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ENHANCING SHARIA INSURANCE DEVELOPMENT IN INDONESIA: THE ROLE OF FINTECH AND PRODUCT INNOVATION

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Information	Abstract:
Article History: Received : 09.08.2024 Revised : 18.08.2024 Accepted : 22.08.2024	<i>The background of this study focuses on the development of the Sharia insurance industry in Indonesia, which continues to grow but faces challenges in leveraging financial technology (Fintech) and product innovation to enhance competitiveness and market penetration. This research investigates the impact of Fintech adoption and product innovation on developing the Sharia insurance industry in Indonesia. This study employs a quantitative approach by analyzing secondary data for 2014-2023. The data is sourced from reliable institutions, such as financial reports and the Financial Services Authority (OJK). Multiple linear regression analysis examines the relationship between the independent variables (Fintech usage and product innovation) and the dependent variable (Sharia insurance development). The findings reveal a significant positive correlation between the use of Fintech and product innovation and the overall development of Sharia insurance. Although product innovation alone does not have a statistically significant impact, combining product innovation with Fintech significantly affects Sharia insurance's growth. However, the influence of these variables is likely moderated by other factors, such as regulatory changes, public perception, and economic conditions.</i>
Keywords: Financial Technology, Product Innovation, Sharia Insurance Development.	

A. INTRODUCTION

Sharia insurance's development in Indonesia's digital era reflects a global trend where the financial industry has transitioned to digital platforms to enhance services, efficiency, and accessibility. In Indonesia, this growth is driven by various factors, including increased awareness of the benefits of financial protection, economic development, and advancements in information technology. This growth also aligns with the Indonesian government's support for the Sharia financial industry. In recent years, the government has issued policies and regulations that support the development of Sharia insurance, including consumer protection, product innovation, and the implementation of information technology. The Financial Services Authority (OJK) has issued various regulations to govern Sharia insurance and encourage the development of this industry (Arsyad & Maimunah, 2019).

The use of digital financial technology has had a significant impact on the Sharia insurance industry. Digital platforms allow customers to easily purchase and manage their insurance policies online without needing physical visits to insurance offices. Additionally, financial technology facilitates faster and more efficient claims processing, increasing customer satisfaction and reducing administrative costs for insurance companies. The growth of internet penetration and smartphone usage in Indonesia supports this trend. According to data from the Indonesian Internet Service Providers Association (APJII), in 2020, internet penetration in Indonesia reached approximately 73%, while smartphone usage penetration reached around 63%. This indicates that Indonesians are increasingly familiar with digital technology daily, including purchasing and managing insurance products.

We have now entered the era of the 5.0 industrial revolution, which marks a shift from the 4.0 technology era towards the social technology of the 5.0 era. In this new era, technology is used for human welfare rather than as a force in itself. In other words, the 5.0 technology era offers a society where technology is human-centered, aiming to create a balance between economic progress and solving social problems through systems that connect the virtual and real worlds. Society 5.0 is an era where all technology is integrated into human life, where the internet is not just a source of information but a way of life, minimizing gaps between people and addressing

economic issues in the future. PHP programming language and MySQL have become commonplace to ease human tasks (Desyanti et al., 2021). Research shows people prefer using technology to meet their needs due to its convenience. One manifestation of the flow of the Industrial Revolution and Society 5.0 in Indonesia is e-commerce, where 44.8% of survey results show that transactions via e-commerce are more favored due to a broader market share, greater convenience, no time limitations, and more accurate product price comparisons (Mumtaha & Khoiri, 2019).

In the context of Sharia insurance in Indonesia, the 5.0 revolution can represent a profound change in how the public structures, markets, and access products through financial technology and digital innovation. This is marked by increased connectivity, interaction, and the development of other systems, including information and digital technology, artificial intelligence, and virtual reality. As the boundaries between humans, machines, and other resources become more convergent, information and communication technology will undoubtedly impact various sectors of life. This development is marked by the determination of the globalization era (Silfia, 2018).

The use of financial technology in the industry will become more integrated and automated. Technology has played a crucial role in improving services, managing risks, and enhancing operational efficiency. This can be seen from using more advanced automated manufacturing technology, enhanced monitoring, and data analysis to improve operational efficiency, as well as using artificial intelligence and robotics to optimize production processes and services. Even in the current information technology era, technology provides convenience in various activities (Yandra, 2018).

Table 1. Financial Technology in Insurance

Year	Level of Fintech	Fintech Categories
2014	36%	Low
2015	45%	Medium
2016	68%	Medium
2017	70%	Medium
2018	74%	Medium
2019	76%	High
2020	75%	Medium

2021	77%	High
2022	78%	High
2023	85%	High

Source:(BPS,2023)

Table 1 shows that Fintech integration in insurance has consistently increased yearly. This growth is evident from the ease of access and the information available, with no significant obstacles, as reflected in the rising levels of financial technology adoption in insurance over time. On the other hand, Table 2 below presents the growth trends of Sharia insurance during the period 2014-2023, which have fluctuated, with a decline noted in 2023. The development of Sharia insurance, for instance, saw fluctuations between 2014 and 2021, and in the last two years, it experienced a decline, reaching only 10.4% in 2023, categorized as low.

Table 2. The Development of Sharia Insurance

Years	Level of Development	Development Categories
2014	25%	Low
2015	27%	Low
2016	30%	High
2017	31%	High
2018	34%	High
2019	35%	High
2020	36%	High
2021	37%	High
2022	18%	Low
2023	10.4%	Low

Source: (OJK, 2023)

From Tables 1 and 2 above, it can be observed that the use of Financial Technology has increased. At the same time, the growth of Sharia insurance has fluctuated, and a decline has occurred in the most recent year. This suggests that integrating Financial Technology into insurance growth is crucial for facilitating transactions, which will ultimately make insurance more accessible and drive annual growth in Sharia insurance. No significant decline was observed in the use of financial technology, but Sharia insurance experienced a drop in the last year (2014-2023).

The world is constantly evolving in line with the progression of time. Both developed and developing countries continue to demonstrate changes and advancements, as is the case in Indonesia. These developments can be seen in Financial Technology, infrastructure, and industry. The rapid advancement of science and technology in today's digital era has influenced human behavior in accessing various information and electronic service features (Sari, 2015). The need for risk protection against potential losses is becoming more recognized and has become a necessity for the Indonesian public. This trend is marked by the increasing number of insurance companies emerging in Indonesia. To expand their reach, insurance companies are developing and innovating their product sales by incorporating digital platforms as a key focus (Napitupulu, et al., 2017). With technology-based insurance, it is hoped that this innovation will change the public's perception of insurance and provide a different experience for digital insurance users, particularly millennials. The shift towards digital also extends to areas such as health services and even holiday travel, as the benefits of using mobile applications have made everything digital, including claims. Choosing an application is appropriate because people, especially millennials, are inseparable from their phones, making using applications more convenient (Fintech, 2019).

One of the industry companies that has embraced digitalization is PT. Chubb Life Insurance, Medan Branch. Chubb Life Insurance, Medan Branch, relies heavily on the success and growth of the company through the utilization of digital tools in this era. Adopting digitalization is seen as a step towards achieving Chubb Life Insurance's mission to create comfort, efficiency, and convenience, thereby automatically enhancing customer service and attracting future growth in the number of clients. With today's technology's ease and broad access, Sharia insurance can become more widely recognized by people from various regions.

Table 3. The Development of Sharia Insurance Product Innovation

Year	Level of Development	Development Categories
2014	10.5%	Low
2015	11.5%	Low
2016	12%	Medium

2017	11%	Low
2018	13%	Medium
2019	15%	High
2020	13%	Medium
2021	14%	Medium
2022	19%	High
2023	15.3%	High

(Source: OJK, 2023)

Table 3 above reveals that the innovation of Sharia insurance products in Indonesia has fluctuated yearly. Product innovation development in Sharia insurance is essential, as seen in the varying growth of insurance product innovation within the service sector. Analyzing the three tables, it is evident that in the past year, particularly in 2023, the growth of Sharia insurance products and overall development faced a decline attributed to a lack of literacy. However, the emergence of digital insurance has simplified the marketing of Sharia insurance products. This research, "The Influence of Financial Technology (Fintech) and Product Innovation on the Development of Sharia Insurance in Indonesia," was undertaken to address these challenges.

B. LITERATUR REVIEW

Development of Sharia Insurance

Development refers to the gradual process or progress in a specific field or matter involving changes, improvements, or evolution from an existing condition or situation towards a better or more advanced state. In a broader context, development encompasses various aspects such as economic, technological, social, and cultural dimensions and can occur in diverse fields like industry, education, health, and the environment. Development is often measured through certain indicators, such as economic growth, productivity increases, and improvements in societal well-being. It can also include changes in policies, regulations, or paradigms that affect how things operate or are practiced in a particular field.

In the context of Sharia insurance, development is an indicator that can refer to the growth of the insurance industry adhering to Sharia principles. This includes an increase in the number of Sharia insurance companies, product diversification,

heightened public awareness, and enhanced regulations supporting the industry's growth. The formula for calculating secondary data from the development indicators of Sharia insurance is based on the annual growth of Sharia insurance premiums. Factors influencing the development of Sharia insurance include Fintech and product innovation.

Financial Technology (Fintech)

Financial technology (Fintech) is an innovation that leverages advances in information technology within financial services, making it one of the fastest-growing sectors in the economy. Investments in this field have surged significantly over the years (Saksonova & Merlino, 2017: 963). Fintech continues to evolve globally alongside technological advancements.

According to Lia Muhibatul Aliyah and Nurdin (2019), Fintech can provide financial solutions, create financial stability, and enhance the quality of financial services. From an industry perspective, Fintech, as defined by the National Digital Research Center (NDRC), refers to financial innovation within the financial services sector, combining finance and modern technology. Simply put, according to Maulida (2019), Fintech is the merging of financial services with cutting-edge technology. Fintech can be seen as an effort to maximize the use of technology in areas such as payments, transfers, loans, asset management, and more, to strengthen, transform, and accelerate various financial services quickly and efficiently.

Fintech also encompasses an understanding of how information and communication technology, along with mobile applications, blockchain, and artificial intelligence, have transformed the financial industry. This includes the shift from physical to digital transactions, financial inclusion through digital services, and operational efficiency improvements through automation and big data usage. Additionally, Fintech theory delves into the social, regulatory, and security impacts related to technological innovation in the financial sector. Fintech indicators used include metrics for measuring development, assessing Fintech performance, such as the number of digital transactions and the growth of financial app users. These indicators help understand trends, monitor the evolution of the Fintech industry, and

identify potential opportunities and challenges. The formula for calculating secondary data from Fintech usage indicators is based on technology usage.

Product Innovation

Product innovation refers to the development or creation of new products that offer added value to consumers, either through new features, improved quality, or adaptation to evolving market needs. The product innovation process involves identifying market opportunities, product development, planning, and marketing, and can transform how consumers interact with a product. According to several theories from experts, the operational definition of product innovation is the implementation of product renewal to adapt to consumer demands. According to Crawford and De Benedetto (2000), product innovation is used throughout a company's operations where a new product is created and marketed, including innovation in all functional processes and applications.

This theory is supported by research conducted by Li and Gima (1999), which concluded that market orientation has a significant relationship with innovation characteristics, such as marketing innovation, product superiority, and technology. Pinho (2008) stated that market orientation positively influences the creation of innovation. Indicators of product innovation, developed by various experts, include creativity, technical innovation, design changes, distribution channel changes, and payment systems. The formula for calculating secondary data from the indicators of Sharia insurance product innovation is based on the total premiums from all Sharia insurance products.

C. METHODOLOGY

The research method used in this study is the quantitative research method, which is based on the philosophy of positivism. This method investigates a specific population or sample, with sampling techniques generally carried out randomly. Data collection is done using research instruments, and data analysis is quantitative or statistical, aiming to test the established hypotheses (Sugiyono, 2010).

The data sources for this study are secondary data, meaning the data collected is already published. The secondary data used in this research is determined by the

dependent variable (the development of Sharia insurance). Therefore, the research will use documentation techniques to gather data from the literature, including journals, financial reports, scientific papers, analyses, and findings.

According to Arikunto (2010), the population is the subject of the research. In this study, the population used financial technology in insurance from 2014 to 2023, with the levels of financial technology in insurance presented in Table 1. According to Suharsimi Arikunto (2010), a sample is a part or representative of the population being studied. Sampling research is conducted when we intend to generalize the results of the sample study. The sample in this study consists of the development of Sharia insurance and the innovation of Sharia insurance products, as shown in Tables 2 and 3.

The data analysis method used in this research is multiple linear regression analysis. This method is used to understand the relationship between one dependent variable and two or more independent variables. The goal is to model and explain the pattern of relationships among these variables and to make predictions based on the model (Sugiyono, 2010). This approach identifies the extent to which the independent variables (fintech and product innovation) influence the dependent variable (development of Sharia insurance), using SPSS 29 software. The equation is as follows:

$$Y = a + b_1X_1 + b_2X_2 + e$$

- Y : Development of Sharia Insurance
- α : Constant
- b1 : Regression Coefficient of Financial Technology
- b2 : Regression Coefficient of Product Innovation
- X1 : Financial Technology
- X2 : Product Innovation
- ϵ : Margin of Error

D. RESULT AND ANALYSIS

Analysis of Financial Technology and Product Innovation on the Development of Sharia Insurance

The analysis uses linear regression to evaluate the relationship between the independent variables, Financial Technology (X1) and Product Innovation (X2), and the dependent variable, Development of Sharia Insurance (Y). Multiple linear regression analysis is employed when at least two independent variables exist.

The multiple linear regression analysis results show the impact of the independent variables, Fintech and Product Innovation, on the dependent variable, the development of Sharia Insurance. The details can be seen in Table 4 below:

Table 4. Multiple Linear Regression Model for the Development of Sharia Insurance

Model	Coefficients ^a				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.106	.034		3.086	.018
Financial Technology (X1)	.097	.039	.605	2.497	.041
Inovation Product (X2)	-.130	.070	-.449	-1.854	.106

a. Dependent Variable: Development of Sharia Insurance (Y)

$$\text{Equation: } Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

We obtain $Y = 0.106 + 0.097X_1 - 130X_2$ from the linear regression equation above. Based on this regression equation:

1. 0.106 represents the constant from the unstandardized coefficients. This constant indicates that if there are no independent variables (Financial et al.), the value of Sharia insurance development will be 0.106.
2. 0.097 is the regression coefficient for Financial Technology (X1). This means that for each additional unit of Financial Technology (X1), the development of

Sharia insurance (Y) will increase by 0.097. Note: a positive value for b1 indicates an increase.

3. -130 is the regression coefficient for Product Innovation (X2). This means that for each additional unit of Product Innovation, the development of Sharia insurance will decrease by -130. Note: a negative value for b2 indicates a decrease.

Partial correlation testing in this study was conducted using SPSS.

1. The correlation test results show that the correlation value between Financial Technology (X1) and Sharia Insurance Development (Y) is $0.097 > 0.05$, indicating a strong and positive relationship between Financial Technology and Sharia Insurance Development.
2. The correlation value between Product Innovation (X2) and Sharia Insurance Development (Y) is $-130 < 0.05$, indicating a significant effect on the dependent variable.
3. For the partial impact test between Financial Technology (X1) and Product Innovation (X2) on Sharia Insurance Development (Y), refer to Table 4.

Table 5. Tabel T Analisis

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
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Financial Technology (X1)	.097	.039	.605	2.497	.041
Innovation Product (X2)	-.130	.070	-.449	-1.854	.106

a. Dependent Variable: Development of Sharia Insurance (Y)

The t-test is used to determine the significance of the influence of independent variables on the dependent variable individually while keeping other variables constant. The criteria for rejecting or accepting the hypothesis are: H1 is rejected, and H2 is accepted if $t\text{-calculated} > t\text{-table}$ or $t\text{-calculated} < -t\text{-table}$, indicating that the independent variable has a partial effect. For instance, if Product Innovation (X2)

increases by one unit, the development of Sharia insurance will increase by 0.106, assuming other influencing variables are considered zero (a and $X_1 = 0$).

t-Test Results

1. For Financial Technology (X_1) and its effect on Sharia Insurance Development (Y): The result is $0.041 < 0.05$, and the t-calculated value is $2.497 > t$ -table 2.365 with $df = t(\alpha/2 ; n-k-1)$, $n = 10$, $k = 2$, $\alpha = 0.025$. This leads to the conclusion that H_1 is accepted, meaning Financial Technology (X_1) significantly affects Sharia Insurance Development (Y).
2. For Product Innovation (X_2) and its effect on Sharia Insurance Development (Y): The result is $0.106 > 0.05$, and the t-calculated value is $-1.854 < t$ -table 2.365 with $df = t(\alpha/2 ; n-k-1)$, $n = 10$, $k = 2$, $\alpha = 0.025$. This leads to the conclusion that H_2 is rejected, meaning Product Innovation (X_2) does not significantly affect Sharia Insurance Development (Y).

F-Test

The F-test, also known as the simultaneous test or ANOVA, is used to assess the combined effect of all independent variables on the dependent variable

Table 6. The result of the Anova Multiple Linear Regression Model Test

		ANOVA ^a				
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	.003	2	.002	5.049	.044 ^b
	Residual	.002	7	.000		
	Total	.006	9			

a. Dependent Variable: Development of Sharia Insurance (Y)

b. Predictors: (Constant), Innovation Product (X_2), Financial Technology (X_1)

Based on the results of the F-test, it can be seen that the significance value for the simultaneous effect of X_1 and X_2 on Y is $0.044 < 0.05$, and the F-calculated value is $5.049 > F$ -table 4.46 (F -table = $F(k; n-k)$, where $n = 10$, $k = 2$, or $F_1 = (k-1)$, $F_2 = (n-k-1)$). This leads to the conclusion that H_3 is accepted, meaning that Financial

Technology (X1) and Product Innovation (X2) have a simultaneous effect on Sharia Insurance Development (Y).

Hypothesis Testing Results

1. H1 = There is an effect of Financial Technology (X1) on Sharia Insurance Development (Y).
2. H2 = Product Innovation (X2) does not affect Sharia Insurance Development (Y).
3. H3 = There is a simultaneous effect of Financial Technology (X1) and Product Innovation (X2) on Sharia Insurance Development (Y).

Confidence Level: 95%, $\alpha = 0.05$

Coefficient of Determination

Table 7. Result of Simulant Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.769 ^a	.591	.474	.01816

a. Predictors: (Constant), Innovation Product (X2), Financial Technology (X1)

Based on the output above, the R Square value is 0.591, which means that the simultaneous effect of variables X1 and X2 on variable Y is 59.1%.

Previous studies supporting this research include a study by Hida Hiyanti and Lucky Nugroho in 2019, which concluded that Sharia Fintech has the potential to differentiate itself from conventional Fintech through its distinct Sharia approach. Additionally, Sharia Fintech in Indonesia has significant opportunities for growth through this unique Sharia approach. Similarly, Indri Nurangraen's 2019 study explains that product innovation in the context of Fintech innovation in Sharia insurance refers to developing more innovative insurance products that meet market demands and technological advancements. The study also indicates that the Sharia insurance industry can enhance market penetration, better meet consumer needs,

and increase competitiveness in the digital era. Furthermore, the research highlights that accessible, fast, and affordable internet technology can boost Indonesia's participation in the digital economy. Proposed strategies include socialization, minimizing human resource requirements, regulation, product resets, and product innovation as crucial steps in Sharia Insurance Fintech innovation.

From the perspective of Islamic economics, this study provides important insights into the role of financial technology (Fintech) and product innovation in developing the Sharia insurance industry in Indonesia. Islamic economics, which is based on the principles of justice, equality, and sustainability, emphasizes the importance of financial instruments that are not only efficient but also compliant with Sharia law, meaning they do not involve *riba* (interest), *gharar* (excessive uncertainty), or *maysir* (speculation). The study shows that the use of Fintech has a significantly positive correlation with the development of Sharia insurance. Fintech enables transparency and efficiency in financial transactions, which is crucial in Islamic economics. Technologies like blockchain can ensure accountability and traceability of funds, thereby reducing the risk of practices that do not align with Sharia principles. Furthermore, Fintech platforms offer wider access to Sharia insurance products, which can increase Sharia-based financial inclusion (Iqbal & Mirakhor, 2011).

In addition, Sharia-compliant product innovation is key to attracting consumers mindful of Islamic principles. Although the study found that product innovation alone does not have a statistically significant impact on the development of Sharia insurance, its combination with Fintech strengthens its positive effects. This suggests that product innovations integrated with digital technology can create more appealing, efficient products that meet the evolving needs of Muslim consumers. The study also highlights several challenges, such as infrastructure limitations and technical skill gaps, which require further attention from the perspective of Islamic economics. In this context, solutions based on waqf (endowment) or zakat (charitable giving) could be Sharia-compliant ways to finance technological infrastructure and workforce training. Additionally, establishing a clear and strong regulatory framework is essential to protect consumers and ensure compliance with Sharia principles in digital technology (Iqbal & Mirakhor, 2011).

E. CONCLUSION

Based on the research, it can be concluded that Financial Technology (Fintech) and Product Innovation significantly impact Sharia Insurance's development in Indonesia, as shown by the F-test results. While Product Innovation alone does not have a significant effect according to the t-test, when combined with Fintech, both factors significantly influence the growth of Sharia Insurance. The regression analysis shows that an increase in Product Innovation tends to decrease Sharia Insurance development by -130, while an increase in Fintech leads to an increase of 0.097. Fintech has the most dominant influence on the growth of Sharia Insurance, as indicated by the correlation results. The research supports the following hypotheses: Fintech significantly impacts the development of Sharia Insurance in Indonesia, but it does not have a statistically significant effect individually. Product innovation also significantly impacts the development of Sharia Insurance in Indonesia, but it does not show a statistically significant effect individually. When combined, Fintech and Product Innovation significantly affect the development of Sharia Insurance in Indonesia. Finally, this study shows that adopting Fintech and product innovation in the Sharia insurance industry enhances the industry's competitiveness and growth and aligns with the core values of Islamic economics. By addressing challenges such as infrastructure limitations and technical skill gaps and adopting a Sharia-based approach to development, this industry has significant potential for further growth and a positive impact on the Indonesian economy.

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