

Financial Savvy To Golden Years: Unraveling The Impact Of Literacy, Savings, And Fintech On Retirement Planning Among Industrial Worker

Cerdas Finansial Menuju Masa Keemasan: Mengungkap Dampak Literasi, Tabungan, Dan Tekfin Terhadap Perencanaan Pensiun Di Kalangan Pekerja Industri

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ABSTRACT

The problems of workers in urban areas such as Batam are very complex. The readiness of workers in Indonesia to welcome the end of productive age, transition from labour to self-employment or to other jobs to fulfil household needs. Retirement planning is a lifelong process to achieve financial security in the future. Therefore, personal financial management determines readiness in good retirement planning. The problem of retirement planning comes from people's low financial literacy in financial management, plus no retirement preparation savings, besides that the use of financial technology is currently not optimally utilised by the community. The purpose of this study is to analyse and determine the effect of financial literacy, saving behaviour and financial technology on retirement preparation both directly and mediated by financial behaviour. The research method uses a quantitative associative approach to test the influence between variables with quantitative data. The number of research samples was 400 respondents who were workers in Batam City. The data analysis technique uses the Structural Equation Model with the SEM-PLS Version 4.0 Statistical Tool. The findings of this study found that there is a significant direct influence between financial literacy, saving behaviour and financial technology variables on financial behaviour. However, a significant direct effect on retirement planning is only found in the direct effect of financial literacy and financial behaviour, while saving behaviour and financial technology do not have a significant direct effect on retirement planning. Financial behaviour functions as an intervening variable in this study, because significant research results were obtained for the indirect effect between financial literacy, saving behaviour and financial technology variables on retirement planning through financial behaviour.

Keywords: Financial Literacy, Saving Behaviour And Financial Technology, Financial Behaviour, Retirement Planning

ABSTRAK

Permasalahan pekerja di daerah perkotaan seperti Batam sangatlah kompleks. Kesiapan para pekerja di Indonesia dalam menyambut berakhirnya usia produktif, transisi dari pekerja menjadi wiraswasta atau ke pekerjaan lain untuk memenuhi kebutuhan rumah tangga. Perencanaan pensiun adalah proses seumur hidup untuk mencapai keamanan finansial di masa depan. Oleh karena itu, pengelolaan keuangan pribadi menentukan kesiapan dalam perencanaan pensiun yang baik. Permasalahan perencanaan pensiun berasal dari rendahnya literasi keuangan masyarakat dalam pengelolaan keuangan, ditambah lagi belum adanya tabungan persiapan pensiun, selain itu penggunaan teknologi keuangan saat ini belum dimanfaatkan secara optimal oleh masyarakat. Tujuan dari penelitian ini adalah untuk menganalisis dan mengetahui pengaruh literasi keuangan, perilaku menabung dan teknologi keuangan terhadap persiapan pensiun baik secara langsung maupun dimediasi oleh perilaku keuangan. Metode penelitian menggunakan pendekatan asosiatif kuantitatif untuk menguji pengaruh antar variabel dengan data kuantitatif. Jumlah sampel penelitian sebanyak 400 responden yang merupakan pekerja di Kota Batam. Teknik analisis data menggunakan Structural Equation Model dengan alat bantu statistik SEM-PLS Versi 4.0. Temuan dari penelitian ini menemukan bahwa terdapat pengaruh langsung yang signifikan antara variabel literasi keuangan, perilaku menabung dan teknologi finansial terhadap perilaku keuangan. Namun, pengaruh langsung yang signifikan terhadap perencanaan pensiun hanya terdapat pada pengaruh langsung literasi

keuangan dan perilaku keuangan, sedangkan perilaku menabung dan teknologi keuangan tidak memiliki pengaruh langsung yang signifikan terhadap perencanaan pensiun. Perilaku keuangan berfungsi sebagai variabel intervening dalam penelitian ini, karena hasil penelitian yang signifikan diperoleh untuk pengaruh tidak langsung antara variabel literasi keuangan, perilaku menabung dan teknologi keuangan terhadap perencanaan pensiun melalui perilaku keuangan.

Kata Kunci: Literasi Keuangan, Perilaku Menabung Dan Teknologi Finansial, Perilaku Keuangan, Perencanaan Pensiun

1. Introduction

The uncertainty of the future requires a worker to have maturity in preparing financial planning in the future. Many perceptions arise in society, especially in Indonesia, which affect a person's financial maturity in retirement. Aulia, et.al. stated that the size of individual asset ownership can reflect financial well-being (Aulia, et. al, , 2019)). A person who is able to manage assets, such as savings, stocks, mutual funds, bonds, and tangible assets, has tried to prepare his old age plan.

However, this has not been fully achieved by the Indonesian people. Retirement is experienced by someone who does not enter the world of work at a job or position on a permanent basis because they have reached an unproductive age, so that it will affect household income. This is something that is very scary without preparation, what most Indonesians will do is reduce their consumption.

Recent studies have made clear the negative impact of post-retirement on household consumption, namely household consumption outside the home, consumption of men of retirement age, and overall household expenditure (Been, et.al, 2021). When household members, especially the head of the household, reach retirement age, household income decreases and the household expenditure budget is reduced. When household members, especially the head of the household, reach retirement age, household income decreases and the household expenditure budget decreases.

Currently, globally, the number of people approaching retirement age is increasing, including in Indonesia. The ageing of the population is happening now, as evidenced by the increase in life expectancy followed by an increase in the number of elderly people. The retirement preparation period will greatly help people in managing family financial resources and help manage family finances for a better quality of life.

Based on data compiled by Mercer and CFA Institute (2021), it is obtained an overview of the ranking of pension programmes owned by various countries in the world and several countries in Southeast Asia with indicators of adequacy, sustainability and integrity. The pension Index levels for several countries in Southeast Asia are as follows:

Table 1. Ranking of Pension Programmes in Some Southeast Asian Countries

Country	Adequacy	Sustainability	Integrity	Overall Score
Singapore	73.50	59.80	81.50	70.70
Malaysia	50.60	57.50	76.80	59.60
Taiwan	40.80	51.90	69.30	51.80
Indonesia	44.70	43.60	69.20	50.40
Philippines	38.90	52.50	35.00	42.70
Thailand	35.20	40.00	50.00	40.60

Singapore ranks highest in all three sub-indices and offers pensions with mandatory contributions from workers and employers, and optional contributions for state-approved pension products. Indonesia is fourth in Southeast Asia with the highest integrity score compared to the other three sub-indices.

In Indonesia itself, financial management behaviour in preparing for retirement is still not a priority, so that after retirement they are still looking for other sources of income to be able to finance their needs and lifestyle. The results of a survey conducted by HSBC (2019) 9 out of 10 people plan to look for other sources of income when retiring with the following data:

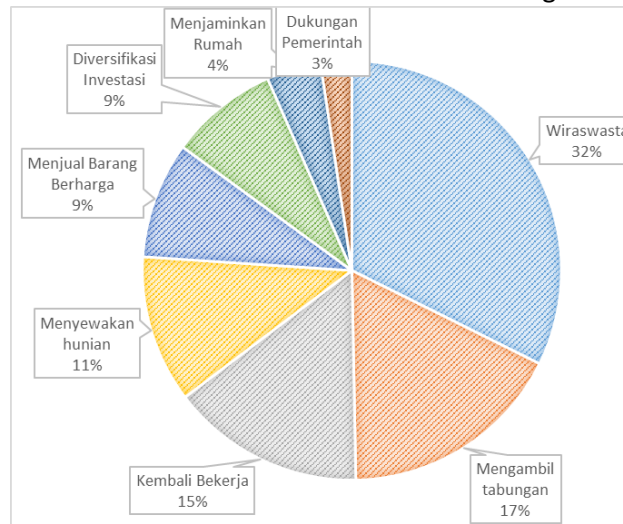


Figure 1. Survey of sources of income after retirement

Retirement refers to the permanent withdrawal of a position from the labour force. It represents something that people look forward to after a lifetime of work. To have an ideal retirement life, individuals must first achieve financial freedom by having personal retirement planning. Retirement planning may not be necessary if it is a personal choice to make preparations for their future. Unfortunately, more than 50% of the elderly population find it difficult to face retirement without proper planning and lack of savings.

This research was conducted to examine the understanding of early retirement preparation as measured by the personal financial behaviour of workers in Indonesia. Based on studies that have been conducted, there has been a shift in people's behaviour regarding financial management where pension preparation, which was previously only managed by the government through its program, has now developed and become a new buzz. Some people have managed their own pension funds with smart thinking.

2. Literature

The issue of retirement planning is an urgency that requires special attention. Some previous researchers who discussed retirement preparation focused on government programmes, but did not consider aspects of financial literacy and personal financial management. While in Indonesia there are still few studies that examine retirement preparation seen from personal financial management behaviour.

a. Financial Literacy

Apra et al. state that financial literacy is one part of financial health that describes a person's knowledge and ability to manage personal finances (Fauziyah, 2020). According to Fitriarianti, financial literacy is a must for every individual in order to avoid financial problems because individuals are often faced with trade offs, namely situations where a person must sacrifice one interest for another.

b. Saving Behaviour

Saving is done for various purposes in the future, including emergency money, retirement funds, long-term needs, education funds, and so on (Pohan, *et.al*, 2021).

c. Financial Technology

According to Bank Indonesia (2020) Financial Technology (FinTech) is the result of the combination of financial services with technology so as to change the business model from conventional to moderate, which initially had to be done face-to-face, but now can make transactions remotely and in seconds.

d. Financial Behaviour

Financial behaviour is an approach that explains how humans make investments or relate to finance influenced by psychological factors (Dew & Xiao, 201)).

e. Retirement Planning

Pension planning behaviour is a behaviour or action taken by individuals to set aside some funds to achieve the goal of living well in the future (Wicaksono, 2015).

Table 2. State of Art Research

No	Year	Author	Result
1	2022	Subur Harahap, Armanu Thoyib, Sumiati Sumiati and Atim Djazuli	Saving behaviour has no effect on retirement planning.
2	2020	Agung Satria Setyawan Hutabarat, Chandra Wijaya	Financial behaviour has a significant effect on employee retirement planning
3	2021	Ratna Catur Widyaningtyas, Suhartono	Fintech Saving behaviour has a significant effect on retirement planning
4	2022	Supoyo Ulupui I Buchdadi A	Saving behaviour has a significant effect on retirement planning
5	2016	K. H. Hassan, R. A. Rahim, F. Ahmad, T. N. A. T. Zainuddin, R.R. Merican & S.K. Bahar	There is a relationship between retirement planning and savings among workers in Malaysia
6	2020	Tan L. S., Audrey L. L. C., Cheah Y. Y.	Financial technology aids retirement planning among the younger generation
7	2019	Fisch JLabouré MTurner J	Financial technology affects retirement planning
8	2019	Julie Agnew, Olivia S. Mitchell	Financial technology has a significant effect on retirement preparation
9	2022	Irdawati I, Abdul Rakhman Laba, Muhammad Yunus Amar, Fauzi R Rahim	– Saving behaviour has a significant effect on retirement planning – Fintech has a significant effect on retirement preparation
10	2023	Wulan Dwi Putri, Amy Fontanella, Desi Handayani	– Saving behaviour has a significant effect on financial behaviour – Fintech has a significant effect on financial behaviour
11	2021	Suwatno, Ikaputera Waspada, Heni Mulyani	Saving behaviour has a significant effect on financial behaviour

Based on theory and previous research, the research conceptual framework is obtained as follows:

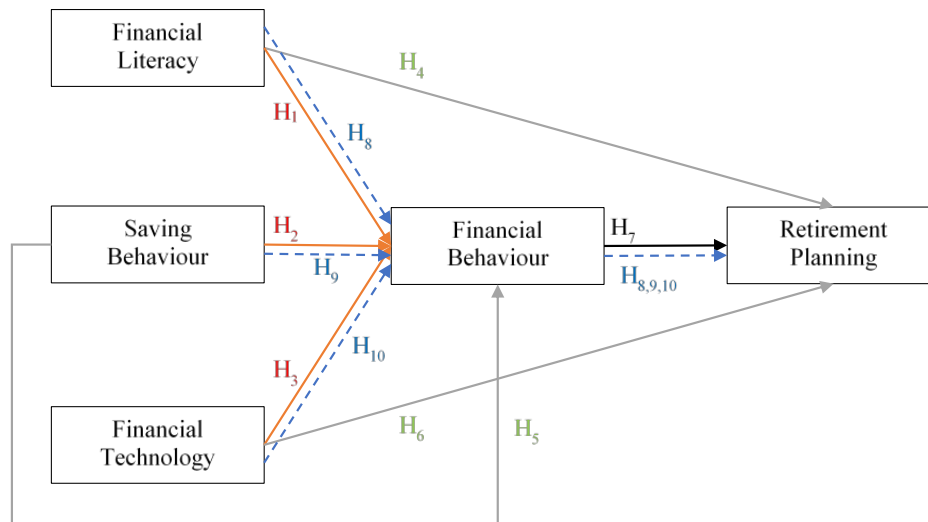


Figure 2. Research Conceptual Framework

3. Research Method

In this study, the approach method used is an associative approach. By using an associative research approach, researchers want to understand the relationship that may exist between the independent variable and the dependent variable in the context of a cause-and-effect relationship [11]. The total population recorded was 340,176 workers in Batam city. Determination of the number of samples using the Slovin formula with an error tolerance level of 5% and obtained a sample size of 400 respondents. The sample details are as follows:

Table 3. Research Sample

No	Sub-district	Active Workers	Percentage	Total Sampling
1	Sekupang	3.346	1,0%	4
2	Sei Beduk	34.271	10,1%	40
3	Sagulung	1.025	0,3%	1
4	Nongsa	4.003	1,2%	5
5	Lubuk Baja	8.346	2,5%	10
6	Galang	66	19,4%	78
7	Bulang	105	30,9%	123
8	Bengkong	1.786	0,5%	2
9	Belakang Padang	54	15,9%	63
10	Batu Ampar	6.823	2,0%	8
11	Batu Aji	4.717	1,4%	6
12	Batam Kota	50.859	15,0%	60
Total		340.176		400

This research uses PLS-SEM analysis method. SEM (Structure Equation Modelling) is used for theory exploration and confirmation. Exploration or variance-based modelling involves theory building, confirmatory modelling tests the theory. Data analysis using Smart PLS with Outer Model and Inner Model Tests.

4. Result and Discussion

a. Demographic Respondents

This study involved a total of 400 respondents who are workers in the industrial sector in Batam City. In terms of demographics, the majority of respondents (60%) were in the 30-45

age group, indicating a predominance of workers in the middle productive age. The gender composition was relatively balanced with 52% male and 48% female, reflecting gender equality in Batam's industrial workforce. Respondents' education levels varied, with 45% high school/vocational school graduates, 35% holding Diploma degrees, and 20% with Bachelor's degrees, illustrating diverse educational backgrounds in this sector. Regarding work experience, most respondents (70%) had been working in the industry for 5-15 years, indicating a fairly high level of experience. The income distribution showed that 40% of respondents earned between Rp 4-6 million per month, 30% below Rp 4 million, and 30% above Rp 6 million, reflecting economic variations among Batam's industrial workers. These characteristics provide a comprehensive picture of the demographic and socioeconomic profile of the respondents, which is important for understanding the context of the subsequent research findings.

b. Outer Model

The results of the factor loading test show that all indicators in this study have excellent convergent validity, with factor loading values above 0.7 for all constructs. These results provide a strong foundation for further analysis, including structural model evaluation and hypothesis testing, as well as increasing confidence in the overall research findings.

Table 4. Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Extracted (AVE)	Variance
Financial Behavior	0.942	0.951	0.948	0.585	
Financial Literacy	0.953	0.960	0.958	0.604	
Financial Technology	0.963	0.968	0.967	0.712	
Retirement Planning	0.943	0.947	0.950	0.636	
Saving Behavior	0.956	0.971	0.961	0.671	

The analysis results show that all constructs in this study have excellent reliability and validity. The Cronbach's Alpha values for all constructs are above 0.9, indicating very high internal consistency. The rho_A and Composite Reliability values are also consistently above 0.9, further strengthening evidence of construct reliability. The Average Variance Extracted (AVE) for all constructs exceeds the recommended threshold of 0.5, with the lowest value being 0.585 for Financial Behavior and the highest 0.712 for Financial Technology, demonstrating strong convergent validity. Specifically, Financial Technology shows the highest convergent validity, while other constructs also show very satisfactory AVE values. These results indicate that the measurements for each construct in this research model are highly reliable and valid, providing a strong foundation for further analysis and interpretation of research findings on retirement planning among industrial workers in Batam.

c. Inner Model

The inner model, also known as the structural model, is a key component of Partial Least Squares Structural Equation Modeling (PLS-SEM). It represents the hypothesized relationships between latent variables or constructs in a study:

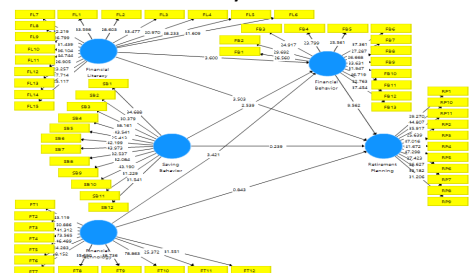


Figure 2. Inner Model Test

Table 5. Direct Effect Test

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Financial Literacy -> Financial Behavior	0.187	0.189	0.052	3.600	0.000
Saving Behavior -> Financial Behavior	0.135	0.136	0.053	2.539	0.011
Financial Technology -> Financial Behavior	0.186	0.188	0.054	3.421	0.001
Financial Literacy -> Retirement Planning	0.176	-0.177	0.050	3.503	0.001
Saving Behavior -> Retirement Planning	0.013	-0.013	0.053	0.239	0.811
Financial Technology -> Retirement Planning	0.046	-0.046	0.055	0.843	0.400
Financial Behavior -> Retirement Planning	0.432	0.434	0.045	9.562	0.000

The path analysis results reveal the key role of Financial Behavior in Retirement Planning, with the largest positive and significant influence ($\beta = 0.432$, $p < 0.001$). Financial Literacy significantly affects both Financial Behavior and Retirement Planning, while Financial Technology and Saving Behavior significantly influence Financial Behavior but do not directly affect Retirement Planning. These findings suggest that Financial Behavior may serve as an important mediator, through which Financial Technology and Saving Behavior indirectly influence Retirement Planning. Overall, these results emphasize the complexity of relationships among variables in retirement planning and the importance of financial behavior as a primary factor.

Table 6. Indirect Effect Test

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Financial Literacy -> Financial Behavior -> Retirement Planning	0.081	0.082	0.025	3.255	0.001
Financial Technology -> Financial Behavior -> Retirement Planning	0.080	0.082	0.026	3.119	0.002
Saving Behavior -> Financial Behavior -> Retirement Planning	0.058	0.059	0.024	2.434	0.015

The mediation analysis results indicate that Financial Behavior serves as a significant mediator in the relationship between Financial Literacy, Financial Technology, and Saving Behavior with Retirement Planning. All mediation paths show positive and significant indirect effects ($p < 0.05$). Financial Literacy has the largest mediation effect (0.081, $p = 0.001$), followed by Financial Technology (0.080, $p = 0.002$), and Saving Behavior (0.058, $p = 0.015$). These findings reinforce the key role of Financial Behavior in the model, acting as an important intermediary between influencing factors and the final outcome of Retirement Planning. Although Financial Technology and Saving Behavior do not have significant direct effects on Retirement Planning based on the previous path analysis, these results show that both have significant indirect effects through Financial Behavior.

5. Discussion

a. Direct Effect Financial literacy on Financial Behavior

This research reveals that financial literacy has a direct and significant influence on financial behavior among industrial sector workers in Batam. This finding affirms the crucial role of financial understanding in shaping positive financial behavior among industrial workers. High financial literacy enables workers to make more informed and strategic financial decisions, which is reflected in their daily financial behavior. The significance of this relationship may be influenced by Batam's unique characteristics as an industrial city, offering various economic opportunities and challenges, encouraging workers to actively improve their financial knowledge. Financial education programs that may have been implemented by companies in Batam also seem effective in improving not only knowledge but also employees' financial

behavior. This finding aligns with previous research showing a positive correlation between financial literacy and financial behavior among industrial workers. The practical implications of these results include the need for enhanced financial literacy programs specifically targeted at industrial workers in Batam, focusing on applying knowledge in daily financial decision-making. For policymakers, these results emphasize the importance of integrating financial education into human resource development programs in Batam's industrial sector, which in turn can improve workers' financial well-being and the city's overall economic stability.

b. Direct Effect Saving Behavior on Financial Behavior

Good saving habits contribute substantially to more prudent overall financial behavior. This positive relationship may reflect the unique characteristics of industrial workers in Batam, where a strong saving culture can act as a catalyst for better financial management in general. Factors such as economic uncertainty often experienced in industrial cities and income fluctuations may encourage workers to develop saving habits that, in turn, affect other aspects of their financial behavior. This significant influence can also be associated with potential financial education programs or company initiatives in Batam that emphasize the importance of saving. The implications of these findings include the need to strengthen programs that promote a saving culture among industrial workers, such as automatic saving schemes or saving incentives, which will not only improve saving behavior but also potentially enhance overall financial behavior. For policymakers and company management, these results highlight the importance of creating an environment that supports and facilitates saving habits as a strategy to improve the financial health of industrial workers in Batam.

c. Direct Effect Financial Technology on Financial Behavior

The growing of digital financial tools in shaping financial practices within the industrial workforce. The positive relationship suggests that the adoption and use of financial technology platforms are conducive to more informed and efficient financial decision-making among workers. This trend may be particularly pronounced in Batam, an industrial hub known for its tech-savvy workforce and digital infrastructure. The significant influence of fintech could be attributed to several factors: the convenience and accessibility of digital financial services, which align well with the busy schedules of industrial workers; the transparency and real-time tracking capabilities offered by fintech platforms, which enhance financial awareness; and the potential for fintech to facilitate better budgeting, saving, and investment practices. Moreover, the industrial setting of Batam, with its exposure to technological advancements, may create an environment where workers are more inclined to embrace and effectively utilize financial technology in their daily lives. The implications of these findings are substantial, pointing to the need for companies and policymakers to further integrate fintech solutions into financial wellness programs for industrial workers. This could include promoting digital financial literacy, partnering with fintech providers to offer tailored solutions, and creating a supportive ecosystem for the adoption of financial technology. Ultimately, leveraging fintech effectively could lead to improved financial behaviors and outcomes for industrial workers in Batam, contributing to their overall financial well-being and resilience.

d. Direct Effect Financial Literacy on Retirement Planning

The crucial role of financial knowledge and understanding in shaping long-term financial strategies, particularly for retirement preparation. The positive relationship suggests that workers with higher levels of financial literacy are more likely to engage in proactive retirement planning, potentially leading to better financial security in their later years. This trend is particularly noteworthy in the context of Batam's industrial sector, where workers may face unique financial challenges and opportunities. The significant influence of financial literacy on

retirement planning could be attributed to several factors: enhanced awareness of the importance of long-term financial planning, better understanding of various retirement savings instruments and their potential returns, and improved ability to navigate complex financial decisions. Moreover, the industrial environment of Batam, characterized by its dynamic economic landscape, may necessitate a higher level of financial acumen for effective retirement planning. The implications of these findings are substantial, highlighting the need for comprehensive financial education programs tailored to the specific needs of industrial workers in Batam. Employers, financial institutions, and policymakers should consider implementing targeted initiatives to boost financial literacy, with a particular focus on retirement planning. This could include workshops, personalized financial counseling, and the integration of retirement planning modules into existing employee training programs. By fostering higher levels of financial literacy, stakeholders can empower industrial workers in Batam to make more informed decisions about their retirement, potentially leading to improved financial well-being in their post-employment years and contributing to the overall economic stability of the region.

e. Direct Effect Saving Behavior on Retirement Planning

There is a tendency for workers with better saving habits to engage in retirement planning, this relationship is not strong enough to be statistically significant. The positive direction of the relationship aligns with financial theory, which posits that individuals who save regularly are more likely to plan for their future, including retirement. However, the lack of statistical significance in this context is noteworthy and warrants further exploration. Several factors might explain this unexpected outcome. Firstly, the industrial workers in Batam may view their current saving behavior and retirement planning as separate financial activities, possibly due to the long-term nature of retirement compared to more immediate saving goals. Secondly, there might be intervening variables, such as financial literacy or access to retirement planning resources, that mediate the relationship between saving behavior and retirement planning. Additionally, the unique economic landscape of Batam, characterized by its status as a free trade zone and industrial hub, might influence workers' perceptions of financial security and retirement needs in ways that differ from other contexts. This finding has important implications for policymakers and employers in Batam's industrial sector. While promoting good saving habits remains crucial for overall financial health, there is a clear need for targeted interventions that explicitly link current saving behaviors to long-term retirement planning. This could involve educational programs that emphasize the connection between present saving habits and future financial security, as well as the development of easily accessible retirement planning tools tailored to the specific needs and circumstances of industrial workers in Batam.

f. Direct Effect Financial Technology on Retirement Planning

While financial technology may be widely adopted for day-to-day financial management among Batam's industrial workers, its application specifically for long-term retirement planning might be limited. Secondly, there could be a gap between the availability of fintech tools and their effective utilization for retirement planning purposes, possibly due to a lack of tailored retirement-focused features or insufficient user education. Additionally, the unique economic environment of Batam as an industrial free trade zone might influence workers' perceptions of retirement needs and the role of technology in long-term financial planning. This finding has important implications for fintech providers, employers, and policymakers in Batam's industrial sector. While promoting the use of financial technology remains valuable for overall financial management, there is a clear need for more targeted approaches that explicitly connect fintech usage to retirement planning. This could involve developing specialized retirement planning features within existing fintech platforms, implementing educational programs that demonstrate how to leverage technology for long-term financial goals, and creating incentives for workers to

use fintech tools specifically for retirement planning. By bridging this gap, stakeholders can potentially enhance the impact of financial technology on retirement preparedness among industrial workers in Batam.

g. Direct Effect Financial Behavior on Retirement Planning

The crucial role that day-to-day financial practices play in shaping long-term financial preparedness, particularly for retirement. The positive and significant relationship suggests that workers who exhibit more prudent and informed financial behaviors are more likely to engage in effective retirement planning. This trend is particularly noteworthy in the context of Batam's industrial sector, where workers may face unique financial challenges and opportunities. The significant influence of financial behavior on retirement planning could be attributed to several factors: First, good financial habits, such as budgeting, regular saving, and informed investment decisions, may naturally extend to long-term financial goals, including retirement planning. Second, workers with positive financial behaviors may have developed a greater sense of financial self-efficacy, making them more confident in tackling complex long-term financial planning. Third, the industrial environment of Batam, characterized by its dynamic economic landscape, may foster a culture where sound financial management is seen as essential for future security. The implications of these findings are substantial for various stakeholders. Employers in Batam's industrial sector should consider implementing comprehensive financial wellness programs that not only address immediate financial concerns but also emphasize the connection between current financial behaviors and retirement readiness. Financial institutions could develop products and services that reinforce this link, potentially offering incentives for consistent positive financial behaviors. Policymakers might consider initiatives that promote and reward responsible financial behavior among industrial workers, with a specific focus on how these behaviors contribute to retirement security. By leveraging the strong connection between financial behavior and retirement planning, stakeholders can potentially enhance the overall financial well-being and retirement preparedness of industrial workers in Batam, contributing to greater economic stability and worker satisfaction in the region.

h. Indirect Effect Financial Literacy on Financial Behavior and Retirement Planning

Financial literacy has a positive and significant indirect effect on retirement planning, mediated through financial behavior, among industrial workers in Batam. This result illuminates the complex interplay between knowledge, actions, and long-term financial planning. The positive and significant indirect relationship suggests that higher levels of financial literacy lead to improved financial behaviors, which in turn contribute to more effective retirement planning. This mediation effect is particularly noteworthy in the context of Batam's industrial sector, where workers navigate a unique economic landscape. The significant indirect influence of financial literacy on retirement planning, mediated by financial behavior, can be attributed to several factors: First, increased financial knowledge likely empowers workers to make more informed financial decisions in their daily lives, fostering positive financial behaviors. Second, these improved behaviors, such as budgeting, saving, and wise investment choices, naturally align with and contribute to better retirement planning practices. Third, the industrial environment of Batam, with its economic opportunities and challenges, may amplify the importance of translating financial knowledge into concrete actions for long-term security. This finding has substantial implications for various stakeholders. For employers in Batam's industrial sector, it underscores the need for comprehensive financial education programs that not only impart knowledge but also emphasize practical application in daily financial management, with a clear link to retirement planning. Financial institutions could develop educational initiatives and products that bridge the gap between financial literacy, behavior, and retirement preparedness. Policymakers might consider implementing multi-faceted financial wellness programs that

address all three aspects: literacy, behavior, and retirement planning. By recognizing and leveraging this mediation effect, stakeholders can design more effective interventions to enhance the financial well-being and retirement readiness of industrial workers in Batam, potentially leading to a more financially secure and stable workforce in the region.

i. Direct Effect Saving Behavior on Financial Behavior and Retirement Planning

The study reveals a noteworthy finding: saving behavior has a positive and significant indirect effect on retirement planning, mediated through financial behavior, among industrial workers in Batam. This result sheds light on the intricate relationship between specific saving habits, overall financial conduct, and long-term retirement preparedness. The positive and significant indirect relationship suggests that strong saving behaviors contribute to improved overall financial behaviors, which in turn lead to more effective retirement planning. This mediation effect is particularly relevant in the context of Batam's industrial sector, where workers face unique economic challenges and opportunities. The significant indirect influence of saving behavior on retirement planning, mediated by financial behavior, can be attributed to several factors: Firstly, consistent saving habits likely foster a sense of financial discipline and consciousness, which permeates other aspects of financial management. Secondly, the act of regular saving may increase workers' financial self-efficacy, encouraging them to engage in a broader range of positive financial behaviors. Thirdly, in the dynamic economic environment of Batam's industrial landscape, the transition from saving to comprehensive financial planning may be particularly pronounced. This finding has important implications for various stakeholders. Employers in Batam's industrial sector should consider implementing programs that not only encourage saving but also demonstrate how these habits can be leveraged for broader financial management and retirement planning. Financial institutions could develop products and services that create a clear pathway from saving to more complex financial behaviors and retirement preparedness. Policymakers might focus on initiatives that reinforce the connection between saving, overall financial health, and retirement security. By recognizing and capitalizing on this mediation effect, stakeholders can design more holistic and effective interventions to enhance the financial well-being and retirement readiness of industrial workers in Batam, potentially leading to a more financially resilient workforce and contributing to the region's economic stability.

j. Direct Effect Financial Technology on Financial Behavior and Retirement Planning

The research findings reveal a compelling relationship: financial technology has a positive and significant indirect effect on retirement planning, mediated through financial behavior, among industrial workers in Batam. This result illuminates the complex interplay between technological tools, daily financial practices, and long-term financial planning. The positive and significant indirect relationship suggests that the use of financial technology leads to improved financial behaviors, which in turn contribute to more effective retirement planning. This mediation effect is particularly noteworthy in the context of Batam's industrial sector, known for its technological advancement and dynamic economic environment. The significant indirect influence of financial technology on retirement planning, mediated by financial behavior, can be attributed to several factors: Firstly, fintech tools likely enhance financial awareness and provide real-time insights into personal finances, fostering more informed and disciplined financial behaviors. Secondly, the accessibility and convenience of fintech may encourage more frequent engagement with personal finances, leading to better overall financial management. Thirdly, in the tech-savvy industrial landscape of Batam, the adoption of financial technology may seamlessly translate into improved financial practices across various aspects of workers' lives. This finding has substantial implications for stakeholders. Employers in Batam's industrial sector should consider integrating fintech solutions into their financial wellness programs,

emphasizing how these tools can improve daily financial management and, consequently, retirement preparedness. Financial institutions and fintech providers could develop features that create a clear pathway from daily financial management to long-term retirement planning within their platforms. Policymakers might focus on initiatives that promote digital financial literacy and demonstrate the connection between fintech usage, sound financial behavior, and retirement security. By leveraging this mediation effect, stakeholders can design more innovative and effective interventions to enhance the financial well-being and retirement readiness of industrial workers in Batam, potentially leading to a more financially savvy and future-oriented workforce in the region.

6. Conclusion

This study provides valuable insights into the financial dynamics of industrial workers in Batam, particularly concerning retirement planning. The findings reveal a complex interplay between financial literacy, saving behavior, financial technology usage, financial behavior, and retirement planning.

Financial literacy emerged as a crucial factor, demonstrating both direct and indirect positive impacts on retirement planning. This underscores the importance of financial education initiatives tailored to the needs of industrial workers in Batam. The significant mediating role of financial behavior in this relationship highlights the need for programs that not only impart knowledge but also encourage the application of this knowledge in daily financial practices.

Interestingly, while saving behavior showed a positive direct influence on financial behavior, its direct impact on retirement planning was not significant. However, the significant indirect effect through financial behavior suggests that promoting good saving habits can contribute to overall financial well-being and, consequently, to better retirement planning.

Financial technology's role in this ecosystem is noteworthy. While its direct impact on retirement planning was not significant, its positive indirect effect through financial behavior indicates the potential of fintech solutions in shaping financial practices that contribute to long-term financial security. This finding is particularly relevant in the technologically advanced industrial setting of Batam.

The strong positive and direct influence of financial behavior on retirement planning reinforces the importance of fostering sound financial practices among industrial workers. This relationship serves as a linchpin, connecting various financial aspects to retirement preparedness.

In conclusion, these findings suggest a need for a holistic approach to improving the financial well-being and retirement readiness of industrial workers in Batam. Stakeholders should focus on enhancing financial literacy, encouraging positive saving behaviors, leveraging financial technology, and promoting sound financial practices. Future interventions should consider the interconnected nature of these factors, designing programs that address multiple aspects simultaneously.

This research contributes to the understanding of financial behavior and retirement planning in industrial contexts and provides a foundation for targeted policies and programs. Further research could explore the long-term impacts of these factors and investigate additional variables that may influence retirement planning among industrial workers in similar economic environments.

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