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MODERATION OF INTELLECTUAL INTELLIGENCE ON THE EFFECT OF FINANCIAL SKILLS AND FINANCIAL PLANNING ON WOMEN'S FINANCIAL LITERACY CAPACITY

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ABSTRACT

This article proves that intellectual intelligence is able to moderate the effect of financial skills and financial planning on women's financial literacy capacity. The sample in this study consisted of 430 respondents from women in Indonesia. Data analysis using structural equation modeling partial least squares (PLS-SEM). Based on the results of the study, shows that financial skills have a significant effect on women's financial literacy capacity which is moderated by intellectual intelligence and financial planning has a significant effect on women's financial literacy capacity which is moderated by intellectual intelligence. The results of this study recommend that for women if they want to increase their financial literacy capacity, the main strategy that must be applied is to have good financial skills and financial planning and be strengthened by having adequate intellectual intelligence. Improving the financial literacy capacity of women is believed to be able to help increase the percentage of women's financial literacy index in Indonesia and to equalize the gender gap.

KEYWORDS: Financial Skill, Financial Planning, Intellectual Intelligence, Women's Financial Literacy Capacity

1. INTRODUCTION

Being in the current digital era has brought various positive changes as a good impact that can be used as well as possible for every individual, especially 'women'. Because at this time *women* have an important *role* in the economic wheels of society in an all-digital era. But at the same time, the digital era also brings many negative impacts, so becomes a new challenge in human life in today digital era. In the end, upgrading knowledge and skills for a woman is the key to survival in the digital era. One of the knowledge and skills that must be possessed by every woman is understanding the terms of finance. Women who have financial skills will understand techniques to make decisions about their financial management behavior (Llados-Maslorens & Ruiz-Dotras, 2022). Women's financial skills are an important part of building women's financial literacy capacity. Having financial literacy for



women is the most important thing to get a prosperous life. Financial literacy can be interpreted as skills or abilities in terms of managing finances, women who aspire to be prosperous, happy, and independent, must increase their capacity in managing finances so that their future is as expected (Darriet et al., 2021).

Based on the High-Level Principles on National Strategy, developed by the OECD International the Financial Education Network (OECD/INFE) assessing the financial literacy competence of the population is a key component of a successful national strategy. This opportunity will be a benchmark for every country to measure itself and find solutions to increase financial literacy capacity. Twenty-six countries on three continents (Asia, Europe, and Latin America), including Indonesia, participated in the international financial literacy survey. Based on the results obtained, the highest overall financial literacy score was obtained by Hong Kong and China with a score of 71.1%, while Indonesia got a score of 63.5%. On average across the sample, men have higher levels of knowledge and scores of financial literacy (OECD, 2020). In Indonesia, based on the National Survey of Financial Literacy and Inclusion (SNLIK) conducted by the Financial Services Authority (OJK) in 2019, the financial literacy index reached 38.03%, an increase compared to the results of the 2016 OJK survey, which was 29.7%. In the last 3 years, there has been an increase in financial literacy in Indonesian society by 8.33%. Furthermore, the results of the OJK survey also show that based on *gender*, the level of financial literacy for men is 39.94% relatively higher than for women at 36.13%. It is important to consider gender differences in financial literacy. The gender gap in financial literacy can exacerbate women's difficulties in securing their future and financial well-being and in participating confidently in economic and financial activities. Seeing the above phenomenon, it is interesting to observe and examine the relationship between financial skills and women's financial literacy capacity. Will having good financial skills and financial planning moderated by intellectual intelligence will encourage Indonesian women to be able to build their financial literacy capacity and be able to equalize the gender gap? This will be the focus of this research.

Researchers have proven that financial skills have been studied about women's financial literacy capacity (Struckell et al., 2022 ; Sconti, 2022 ; Kizsl & Winkler, 2022). Financial planning has been studied about women's financial literacy capacity (Gallego-Losada et al., 2022 ; Sekita et al., 2022 ; Amagir et al., 2022). Intellectual intelligence has been investigated in women's financial literacy capacity (Lin & Bates, 2022 ; Merkoulova & Veld, 2022 ; Kienzler et al., 2022). However, no research places intellectual intelligence as a moderating variable on the effect of financial skill on women's financial literacy capacity. Furthermore, another recent finding from this study lies in the intellectual intelligence variable as a moderating variable that moderates the financial planning variable on the variable of women's financial literacy capacity. This will be the latest discussion in this study and become new evidence to fill the research gap that did not exist before.



2. HYPOTHESES DEVELOPMENT

Theory of Planned Behavior

The Theory of Planned Behavior (TPB) is a further development of The Theory of Reasoned Action (TRA) which was initiated by (Ajzen, 1991). The theory of planned behavior is used to predict behavior and investigate the relationship between attitudes, intentions, and behavior. The theory of planned behavior suggests that individuals with a positive attitude toward a behavior have a stronger intention to engage in that behavior, a strong positive subjective norm increases behavioral intention, and perceived behavioral control is the individual's control over the resources and opportunities required to perform the behavior. Specific behavior and behavioral intention refer to how strong an individual's desire to perform a particular behavior is (Shih et al., 2022). By using this theoretical approach, the research model is studied systematically to see the financial skills of women which will affect women's financial literacy capacity. Financial literacy capacity is influenced by financial skills and financial planning and moderated by intellectual intelligence as a moderating variable. Thus, financial skills and financial planning have the potential to affect women's financial literacy capacity, which is moderated by intellectual intelligence. Based on these arguments, the results of previous studies were traced and a research hypothesis was formed.

The Effect of Financial Skills on Women's Financial Literacy Capacity

A woman who has financial skills in managing the flow of her financial resources has a positive influence on all financial aspects, including increasing women's financial literacy capacity. (Struckell et al., 2022). Financial skills can be applied both traditionally and digitally, both of which have the same positive effect on individual finances (Sconti, 2022). Financial literacy has a seemingly simple concept, but in many cases, it proves difficult to apply precisely, therefore it takes some skills to increase its capacity, one of which is to have financial skills. (Kiszl & Winkler, 2022). Thus, financial skills have the potential to have an important influence on women's financial literacy capacity. This is certainly an important thing, needed, and has the potential to form a positive perception for every woman. According to the previous research statement and the arguments above, hypothesis H1: Financial skills have the potential to have a significant effect on women's financial literacy capacity.

The Effect of Financial Planning on Women's Financial Literacy Capacity

Related to gender women have an important role in increasing financial literacy capacity, women must have the ability in terms of financial planning given the importance of saving and planning finances for the future (Gallego-Losada et al., 2022). Having a financial plan to design and stick to a retirement savings plan can be one way to increase women's financial literacy capacity (Sekita et al., 2022). In addition, with financial planning women can visualize their dreams by committing to their savings such as spending money responsibly and considering future desires and circumstances (Amagir et al., 2022). Thus, financial planning has the potential to have an important influence on women's financial



literacy capacity. This is certainly an important thing, needed, and has the potential to form a positive perception for every woman. According to the previous research statement and the arguments above, hypothesis H2: Financial planning has the potential to have a significant effect on women's financial literacy capacity.

Influence of Intellectual Intelligence on Women's Financial Literacy Capacity

Women with intellectual intelligence have verbal skills related to economic knowledge that can increase growth, development, and financial literacy (Lin & Bates, 2022). According to a study, individuals with intellectual intelligence tend to have higher incomes, with intellectual intelligence possessed by these individuals can be the key to making decisions, especially in financial matters (Merkoulova & Veld, 2022). Individuals who have high intellectual intelligence also have good numerical abilities so that they can carefully manage finances and avoid susceptibility to financial nonsense (Kienzler et al., 2022). Thus, intellectual intelligence has the potential to have an important influence on women's financial literacy capacity. This is certainly an important thing, needed, and has the potential to form a positive perception for every woman. According to the previous research statement and the arguments above, hypothesis H3: Intellectual intelligence has the potential to have a significant effect on women's financial literacy capacity.

Moderation of Intellectual Intelligence on the Effect of Financial Skills on Women's Financial Literacy Capacity

Having financial skills moderated by intellectual intelligence must be prioritized to increase financial literacy capacity (Twumasi et al., 2022). Having financial skills is indispensable for all stages of people's lives, especially to increase financial literacy capacity because financial literacy plays an important role for individuals who consume financial products and the national and global economy, especially in the digital era (Van Nguyen et al., 2022). Women with good intelligence and financial skills will be able to make financial decisions consciously and will encourage better daily financial behavior (Haleem, 2022). By the previous research statement and the arguments above, hypothesis H4 is determined: Intellectual intelligence has the potential to influence and moderate the influence of financial skills on women's financial literacy capacity.

Moderation of Intellectual Intelligence on the Effect of Financial Planning on Women's Financial Literacy Capacity

Financial literacy capacity can be increased if women have intellectual intelligence related to financial understanding that will provide information about pension funds that can secure women's future, one of the financial understandings that women must have is financial planning (Ghadwan et al., 2022). Financial planning can help women to manage their finances, and able to control every personal expense by making a personal budget every month. It is expected that women have the principle "I



have to buy something according to my needs, not what I want" (Tambun et al., 2022). Various other aspects of financial planning such as preparing for retirement, choosing investment instruments, and paying for insurance if moderated with intellectual intelligence will be important to increase women's financial literacy capacity (Cossa et al., 2022). By the previous research statement and the arguments above, hypothesis H5 is determined: Intellectual intelligence has the potential to influence and moderate the influence of financial planning on women's financial literacy capacity.

3. METHODS, DATA, AND ANALYSIS

This study uses research samples from women with a selected sample of 430 female respondents in Indonesia. The number of indicators of the variables studied is 16. This study has four variables studied. First, the financial skill variable is the independent variable. Financial skill is a technique for making decisions on the behavior of financial management that he has. The financial skill variable consists of four indicators, namely preparing a budget, choosing the type of investment instrument, choosing an insurance plan, and using credit (Lladós-Maslorens & Ruiz-Dotras, 2022). The second is the financial planning variable. Financial planning is a process carried out by an individual to fulfill his financial goals through a comprehensive financial plan for both the long and medium term. The financial planning variable consists of five indicators, namely there are financial goals to be achieved, there is a period to meet these goals, there is a clear and practical action plan to be carried out, and there are resources that can be used to carry out the action plan, and can anticipate several risk factors associated with resource choice (Choung et al., 2022). Third, the variable of women's financial literacy capacity is the dependent variable. Financial literacy can be interpreted as skills or abilities in terms of managing finances, women who aspire to be prosperous, happy, and independent, must increase their capacity in managing finances so that their future is as expected. The financial literacy variable consists of four indicators, namely the ability to read finance, analyze finances, manage finances, and communicate about personal financial conditions that affect material welfare. (Darriet et al., 2021). Fourth, the intellectual intelligence variable is a moderating variable. Intellectual intelligence is a person's ability to explain basic abilities, such as the ability to reason, plan, solve problems, think abstractly, understand ideas, use language, capture power, and learn. The intellectual intelligence variable consists of three indicators, namely figure ability, verbal ability, and numerical ability (Mulatningsih et al., 2022). The data in this study were taken using a questionnaire in Google Form that uses a Likert scale of 1 to 5. All statements in the research questionnaire follow the indicators of each variable being studied. Respondents' answers collected were recapitulated to be analyzed using partial least squares (PLS-SEM) structural equation modeling. The SmartPLS (Partial Least Square) software that is used to prove the hypothesis of this study uses the bootstrapping method. The PLS-SEM analysis consists of two sub-models, namely the measurement model or outer model and the structural model or inner model. The outer model test uses the MultiTrait-MultiMethod or MTMM approach by testing the convergent and discriminant validity. While the reliability test was carried out

in two ways, namely with Cronbach's Alpha and Composite Reliability (Hair & Alamer, 2022). Convergent Validity value > 70 is considered high, a loading factor value of 0.50 to 0.60 is interpreted as still acceptable (Hair & Alamer, 2022). Discriminant validity, which is comparing the square root of the average variance extracted (\sqrt{AVE}), $AVE > 0.50$ is considered good (Hair & Alamer, 2022). Reliability test is declared reliable if the value of composite reliability and Cronbach alpha > 0.70 (Hair & Alamer, 2022). The test of the structural model or inner model shows the relationship or strength of estimates between latent variables or constructs based on substantive theory. Reliability is measured using 3 criteria, namely R-Square, F-Square, and Estimate for Path Coefficients. R-Square which is the goodness-fit test of the model, if the R-Square value is 0.75, it is considered that the model is strong, 0.50 is considered to be a moderate model and 0.25 is considered to be a weak model (Golzarri-Arroyo et al., 2022). If the F-square value of 0.02 is interpreted as having a weak influence on the latent variable, 0.15 is interpreted as having a medium effect on the latent variable and 0.35 is interpreted as having a large weak influence on the structural level (Golzarri-Arroyo et al., 2022). Estimate For Path Coefficients looks at the significance of the effect between variables by looking at the parameter coefficient values and the T statistical significance value, namely through the bootstrapping method (Golzarri-Arroyo et al., 2022).

Table 1. Operationalization of Research Variables

Variable	Indicator	Rating Size	Items
Financial Skills (X1) Financial skill is a technique for making decisions on financial management behavior that he has (Lladós-Maslorens & Ruiz-Dotras, 2022).	Prepare a budget.	1. Each month, you create a personal budget to control every personal expense. 2. You are consistent in making a budget as a reference in all your financial calculations. Starting from income, expenses, as well as the need to invest and access health services.	1 2
	Choose the type of investment instrument.	1. You understand what type of investment instrument you will choose, which will be your opportunity to	3

		invest capital.	
	Choose an insurance plan.	1. Having health and life insurance is one way you can pay for treatment or care and protect the assets you own.	4
	Using credit.	1. You understand and understand clearly about credit cards so that you can use them wisely and by the rules set by the credit card issuing bank.	5
<p>Financial Planning (X2) Financial planning is a process carried out by an individual to fulfill his financial goals through a comprehensive financial plan for both the long and medium term (Choung et al., 2022).</p>	financial goals to be achieved.	1. You already have financial goals that you want to achieve, both in the long and short term, such as wanting to have savings of 20 million in the bank in the next 2 years or wanting to own your own house in the next 10 years.	6
	There is a timeframe or period to fulfill the objective.	1. You have set a timeframe to meet your financial goals, such as paying Rp. 350,000/month for the insurance premium for children's education for 10 years.	7
	There is a clear and practical action plan to do.	1. You have a clear action plan so that you can create a well-planned path to reach your financial goals promptly.	8
	Some resources can be used to carry out an action plan.	1. You have income as a resource that can be used to carry out your action	9

		plan.	
	Can anticipate several risk factors associated with the choice of resources.	1. You can anticipate and manage the risk of the income you get.	10
<p>Women's Financial Literacy Capacity (Y) Financial literacy can be interpreted as skills or abilities in terms of managing finances, women who aspire to be prosperous, happy, and independent, must increase their capacity in managing finances so that their future is as expected (Darriet et al., 2021).</p>	Financial reading skills.	1. As a woman you can read finances intelligently, wisely, and reliably in managing <i>finances</i> .	11
	Analyzing finances.	1. You can analyze or check the financial health you have.	12
	Manage finances.	1. Before managing finances, you have learned how to manage finances properly and correctly.	13
		2. You can manage finances well to create financial welfare goals.	14
Communicate about personal financial conditions that affect material well-being.	1. At the end of every month you always evaluate your financial statements for that month so that your financial condition is guaranteed to be stable.	15	
<p>Intellectual intelligence (Z) Intellectual intelligence is a person's ability to explain basic abilities, such as the ability to reason, plan, solve problems, think abstractly, understand ideas, use language, capture power, and learn.</p>	Figure ability.	1. It is very important and necessary for you to equip yourself with financial literacy, especially related to critical reasoning skills to avoid all forms of fraud.	16
	Verbal ability.	1. You can analyze if there are problems with the financial statements you	17

(Mulatningsih et al., 2022).		have. 2. Verbally you can read financial statements either personal or belonging to the organization.	18
	Numerical ability.	1. You can read the data in the financial statements carefully. 2. You can calculate quickly and precisely calculate the financial statements you have.	19 20

4. RESULTS

The results of the data in this study were obtained from questionnaires distributed to respondents using Google Forms. The questionnaire in this study contains statement items related to research variables as shown in Table 1. Operationalization of Research Variable. The sample in this study used as many as 430 respondents among women in Indonesia. The criteria for respondents with a minimum age of 18 years with the latest education, among others consist of SMA/K which are filled by 29.5% women, Diploma is filled by women as many as 13.3% women, Strata 1 is filled by women as many as 53.7% women, and from Strata 2 the rest is filled by 3.5% women. The descriptive statistics of the respondents' answers are presented as follows:

Table 2. Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
FS	430	3.00	5.00	4,4200	0.68868
FP	430	3.00	5.00	4,4116	0.71556
WFLC	430	3.00	5.00	4.4163	0.72736
II	430	3.00	5.00	4.4474	0.70230

Source: SPSS Statistics Processed Data

The results of descriptive statistics can be explained by the achievement of each variable. First, financial skills have a minimum value of 3.00, a maximum of 5.00, and a mean of 4.4200. The mean value of 4,200 out of a maximum of 5 indicates that the achievement of this financial skill is 88.40% of the maximum score of 5 and is not maximized and can still be increased by 11.60%. Both financial plans have a minimum value of 3.00, a maximum of 5.00, and a mean of 4.4116. The mean value of

4.4116 from a maximum of 5 indicates that the achievement of this financial planning is 88.23% of the maximum score of 5 and is not maximized and can still be increased by 11.77%. The average score for financial skills is the lowest among the four variables. The three women's financial literacy capacity has a minimum value of 3.00, a maximum of 5.00, and a mean of 4.4163. The mean value of 4.4163 out of a maximum of 5 indicates that the achievement of women's financial literacy capacity is 88.33% of the maximum score of 5 and is not yet maximal and can still be improved by 11.67%. The four intellectual bits of intelligence have a minimum value of 3.00, a maximum of 5.00, and a mean of 4.4474. This mean score is the highest among the other four variables. The mean value of 4.4474 from a maximum of 5 indicates that the achievement of this intellectual intelligence is 88.95% and can still be increased by 11.05%.

The data quality test in this study used partial least squares (PLS-SEM) structural equation modeling. By using software SmartPLS (Partial Least Square). The reliability value for all variables tested with Cronbach's Alpha, Rho, and Composite Reliability results > 0.70, which means that the reliability test is declared to meet the criteria with a high value. The average variance extract (\sqrt{AVE}) value to test the validity has a result > 50, which means the validity test is acceptable and considered good. The inner model test which is measured using 3 criteria, namely R-Square, F-Square, and Estimate for Path Coefficients has results for the R-Square value of the dependent variable of women's financial literacy capacity of 0.95 so that it can be interpreted that the R-Square value is in the category strong. The F-Square value for the moderating intellectual intelligent variable is 0.71. It can be concluded that the intellectual intelligent variable has a moderate influence on the structural level. The variable loading factor value for each construct > 0.5 can be interpreted as all valid data. The results of Estimate for Path Coefficients used to see the significance of the influence between variables have significant results for all hypothesis testing. The following are the results of testing the research hypothesis:

Table 2. Hypothesis testing

Hypothesis		Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	Decision
H1	FS → WFLC	0.052	0.049	0.054	0.953	0.170	Rejected
H2	FP → WFLC	0.360	0.362	0.060	5,986	0.000	Accepted
H3	II → WFLC	0.590	0.590	0.063	9,372	0.000	Accepted
H4	II * FS → WFLC	0.158	0.167	0.066	2,371	0.009	Accepted
H5	II * FP → WFLC	-0.154	-0.164	0.078	1,966	0.025	Accepted

Source: SmartPLS Processed Data

Based on the results of the hypothesis test above, it can be described as follows. Proving the first hypothesis, financial skills do not have a positive effect on women's financial literacy capacity. Having



financial skills for women does not affect women's financial literacy capacity. The possible cause is that applying financial skills is not an easy thing, it is difficult to practice financial skills in everyday life. This means that financial skills are not able to become a stimulus to trigger an increase in women's financial literacy capacity. Thus, the evidence of this study supports previous research conducted by Struckell et al., (2022), Sconti, (2022), and Kizil & Winkler, (2022). Proving the second hypothesis, financial planning has a positive effect on women's financial literacy capacity. Having financial planning for women will help women in planning financially well for their future. Financial planning applied by women is one way to increase women's financial literacy capacity. This research evidence supports and complements the research that has been done previously by Gallego-Losada et al., (2022), Sekita et al., (2022), and Amagir et al., (2022). Proving the third hypothesis, intellectual intelligence has a positive effect on women's financial literacy capacity. Intellectual intelligence can help increase women's financial literacy capacity. One proof is that women with intellectual intelligence are influential in increasing women's financial literacy capacity, namely intellectual intelligence can be the key to managing and making financial decisions that they have. Thus, the evidence of this study supports previous research conducted by Lin & Bates, (2022), Merkoulova & Veld, (2022), and Kienzler et al., (2022). Proving the fourth hypothesis, intellectual intelligence has a significant effect and can moderate the influence of financial skills on women's financial literacy capacity. Financial skills can affect women's financial literacy capacity if it is strengthened by intellectual intelligence. That means intellectual intelligence becomes important for women, especially in terms of financial skills. The evidence of this study supports and complements the research that has been done previously by Twumasi et al., (2022), Van Nguyen et al., (2022), and Haleem, (2022). Proving the fifth hypothesis, intellectual intelligence has a significant and moderate effect on the influence of financial planning on women's financial literacy capacity. Intellectual intelligence has a role that can strengthen the influence of financial planning on women's financial literacy capacity. Intellectual intelligence possessed by women will be able to create a positive influence on financial planning for the future. The evidence of this study supports and complements previous research by Ghadwan et al., (2022), Tambun et al., (2022), and Cossa et al., (2022).

5. DISCUSSION

The results of this study should be discussed related to the results of the coefficient of determination. The coefficient of determination is used as the basis for determining the effect of the independent variable on the moderating variable. The formula used is Coefficient of Determination = $R^2 \times 100\%$. Based on the data processing in this study, the R^2 is 0.95. The coefficient of determination (R^2) is 0.95, which means that financial skills and financial planning on women's financial literacy capacity have an effect of 95%. In addition, if women want to increase their financial literacy capacity, the main strategy that must be carried out is to strengthen intellectual intelligence abilities, followed by having good financial skills and financial planning. In other words, factors to increase women's financial literacy capacity are prioritized rationally, such as managing finances, women who aspire to be



prosperous, happy, and independent, must increase their capacity in managing finances so that their future is as expected. The results of this study complement and prove the theory of planned behavior. Women's financial literacy capacity is part of planned behavior, as previously studied using the theory of planned behavior. Furthermore, the percentage of financial literacy index in women in Indonesia is lower than men in 2019 as described in the introduction, the recommended solution from this study is that women in Indonesia must have adequate intellectual intelligence to carefully manage finances and avoid vulnerability to financial bullshit. Having adequate intellectual intelligence has been proven to encourage women to have good financial skills and financial planning, which will affect women's financial literacy capacity.

6. CONCLUSION, LIMITATIONS, AND SUGGESTIONS

Conclusion

This study proves that having financial skills and financial planning that are strengthened by intellectual intelligence has a positive effect on financial literacy capacity. Intellectual intelligence has an important role in increasing the financial literacy capacity of women in Indonesia. With intellectual intelligence related to financial understanding, women will cultivate financial skills by making financial decisions consciously and correctly. This study has limitations, namely the number of female respondents who became the sample is very limited. This study recommends to women that if they want to increase their financial literacy capacity, the main strategy that must be applied is to have good financial skills and financial planning and be strengthened by having adequate intellectual intelligence. Improving the financial literacy capacity of women is believed to be able to help increase the percentage of women's financial literacy index in Indonesia and to equalize the gender gap.

Limitations and suggestions

For further research, the personal finance management variable can be added as an independent variable to complete the model that affects women's financial literacy capacity. Because personal finance management is very important to support the realization of the goals that an individual wants to achieve, personal finance management can make each individual aware of the goals to be achieved and can take advantage of the optimal management of financial resources. This will affect women's financial literacy capacity. It is hoped that the presence of personal finance management as an independent variable, can make financial skills a direct positive influence on women's financial literacy capacity, and can strengthen the influence of financial planning on women's financial literacy capacity.



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