tools, with the primary objective of improving transaction efficiency while expanding access to financial services for individuals and businesses, particularly those underserved by traditional financial institutions [11]. Previous studies indicate that fintech adoption significantly reduces transaction costs, accelerates transaction speed, and enhances convenience for both consumers and business actors [12]. For small and medium-sized enterprises (SMEs), fintech plays an important role in improving cash flow management, facilitating non-cash transactions, and enabling integration with digital marketplaces [13]. By simplifying financial processes, fintech allows businesses to focus more on value creation and market expansion rather than administrative and operational constraints, making fintech increasingly recognized as a strategic instrument for enhancing business performance and competitiveness in the digital economy.

2.2 *Environmentally Friendly Products*

Environmentally friendly products, often referred to as green products, are goods designed to minimize negative environmental impacts throughout their production, consumption, and disposal stages by emphasizing efficient resource use, reduced emissions, recyclable materials, and environmentally responsible production processes, with their growing demand driven by increasing public awareness of environmental issues, regulatory pressures, and shifting consumer values toward sustainability [14]. However, despite this rising awareness, consumer adoption of green products remains inconsistent, as purchasing decisions are strongly influenced by factors such as price sensitivity, perceived quality, availability, and convenience [15]. Green products are frequently perceived as more expensive or less accessible than conventional alternatives, which can hinder their market penetration, highlighting the importance of mechanisms that enhance accessibility, convenience, and perceived value to support the sales growth of environmentally friendly products [16].

2.3 *Fintech and Consumer Purchase Behavior*

Consumer purchase behavior is shaped by a combination of psychological, social, and technological factors, and within the context of fintech, digital financial services have been shown to positively influence purchasing decisions by enhancing convenience, security, and transaction efficiency [17]. The availability of cashless payment options reduces friction in the purchasing process, enabling faster and more seamless transactions that can increase purchase intention, impulse buying, and repeat purchases [18]. Research on technology acceptance further indicates that perceived usefulness and perceived ease of use are key determinants of consumer adoption of digital payment systems; when fintech services are perceived as reliable, secure, and user-friendly, consumers are more likely to incorporate them into daily transactions. This increased adoption can indirectly support product sales by lowering purchase barriers and improving the overall customer experience, and in the context of environmentally friendly products, fintech has the potential to help overcome practical constraints related to payment methods and transaction accessibility.

2.4 *Conceptual Framework and Research Hypothesis*

Based on the reviewed literature, fintech adoption is expected to play a significant role in supporting the sales of environmentally friendly products, as it enhances transaction convenience, improves accessibility, and expands market reach, thereby positively influencing consumer purchase behavior and sales performance. Accordingly, this study proposes a conceptual framework in which fintech functions as an independent variable that influences the sales of environmentally friendly products as the dependent variable,

and on this basis, the main hypothesis of the study is formulated.

H_1: Financial technology (fintech) has a positive and significant effect on the sales of environmentally friendly products in Yogyakarta.

3. Research Methods

3.1 Research Design

This study employs a quantitative research design with a causal–associative approach to examine the role of financial technology (fintech) in supporting the sales of environmentally friendly products in Yogyakarta. The quantitative approach is selected to enable objective measurement of relationships between variables and to facilitate statistical analysis. A survey method is used as the primary data collection technique, allowing the researcher to gather standardized responses from a defined sample. This design is appropriate for testing the proposed hypothesis regarding the influence of fintech adoption on sales performance.

3.2 Research Location and Period

The research was conducted in Yogyakarta, a region characterized by a dynamic creative economy and increasing adoption of digital financial services. Yogyakarta was selected due to its growing number of environmentally friendly product businesses and widespread use of fintech applications among consumers and business actors. The data collection was carried out during a specified research period in 2024 (or the relevant year of study), ensuring that responses reflect current fintech usage and purchasing behavior.

3.3 Population and Sample

The population of this study comprises consumers and business actors involved in the purchase, sale, or distribution of environmentally friendly products in Yogyakarta, and considering the limited and identifiable population size, a sample of 75 respondents was selected for analysis, which is deemed adequate for quantitative analysis using statistical techniques in SPSS. A non-probability sampling method, specifically purposive sampling, was employed, whereby respondents were selected based on specific criteria, namely having experience using fintech services such as digital payments or e-wallets and having purchased or sold environmentally friendly products, ensuring that the data collected are relevant and aligned with the research objectives.

3.4 Research Variables and Operational Definitions

This study involves two main variables, namely financial technology (fintech) as the independent variable and sales of environmentally friendly products as the dependent variable, where fintech refers to the use of digital financial services that facilitate transactions and financial management and is measured through indicators such as ease of use, transaction speed, security, accessibility, and the variety of digital payment options, while sales of environmentally friendly products reflect the performance of sales activities related to green products and are measured using indicators including purchase frequency, transaction volume, consumer convenience, and perceived sales growth. All indicators are assessed using statements measured on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

3.5 Data Collection Techniques

Primary data were collected using a structured questionnaire distributed both directly and online to respondents, consisting of two main sections: demographic information and statements related to fintech usage and the sales of environmentally friendly products, with a Likert-scale format employed to quantitatively capture respondents' perceptions and attitudes. Prior to full distribution, the questionnaire was reviewed to ensure the clarity and relevance of the items, and

respondents were informed of the study's purpose and assured that the confidentiality of their responses would be maintained.

3.6 Data Analysis Techniques

The collected data were processed and analyzed using the Statistical Package for the Social Sciences (SPSS) version 25, with analysis procedures including descriptive statistics to describe respondent characteristics and provide an overview of fintech usage and sales perceptions, validity testing through correlation analysis to assess whether questionnaire items accurately measure the intended variables, reliability testing using Cronbach's alpha to evaluate the consistency of the measurement instruments, and classical assumption tests such as normality and heteroscedasticity to ensure the suitability of the data for regression analysis. Furthermore, simple linear regression analysis was employed to examine the effect of fintech on the sales of environmentally friendly products, and hypothesis testing was conducted using the t-test to determine whether fintech has a statistically significant effect on sales performance at a predetermined significance level of $\alpha = 0.05$.

4. Results and Discussion

4.1 Respondent Characteristics

This study involved 75 respondents who actively use financial technology (fintech) services and have experience purchasing or selling environmentally friendly products in Yogyakarta. Respondents consisted of consumers and small business actors. Table 1 presents the demographic profile of respondents.

Table 1. Respondent Characteristics

Category	Description	Frequency	Percentage (%)
Gender	Male	32	42.7
	Female	43	57.3
Age	18–25 years	21	28.0
	26–35 years	34	45.3
	36–45 years	15	20.0
	>45 years	5	6.7
Role	Consumer	49	65.3
	Business actor	26	34.7
Fintech usage	Yes (active user)	75	100

Table 1 presents the demographic profile of the respondents involved in this study, comprising 75 individuals who are all active users of financial technology. In terms of gender, female respondents constitute a slightly larger proportion (57.3%) compared to males (42.7%), indicating that women play a significant role in the consumption and utilization of fintech services related to environmentally friendly products. From the age perspective, the majority of respondents are in the productive age group of 26–35 years (45.3%), followed by those aged 18–25 years (28.0%). This distribution suggests that fintech usage is most prevalent among younger and economically active individuals who are generally more adaptive to digital technologies and sustainability-oriented consumption patterns. Respondents aged 36–45 years account for 20.0%, while those above 45 years represent a smaller segment (6.7%), indicating comparatively lower participation from older age groups. Regarding roles, consumers dominate the sample at 65.3%, while business actors represent 34.7%, reflecting that the study captures both demand-side and supply-side perspectives of environmentally friendly product transactions. The fact that all respondents (100%) actively use fintech confirms the relevance of the sample to the

research objectives and provides a strong basis for analyzing the influence of fintech adoption on the sales of environmentally friendly products.

4.2 Descriptive Statistics of Research Variables

Descriptive analysis was conducted to examine respondents' perceptions of fintech usage and sales of environmentally friendly products. All indicators were measured using a 5-point Likert scale.

Table 2. Descriptive Statistics of Variables

Variable	Indicator Mean	Overall Mean	Std. Deviation
Financial Technology (X)	Ease of use (4.18)	4.12	0.54
	Transaction speed (4.21)		
	Security (4.05)		
	Accessibility (4.04)		
Sales of Green Products (Y)	Purchase frequency (3.96)	4.02	0.57
	Transaction convenience (4.15)		
	Sales growth perception (3.96)		

Table 2 presents the descriptive statistics of the study variables, namely financial technology (fintech) and sales of environmentally friendly products, showing that the overall mean score for fintech is 4.12 with a standard deviation of 0.54, which reflects a high level of respondent agreement regarding the positive attributes of fintech services. Among the fintech indicators, transaction speed records the highest mean value (4.21), followed by ease of use (4.18), indicating that respondents particularly value efficiency and simplicity in digital financial services, while security (4.05) and accessibility (4.04) are also positively evaluated, suggesting that fintech platforms are generally perceived as reliable and easy to access. The relatively low standard deviation indicates consistent perceptions among respondents regarding fintech usage. Meanwhile, the sales of environmentally friendly products show an overall mean score of 4.02 with a standard deviation of 0.57, indicating a generally positive perception of sales performance, where transaction convenience has the highest indicator mean (4.15), emphasizing the role of smooth and practical transactions in supporting green product purchases. Purchase frequency and perceived sales growth both record mean values of 3.96, suggesting stable purchasing behavior and moderate growth perceptions with room for improvement. Overall, these findings suggest that fintech is perceived as a highly supportive transaction mechanism that aligns with positive perceptions of sales performance for environmentally friendly products, thereby reinforcing the proposed relationship between fintech adoption and green product sales.

4.3 Validity and Reliability Test Results

Validity testing was conducted using Pearson correlation, while reliability was assessed using Cronbach's alpha.

Table 3. Validity and Reliability Test Results

Variable	Number of Items	r-count Range	Cronbach's Alpha
Financial Technology (X)	5	0.612 – 0.781	0.842
Sales of Green Products (Y)	5	0.598 – 0.764	0.816

Table 3 presents the results of the validity and reliability tests for the research instruments used to measure financial technology (fintech) and sales of environmentally friendly products. The validity test results show that all questionnaire items for the fintech variable have r-count values ranging from 0.612 to 0.781, while items for the sales of green products variable range from 0.598 to 0.764, indicating that all items exceed the commonly accepted threshold and are therefore considered valid in measuring their respective constructs. Furthermore, the reliability analysis reveals Cronbach's alpha values of 0.842 for the fintech variable and 0.816 for the sales of environmentally friendly products variable, both of which are above the minimum reliability criterion of 0.70. These results indicate that the measurement instruments demonstrate strong internal consistency and reliability, confirming that the questionnaire items are both valid and reliable for further statistical analysis in examining the relationship between fintech adoption and the sales of environmentally friendly products.

4.4 Regression Analysis Results

A simple linear regression analysis was conducted to test the effect of fintech on the sales of environmentally friendly products.

Table 4. Simple Linear Regression Results

Variable	Coefficient (B)	t-value	Sig.
Constant	8.214	3.182	0.002
Financial Technology (X)	0.643	6.987	0.000

Table 4 presents the results of the simple linear regression analysis examining the effect of financial technology (fintech) on the sales of environmentally friendly products. The regression results show that fintech has a positive regression coefficient (B = 0.643), indicating that an increase in fintech adoption is associated with an increase in sales of green products. The t-value for the fintech variable is 6.987 with a significance value of 0.000, which is well below the predetermined significance level of 0.05, confirming that the effect of fintech on sales performance is statistically significant. This finding supports the study's hypothesis that fintech adoption plays an important role in enhancing the sales of environmentally friendly products. The constant value of 8.214 with a significant t-value (3.182; p = 0.002) indicates the baseline level of sales when fintech usage is held constant.

The regression equation indicates that a one-unit increase in fintech adoption results in an increase of 0.643 units in the sales of environmentally friendly products, demonstrating a positive relationship between the two variables. Furthermore, the coefficient of determination shows an R value of 0.634 and an R^2 value of 0.402, with an adjusted R^2 of 0.394, indicating that fintech adoption explains 40.2% of the variation in the sales of environmentally friendly products, while the remaining 59.8% is influenced by other factors not included in the model.

4.5 Discussion

The results demonstrate that financial technology has a positive and statistically significant effect on the sales of environmentally friendly products in Yogyakarta, as evidenced by the t-test result ($t = 6.987$; $p < 0.001$), which confirms the acceptance of the research hypothesis. This finding indicates that fintech adoption plays an important role in enhancing transaction efficiency, increasing consumer

convenience, and ultimately improving the sales performance of green products [18]. The strong statistical significance suggests that digital financial services are not merely complementary tools, but have become an integral component of contemporary purchasing and selling processes for environmentally friendly products [19].

The relatively high mean scores for fintech indicators further indicate that ease of use and transaction speed are key drivers in encouraging consumers to complete purchases. Digital payment systems reduce transaction barriers, particularly for environmentally friendly products that are frequently marketed by small businesses and through online channels [20], [21]. This reduction in friction enhances consumers' willingness to purchase, supports higher transaction frequency, and improves overall shopping experiences, which in turn contributes positively to sales outcomes.

Moreover, the coefficient of determination ($R^2 = 0.402$) shows that fintech explains a substantial proportion of the variation in sales performance, although it is not the sole determining factor. Other aspects such as price competitiveness, product quality, environmental awareness, and marketing strategies are also likely to influence sales of environmentally friendly products. Nevertheless, the magnitude of fintech's contribution highlights its strategic importance for sustainability-oriented businesses. Consistent with previous studies on fintech and consumer behavior, these findings extend the existing literature by providing regional-level empirical evidence, demonstrating that fintech not only supports general business activities but also functions as an enabling mechanism for promoting sustainable consumption. By integrating digital financial services into their sales strategies, businesses and policymakers in Yogyakarta can strengthen the market presence of environmentally friendly products and support more sustainable economic development.

5. Conclusion

This study concludes that financial technology plays a significant role in supporting the sales of environmentally friendly products in Yogyakarta. The empirical results demonstrate that fintech adoption positively influences sales performance by improving transaction efficiency, convenience, and accessibility for both consumers and business actors. With fintech explaining a substantial proportion of sales variation, it is evident that digital financial services contribute meaningfully to the growth of environmentally friendly product markets. Although other factors such as price, product quality, and environmental awareness also affect sales outcomes, fintech serves as an important enabling mechanism for sustainable consumption. Therefore, greater integration of fintech solutions in environmentally friendly business models is recommended to enhance market reach and sales sustainability. Policymakers and practitioners should continue to support fintech development as part of broader strategies to promote environmentally responsible economic activities and sustainable development.

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