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Journal of Management Systems

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QUALITY-ACCESS TO SUCCESS

The magazine Quality-Access to Success is published by the Romanian Society for Quality Assurance - SRAC (https://www.srac.ro/) - and is in its 21st year of uninterrupted publication.

It is a management systems magazine, which addresses topics of general management, quality management, environment, energy, occupational health and safety, food safety, information security, as well as social responsibility and product conformity assessment. The magazine has six issues per year, with a high graphic design.

Quality-Access to Success is included in the international databases Web of Science™ Core Collection - Emerging Sources Citation Index (ESCI), SCOPUS, EBSCO, PROQUEST and is listed in CABELL'S Whitelist.

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PURPOSE AND OBJECTIVES

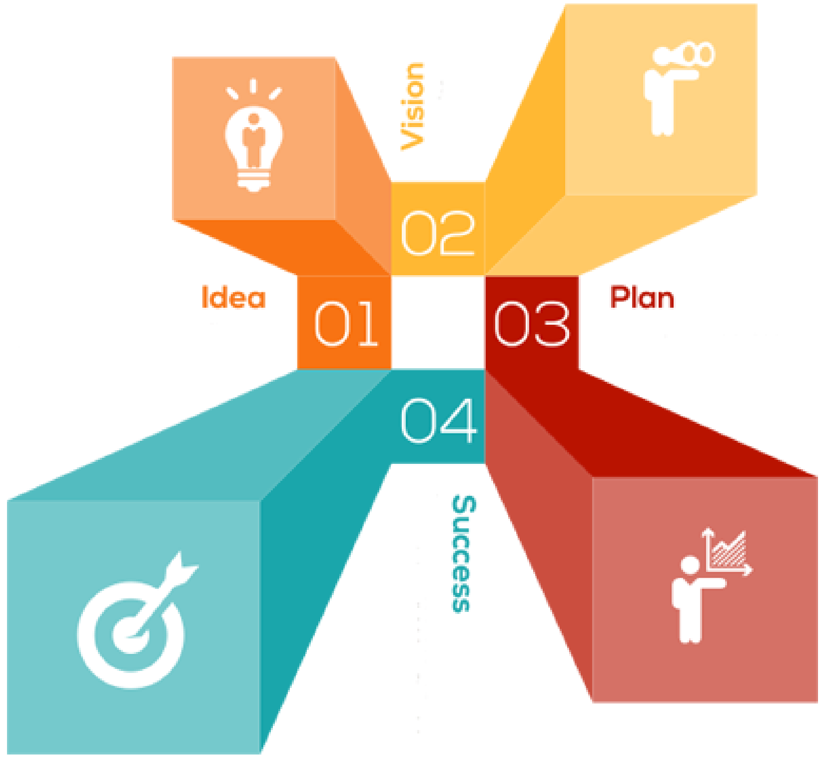
QUALITY - ACCESS TO SUCCESS

The magazine **Quality - Access to Success** is published by the Romanian Society for Quality Assurance (SRAC), with the aim of promoting quality culture in Romania and the Republic of Moldova.

Designed as a quality management magazine, it was addressed from the beginning (year of publication – 2000) to top management, in order to raise awareness among the managerial environment for the implementation and certification of the quality management system.

As a result of the rapid evolution of the field, the widening of the range of standards, but also of the clients' requests, the magazine expanded its thematic scope, starting with 2005, becoming a management systems magazine. As a result, all management systems for which there are international implementation and certification standards are addressed, even in the form of columns:

- Quality management
- Environmental management
- Energy management
- Food safety management
- Occupational health and safety management
- Information security management
- Social responsibility



At the same time, addressability has acquired new values. Although the target audience is still top management, the magazine is addressed to companies that want to implement a quality system, to those who want to maintain and improve the implemented system, but also to those who want to increase the performance of the enterprise, with an orientation towards quality, towards increasing customer satisfaction, following the path towards total quality management, towards business excellence, towards quality awards. They can find in the general management section articles about management functions, management methods, organizational culture, etc. The articles in the general management section will provide a fundamental understanding of the notions of human resource management, strategy, finance, marketing and business operations, as well as how all of these integrated can lead to the success of the organization.

Quality-access to success is the only Romanian management systems magazine that synergistically approaches all management systems, becoming one of the best-rated national magazines in this field.

Quality-access to success is included in the international databases WoS-ESCI, SCOPUS, EBSCO, CABELL'S Directories and PROQUEST.

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The journal Quality-Access to Success adheres to the policies and guidelines of the Committee on Publication Ethics (COPE) (http://publicationethics.org/)

Submitting a manuscript for publication in the journal Quality-Access to Success means that all authors have read and accepted the content of the manuscript and agreed to comply with the journal's policies on ethical norms.

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Financial Performance of Female MSME Actors: The Role of Digital Financial Literacy and Financial Technology by Mediating Financial Inclusion

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Abstract

The research analyzes the influence of digital financial literacy and financial technology (fintech) on the financial performance of female MSMEs in the Special Region of Yogyakarta mediated by financial inclusion. Some Indonesian MSMEs are managed by women, but gender gaps still exist which are obstacles to starting a business, such as personal characteristics due to the dual role of women as well as structural characteristics such as barriers to accessing financial facilities and low digital financial literacy. Apart from that, there is still a low number of MSMEs managing their finances and using fintech. Therefore, financial capabilities (digital financial literacy and fintech) need to be improved through increasing financial inclusion so that they have a competitive advantage that increases financial performance using the Knowledge Based View theory approach. The research sample was 450 female MSME actors in the Special Region of Yogyakarta who filled out an offline questionnaire using a cross-sectional survey method approach. The sampling technique uses quota sampling. Structural Equation Model Partial-Least Square was used to process the data. The research results of digital financial literacy and financial inclusion have a positive effect on financial performance, fintech has no effect on financial performance, digital financial literacy and fintech have a positive effect on financial performance mediated by financial inclusion of female MSME actors in the Special Region of Yogyakarta. Future research is expected to use combined research methods through focus group discussions and adding non-impulsive behavior variables that influence financial performance so that better results are obtained.

Keywords: *digital financial literacy, financial technology, financial inclusion, financial performance, female MSME actors*

1. Introduction

MSMEs have an important role in driving Indonesia's national economy. In 2023, based on data obtained from the Ministry of Cooperatives and SMEs, the number of MSMEs in Indonesia will reach 8.71 million business units and 27 million MSME actors in the digital ecosystem (Rufaidah et al., 2023). The existence of MSMEs encourages people to participate in economic activities because they contribute to Gross Domestic Product by 65.58% (Nursini, 2022). Therefore, MSMEs are the largest actors in Indonesia's national economic activities, absorbing a large number of workers.

Based on information obtained by the Ministry of Cooperatives and SMEs, 64% of Indonesian MSMEs are managed by women (Tambunan, 2019). Female MSME actors play an essential role in helping the family economy and initiating strategies for economic progress (Setyaningrum et al., 2022). However, a gender gap still exists in Indonesia which is an obstacle for women to start a business. The G20 EMPOWER agenda of the Indonesian Presidency discusses the urgent role of women MSME actors, for example limited access to financial facilities, low financial literacy and connectivity to the internet (Rao et al., 2023). Therefore, strengthening the role of female MSME actors needs to be increased through increasing digital financial literacy and fintech so that it is easy to access financial services which then improves financial performance.

Financial performance is the ability of a business to meet previously determined targets in describing the level of business competitive advantage (Cho et al., 2019). Based on the Knowledge Based View (KBV) theory, competitive advantage lies in a business's ability to collect, integrate and use knowledge so as to improve financial performance (Khan et al., 2022). The resources owned by MSMEs should be strengthened with functional capabilities including human resources, operations, finance and marketing so that good business performance can be produced and can easily compete with business dynamics (Nikolaou, 2019). Financial resources are very crucial in implementing business operational activities and how to increase financial capabilities through digital financial literacy.

Digital financial literacy is a combination of skills, knowledge and beliefs that have an impact on behavior and attitudes related to financial service activities that utilize digital technology to improve financial management so as to avoid financial problems (Ravikumar et al., 2022). MSME players who can apply digital financial literacy well will have competence in managing finances and can improve business performance (Affandi et al., 2024; Rehman, 2024; Abdallah et al., 2024; Luo et al., 2021; Rahayu & Rahmawati, 2022; Oggero et al., 2020; Rahayu & Rahmawati, 2019). In 2022, based on information obtained by the Financial Services Authority through the National Survey of Financial Literacy and Inclusion, it is described that the Indonesian people's financial literacy level will reach 49.68%, a jump from 38.03% in 2019, and specifically the financial literacy level for women will reach 50.33% or slightly higher than men. 49.05% (Christiani & Kastowo, 2023). Therefore, an escalation is needed in terms of digital financial literacy of female MSME players as drivers of MSMEs and able to be on par with men in utilizing financial products and services which ultimately improves financial performance. Several previous studies discussing the influence of digital financial literacy on financial performance gave inconsistent results (Kwadwo et al., 2022; Frimpong et al., 2022; Agyapong, 2021; Angeles, 2022).

How to increase financial capabilities is also through fintech. The challenges of the era of society 5.0 require comprehensive economic transformation which has an impact on financial technology innovation (fintech) which demands changes in a moderate direction. This statement is in line with the KBV theory which describes competitive advantage as lying in knowledge, one of which is fintech (Aggarwal et al., 2023). The role of women is a strength in the MSME ecosystem which has a competitive advantage, because of their sensitivity to the market and ability to innovate so that women can contribute to the economy and improve economic welfare (Tchidi & Zhang, 2024). However, various obstacles are faced by female MSME actors, such as access to capital and financial resources. Female MSMEs experience limitations in accessing adequate financing to develop their business (Sreenu, 2024). Therefore, female MSME actors need to use fintech to improve financial performance. The presence of fintech makes it easier for MSME players to access digital sources of capital and financing, so that they can improve financial performance (Vyas & Jain, 2021). The more female MSMEs who use fintech to obtain capital and manage finances, the greater their financial performance. Several previous studies discussing the influence of fintech on financial performance have provided inconsistent results (Lontchi et al., 2023; Menne et al., 2022; Najib et al., 2021; Dhiaf & Khakan, 2022).

The way to improve financial performance is also through financial inclusion. This is in accordance with KBV theory, where knowledge about financial inclusion is important for MSME players, because it has an impact on financial performance (Kuada, 2022; Simu et al., 2023). Financial inclusion is a way to strengthen people's access to various kinds of financial products, institutions and services in accordance with their needs to improving welfare (Hasan et al., 2023; Amnas et al., 2024; Zutshi et al., 2021). It is hoped that the existence of optimal financial inclusion will be able to realize accelerated economic growth, where it will be easier for MSME players to access the availability of financial services which can later be used in the process of business activities so that ultimately they can improve financial performance. Several previous studies discussing the effect of financial inclusion on financial performance provided inconsistent results (Kaya, 2022; Vo et al., 2022; Ramzan et al., 2021; Fomum & Opperman, 2023). In 2022, based on the results of the National Survey on Financial Literacy and Inclusion, it is depicted that Indonesian society has a financial inclusion rate of 85.10%, a jump from 2019 which reached 76.19% and the financial inclusion rate of women reached 83.88%, lower than men's 86.28% (Hidayat & Sari, 2022). MSME players with good digital financial literacy skills will use more formal financial institution products and services and know how to access capital sources within their capabilities, thereby improving financial performance (Lontchi et al., 2022). The more MSME players who utilize fintech, the greater the achievement in implementing access to various formal financial services, so that financial performance can increase. Therefore, in this research financial inclusion is used as a mediating variable on the influence of digital financial literacy and fintech on the financial performance of MSMEs.

MSMEs are the industrial sector in the Special Region of Yogyakarta as economic drivers in supporting the realization of the Indonesian economy. In 2020, based on information obtained by the Central Statistics Agency, the Gender Empowerment Index for female MSMEs in the Special Region of Yogyakarta contributed income reaching 40.82% and jumped to 41.26% in 2021 and the number of MSMEs managed by female MSMEs in the Special Region of Yogyakarta reached more than 49.6%. lower than men 49.8% (Akter et al., 2017). Meanwhile, based on information obtained by the Financial Services Authority, it is clear that in 2019 the level of digital financial literacy of female MSME players in the Special Region of Yogyakarta reached 58.12%, lower than that of men, 59.95% (Christiani & Kastowo, 2023). Furthermore, based on information obtained by the Central Statistics Agency in 2023, only 905 MSMEs in the Yogyakarta Special Region use fintech as a means of payment and only 1,586 of the total number of MSMEs are 344,304 MSMEs (Nugraha et al., 2022). Therefore, it is necessary for female MSME actors, especially in the Special Region of Yogyakarta, to understand the financial industry through increasing financial literacy and fintech so as to facilitate access to financial services and avoid illegal investment offering practices and ultimately improve financial performance.

This research has an element of novelty which lies in the study of digital financial literacy, and fintech on financial performance with financial inclusion as mediation which uses research subjects as female MSME actors in the Special Region of Yogyakarta. It is hoped that the contribution of this research can identify emerging problems and urgency and produce a framework (digital financial literacy, fintech, and financial inclusion) to help the government design and initiate programs aimed at female MSMEs, especially in the Yogyakarta Special Region, so that financial performance can increase.

Based on the explanation of the background of the phenomenon and the results of previous research, it is important to carry out this research. This research, apart from analyzing the phenomenon and trying to close the gap in previous research due to inconsistencies in the results of previous research, also proposes the financial inclusion variable as a mediating variable between digital financial literacy and fintech on financial performance with the research subject being female MSMEs in the Special Region of Yogyakarta.

2. Literature Review

2.1. Knowledge Based View (KBV) Theory

KBV or knowledge-based view of the company is a new extension of the Resources Based View (RBV) and provides a strong theoretical basis in supporting intellectual capital which can ultimately improve financial performance. Financial performance will spur the added value of MSMEs in competing to meet customer needs, where in this competitive era MSMEs are trying to gain a competitive advantage by expanding new knowledge gained more quickly than their rivals. Furthermore, intellectual capital will meet the required qualifications as a unique resource owned to create added value for their business (Nikolaou, 2019). The same resources can be utilized in different ways depending on capabilities, which are closely related to the knowledge possessed by the organization (Chen et al., 2018). MSMEs in running their business are very dependent on the resources they have, but their success relies heavily on the capability to apply knowledge to elaborate their products, methods and operating services in the market (Khan et al., 2022).

Financial resources are very crucial in carrying out business operational activities and ways to increase financial capability can be through digital financial literacy, fintech, and financial inclusion (Ravikumar et al., 2022; Aggarwal et al., 2023; Kuada, 2022). KBV is of the view that knowledge is one of the most important assets for a company, where if assets owned by a company such as knowledge are directed appropriately, financial performance can increase (Khan et al., 2022). The company context studied here is MSMEs as a collection of productive resources, both physical resources and human resources.

2.2. Digital Financial Literacy and Financial Performance

Digital financial literacy skills are now not just a necessity, but have become a lifestyle in the era of society 5.0. This is driven by restrictions on human movement during the Covid-19 pandemic, where digital transactions are increasingly in demand and needed (Setiawan et al., 2020). Digital financial literacy is an important factor in improving financial performance. This is in line with KBV theory, where in the context of the modern economy, digital financial literacy is considered a very crucial financial resource for MSMEs in maintaining the continuity of their business. The increasing organizational knowledge base allows digital financial literacy to improve financial performance (Michalis et al., 2021). Digital financial literacy helps female MSME players gain knowledge, skills and abilities in developing financial strategies to make investment decisions and to be able to be on par with men in utilizing financial products and services which can ultimately improve financial performance (Twumasi et al., 2022). Therefore, female MSME actors who have high financial literacy will be able to manage finances, thereby improving financial performance. This statement is in line with what was written by Affandi et al. (2024); Rehman (2024); Abdallah et al. (2024); and Luo et al. (2021). Based on this narrative, a hypothesis can be developed as follows:

H1: Digital financial literacy has a positive effect on the financial performance of female MSMEs in the Special Region of Yogyakarta

2.3. Financial Technology and Financial Performance

Fintech was created as a complement to the financial system by providing services in digital form and offering convenience to MSME players, so that it can potentially improve financial performance. This statement is in line with the KBV theory which describes competitive advantage as lying in knowledge, one of which is fintech (Aggarwal et al., 2023). The presence of fintech can support female MSME players to gain flexibility and efficiency in financial matters with the help of digitalization, where MSME players can more easily access digital payments, expand market reach, sources of capital, and overcome financial reporting problems which can ultimately improve financial performance (Ravikumar et al., 2022). Therefore, more and more female MSME players are utilizing fintech to obtain capital and manage finances, thereby increasing financial performance. This statement is in line with what was written by Lontchi et al. (2023) and Menne et al. (2022). Based on this narrative, a hypothesis can be developed as follows:

H2: Fintech has a positive influence on the financial performance of female MSMEs in the Special Region of Yogyakarta

2.4. Financial Inclusion and Financial Performance

Financial inclusion is a process of ensuring access to financial services and products that suit the needs of MSME players, so that it can improve financial performance (Kaya, 2022). This statement is in line with the KBV theory which describes knowledge about financial inclusion as important for MSME players because it has an impact on financial performance (Kuada, 2022; Simu et al., 2023). Women who dominate the MSME sector in Indonesia still face obstacles in developing their businesses, ranging from lack of family support to licensing and capital problems. Therefore, the Indonesian government is implementing the National Strategy for Women's Inclusive Finance (SNKI Perempuan) to ensure that Indonesian women have the knowledge, capacity and opportunities to be economically empowered, supported by financial service facilities that are fair, responsive and inclusive of women's needs (Kuada, 2022). Financial inclusion for female MSME actors is an effort to increase women's productivity so that ultimately they can improve financial performance. It is hoped that the ease of access provided by financial institutions can support all activities of female MSME actors, especially in transactions and financing (Ramzan et al., 2021). Increasing access to financial services for female MSMEs, especially access to credit financing, will have an impact on increasing market reach, sales, number of workers and profits which can improve financial performance (Amnas et al., 2024). This statement is in line with what was written by Kaya (2022); Vo et al. (2022); and Obiedallah & Abdelaziz (2024). Based on this narrative, a hypothesis can be developed as follows:

H3: Financial inclusion has a positive effect on the financial performance of female MSMEs in the Special Region of Yogyakarta

2.5. Digital Financial Literacy, Financial Performance, and Financial Inclusion

Good digital financial literacy will help female MSMEs manage their finances better, choose financial access routes, and be wiser in choosing the risks of the financial services they will choose. In 2022, based on information obtained by the Financial Services Authority through the National Survey of Financial Literacy and Inclusion, the level of financial literacy among women in Indonesian society has reached 50.33% and the level of financial inclusion in Indonesian society has reached 83.88% (Christiani & Kastowo, 2023). This means that there is quite a gap when viewed between financial inclusion and financial literacy, where many people can access financial services and even have financial products but only have them without understanding the benefits and risks, which can result in losses for society. Therefore, digital financial literacy also encourages financial inclusion, which makes it easier for MSME players to access financial services and products either through financial service institution applications (Ravikumar et al., 2022). Female MSME actors with high digital financial literacy skills will use more formal financial institution products and know how to access capital sources according to their abilities, thereby increasing financial performance (Frimpong et al., 2022). This statement is in line with what was written by Ravikumar et al. (2022) and Frimpong et al. (2022). Based on this narrative, a hypothesis can be developed as follows:

H4: Digital financial literacy has a positive effect on the financial performance of female MSMEs in the Special Region of Yogyakarta mediated by financial inclusion

2.6. Financial Technology, Financial Performance, and Financial Inclusion

Fintech can maximize the use of technology in accelerating financial services so that it can increase financial inclusion, because the internet network is extensive and many areas can be reached and it is easy for MSME players to access various products, institutions and financial services that are in line with their capabilities and urgency (Tchidi & Zhang, 2024). Fintech can help female MSMEs access financing sources by providing financial services that are fair, inclusive and responsive to women's needs, so that they can improve financial performance (Rehman, 2024; Siddik et al., 2023). Therefore, the more female MSMEs who utilize fintech, the more it will encourage the implementation of access to financial services, thereby improving financial performance. This statement is in line with what was written by Tchidi & Zhang (2024) and Sreenu (2024). Based on this narrative, a hypothesis can be developed as follows:

H5: Fintech has a positive effect on the financial performance of female MSMEs in the Special Region of Yogyakarta mediated by financial inclusion

Figure 1 illustrates the conceptual framework regarding explanations related to literature reviews, relationships between variables, and results of previous research.

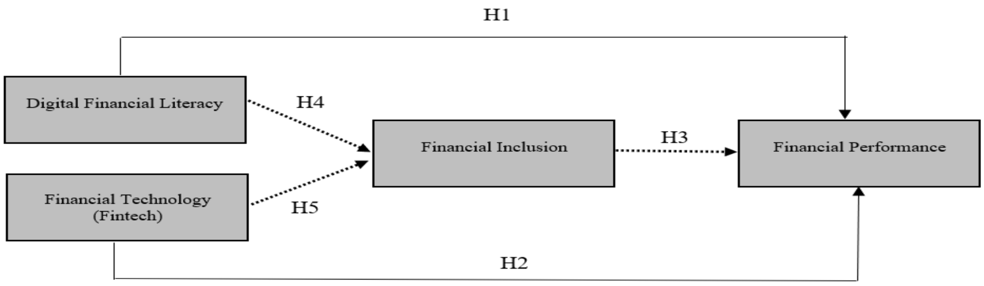

Figure 1. Conceptual Framework
Source: Rao et al. (2023); Ravikumar et al. (2022); Aggarwal et al. (2023); Amnas et al. (2024)

3. Research Methods

A quantitative approach is used as this type of research with a cross sectional approach in the survey method. The research population was 344,304 female MSME actors in the Special Region of Yogyakarta. The sample for this research was some of the female MSME actors in the Special Region of Yogyakarta, totaling 450 MSME actors. The sampling technique uses quota sampling, where the researcher sets a certain number as a target that must be met in taking samples from the population to ensure that the respondents for this research are spread across 4 regencies, namely Bantul Regency, Sleman Regency, Kulon Progo Regency, and Gunung Kidul Regency and Yogyakarta City so as to obtain proportional representation. This is in line with what was stated by Hair et al. (2022), which describes sampling based on quotas as aiming to make it easier for the sample as a whole to have proportional representation of the targeted population strata. Primary data was used as a data collection technique for this research in the form of an offline questionnaire (questionnaire in paper format) which was distributed directly to female MSME actors in the Special Region of Yogyakarta, where respondents were accompanied in answering the questionnaire. The data collection time for this research was carried out in July 2024 with the coordination of the second and third authors and assisted by ten student assistants who distributed questionnaires and met directly with female MSME respondents by visiting the respondents' locations. The questionnaires distributed include information on respondents' characteristics such as business field, length of time in business, age, education, marital status, and number of employees the respondent has as well as measurements of the research variables used. Next, the researcher asked for the respondent's time to fill out the research questionnaire where the respondent was not asked to write down their name. After the respondent has finished filling out the questionnaire in its entirety, the respondent then gets a souvenir as a form of thanks for being willing to fill out the questionnaire.

The independent variables of this research use digital financial literacy and fintech. Meanwhile, the dependent variable used in this research is financial performance and the mediating variable used is financial inclusion. A 5 point Likert scale was used as a measurement of the research variables, ranging from strongly agree to strongly disagree where a closed questionnaire type was used for all statement items on the research variables.

The digital financial literacy variable indicator has 4 statement items adapted from previous research by Ravikumar et al. (2022) including:

a) General knowledge of digital finance, with the statement item "I know about digital or online financial transaction methods".
b) Awareness of digital financial risks, with the statement item "I am aware of various risks such as phishing and spyware when I carry out digital financial transactions".
c) Digital financial risk control, with the statement item "I am able to overcome errors that occur in digital financial transactions".
d) Self-determination to use digital financial knowledge and skills, with the statement item "I understand that there is an appropriate forum or procedure if I become a victim when carrying out digital financial transactions."

The fintech variable indicator has 3 statement items adapted from previous research by Aggarwal et al. (2023) including:

a) Attitude to using fintech, with the statement item "I feel happy using fintech".
b) Decision making regarding fintech, with the statement item "My decision to use fintech was a wise decision".
c) Confidence in using fintech, with the statement item "Fintech gives me confidence".

The financial performance variable indicator has 4 statement items adapted from previous research by Rao et al. (2023) including:

a) Profitability, with the statement item "I am satisfied with the profits of my business venture".
b) Growth in business sales, with the statement item "My business assets have increased".
c) Growth in business assets, with the statement item "Sales of my business have experienced high growth".
d) Business market share, with the statement item "My business market share has increased".

The financial inclusion variable indicator has 4 statement items adapted from previous research by Amnas et al. (2024) including:

a) Access to financial products and services, with the statement item “Fintech services expand my access to financial products and services”.
b) Fintech services for sending and receiving money, with the statement item "Fintech services make it easier for me to send and receive money".
c) Fintech services in accessing credit and loans, with the statement item "Fintech services improve my ability to access credit and loans".
d) Fintech services in saving and investing money, with the item stating "Fintech services increase my ability to save and invest my money".

This research instrument testing technique uses measurement model testing (outer model) and structural model testing (inner model). Next, carry out a descriptive analysis of respondent characteristics and hypothesis testing using the Structural Equation Model Partial-Least Square (SEM-PLS) with SmartPLS 4 software. Hypotheses 1 to 3 use the basis for decision making by looking at the P-value if it is smaller than 0.05 then the hypothesis can be accepted (Hair et al., 2022). Meanwhile, decision-making in the mediation hypothesis refers to Hair et al. (2022) which states that the role of mediation variables is grouped into 3 types of mediation, namely:

If the relationship between the independent variable is directly significant to the dependent variable, while the independent variable is significant to the mediating variable, and the mediating variable is not significant to the dependent variable, or the independent variable is not significant to the mediation, and the mediating variable is significant to the dependent variable, then the mediating variable not mediate.

If the relationship between the independent variable is directly significant to the dependent variable, while the independent variable is significant to the mediating variable, and the mediating variable is significant to the dependent variable, then the mediating variable partially mediates.

If the relationship between the independent variable is not directly significant to the dependent variable, while the relationship between the independent variable is significant to the mediating variable and the mediating variable is significant to the dependent variable, then the mediating variable fully mediates.

4. Research Findings

4.1. Characteristics of Respondent Data

This research distributed offline questionnaires filled out by 450 female MSME respondents in the Special Region of Yogyakarta. Next, respondents fill out a questionnaire which includes information regarding, among other things, the characteristics of the respondent's data including business field, length of time in business, age, education, marital status, and number of employees they have.

Category	Amount	Percentage (%)
Business field:		
Culinary	197	43.78
Fashion	46	10.22
Farm	10	2.22
Agriculture	6	1.33
Health	10	2.22
Creative Products	40	8.89
Beauty	25	5.56
Cleaning Services	11	2.44
Tourist	4	0.89
Grocery store	71	15.78
Other	30	6.67
Length of business venture:		
<3 years	113	25.11
3 – 5 years	127	28.22
>5 – 10 years	92	20.44
Age:		
≤25 years	105	23.33
26 – 40 years	184	40.89
41 – 55 years	112	24.89
>55 years	49	10.89
Education:		
Not finished elementary school or equivalent	5	1.11
Elementary school or equivalent	24	5.33
Middle school or equivalent	52	11.56
High school or equivalent	234	52.00
D3 or equivalent	21	4.67
S1 or equivalent	108	24.00
S2 or equivalent	6	1.33
S3 or equivalent	0	0.00
Marital status:		
Marry	316	70.22
Not married	134	29.78
Number of employees owned:		
<10 people	424	94.22
10 – 30 people	24	5.33
>30 – 300 people	2	0.44
Total	**450**	**100**

Table 1. Characteristics of Respondent Data
Source: Primary data processed (2024)

Table 1 shows the characteristics of respondent data, where categories based on business fields show that the culinary business dominates at 43.78%; the relative length of business venture varies from <3 years to >10 years, the dominant length of business venture is between 3-5 years at 28.22%; The age of respondents also varies relatively from <25 years to >55 years and those who dominate are those between 26 - 40 years old at 40.89%; high school education level or equivalent dominates at 52%; married marital status dominates at 70.22%; and the number of employees <10 people dominates at 94.22%.

4.2. Instrument Test Results

4.2.1. Measurement Model Testing (Outer Model)

Testing of the measurement model (outer model) uses construct validity and instrument reliability tests, where construct validity tests include convergent validity tests and discriminant validity tests (Hair et al., 2022). Convergent validity testing is based on loading factor values and Average Variance Extracted (EVA). Table 2 shows that most of the constructs are declared valid based on loading factor values that meet the minimum standard value of >0.7. Apart from that, only the FI3 and FP1 statement items were deleted because they respectively had loading factor values of 0.628 and 0.622, which were below the minimum standard value. Meanwhile, convergent validity testing is based on AVE as shown in Table 2. It can be seen that the AVE value is > 0.5 so that all constructs are declared valid and have strong convergent validity.

Latent Variable	Manifest Variable	Loading Factor	Cronbach's Alpha	Composite Reliability	AVE
Digital Financial Literacy (DFL)	DFL1	0.835	0.842	0.846	0.678
	DFL2	0.827			
	DFL3	0.813			
	DFL4	0.818			
Financial Inclusion (FI)	FI1	0.864	0.850	0.852	0.771
	FI2	0.884			
	FI3	0.628			
	FI4	0.829			
Financial Performance (FP)	FP1	0.622	0.847	0.851	0.766
	FP2	0.861			
	FP3	0.890			
	FP4	0.855			
Financial Technology (FT)	FT1	0.911	0.912	0.912	0.850
	FT2	0.941			
	FT3	0.914			

Table 2. Measurement Model Test Results
Source: Data processed with SmartPLS 4 (2024)

Furthermore, discriminant validity testing uses the Heterotrait - Monotrait Ratio (HTMT) value where the recommended minimum standard value is 0.90 (Hair et al., 2022). Table 3 shows that all research variable items have strong discriminant validity. This can be seen from the value ranging between 0.812 and 0.408, where this value is below the minimum standard value.

Further testing of the research instrument used an instrument reliability test using Cronbach Alpha (□) and Composite Reliability (CR) values with a minimum standard value of >0.70 (Hair et al., 2022). Table 2 shows that all the indicators contained in this measurement model are declared reliable.

	DFL	FI	FP	FT
DFL	N/A			
FI	0.812	N/A		
FP	0.513	0.462	N/A	
FT	0.836	0.868	0.408	N/A

Table 3. Heterotrait Value - Monotrait Ratio (HTMT)
Source: Data processed with SmartPLS 4 (2024)

4.2.2. Structural Model Testing (Inner Model)

Inner model testing is carried out using the meaning of the R Square (R2) value. The R2 value can be used as a measurement of the level of variation in change between the independent variable and the dependent variable (Hair et al., 2022). Table 4 shows that the R2 value for the financial inclusion variable is influenced by digital financial literacy and fintech at 65.8%, while the remaining 34.2% is influenced by other variables outside this research model. Apart from that, the financial performance variable is influenced by digital financial literacy, fintech and financial inclusion by 20.8%, while the remaining 79.2% is influenced by other variables outside this research model.

	Financial Inclusion	Financial Performance
Coefficient of determination, R^2	0.658	0.208

Table 4. Structural Model Test Results
Source: Data processed with SmartPLS 4 (2024)

4.3. Hypothesis Test Results

The influence between variables can be seen in this research model through the β value and path estimation results (P-Value), whereas a basis for decision-making is by looking at the P-Value value <0.05, the hypothesis can be accepted. Figure 2 shows the path coefficient of this research model which was processed using SEM-PLS with SmartPLS 4 software.

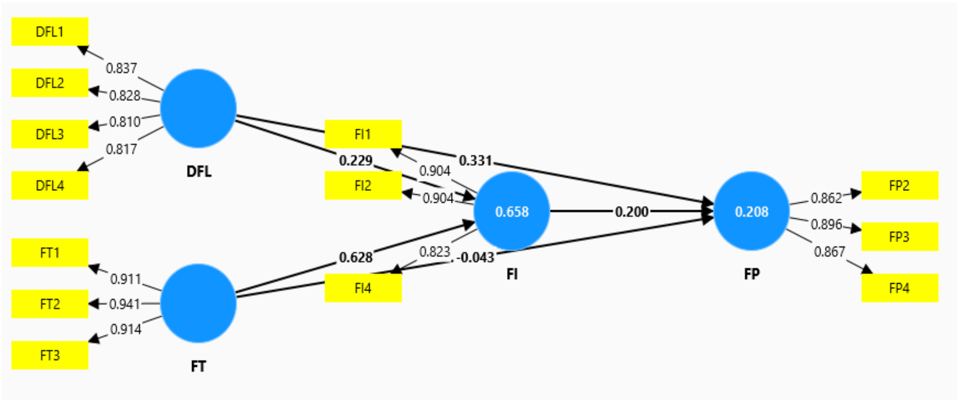

Figure 2. Path Coefficient Research Model
Source: Data processed with SmartPLS 4 (2024)

Hypothesis	Path Hypothesis	(β)	STD	t-Value	P-Value	Status
H1	DFL → FP	0.376	0.064	5.866	0.000	Accepted
H2	FT → FP	0.083	0.067	1.230	0.219	Rejected
H3	FI → FP	0.200	0.073	2.725	0.006	Accepted
H4	DFL → FI → FP	0.046	0.019	2.458	0.014	Accepted
H5	FT → FI → FP	0.125	0.048	2.613	0.009	Accepted

Table 5. Hypothesis Testing Results via Path Coefficient
Source: Data processed with SmartPLS 4 (2024)

Based on Table 5, it can be seen that hypotheses 1 and 3 are accepted, which have a P-value <0.05. Therefore, the results of hypothesis 1 show that digital financial literacy has a positive effect on the financial performance of female MSME actors in the Special Region of Yogyakarta and the results of hypothesis 3 show that financial inclusion has a positive effect on the financial performance of female MSME actors in the Special Region of Yogyakarta. Meanwhile, hypothesis 2 is rejected, because it has a P-Value > 0.05. Therefore, the results of hypothesis 2 show that fintech has no effect on the financial performance of female MSMEs in the Special Region of Yogyakarta

4.4. Testing Mediation Effects

Mediation testing is used to see the role of the financial inclusion variable as a mediating variable in the influence of digital financial literacy and fintech on financial performance. The results of testing the mediation effect can be seen in Tables 5 and 6.

Variable	Direct Effect (DE)	Indirect Effect (IE)	Total Effect (TE)	Mediation Effect
	DFL → FP	DFL → FI → FP	(DE + IE)	(TE – DE)
(1)	(2)	(3)	(4)	(5)
DFL	0.376 (0.000)	0.046 (0.009)	0.422 (0.001)	(0.422 – 0.376) = 0.046
Variable	**Direct Effect (DE)**	**Indirect Effect (IE)**	**Total Effect (TE)**	**Mediation Effect**
	FT → FP	FT → FI → FP	(DE + IE)	(TE – DE)
(1)	(2)	(3)	(4)	(5)
FT	0.083 (0.219)	0.125 (0.009)	0.208 (0.004)	(0.208 – 0.083) = 0.125

Table 6. Mediation Effect Test Results
Source: Data processed with SmartPLS 4 (2024)

Table 5 shows the results that hypothesis 4 is accepted, where digital financial literacy has a positive effect on financial performance mediated by financial inclusion with a value of β = 0.046 and P-Value = 0.014 < 0.05. Table 6 shows the results of testing the mediation effect, which based on decision-making in the mediation hypothesis refers to Hair et al. (2022) if the relationship between the independent variable (digital financial literacy) is directly significant to the dependent variable (financial performance), while the relationship between the independent variable (digital financial literacy) is significant to the mediating variable (financial inclusion) and the mediating variable (financial inclusion) are significant to the dependent variable (financial performance), so the financial inclusion variable partially mediates the influence of digital financial literacy on the financial performance of female MSMEs in the Special Region of Yogyakarta.

Furthermore, Table 5 shows the results that hypothesis 5 is accepted, where fintech has a positive effect on financial performance mediated by financial inclusion with a value of β = 0.125 and P-Value = 0.009 < 0.05. Table 6 shows the results of testing the mediation effect, which based on decision-making in the mediation hypothesis refers to Hair et al. (2022) if the relationship between the independent variable (fintech) is not directly significant to the dependent variable (financial performance), while the relationship between the independent variable (fintech) is significant to the mediation variable (financial inclusion), and the mediating variable (financial inclusion) is significant to the dependent variable (financial performance), so the financial inclusion variable fully mediates the influence of fintech on the financial performance of female MSME actors in the Special Region of Yogyakarta.

5. Discussion

5.1. Digital Financial Literacy and Financial Performance

The research results show that hypothesis 1 is accepted that digital financial literacy has a positive effect on the financial performance of female MSMEs in the Special Region of Yogyakarta, where the β value = 0.376 and P-Value = 0.000 < 0.05 (Table 5). This means that the higher the digital financial literacy, the more female MSMEs in the Special Region of Yogyakarta will be able to manage their finances appropriately, thus further improving their financial performance. This statement is in line with what was written by Affandi et al. (2024); Rehman (2024); Abdallah et al. (2024); and Luo et al. (2021). This illustrates that digital financial literacy is an important factor in improving financial performance and helping female MSMEs gain knowledge, skills and abilities regarding digital finance as well as the risks they will face related to digital financial transactions such as phishing and spyware, so that they can make the right investment decisions. Ultimately, it can improve financial performance. This is in line with KBV theory, where in the context of the modern economy, digital financial literacy is considered a very important financial resource for MSMEs to improve financial performance and maintain business continuity. The increasing knowledge base of the organization allows digital financial literacy to improve financial performance (Michalis et al., 2021).

5.2. Financial Technology and Financial Performance

The research results show that hypothesis 2 is rejected that fintech has no effect on the financial performance of female MSMEs in the Special Region of Yogyakarta, where the β value = 0.083 and P-Value = 0.219 > 0.05 (Table 5). This means that the higher or lower the fintech owned by female MSMEs in the Special Region of Yogyakarta, the higher or lower the financial performance will not be. This statement is in line with what was written by Najib et al. (2021) and Dhiaf & Khakan (2022). This illustrates that although the use of fintech provides many benefits, one of which is providing a sense of confidence for female MSMEs who use fintech and to access funding sources, there are also several disadvantages related to limitations in using technology. Based on data from the Central Statistics Agency for 2023, only 905 MSMEs in the Yogyakarta Special Region use fintech as a means of payment out of the total number of MSMEs in the Yogyakarta Special Region of 344,304 MSMEs (Nugraha et al., 2022). In addition, based on the characteristics of the educational level classification, the majority of respondents have a high school education or equivalent. Therefore, not all female MSME actors in the Yogyakarta Special Region have optimal technological understanding in utilizing financial technology (fintech), so not many female MSME actors use the services offered by fintech.

5.3. Financial Inclusion and Financial Performance

The research results show that hypothesis 3 is accepted that financial inclusion has a positive effect on the financial performance of female MSME actors in the Special Region of Yogyakarta, where β = 0.200 and P-Value = 0.006 > 0.05 (Table 5). This means that the higher the financial inclusion, the more the financial performance of female MSMEs in the Special Region of Yogyakarta will improve. This statement is in line with what was written by Kaya (2022); Vo et al. (2022); and Obiedallah & Abdelaziz (2024). This illustrates that financial inclusion plays an important role in equalizing financial access for the entire community, especially female MSMEs, so that they have the knowledge, capacity and opportunity to be economically empowered (Kuada, 2022). This is in accordance with KBV theory, where knowledge about financial inclusion is important for female MSME actors because it has an impact on financial performance (Kuada, 2022; Simu et al., 2023). Female MSME actors in the Yogyakarta Special Region find access to financial services and products that make it easier for female MSME actors to get access to funding, access to savings and investment as well as easy access so that they can increase the productivity and financial performance of female MSME actors in the Yogyakarta Special Region.

5.4. Digital Financial Literacy, Financial Performance, and Financial Inclusion

The research results show that digital financial literacy has a positive effect on the financial performance of female MSMEs in the Special Region of Yogyakarta, partially mediated by financial inclusion, where β = 0.046 and P-Value = 0.014 < 0.05 (Tables 5 and 6). This shows that the financial performance of female MSME actors in the Special Region of Yogyakarta is partly influenced by digital financial literacy through financial inclusion and partly influenced directly by digital financial literacy. Therefore, the higher the digital financial literacy, the higher the financial inclusion, and the higher the financial performance, and conversely, the lower the digital financial literacy, the lower the financial inclusion, and the lower the financial performance. This statement is in line with what was written by Ravikumar et al. (2022) and Frimpong et al. (2022). This shows that the digital financial literacy skills possessed by female MSME actors in the Special Region of Yogyakarta encourage financial inclusion which makes it easier for female MSME actors to carry out digital financial transactions and access formal financial products and services such as investment services, services to access capital sources according to their abilities. Furthermore, female MSME actors who have financial inclusion capabilities to access various financial products and services will improve financial performance.

5.5. Financial Technology, Financial Performance, and Financial Inclusion

The results of this research show that fintech has a positive effect on the financial performance of female MSMEs in the Special Region of Yogyakarta, mediated by full financial inclusion, where $\beta = 0.125$ and P-Value = $0.009 < 0.05$ (Tables 5 and 6). This shows that the influence of fintech on the financial performance of female MSMEs in the Special Region of Yogyakarta is completely mediated by financial inclusion. Therefore, the higher the fintech, the higher the financial inclusion, and the higher the financial performance, and conversely the lower the fintech, the lower the financial inclusion, and the lower the financial performance. This statement is in line with what was written by Tchidi & Zhang (2024) and Sreenu (2024). This shows that the more female MSMEs in the Special Region of Yogyakarta who utilize fintech will encourage the achievement of access to formal financial products and services such as easy access to credit and sources of financing and investment. Furthermore, female MSME actors in the Special Region of Yogyakarta who already have easy access to formal financial products and services will improve their financial performance such as increasing market share, sales and business assets.

6. Conclusions

The results of this research show that digital financial literacy has an effect on financial performance, meaning that the higher the digital financial literacy possessed by female MSME actors, the more financial performance will be improved, fintech has no effect on financial performance, meaning that the higher or lower the fintech owned by female MSME actors will not increase or reduce financial performance.

Apart from that, the results of this research also show that digital financial literacy has an influence on the financial performance of female MSMEs in the Special Region of Yogyakarta, mediated by financial inclusion. This means that female MSME actors who have high digital financial literacy will use more formal financial institution products and know how to access capital sources according to their abilities, thereby increasing financial performance. Furthermore, fintech influences the financial performance of female MSMEs in the Special Region of Yogyakarta mediated by financial inclusion. This means that the more female MSMEs use fintech, the more it will encourage the implementation of access to financial services, thereby increasing financial performance.

It is hoped that future research can use combined research methods through focus group discussions and add non-impulsive behavior variables that influence financial performance so that better results are obtained. It is hoped that the implications of the results of this research can contribute to identifying emerging problems and urgency as well as producing a framework (digital financial literacy, fintech, and financial inclusion) to help the government design and initiate programs aimed at female MSMEs in the Special Region of Yogyakarta in improving financial performance.

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