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## STRUCTURAL EQUATION MODEL ON DETERMINANTS OF FINANCIAL DECISIONS FOR WOMEN MSME IN TANGERANG

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**Abstract:** One of the most interesting topics of financial behavior to be researched continuously is the measurement of the financial decision model of women MSME actors. This is in line with the feminism movement that has spread in the last few decades. Research from Lusardi (2019) has highlighted the increasing value of financial literacy for women at various levels of work across countries. Specifically for Indonesia, with the increasing awareness of financial literacy and inclusion which is increasingly being promoted by the Financial Services Authority, it encourages authors to conduct research on topics related to one object of research, namely women entrepreneurs of MSMEs in Tangerang, Indonesia. The selection of the Tangerang area is because local women who are MSME actors have a higher level of digital literacy than other regions in Indonesia. Of course this condition is expected to obtain results in accordance with the hypothesis. Then by using 150 respondents who were obtained by snowball sampling and the SEM by STATA analysis method, it was found that there was a financial decision-making model for women's SMEs in Tangerang with 2 determinants, namely literacy and financial inclusion. However, the results of the model have not been able to raise financial intentions as a mediating factor for the influence of financial literacy and inclusion on financial decisions.

**Keywords:** Tangerang UMKM Women, Financial Decisions, SEM Analysis with STATA

### 1. Background

Women are figures who have extraordinary roles. By nature, women are destined to play an important role in giving birth and nurturing the next generation. The nature, attitude and behavior of these women will determine the future of the next generation. Gender equality between women and men is getting stronger, resulting in positive changes that occur in women. In the past, women only played a role locally, or only in the household. Not infrequently, women are not involved in decision-making in the family, especially those related to finances. But over time, there has been a paradigm shift in thinking that women also have gender equality and roles, both in the household and in national development. Women can take part and play an active role in society, they can create a new civilization and can even participate in supporting the family economy.

The ongoing Covid-19 pandemic has had a tremendous impact on the national economy which ultimately has an impact on the family economy. Termination of employment, declining demand for products and increasing health costs borne by the community, eventually brought instability in the country's economy. So the challenges they face are huge. This causes women to be encouraged to participate more in saving the family economy. Those who used to be stuck in the management of family finances, now they are encouraged to play a more active role in managing family finances. Previously, women were more active in the internal sphere (domestic roles), then gradually began to play an active role in public roles (society).



The role of women in the economy is seen significantly, namely from the MSME sector there are 53.67% of MSMEs owned by women, with almost 97% of the employees being women. The contribution given by women to the national economy is 61%, while the contribution of women in the investment sector is 60%. This shows how big the role given by women and the national economy. Thus, women's literacy skills and capacity to think intelligently on financial management will have a tremendous impact on their financial decision making. The large female population in Indonesia is almost half of the total population in Indonesia. Women's participation is critical to sustainable economic strength and resilience.

During the Covid-19 pandemic, there was an increase in the number of MSMEs managed by women. There are several things that cause this, some of which are that women are more likely to be involved in home industries, rather than factory industrial activities. Besides of course, during the Covid-19 pandemic, there were many factory closures or employee reductions. The next thing is more flexible working hours in the home industry, so that is a positive and beneficial thing for women. Because they still have the opportunity to care for and nurture their children. In addition, the flexible and resilient attitude possessed by women is one of their provisions to survive and strive to support the family economy.

Women are economic actors who play an important role in the progress of MSMEs. So that women's resilience in managing MSMEs is fundamental, because MSMEs are the driving force and backbone of the family economy and the national economy. Women's resilience in managing MSMEs starts from their ability to understand financial management (financial literacy), financial and investment products offered by financial institutions (financial inclusion), allocation of funds, product marketing development and the use of digital marketing and digital technology to strengthen the existence of these MSMEs. .

Based on this background, this study aims to determine the financial literacy and inclusion capabilities of female MSME actors in Tangerang and to determine the determinants of financial decision makers. Related to the differences with previous research, the authors try to realize the financial decision-making model of MSME women in Tangerang using SEM (Structural Equation Modeling) analysis with STATA software version 13.

## 2. Research Conceptual Framework

The research model that is used to solve the problem of the relationship between financial literacy and financial as an antecedent of financial decisions as a consequence of course must be based on several similar previous studies. Several previous studies, such as Abel, et. al. (2018), Alen, et.al. (2016), Grohman, et.a. (2018), Lusardi and Mitchell (2014) and Remund (2010) have been able to map well various forms of interrelationships of financial literacy, financial inclusion and financial decisions with each other, both as antecedents and consequents or even as mediating variables. Various types of units of analysis are also used, from the productive age group who already have a job and an established business to the young age group who still does not have a job and still depends on income from their parents.



In general, the results of these studies have been able to reach an agreement that a good financial decision will depend on the extent of mastery of the level of financial literacy and experience of financial inclusion experienced by each type of unit of analysis. This means that if the level of financial literacy is high and followed by maximum financial inclusion experience, the type of financial decision will be good and appropriate. Because considering that the type of unit of analysis used is the productive age group and the young age group in developed countries, the empirical fact that occurs is almost always the exact type of financial decision taken with the reason that financial literacy is so high. The results of these various studies on the relationship between financial inclusion, financial literacy and financial decisions are certainly a strong motivator to prove the same thing in the case in Indonesia.

Based on the study of Suryani, et.al. (2015) which has similarities with the author's type of study, namely MSMEs, it is found that contrasts with various research results on the relationship between financial literacy and financial inclusion with financial decisions. Suryani study, et al. (2015) found the results of various types of financial decisions that were not good and appropriate from MSME actors in Indonesia. In addition, Suryani, et.al. (2015) also noted that the financial literacy of MSME actors is still low, even though the degree of financial inclusion is already so high thanks to the financial penetration activities carried out by the Financial Services Authority (OJK) since the last 5 years.

Thus, on the basis of differences in contrasting results regarding the level of financial literacy in the case of developed countries and in Indonesia, this study tries to propose a research model framework attached to Figure 1. The research model below is based on the views of Ajzen (2015) which explains the need to include factors intervention between financial literacy and financial inclusion to produce good and appropriate types of financial decisions. The model is described as a model of attitudes, behavior and actions. The intervention factor offered is financial intention which refers to the results of the Lusardi study (2019) which states that for the case of developing countries and MSMEs, the financial intention factor can be a good substitute for low levels of financial literacy such as MSME actors. Based on Figure 1, the research model has 5 hypotheses to be tested with SEM

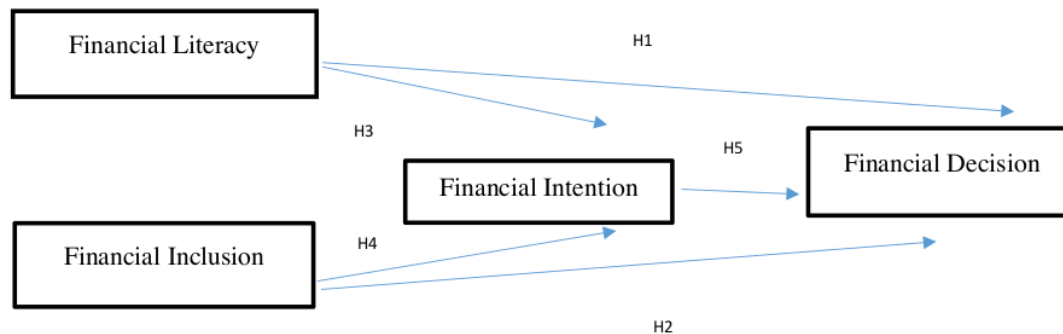


Figure 1. The Author's Research Model (2022)



In general, the working logic of the above model is that financial decisions as a consequence of the two antecedents of financial literacy and financial inclusion can be explained earlier without using financial intention as a mediating variable. In some cases of the productive age group who are already working and have an established business, the type of good and appropriate financial decisions will be formed automatically through the high level of financial literacy and financial inclusion that has been experienced. A similar condition can also be experienced in the middle age group who have income from their parents who come from wealthy families. However, for the case of the MSME group who generally live in developing countries, the close relationship between financial decisions and the 2 antecedents, namely financial literacy and financial inclusion, needs to be facilitated by the work of financial intention as an effective mediator variable.

### 3. Research Methods

Data collection activities have been carried out in a counter part with data collection activities for women SMEs in the Pacitan area. If data collection activities in Pacitan are carried out by utilizing the accessibility of the local PLUT KUKM, then for data collection activities in the Tangerang area get direct assistance from various associations of MSME actors in several culinary, clothing and various handicraft industries. The heads of associations per industry were previously contacted by the researcher and invited to do a brainstorming to get an initial understanding of the motivation and purpose of this research. In addition, they can also be the initial respondents in filling out the questionnaire to get a range of initial data profiles from the 4 constructs that have been formed in Figure 1.

To test H1 to H5 as shown in Figure 1, the analysis of SEM (Structural Equation Modeling) testing was carried out using the STATA 13 software based on the Cain (2021) study. In order for the model in Figure 1 to be realized using SEM, each construct in Figure 1, namely financial literacy, financial inclusion, financial intention and financial decisions, must be formulated very well for the indicators. Based on the results of the study Setyawan, et.al. (2020) then financial literacy, financial inclusion, financial intention and financial decision each have 5, 4, 4 and 3 indicators. Furthermore, each indicator will be converted into a questionnaire statement item. Questionnaires were distributed to 150 women entrepreneurs of SMEs in the Tangerang area with a snowball sampling system, meaning that one respondent would recommend this research collection activity to other respondents on the basis of geographical proximity and kinship (kinship).





#### 4. Analysis Result and Discussion

##### 4.1. SEM (Structural Equation Modeling) Diagram Analysis

Based on the results of the SEM STATA analysis in Figure 2, the path coefficient value from the influence of the financial literacy construct to the financial decision construct is 0.25. Then followed by the path coefficient value of 0.31 to influence the financial inclusion construct to the financial decision construct. The path coefficient value is 0.37 from the financial intention construct to the financial decision construct. And at the end of the path coefficient value of 0.4 from financial literacy to financial intention and path coefficient value of 0.44 from financial inclusion to financial intention.

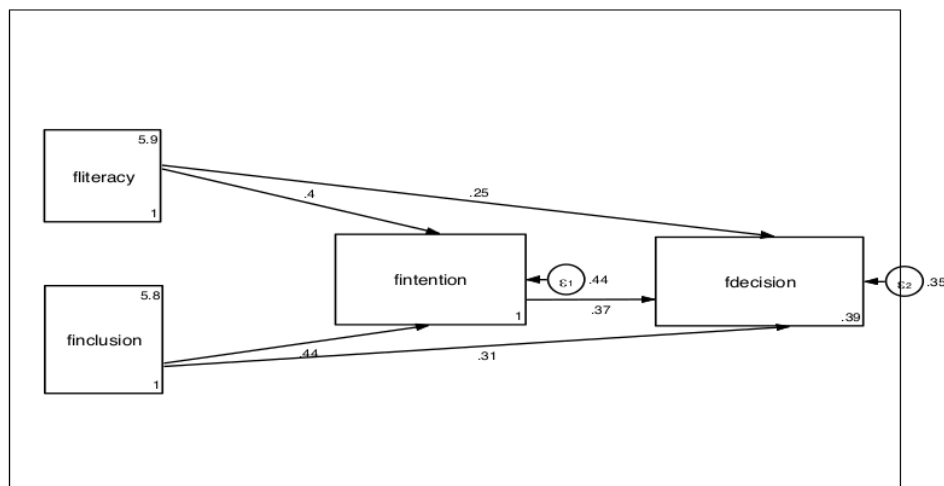


Figure 2. Results of SEM Diagram with STATA 13.

To find out whether the hypothesis H1 to H5 is accepted or not, it is necessary to look at the z-count significance value of each direction of the influence of each construct, both antecedent and consequent. Detailed discussion of z-count will be realized in the following sub-section. From Figure 2 above, the construct that has the most important role is the financial intention construct which in this research model acts as a mediating variable. This means that the financial intention construct will be an intermediary variable between the influence of the two antecedent constructs, namely financial literacy and financial inclusion, on the consequent construct, namely financial decision. By using a combination of the product of the patch coefficient, the product of financial inclusion and financial intention is 0.163, which is greater than the product of financial literacy and financial intention of 0.148. However, to see which one is more effective, it is necessary to analyze the direct and indirect effects which will be discussed later.

#### 4.2. SEM (Structural Equation Modeling) Testing Analysis

One of the characteristics of using STATA is the program language feature or syntax as attached in Figure 3. Processing with STATA determines two endogenous variables, namely financial intention and financial decision, as well as two exogenous variables, namely financial literacy and financial inclusion. In testing the H1 to H5 hypotheses, each construct is treated as a non-latent variable because this research is an initial study using STATA for SEM analysis. That way what is used as a construct value is the average of each previously determined indicator. The use of the mean as the basis for indicator values does not apply to SEM analysis with SMART PLS.

```
. sem (fliteracy -> fintention, ) (fliteracy -> fdecision, ) (finclusion -> fintention, )
(finclusion -> fdecision, ) (fintention -> fdecision, ), standardized nocapslatent
3
Endogenous variables
Observed: fintention fdecision
Exogenous variables
Observed: fliteracy finclusion
Fitting target model:
Iteration 0: log likelihood = -457.66802
Iteration 1: log likelihood = -457.66802
Structural equation model                               Number of obs   =       150
Estimation method = ml
Log likelihood   = -457.66802
```

Standardized	Coef.	Std. Err.	Z	P> z	[95% Conf. Interval]	
Structural						
fintention <-						
fliteracy	.3959859	.0630056	6.28	0.000	.2724972	.5194747
finclusion	.4399447	.0619408	7.10	0.000	.318543	.5613464
_cons	1.04843	.4062699	2.58	0.010	.2521556	1.844705
fdecision <-						
fintention	.365755	.0709261	5.16	0.000	.2267424	.5047675
fliteracy	.2451135	.0651367	3.76	0.000	.1174479	.3727791
finclusion	.3105245	.0659163	4.71	0.000	.181331	.439718
_cons	.3862949	.3460436	1.12	0.264	-.291938	1.064528
var(e.fintention)	.4443653	.0459666			.3628181	.544241
var(e.fdecision)	.3496249	.0393811			.2803655	.4359936

```
11 LR test of model vs. saturated: chi2(0) = 0.00, Prob > chi2 =
```

Figure 3. Main Output Results of SEM with Stata 13.

After going through two iterations, the results of the z-count and the level of significance are obtained through  $P > |z|$  and it can be seen that all constructs have a very high z-hotun value and a significance level of  $P > |z|$  all fulfilled. So from the results of Figure 3 above, all hypotheses H1 to H5 are declared absolutely accepted. Thus, it proves again the determinants of financial decisions, namely financial literacy and inclusion.

These results support Abel, et. al. (2018), Alen, et.al. (2016), Grohman, et.al. (2018), Lusardi amd Mitchell (2014) and Remund (2010). Good financial intention results for z-count and significance level  $P > |z|$  besides supporting H5, it also succeeded in improving the results of the study Suryani,



et.al. (2015) which actually found that the level of financial decisions of MSME actors was not good because the level of financial literacy of MSME actors was still low.

### 4.3. Analysis of Direct and Indirect Effects

The results of testing the direct and indirect effects are shown in Figure 4. The direct effect for financial literacy on financial decisions has a path coefficient value of 0.2523079. Then for the indirect effect of financial literacy on financial decisions, the path coefficient value is 0.1490849. Because the results of the direct effect are greater than the indirect effect, it can be stated that financial intention is not proven to mediate the influence of financial literacy and financial decisions. If it is also related to the influence of financial inclusion and financial decisions, the same thing also happens. Then it was found that financial intention was not proven to mediate the influence of financial inclusion and financial decisions.

estat teffects, standardized

#### Direct effects

	Coef.	OIM Std. Err.	z	P> z	Std. Coef.
<b>Structural</b>					
fintention <- fliteracy	.4048554	.0688693	5.88	0.000	.3959859
finclusion	.436118	.0667746	6.53	0.000	.4399447
<b>fdecision &lt;-</b>					
fintention	.3682423	.072917	5.05	0.000	.365755
fliteracy	.2523079	.0682215	3.70	0.000	.2451135
finclusion	.3099169	.0675822	4.59	0.000	.3105245

#### Indirect effects

	Coef.	OIM Std. Err.	z	P> z	Std. Coef.
<b>Structural</b>					
fintention <- fliteracy	0	(no path)			0
finclusion	0	(no path)			0
<b>fdecision &lt;-</b>					
fintention	0	(no path)			0
fliteracy	.1490849	.0389184	3.83	0.000	.1448338
finclusion	.1605971	.0401982	4.00	0.000	.160912

#### Total effects

	Coef.	OIM Std. Err.	z	P> z	Std. Coef.
<b>Structural</b>					
fintention <- fliteracy	.4048554	.0688693	5.88	0.000	.3959859
finclusion	.436118	.0667746	6.53	0.000	.4399447
<b>fdecision &lt;-</b>					
fintention	.3682423	.072917	5.05	0.000	.365755
fliteracy	.4013928	.0665271	6.03	0.000	.3899473
finclusion	.470514	.0645036	7.29	0.000	.4714365

Figure 4. Results of Direct & Indirect Effects of SEM Stata 13.





The implication of the test results is that Tangerang MSME women have had a high level of financial literacy and financial inclusion so that they do not require financial intention in determining financial decisions. The results of this study support Grohman, et.al. (2018).

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## 5. Conclusion and Suggestion

The results of the study to determine the structural equation model of the financial decision-making factors of MSME women in Tangerang have been successfully realized with SEM analysis through the STATA 13 program. This will certainly add to the repertoire of previous research using SMART-PLS, AMOS and LISREL. The five hypotheses H1 to H5 were all answered well from the results of processing the measurement model of decision-making factors which included z-count values and  $P > |z|$  each construct.

However, this structural equation model with STATA 13 still has weaknesses because it has not been able to prove the mediating effect of financial intention. If we look at the type of female respondents of MSMEs in Tangerang, who have higher digital literacy compared to other regions, the findings of the new study are judgmental. In order to accept the SEM model built, mediation needs to occur. The suggestion to improve the SEM model is to test at the indicator level, not just the average of each construct. This is closely related to the latent nature of the construct in which there are many indicators.

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