



# The Phantom Menace: A Moderation Analysis of Gender on MSMEs' Financial Literacy and Financial Performance

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

Micro, small, and medium enterprises or MSMEs in the Indonesian economy have a major role as the largest provider of employment, a means of community empowerment, a creator of new markets, a source of innovation, and their contribution to the balance of payments. Data from the

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Indonesian co-funding fintech association shows that around 46.6 million MSMEs in Indonesia cannot reach access to financial services or financial inclusion from banks and fintech due to lack of knowledge about financial literacy and inclusion. Therefore, knowledge about financial literacy and inclusion is very important for MSME actors, especially for their financial management which will have implications for the performance and sustainability of MSMEs. Meanwhile, the number of micro and small enterprises is dominated by women with home-based businesses, while in medium enterprises more dominated by men. With these findings, an issue that is hotly discussed in the literature is the issue of gender stereotypes that have implications for business management. In Indonesia, women are also shown to be more involved in private spaces while men are more involved in professional roles. However, findings from a number of studies also show that women's financial literacy levels tend to be lower than men. As a result, in the context of MSMEs in Indonesia, literature indicates that there are issues of financial literacy, gender differences, and constraints on access to financial services in MSME activities which then become something that is principled and important for MSMEs. Therefore, with the support of the above issues, this study then formulated a research objective, which was only found in the literature, namely the analysis of the effect of digital financial literacy and inclusion on the financial performance of MSMEs with gender as a moderation variable. The output of this research is expected to present information that makes a positive contribution both theoretically and managerially. In particular, contributions in providing detailed explanations and guidelines related to financial literacy, financial inclusion, financial performance, and gender issues for MSME actors. This research is also expected to provide recommendations for future research.

*Keywords: Financial literacy; financial inclusion; financial performance; MSMEs; marketing; human resource management.*

## 1. INTRODUCTION

Since 1998, the popularity of micro, small and medium enterprises (MSMEs) in Indonesia has increased in existence and constitutionally, MSMEs have been regulated in Law Number 9 of 1995 and Number 20 of 2005 [1]. Along with the development of MSMEs in Indonesia, the strategic role of this business unit is very significant, especially as one of the driving forces of the nation's economy such as job creation, innovation, and/or community empowerment, as well as a contributor to gross domestic product or GDP [2, 3]. Furthermore, in order to increase the financial literacy of the Indonesian population, the government continues to strive with the Indonesian National Financial Literacy Strategy (SNLK) program. Based on the results of the National Financial Literacy and Financial Inclusion Survey (SNLIK) in 2019 conducted by the Financial Services Authority (OJK), stated that the financial literacy index in Indonesia increased to 38.03% from the previous 29.66% in 2016 [4]. However, specifically in the MSME sector, the results of the SNLK survey by OJK in 2016 found that the level of financial literacy in the MSME group was only 15.68%. This then reflects that there is still low knowledge about financial literacy among MSME actors in Indonesia [5].

## 2. MATERIALS AND METHODS

### 2.1 MSME, Financial Performance, Digital Financial Literacy, and Financial Inclusion

MSME stands for Micro, Small, and Medium Enterprises. It is a classification that refers to businesses based on their size and investment. The specific definition of MSME may vary from country to country, but generally, it is based on factors such as the number of employees, annual turnover, and investment in plants and machinery. In Indonesia, MSMEs play a crucial role in promoting economic growth, employment, and poverty reduction.

Moreover, financial performance (FP) has the capability to help business owners to manage their business professionally starting from several actions, such as budgeting, planning to save business funds, and basic knowledge of finance to achieve business financial goals that have been set before [6]. Many definitions are given in connection with this concept, e.g. the study of Angreyani [7] implies that financial management behavior is defined as determination, acquisition, allocation, and utilization of financial resources. Therefore, training, mentoring, and further implemented

policies for MSME actors and/or owners must focus on financial governance issues or problems and their solutions [6-8]. In addition, in the context of Indonesia, to develop the level of financial literacy, there is a program called SNLK, which is created by the government. The program has brought many contributions for the people including MSMEs' owner, that can be seen in the annual report of OJK that shows the financial literacy index in Indonesia has developed to 38.03% in 2019 compared in 2016, which is only 29.66%. In addition, However, in the MSME sector, the annual report of OJK finds that the financial literacy level within the MSME context is only 15.68%.

Financial literacy refers to the ability to understand and apply various financial skills and concepts to make informed decisions regarding personal and household finances [7, 8]. It encompasses the knowledge and understanding of financial concepts such as budgeting, saving, investing, borrowing, and managing debt. Likewise, digital financial literacy (DFL) involves the ability to analyze and assess financial risks, evaluate financial products and services, and make informed decisions to achieve long-term financial goals through digitalization path [6]. Being financially literate is crucial in today's complex financial landscape to make sound financial decisions and achieve financial security [7, 9].

Financial inclusion (FI) refers to the accessibility and availability of financial services and products to all individuals and businesses, regardless of their income levels or social status [10]. It ensures that people have access to formal financial institutions, such as banks, credit unions, and microfinance institutions, as well as basic financial services like savings accounts, loans, insurance, and payment systems [10, 11]. Financial inclusion also aims to address the barriers that exclude individuals from participating in the formal financial system. These barriers can include limited access to physical bank branches, high transaction costs, lack of documentation, and financial illiteracy [11]. By promoting financial inclusion, policymakers and organizations seek to empower individuals economically, reduce poverty, and enhance overall economic growth [12].

## 2.2 Gender

Gender identity refers to an individual's deeply felt sense of being male, female, or something

else, which may or may not align with the sex assigned to them at birth [13]. It is important to distinguish gender identity from biological sex, as the two can differ [14]. Additionally, gender is also a complex concept that refers to the roles, behaviors, activities, and attributes that society considers appropriate for different sexes [13-14]. It goes beyond biological distinctions of male and female and encompasses the social and cultural expectations and norms associated with masculinity and femininity [15]. Gender encompasses a wide range of identities, including but not limited to cisgender (when an individual's gender identity matches the sex assigned at birth) and transgender (when an individual's gender identity differs from the sex assigned at birth) [14]. It is an important aspect of social identity and influences various aspects of individuals' lives, including opportunities, experiences, and relationships [13-16].

Based on the previous research, especially related issues that have been described in the background of the problem, this study then wants to analyze how much influence financial literacy and financial inclusion have on the financial performance of MSME actors by making gender a moderation variable. Furthermore, as a research problem in this study is the findings of a literature review which indicates that there are many scientific studies that discuss financial literacy and financial inclusion on the financial performance of MSME actors, but only a few literature is found that discusses gender roles in analyzing the effect of digital financial literacy and financial inclusion on the financial performance of MSME actors. In line with this research problem, there is a research gap found or research gap, which later becomes the novelty of this research or research novelty, which is the finding of gaps in the scientific literature related to the scarcity of research conducted in the developing world, especially in Indonesia. Therefore, with the support of the background of the above problems, this study then formulates a research objective, namely the analysis of the effect of digital financial literacy and financial inclusion on the financial performance of MSMEs with gender as a moderation variable in order to present research outputs that can make a positive contribution both theoretically and managerially, especially providing detailed explanations and guidelines on financial literacy and inclusion for perpetrators and/or owners of MSMEs. Then, the results of this research are also expected to make a useful contribution to previous studies both by supporting and / or

rejecting the results of the research and providing additional scientific descriptions to the research results. In addition, the results of this study are expected to provide recommendations for future research.

### 2.3 Research Framework and Hypothesis

In line with the discussion in the earlier section above, this study then aims to construct research framework, which is illustrated in Fig. 1. The illustration in Fig. 1 shows that the first independent variable or X1, is financial literacy. Then, for the second independent variable or X2, is financial inclusion, and for the dependent variable, namely, financial performance, and the moderating variable is gender. Based on Fig. 1, this study aims to explore the role gender in moderating the relationship between financial literacy, financial inclusion, and financial performance. Following the research framework of this study, it is expected that the findings of this study will provide several explanations regarding the role of financial literacy as well as financial inclusion on financial performance of MSMEs. Additionally, the findings of this study are also expected to provide a detail analysis on the moderation role of gender on the relationship between both financial literacy and inclusion on MSMEs' financial performance.

### 2.4 Research Design

This study applies the quantitative research method and conducts survey methods where the goal is to obtain data from certain places that are natural (not artificial) through survey tools, for example questionnaires and structured interviews [17, 18]. This study then compares as well as highlights MSMEs, which are from Makassar and Surabaya, on how financial literacy and financial inclusion affect MSMEs' financial performance. Subsequently, through comparison study, the findings of this study aim to theoretically contribute in the body of

knowledge of management research discipline. As for managerial contribution, this study also aims to provide a guideline in increasing and improving: (a) joint-research both at national and international levels; (b) institutional strengthening through increased research cooperation; (c) internationalization of research quality; (d) optimization of the benefits of research results, etc.

### 2.5 Research Location, Period, Population, and Sample

The study was conducted in August-November 2023. The location selection is in Surabaya, East Java and Makassar, South Sulawesi. For sample selection, this study sorts out SMEs that meet the requirements specified in this study to then be used as a unit of research analysis. Moreover, the population of this study came from SMEs that met the requirements to be used as a unit of analysis of the research population unit. For sampling techniques, this study will use non-random sampling techniques or non-probability sampling, which is a technique that is not based on the laws of probability so that it does not provide equal opportunities for every element or member of the population to be selected into a sample [6, 17-19]. The number of samples in this study was 130 SMEs that were active and officially registered with the Indonesian Ministry of Cooperatives.

### 2.6 Source, Collection, and Analysis Technique of Data

The data sources used in the study are the first, namely primary data which includes: (a) data in the form of interview results obtained from MSMEs in Makassar and Surabaya, plus interviews with key informants who carry out MSME activities; and (b) field observations. In addition, the second or secondary source

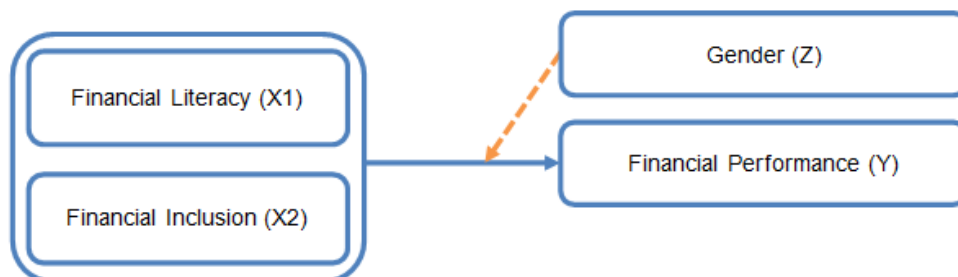


Fig. 1. Research framework

**Table 1. Research hypothesis**

No	Research Hypothesis
H1	Financial literacy has a positive influence on SME's financial management behavior in both Makassar and Surabaya
H2	Financial inclusion has a significant influence on SME's financial management behavior in both Makassar and Surabaya
H3	Gender has a moderation role on the relationship between financial literacy, financial inclusion, and financial performance of MSMEs in both Makassar and Surabaya

of data is data from reports or documents related to SMEs in Makassar and Surabaya. Furthermore, the data collection techniques in this study, particularly are: (a) literature study that is from any written relics, e.g. books or official documents, (b) observation, which is through the visual data collection that accordingly transform the visual findings into the written documents; and (c) interview, which is the conversations with the respondents [20-21]. Moreover, this study also applies several descriptive analysis approaches, especially through the application of several statistical measurement tests, which are validity and reliability test as well partial least square path analysis.

### 3. RESULTS AND DISCUSSION

#### 3.1 The Results of Validity, Reliability, and R-Square Test

Based on Table 2, this study discloses that all variables in this research are valid for both Makassar and Surabaya research location. The reason is because r-count scores of all variables are higher than r-table scores. Accordingly, this study implies that the variables and indicators of financial literacy, locus of control, as well as, financial management behavior of SMEs are valid, and can be used for the further statistical analysis. For the reliability test results, as suggested by Yushar et al. [20], if Cronbach Alpha scores of variables are higher than 0.60, then the indicators as well as variables are reliable. This study variables' Cronbach Alpha scores are higher than 0.60, as such, this study implies that all variables in this study are reliable and can be used for further statistical measurements. Moreover, R-squared is the proportion of the variance in the dependent variable that is explained by the independent variables in a regression model. The coefficient of determination shows how correlated one dependent and one independent variable are [17, 19, 21]. The closer to 0.0, the less correlated the dependent value is. The closer to 1.0, the

more correlated the value is. Based on Table 2, it is shown that the result of R-Square test in Makassar is 0.325, and Surabaya is 0.132, and therefore, such scores are closer to 0.0 rather than 1.0, in other words, the dependent value is less correlated.

#### 3.2 The Results of Path Coefficient Test

##### 3.2.1 The effect of DFL and FI on FP (Makassar and Surabaya)

Based on Table 3, Fig. 2, and Fig. 3, this study finds that there is a positive effect of DFL and FI on FP at the research location in Makassar, with the path coefficient score is 5.781. Additionally, based on the score of P-Value, which is 0.000 or smaller than 0.05 (significant), this study accordingly confirms that in Makassar, DFL and FI affects FP significantly in positive way. Likewise, this study also discloses that there is a positive effect of DFL and FI on FP at the research location in Surabaya, with the path coefficient score is 0.292. Additionally, based on the score of P-Value, which is 0.003 or smaller than 0.05 (significant), this study accordingly confirms that in Surabaya, DFL and FI affects FP significantly in positive way, as such H1 is accepted.

##### 3.2.2 The effect of gender on FP (Makassar and Surabaya)

Based on Table 3, Fig. 2, and Fig. 3, this study finds that there is a positive effect of Gender on FP with the path coefficient score is 0.857. Additionally, this study implies that based on the score of P-Value, which is 0.453 or higher than 0.05 (insignificant), this study accordingly confirms that in Makassar, gender has a positive effect, however, not significant, on FP. Likewise, this study also discloses that there is a positive effect of DFL and FI on FP at the research location in Surabaya, with the path coefficient score is 0.207. Additionally, based on the score of P-Value, which is 0.030 or smaller than 0.05 (significant), this study accordingly confirms that

in Surabaya, DFL and FI affects FP significantly in positive way, as such H2 is rejected.

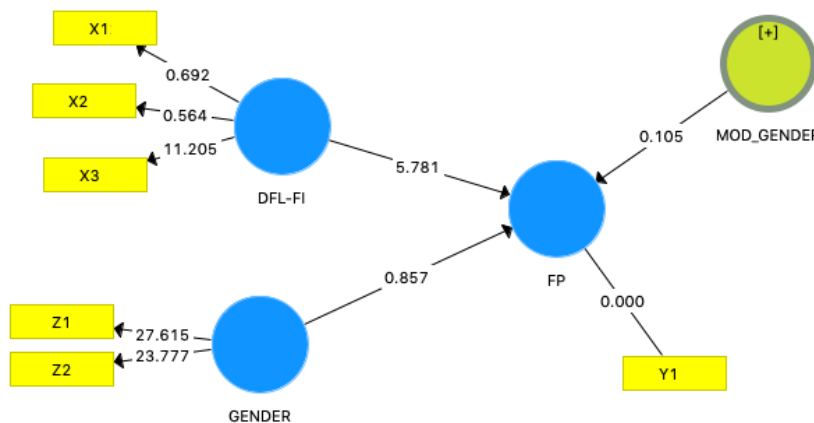
### 3.2.3 Gender’s moderation role on DFL, FI, and FP (Makassar and Surabaya)

Based on Table 3, Fig. 2, and Fig.3, this study finds that there is a positive effect of Gender on FP with the path coefficient score is 0.105 in Makassar. Additionally, this study implies that based on the score of P-Value, which is 0.929 or higher than 0.05 (insignificant), this study accordingly confirms that in Makassar, gender

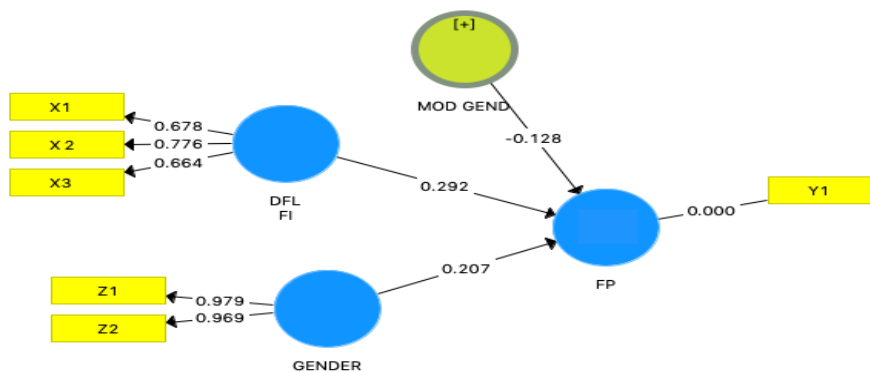
has a positive moderation effect, however, not significant, on the relationship between DFL, FI, and FP. Interestingly, this study also discloses that in Surabaya, Gender has a negative moderation effect on the relationship between DFL, FI, and FP, with the path coefficient score is -0.128. Additionally, based on the score of P-Value, which is 0.153 or higher than 0.05 (significant), this study accordingly confirms that in Surabaya, the moderation effect of gender is negative and insignificant on the relationship between DFL, FI, and FP. Therefore, H3 is rejected.

**Table 2. Validity, reliability, and R-Square test results**

MAKASSAR						
	C.Alpha	rho_A	Realiab.	r-table	AVE	R-Square
DFL	0.940	1.152	0.954	0.159	0.732	0.325
FI	0.728	0.750	0.879	0.159	0.632	
FP	1.000	1.000	1.000	0.159	0.663	
SURABAYA						
	C.Alpha	rho_A	Realiab.	r-table	AVE	R-Square
DFL	0.744	0.791	0.884	0.159	0.793	0.132
Fi	1.000	1.000	1.000	0.159	1.000	
FP	1.000	1.000	1.000	0.159	1.000	



**Fig. 2. Path coefficients test results (Makassar)**



**Fig. 3. Path coefficients test results (Surabaya)**

**Table 3. Path coefficient (Hypothesis) test results**

<b>MAKASSAR</b>					
	<b>(O)</b>	<b>(M)</b>	<b>STDEV</b>	<b>T Stat</b>	<b>P Values</b>
DFL_FI -> FP	5.781	5.625	5.062	1,142	0.000
GENDER->FP	0.857	0.866	0.716	1.196	0.453
MOD GEND->FP	0.105	0.108	0.061	1.721	0.929
<b>SURABAYA</b>					
	<b>(O)</b>	<b>(M)</b>	<b>STDEV</b>	<b>T Stat</b>	<b>P Values</b>
DFL_FI -> FP	0.292	0.296	0.098	2.964	0.003
GENDER->FP	0.207	0.185	0.095	2.178	0.030
MOD GEND->FP	-0.128	-0.122	0.090	1.432	0.153

**4. CONCLUSION AND RECOMMENDATION**

Based on the findings of this study, it is discovered that in both Makassar and Surabaya, digital financial literacy plays important role on financial performance of MSMEs. The findings of this study are also similar with the recent study of Yakob et al. [21] that confirms digital financial literacy affects firm’s financial performance. Additionally, the findings of this study also reveal that in Surabaya, gender plays significant role and it has positive impact on MSMEs financial performance, contrary in Makassar, gender has no significant role on MSMEs financial performance. The findings of this study are also similar with several scholars’ research article publications [22], which approve that gender has no significant role on firm’s financial performance. The most interesting findings in this study that the moderation effect of gender on the relationship between DFL, FI, and FP in Makassar is not significant, however, it has positive impact. Contrary in Surabaya, gender has a negative impact on the relationship between DFL, FI, and FP, but it also has no significant moderation effect. Furthermore, the findings of this study are considered to be handful as a guideline for MSMEs owners in improving their whole firms’ performance, nevertheless, due to some research limitations of this study, namely: research time and sample size, it is important to recommend accordingly that further study should be conducted in more than two major cities in Indonesia with more sufficient research time in exploring the role of financial inclusion on MSMEs financial performance, or on gender’s financial literacy inside MSMEs, or more bigger firms, e.g. large companies.

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**COMPETING INTERESTS**

Authors have declared that no competing interests exist.

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