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Categorical Modeling of Determinants of Financial Inclusion and Financial Literacy of Women MSMEs in Pacitan

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ABSTRACT: Preliminary research data prior to the Covid-19 pandemic, namely that 150 women MSME had unique characteristics in terms of sociodemographic factors and levels of financial literacy and inclusion. It can be empirically proven that these three variables will have an important role in each other through the multiInomial logit categorical equation model according to the Bayar et al. research procedure. al. (2020). The important result to be achieved is that the researchers want to prove the business potential of women SMEs in Pacitan, which so far has not been exposed to BI UMKM as a common market place for all SMEs in Indonesia. There is a stigma that the low financial literacy and inclusion (OJK) score of MSME actors is a negative effect of less exposure to the business potential of MSME actors in the local area.

The results of this study succeeded in describing the sociodemographic profile of women MSME in Pacitan with several characteristics, namely the dominance of having a productive age of 40-55 years, the majority having high school education; have a turnover of over 10 million per month and most of them have used access to bank and non-bank financial institutions, usually pawnshops for storage and credit applications. Furthermore, this study succeeded in proposing a categorical equation model with multinomial logistic regression through STATA 13.0 software on the three attributes of low, medium and high financial literacy and inclusion referring to the research model from Bayar et.al. (2020) and managed to find that the sociodemographic variable of age is always a determining factor in each model panel. The implication is that individually, women MSME actors with high financial literacy can make financial decisions more quickly than just participating in mentoring or the community in such area.

KEYWORDS: Sociodemographic Factors, Financial Literacy & Inclusion, Women MSME in Pacitan, Multinomial Logit Model.

I. INTRODUCTION

Pacitan is one of the regencies in the province of East Java. This area is located on the South Coast of Java Island which is bordered by Central Java Province and the Special Region of Jogjakarta. This regency is the gateway to the western part of East Java Province with the physical condition of the southern limestone mountains stretching from Gunung Kidul to Trenggalek Regency facing the Indonesian Ocean. Pacitan Regency is located between 110 55' - 111 25' East Longitude and 7 55' - 8 17' South Latitude, with an area of 1,389.16 km or 138,987.16 Ha. The area is mostly in the form of hills, which is approximately 85% of the small mountains of approximately 300 pieces spread throughout the Pacitan Regency and steep ravines which are included in the Seribu Mountain range which stretches along the south of Java Island, while the rest is lowland.

The existence of women as MSME actors in Pacitan is very much felt. They are mostly engaged in the textile (batik) industry, as well as the food and beverage industry. But the potential of these women is still not seen, when they play a role as decision makers in their business. This is especially in terms of knowledge and understanding of the management of sources of funds and the allocation of funds they have.

The results of the author's previous research showed that 75% did not understand financial institution products and their benefits and 65% did not understand financial literacy or basic knowledge. There are still many MSMEs, especially women, who still do not understand the facilities and products offered by bank and non-bank financial services. They only use the bank, limited to depositing and withdrawing funds. When they are faced with banking technology or banking products other than savings, they are still afraid and hesitant to use it. Even though they should be able to use all kinds of facilities and products offered by financial institutions in this country to speed up their business financial transactions. So, it is very unfortunate if they do not take advantage of all the conveniences and advances offered by banking institutions.

There is an allegation that low financial literacy and inclusion (see table 3) is not solely due to the complexity of the terminology of financial literacy and inclusion which departs from research by Lusardi (2019) and OJK (2017) & (2018) but rather from sociodemographic profiles and tolerance attributes. the risk of women doing SMEs. If these women SMEs live in areas far from urban areas, their sociodemographic profile will be dominated by low education, old age (non-productive), small turnover and limited access to financial development. Sociodemographic conditions like this make their risk tolerance very low which results in a lack of courage to make financial decisions due to concerns about the risk of business failure caused by a lack of understanding of financial literacy and related financial inclusion [see Grable and Joo, (2004)].

However, the spirit of women entrepreneurship which has increasingly crystallized in various regions such as India, China, Southeast Asia (Singh, 2017) creates a sociodemographic profile that is not supportive for business development which also includes the development of financial literacy and inclusion which needs to be re-profiled. Bayar, et.al. (2020) proves that with a sociodemographic profile that supports high risk tolerance, ideal financial literacy and inclusion conditions of a target community can be achieved and are useful for mapping national level performance

Based on the previous description, this study poses a problem, namely the search for categorical modeling of the determinants of literacy and financial inclusion for Pacitan MSME women who actually still have a sociodemographic profile that supports business development. Thus there are still sociodemographic profile items that need to be explored in order to provide new evidence that there is still potential for increased financial literacy and inclusion through a categorical model that will be built.

II. HYPOTHESES DEVELOPMENT

Referring to data from the Financial Services Authority (OJK) released in 2020, the financial literacy level of Indonesian women is currently only 25.69 percent, while the level of financial literacy for men is 33.52 percent. In fact, nearly 80 percent of financial affairs in the household are managed by women. The increasing number of financial service products available, accompanied by advances in the technology sector and changes in the demographic structure of today's society, requires good knowledge and understanding of financial aspects, including financial products.

The level of financial literacy has a significant and positive contribution to economic participation and the economic health of the community. That is, the higher the level of financial literacy in a society, the higher the economic participation and economic health of that community.

In the context of empowering women, there are several reasons why financial literacy is so important for women. The first reason relates to financial management in the family. Where based on the culture in this country, that almost 80 percent of family financial management matters are managed by women or wives. Thus, whether the management of household finances is good or bad depends on how far the level of financial literacy of women is. If household financial management can be carried out properly, this will affect the level of family harmony and the level of family welfare. Harmony and prosperity in the family will eventually affect harmony and prosperity at the national level.

The second reason is that the results of several studies that have been conducted by other researchers previously stated that women on average have a longer life span than men. The risk is that women are required to be more independent, including in financial activities, that is when their partner left them first. Knowledge and understanding around the financial sector and financial service products, along with their ability to make effective decisions related to financial aspects and financial service products, can be an important capital for women to be financially independent.

The third reason is related to the status of women as mothers for their children. As a mother, women must also be capable of being educators for their children. A mother has a great influence on inculcating values and knowledge for her children. So, it is hoped that with good mastery of financial literacy, women or mothers can equip their sons and daughters from an early age with knowledge and understanding of the financial sector and financial service products as well as knowledge on how to manage finances effectively and efficiently.

The fourth reason relates to capabilities and progress in the field of information and communication technology. This can be seen from the current trend, where many women are involved in the investment and business world. So to support the smooth running and success of the world of business or business and their investments, they need good knowledge and understanding of financial services.

The fifth reason is related to the nature of femininity possessed by women. Where, women tend to have unique routine needs to support their image, appearance and self-confidence. Such as the need for beauty care, clothing and their cosmetics. All of these expenditures require a specific budget to finance their needs. Thus, mastering good financial literacy will make it possible for women to be able to prepare a good budget for these special needs, without having to interfere with the budget in other posts.

Women are one of the main target groups in the National Financial Inclusion Strategy (SNKI). In the context of financial management, women have an important role in the domestic and public spheres. In the domestic realm in the household, women are mothers who become financial managers in the household who ensure the fulfillment of all household needs. Meanwhile, in the public domain, women can run various economic businesses that involve financial management on a larger scale.

Businesses carried out by women often face obstacles, both from a cultural and structural point of view. From a cultural perspective, women in Indonesia are generally not encouraged to develop large-scale businesses or become the main source of income for the family. Women are only expected to run side businesses to supplement family income. Meanwhile, structurally, women's businesses have constraints related to capital for business development. In general, family assets are owned by the husband, so women do not have access to collateral for capital loans from banks. This causes the businesses run by women to be subsistence and unable to grow any bigger. They have problems in accessing credit for developing their business.

In addition, the obstacles faced are related to information and communication technology. So it is necessary to increase the provision of applications to support the economic activities that they carry out. So that banks need to use the latest technology to serve the community, especially those in remote areas. Therefore, there is a need for a third party to bridge the gap between financial institutions and business actors. For example by picking up the ball to business actors or customers. Financial institutions can use bank agents to answer problems when business actors are faced with obstacles due to the long distance between the financial institution's offices and their homes.

The World Bank stated that there are four types of financial services that are considered vital for people's lives, namely fund deposit services, credit services, payment system services and insurance. Data from Indonesian Ministry of National Development Planning/Bappenas shows that women (68%) save more than men (32%). However, women prefer to save conventionally, while men tend to use formal financial services. The data also shows that there are still many economically weak women who do not have access to open bank accounts. In fact, building financial inclusion on a macro basis will only succeed if you build financial inclusion on a micro basis first. This means that increasing financial inclusion can start as early as possible from family entities. The impact of empowering women in the economy is very important for family economic growth which will ultimately increase the country's growth. If women can be empowered economically, this will help alleviate poverty.

Financial inclusion is a comprehensive activity that aims to eliminate all forms of barriers, both price and non-price, to public access in utilizing financial services. The price barrier referred to here is a prerequisite regarding the amount of funds that must be deposited when people open an account at a bank. Meanwhile, non-price barriers are related to administrative requirements which are sometimes burdensome to prospective customers. Access to banking services is an important part of economic growth and poverty alleviation. A good financial inclusion system can help the poor to improve their standard of living, so that they can enjoy banking services as a facility that supports their daily lives. Easily accessible banking services will make it easier for many people to be able to carry out banking activities such as borrowing credit, saving, so that they can build assets and also help trading businesses in society. Good financial inclusion will greatly affect the improvement of the standard of living of society as a whole.

One of the things that becomes an obstacle for women SMEs is related to the ease of access to banking services. Banking services can help MSME entrepreneurs to improve their business development. For example, by providing credit for working capital and other banking services. Women entrepreneurs in Indonesia need to get capital support from banks to be able to grow their businesses and help run their businesses smoothly. MSMEs run by women are one type of business sector that is able to survive in times of economic crisis. So, it should need a lot of support for the existence of MSMEs that are run by these women. For example, with the ease of providing access to banking, granting credit to them. Women are a very potential market for commercial banks, considering that there are still many of them who have not been served by banking access. Banking parties can expand access and facilities for MSMEs, for women entrepreneurs by providing credit for expanding and developing their businesses.

This study will examine the determinants of financial literacy and inclusion using the sociodemographic variables of women SMEs in Pacitan. The sociodemographic variables used are education, age, length of business, turnover, source of financing, type of savings, type of credit, credit limit, financial literacy score (OJK) and financial inclusion score (OJK). In Indonesia, there have been many studies on sociodemographic factors as determinants of financial literacy with mixed and unsatisfactory results, making them unreliable as research references. Some of the mistakes of previous research were the inaccuracy of respondents, for example, only students or random MSME actors. Both of these resulted in the results of filling in sociodemographic data to be less reliable and ineffective when tested with categorical equation models, from the simplest, namely logit, probit and tobit and binary logistics to the most complex models, such as multinomial logit. Logit, probit and tobit models and binary logistics generally only use two categories of the dependent variable, namely 0 if there is no decision or certain conditions and 1 if there is a decision or certain conditions. Thus, this study will propose an alternative hypothesis, namely:

H1: One of important determinant of literacy and financial inclusion for women MSME in Pacitan is sociodemographic factors.

III. RESEARCH METHODS

III.1. Data

In this study, the population is women MSMEs in Pacitan. These include snack makers, traders, craftsmen and others. The number of samples taken refers to Grohman, et.al. (2018) and Lusardi (2019), that according to the multivariate technique a minimum of 100 and the research team used 150 respondents. In selecting respondents to be surveyed, the method used was the snowball sampling method, where the researcher looked for one respondent, then asked for recommendations from other respondents.

III.2. Variable operational definitions

This study uses two types of variables, namely 1) Sociodemographic consisting of education, age, turnover and accessibility of financial institutions. 2) Financial Behavior consists of financial inclusion, financial intention and financial literacy. The four sociodemographic variables are categorical variables with a scale of 0 and 1, namely Education (0 = below high school, 1 = high school and above), Age (0 = 55 years and over, 1 = under 55 years), turnover (0 = below 10 million, 1 = 10 million and above) & Access to Financial Institutions (0 = Banks only; 1 = Banks & Others). While the three financial behavior variables: inclusion, intention and financial literacy are also measured with categorical variables on a scale of 2, 1 & 0 namely (0 = value of inclusion, intention and low financial literacy, 1 = value of inclusion, intention and moderate financial literacy & 2 = value inclusion, intention and high financial literacy The choice of scale is more than two categories considering that the financial behavior variable is the dependent variable of the research model which will be analyzed by multinomial logistic regression.

III.3. Analysis Model

The research model is to answer the study objectives, namely what will be the model of the determinants of financial literacy and inclusion with categorical equations. The determining factors will consist of 1) The sociodemographic variables are none other than the descriptive profiles of women MSME respondents in Pacitan 2) The financial behavior variables namely intention, inclusion and financial literacy are the results of previous research surveys. The categorical equation model with multinomial logistic regression can be shown as follows:

FIN.LIT = α + β1* FIN. INC + β2* FIN.INTENTION + β3*EDUCATION + β4*AGE + β5*OMZET + β6*ACCESSES OF FIN. INST + ε … (1)

FIN.INC = α + β1* FIN. LIT + β2* FIN.INTENTION + β3*EDUCATION + β4*AGE + β5*OMZET + β6*ACCESSES OF FIN. INST + ε … (2)

Model equations 1 and 2 refer to Bayar, et.al. (2020) and tested at three levels of low, medium and high attributes. The feasibility of models 1 & 2 is the LR-Test and Pseudo R^2 which must be significant.

IV. RESEARCH RESULTS AND DISCUSSION

IV.1. Demographic Profile of Women MSMEs in Pacitan

In terms of age, the majority of respondents in Pacitan Regency are around > 40 years - 55 years old. Then in second place in the age category > 55 years and third position, namely in the age category > 25 years - 40 years. So it can be seen that the largest proportion are respondents aged > 40 years -55 years, which is 50%, and the lowest is respondents aged > 25 years - 40 years, amounting to 4%. The last education that dominated respondents in Pacitan Regency in this study was high school/vocational school as much as 42%, then undergraduate education as much as 27%, junior high school 20% and the least was elementary school as much as 11%. are high school graduates, this can be caused because when they graduate from high school, and are faced with the costs of continuing higher education, they have no other choice, other than opening a business or continuing their parents' business or looking for a job.

The largest proportion is for monthly income < 10 million, which is 74%, while the lowest proportion is for income per month > 10 million - 25 million, which is 26%. For research respondents who are in Pacitan Regency, most of them are small businesses, home industries that process a lot of local natural resources. The scale of the industry that they manage is generally still on a small scale using the labor of family members.

Respondents in Pacitan District are less likely to use pawnshops as an alternative source of financing for their business. This is understandable, considering that there are relatively few pawnshops in Pacitan Regency. In addition, respondents in Pacitan District feel comfortable and helpful when using banks as a source of financing for their businesses. The existence of cooperation between banks and government agencies and assistance for their businesses during the process of borrowing capital from banks made respondents feel helped and comfortable.

The financial institutions for saving funds referred to in this study are several financial institutions, namely cooperatives, Baitul Malls, BPRs, banks and others that are used by respondents to store their excess funds. All respondents in this study used bank financial institutions as financial institutions that they trusted to store their excess funds. Almost all respondents stated that they considered banks to be trusted, safe and easy financial institutions for transactions.

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Almost all respondents still do not know about financial inclusion. Even though basically they have been in touch for a long time and use financial inclusion in their daily life. This shows that the understanding and use of financial products is still not understood by the community, especially people in rural areas. There is a big gap in this regard, because it turns out that even though the respondents already have and use financial products, they are only limited to owning them, without further understanding the benefits and risks of these financial products. Savings is a financial product used by all respondents. It is considered the easiest to use and the easiest to withdraw funds whenever they need it. The process of withdrawing and depositing funds is fast using an ATM card, making savings products considered easy for them to use when there is a financial surplus. Buying gold is also an activity that is easy for them to do when there is a financial surplus, because they can go to a gold shop and make transactions there. Respondents' ability in financial intentions was assessed from their responses about whether or not they needed to make financial planning and financial management plans. And all respondents stated that they had been planning budgets and managing assets so far. This is quite encouraging, because it means that respondents are able to assess their financial capabilities and manage their business finances and family finances.

IV.2. Hypothesis Testing

Based on testing the determinants of inclusion and financial literacy in table 1, the most determining factor is the age of women MSME respondents in Pacitan. This indicates that the more mature the age of the women MSME respondents in Pacitan, the better they are at making decisions in the financial sector. They are becoming more effective in financial inclusion, namely choosing the most suitable community to gain access to financial institutions, both banks and non-banks, and at the same time increasing the level of financial literacy by getting to know bank and non-bank financial products for storage purposes and applying for the type & credit limit related.

Table 1. Categorical Equation Model of Determinants of Financial Inclusion & Financial Literacy

Determinant factors	Financial Inclusion		Financial Literacy	
	Coefficient	Z-test	Coefficient	Z-test
0 = Low				
Financial Literacy	1.35	2.55**	-	-
Financial Inclusion	-	-	2.63	1.69*
Financial Intention	0.83	1.68*	2.96	1.65*
Education	0.57	1.00	0.08	0.17
Age	2.71	2.10**	0.98	1.91*
Omzet	0.17	0.34	0.19	0.44
Financial Institution Access	0.08	0.12	0.25	0.41
Intercept	0.84	1.61	0.88	1.00
1 = Middle				
Financial Literacy	1.54	2.74***	-	-
Financial Inclusion	-	-	1.72	3.18***
Financial Intention	0.97	1.87*	0.94	1.74*
Education	0.03	0.04	0.16	0.34
Age	1.13	1.92*	1.01	1.75*
Omzet	0.12	0.20	0.03	0.06
Financial Institution Access	0.11	0.16	0.11	0.17
Intercept	3.26	2.21**	1.98	1.54
2 = High				
Financial Literacy	1.56	2.82***	-	-
Financial Inclusion	-	-	1.40	2.66***
Financial Intention	1.02	1.95*	1.09	2.16**
Education	0.03	0.04	0.11	0.19
Age	1.12	1.91*	3.06	2.30**
Omzet	0.11	0.21	0.53	0.85
Financial Institution Access	0.02	0.03	0.77	1.18
Intercept	2.62	1.99**	0.37	0.67
LR-Test	39.81***		27.51***	
Pseudo R^2	0.2955		0.1732	

Source: data analysis (2023) ***: significant at 1% level, **: significant at 5% level, * : significant at 10% level

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In aggregate, the determinants of financial inclusion models have stronger predictive power than the determinants of financial literacy models. This means that women who are SMEs in Pacitan really need the accessibility of selected communities and ongoing assistance programs so that their financial capabilities increase more than building financial literacy independently. Individually, women MSMEs with high financial literacy can make financial decisions more quickly than only participating in assistance or certain communities. These results support Bayar, et.al. (2020) and Grable and Joo (2004).

V. CONCLUSIONS AND SUGGESTIONS

V.1. Conclusion

The results of this study succeeded in describing the sociodemographic profile of women MSME practitioners in Pacitan with several characteristics, namely the dominance of having a productive age of 40-55 years, the majority having high school education; have a turnover of over 10 million per month and most of them have used access to bank and non-bank financial institutions, usually pawnshops for storage and credit applications. Furthermore, this study succeeded in proposing a categorical equation model which was analyzed by multinomial logistic regression on the three attributes of low, medium and high financial literacy and inclusion referring to the research model from Bayar et.al. (2020) and managed to find that the sociodemographic variable of age is always a determining factor in each panel of the multinomial logistic regression model. These results indicate that the more mature the age of women MSME respondents in Pacitan, the better they are at making financial decisions independently based on their level of financial literacy or joining the community & assistance to strengthen their inclusion power.

V.2. Suggestions

This study has not included aspects of risk tolerance in the multinomial logistic regression model as in Bayar et.al. (2020) remembering that it is not easy to instill the notion of risk tolerance in women who are SMEs in Pacitan. In general, almost all women MSME practitioners in Pacitan are risk averse, meaning they will not dare to take the risk of starting a business that they are not interested in and do not control. Risk averse conditions that are close to 100% make modeling inclusion and financial literacy ineffective. Thus, if the context of risk tolerance is to be reintroduced, then it is necessary to have new respondents who have a high level of risk tolerance, for example, women MSME practitioners in large urban areas such as Tangerang (close to Jakarta) and Sidoarjo (near Surabaya).

Another thing is to get to know more about the sociodemographic profile of women involved in SMEs by carrying out active interactions through various MSME assistance. The existence of active interaction will be able to explore more deeply about the actual operational definition of literacy, inclusion and even the financial intentions of local MSME actors. This definition is important for measuring the level of financial literacy and inclusion k to provide more valid information if the SNKI (National Financial Inclusive Survey) activity from the OJK continues to be rolled out and does require information from a research result to obtain far more accurate financial literacy and inclusion index values.

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