

“Pentagon capital and performance of Indonesian women entrepreneurs: The role of the adoption of digital technology”

AUTHORS	Nungky Viana Feranita  Andrias Dwimahendrawan  Asmuni 
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Nungky Viana Feranita, Dr. in Business Administration, Faculty of Business Administration, College of Development Administration Sciences, Indonesia. (Corresponding author)

Andrias Dwimahendrawan, Dr. in Business Administration, Faculty of Business Administration, College of Development Administration Sciences, Indonesia.

Asmuni, Master in Public Administration, Faculty of Public Administration, College of Development Administration Sciences, Indonesia.



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Nungky Viana Feranita (Indonesia), Andrias Dwimahendrawan (Indonesia), Asmuni (Indonesia)

PENTAGON CAPITAL AND PERFORMANCE OF INDONESIAN WOMEN ENTREPRENEURS: THE ROLE OF THE ADOPTION OF DIGITAL TECHNOLOGY

Abstract

Pentagon capital is a term used to describe the five essential forms of capital: human, social, financial, physical, and intellectual. These five forms of capital play a crucial role in improving the performance of women entrepreneurs. Therefore, this study aims to analyze the effect of these five forms of capital on the performance of women entrepreneurs, both directly and indirectly, through the adoption of digital technology. The analysis was conducted in 38 regencies/cities located in East Java Province, Indonesia, and comprised 268 women entrepreneurs from various business sectors. Following this, the primary data source was collected through the distribution of questionnaires, and the partial least squares structural equation modeling (PLS-SEM) was utilized to assess both the direct and indirect effects of the observed capitals using SmartPLS 4.0 software. The results showed that only social capital had a direct and significant effect on the performance of women entrepreneurs. However, human, financial, physical, and intellectual capital were found to significantly affect the performance of entrepreneurs indirectly through the mediation of the adoption of digital technology. It is also expedient to acknowledge that among the observed variables, financial capital was found to be the most important (19%). These results offered practical understanding for women entrepreneurs on strategies to increase their business income and access loans from financial institutions and government assistance.

Keywords

East Java, entrepreneurship, dynamic capabilities, digitalization, strategy

JEL Classification

J16, L26, O31

INTRODUCTION

Micro, small and medium enterprises (MSME) contribute significantly to Indonesia's economic growth and employment rate. This sector accounts for 99.99% of business units and 96.92% of the total workforce employment compared to other larger companies (Ministry of Cooperatives and SMEs, 2019). Among all the provinces in Indonesia, East Java is ranked third, after West Java and Central Java. In East Java, 44.7% of MSMEs are owned by women, and it has been established that entrepreneurs exhibit substantial potential for economic development. Accordingly, data from the Central Bureau of Statistics (2023) have shown that the contribution of women entrepreneurs in East Java Province to the economy has increased over the last 10 years, amounting to approximately 34.17% in 2013 and 35.81% in 2022.

It is expedient to acknowledge that women entrepreneurs often face challenges when starting or running their businesses (Japhta et al., 2016). When starting a business, they often encounter financial difficulties, need help finding customers, face challenges in securing suit-

able business locations and employees, and may also need more self-confidence. Furthermore, women face significant challenges when competing with men in running a business. They also grapple with personal, household, and social constraints, and these challenges necessitate women entrepreneurs to enhance their performance.

According to Department for International Development (1999), there are five capital categories: human, social, financial, physical, and intellectual. Subsequently, Hendratmi et al. (2022) identified the relationships among these five forms of capital within the context of sustainable livelihoods. This was carried out to shed light on the survival strategies adopted by women entrepreneurs in Indonesia during the COVID-19 pandemic. The investigation was conducted by analyzing the effects of the five forms of capital on the adoption of digital technology and the performance of women entrepreneurs in East Java.

Gender differences are essential in the relationship between human capital and technology adoption (Skare & Blažević Burić, 2022). Women entrepreneurs often use social capital to develop their entrepreneurial capacity (Hammad & El Naggar, 2023). However, financial capital remains a significant limiting factor (Orser et al., 2020; Kovaleva et al., 2023). The adoption of digital technology has also been hindered by a lack of essential infrastructure (Awinia, 2023), and previous studies have established that intellectual capital affects the sustainability of a business (Ullah et al., 2022).

The adoption of digital technology is crucial for women entrepreneurs to effectively enhance their business performance. Therefore, it is interesting to determine what kind of capital is more critical for improving the performance of women entrepreneurs with the adoption of digital technology as a mediating variable.

1. LITERATURE REVIEW

Business performance as an entity can be directly determined by these five capitals, including human (Che & Zhang, 2018; Salam et al., 2019; Queiro, 2022), social (Olamide & Ogbechie, 2021; Zaato et al., 2022; Ding, 2022), financial (Adomako & Ahsan, 2022; Jayeola et al., 2022; Liu et al., 2022), physical capital (Verdecchia et al., 2022), and intellectual capital (Khan et al., 2021; Zakery & Saremi, 2021; Gómez-Valenzuela, 2022). However, it is vital to comprehend that the availability of research conducted to analyze the effect of these five variables on business performance through the adoption of digital technology is still relatively limited. This gap is still substantial even though empirical evidence has identified the adoption of digital technology as a significant performance influencer (Bhagat et al., 2021; Chirumalla, 2021; Matarazzo et al., 2021; Hwang & Kim, 2022; Li et al., 2022; Ramírez-Solis et al., 2022; Songkajorn et al., 2022; Yunita et al., 2023).

Human capital is a comprehensive term used to describe the valuable assets and potential embodied within individuals (Kungwansupaphan &

Leihaothabam, 2016). This form of capital comprises individuals' skills, knowledge, and abilities (Department for International Development, 1999), which affects their capacity for creative thinking and action (Hendratmi et al., 2022). According to Asif and Lahiri (2021), education, as one dimension of human capital, is measured through cognitive skills. Indisputably, human capital is a core factor in the entrepreneurship process. Entrepreneurs with higher levels of human capital were found to be more effective in decision-making, identifying opportunities, and exploitation (Ganotakis et al., 2021).

The factor was observed to ultimately bring about better business performance. Che and Zhang (2018) found that Chinese manufacturing companies that utilized more human capital experienced increased total factor productivity. Furthermore, companies with human capital-intensive processes were found to experience significant growth and accelerated adoption of new technologies compared to previous years. In Portugal, entrepreneurs with higher levels of education were observed to typically manage larger companies and exhibit more substantial growth rates (Queiro,

2022). Competent digital human resources accelerated the economic growth of low and middle-income countries (Giotopoulos et al., 2017; Salam et al., 2019).

Following human capital, social capital is defined as the ability to interact with the environment (Hendratmi et al., 2022), referring to interpersonal relationships and the resources encapsulated within those relationships. Indisputably, this aspect is crucial for women engaged in entrepreneurial activities (Kungwansupaphan & Leihaothabam, 2016). There are two forms of social capital (Zelege et al., 2023): cognitive and structural. The cognitive dimension includes social networks, norms, and trust (Departement for International Development, 1999; Hunecke et al., 2017; Ren et al., 2022; Lawa & E-Vahdati, 2022). Meanwhile, the structural dimension is related to social organizations.

This study conceptualized social capital among women entrepreneurs from both internal and external perspectives. Internal social capital comprises close friends, family members, business partners, and employees, while external social capital includes customers, suppliers, competitors, and associations. According to Olamide and Ogbechie (2021), there is a significant and meaningful effect on business performance from both internal and external social capital in the domain of women-owned informal sector MSME in Nigeria, with external social capital producing a more pronounced effect. Moreover, business performance has become more successful with the increased use of digital technology within social capital. Previous research also established that networks of internal and external social capital enhanced MSME performance in Ghana (Zaato et al., 2022). Ding (2022) observed a mediating role of digital technology capabilities between social capital and MSME performance in China.

The third form of capital observed in this paper is financial capital. This capital represents the financial resources accessible by the community, such as savings and credit supplies (Departement for International Development, 1999; Ahmed & Wahid, 2011; Hendratmi et al., 2022), which plays a crucial role in entrepreneurship, specifically during the initial stages of starting a busi-

ness. The resource is considered a significant obstacle for many women entrepreneurs, and this is primarily because, compared to men, women are less likely to use external sources of funding and often rely on internal sources such as personal savings or financial support from family and friends (Kungwansupaphan & Leihaothabam, 2016).

Jayeola et al. (2022) observed that manufacturing MSMEs in Malaysia receiving government financial assistance performed better compared to those who did not. Similarly, in Ghana, access to government assistance was found to affect MSME performance in the country (Zaato et al., 2022). MSME owners in Ghana could also access financial capital from other sources, such as business profits and loans from financial institutions for business development (Adomako & Ahsan, 2022). Lastly, Liu et al. (2022) indicated the significant effect of formal and informal funding through banking structures on the growth of technology-adopting MSMEs in China.

Following financial capital, the fourth form of essential business resource is physical capital. This form of capital consists of basic infrastructure and the production of goods needed to support a business (Hendratmi et al., 2022). In this context, infrastructure comprises the physical environments, and production goods refer to the types of equipment and supplies used. According to Departement for International Development (1999), integral infrastructure components include affordable transportation, secure shelter and buildings, and access to information (communication).

In companies with a higher physical capital intensity than other forms of capital, the importance and prevalence of physical resources are most conspicuous. As a result, physical capital becomes the primary resource for company operations (Zheng et al., 2020). In the long term, digital infrastructure has become a crucial part of physical capital, affecting the adoption of digital technology. Based on this insight, companies with dynamically allocated digital infrastructure experienced more pronounced and sustainable growth (Verdecchia et al., 2022).

The last form of capital explored in this study is intellectual capital, which refers to intellectual abilities and knowledge contributing significant-

ly to developing organizational values (Abbas et al., 2022). This concept is a combination of human, structural, and relational capital (Do Rosário Cabrita & Bontis, 2008; Khan et al., 2021; Gómez-Valenzuela, 2022). However, Hendratmi et al. (2022) interpreted intellectual capital as intangible resources that contribute to the strategic value of an organization. Examples of this form of capital include an excellent reputation, non-physical assets such as intellectual property, and certifications to facilitate business smoothness and development.

Previous research has established that intellectual capital has a significant effect on the financial and non-financial performance of manufacturing MSMEs in Pakistan (Khan et al., 2021) and the Dominican Republic (Gómez-Valenzuela, 2022). Similarly, in China, intellectual capital also substantially and positively affected the performance of manufacturing companies and their sustainable competitive advantage (Anwar et al., 2021). This factor was even considered a prerequisite for MSME internationalization in Iran (Zakery &

Saremi, 2021). It is necessary to comprehend that in the context of the adoption of digital technology, intellectual capital is crucial for achieving competitive advantage and growth for companies (Phonthanakitithaworn et al., 2023).

2. AIM AND HYPOTHESES

This study aims to analyze the effect of human, social, financial, physical, and intellectual capital on the performance of women entrepreneurs, both directly and indirectly through the adoption of digital technology. The model framework and hypotheses are shown in Figure 1. Based on the outlined aim, the following hypotheses were proposed:

- H_1 : Human capital affects the performance of women entrepreneurs.
- H_2 : Human capital affects the performance of women entrepreneurs through the adoption of digital technology.

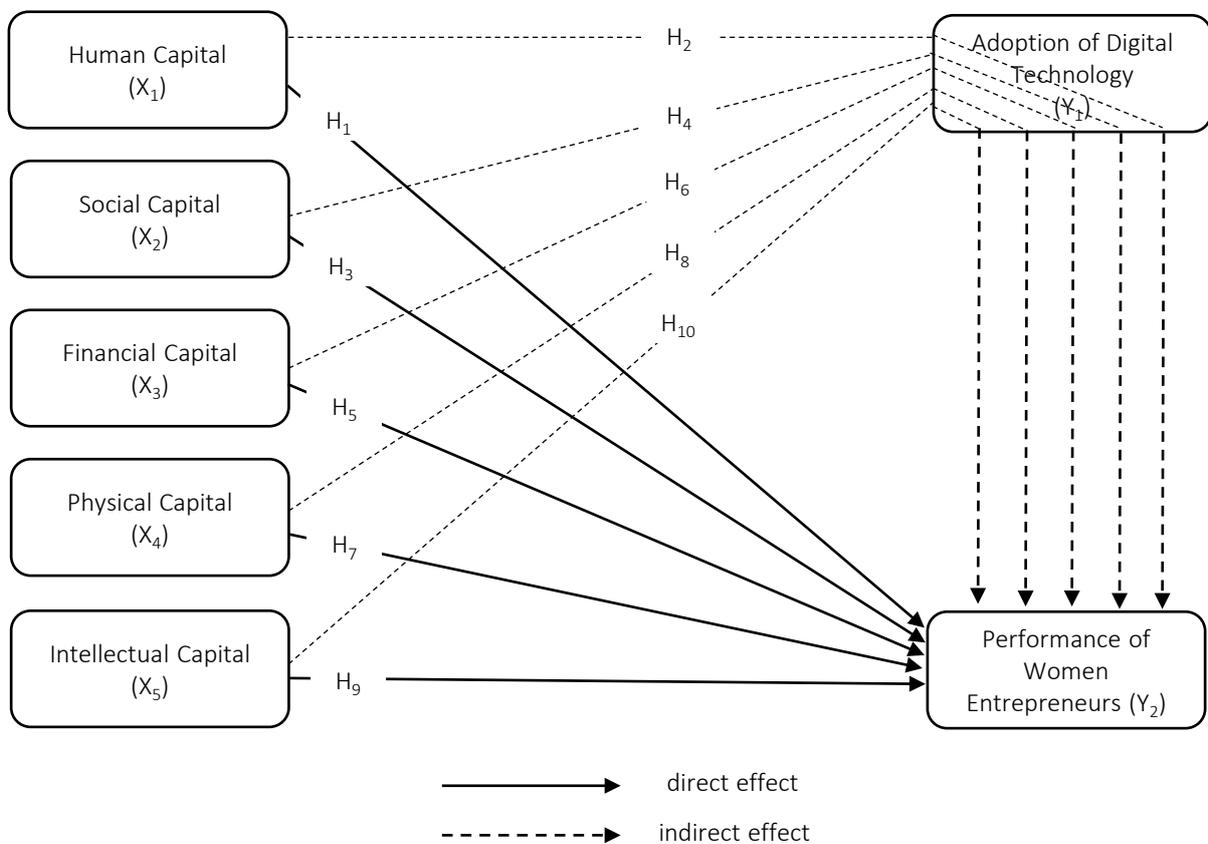


Figure 1. Conceptual model

- H_3 : *Social capital affects the performance of women entrepreneurs.*
- H_4 : *Social capital affects the performance of women entrepreneurs through the adoption of digital technology.*
- H_5 : *Financial capital affects the performance of women entrepreneurs.*
- H_6 : *Financial capital affects the performance of women entrepreneurs through the adoption of digital technology.*
- H_7 : *Physical capital affects the performance of women entrepreneurs.*
- H_8 : *Physical capital affects the performance of women entrepreneurs through the adoption of digital technology.*
- H_9 : *Intellectual capital affects the performance of women entrepreneurs.*
- H_{10} : *Intellectual capital affects the performance of women entrepreneurs through the adoption of digital technology.*

3. METHOD

This study was conducted in East Java Province, which comprises 38 regencies and cities. This province was selected primarily because it still plays a significant role in advancing the local economy through the MSME sector. According to various assessments, MSME in East Java ranks third and plays a primary role in supporting the grassroots economy compared to other provinces.

The population for this analysis comprised all women entrepreneurs registered with the Department of Cooperatives and SMEs of East Java Province, totaling 394 respondents. The sample comprised 268 women-entrepreneurs selected based on specific criteria using purposive sampling. The criteria included that the participants must have integrated digital technology into their marketing approaches. Following this, data collection was performed through questionnaires distributed to respondents from July to August 2023.

Variables were measured using a questionnaire adapted from previous relevant works. The measurement of human capital was adapted from Kabir et al. (2012), Kungwansupaphan and Leihaothabam (2016), Giotopoulos et al. (2017), and Ganotakis et al. (2021), which consists of three dimensions: education, skills/expertise, and experience. Social capital was measured using internal and external dimensions (Olamide & Ogbechie, 2021). Dimensions used for financial capital include personal, financial institutions, and government (Ahmed & Wahid, 2011; Kabir et al., 2012; Hendratmi et al., 2022; Jayeola et al., 2022). Then, physical capital dimensions consist of property and Information and Communication Technology (ICT) equipment (Ahmed & Wahid, 2011; Kabir et al., 2012; Zheng et al., 2020). Intellectual capital dimensions use reputation and non-physical assets (Hendratmi et al., 2022).

Furthermore, the adoption of digital technology was adapted from questionnaires developed by Pergelova et al. (2019). Therefore, this study focuses on infrastructure use, management information system (MIS) use, and internet use. Performance was measured using the findings of Feranita et al. (2020), Olamide and Ogbechie (2021), and Adomako and Ahsan (2022). Its dimensions are measured based on the market shares, sales, and profits.

Partial least squares-structural equation modeling (PLS-SEM) with SmartPLS 4.0 software was used to determine the direct and indirect effects of the five forms of capital on the performance of women entrepreneurs, with the adoption of digital technology serving as a mediator.

4. RESULTS

The validity tests for all variables yielded correlation values with p-values $< \alpha$ (0.05), confirming the authenticity of all the statement items. Furthermore, the test produced Cronbach's Alpha coefficients > 0.60 , indicating the reliability of the variables. The results of the validity and reliability tests are presented in Table 1.

The general characteristics of respondents based on the business sector, marital status, age, highest education level, duration of running the business, and the number of employees are presented

Table 1. Validity and reliability tests

Variables	Dimension	Cronbach's Alpha	Correlation
Human Capital (X ₁)	Education (X _{1,1})	0.842	
	Background education of women entrepreneurs		0.919
	Educational background of employees		0.946
	Skills/Expertise (X _{1,2})	0.787	
	Skills/expertise of women entrepreneurs		0.902
	Skills/expertise of employees		0.914
	Experience (X _{1,3})	0.801	
	Experience of women entrepreneurs		0.906
	Experience of employees		0.922
Social Capital (X ₂)	Internal (X _{2,1})	0.875	
	Support from family members		0.894
	Valuable advice from employees		0.860
	Close friends providing feedback		0.858
	Business partners collaborating		0.818
	External (X _{2,2})	0.813	
	Strong relationships with loyal customers		0.723
	Cost reduction from suppliers for purchasing raw materials		0.889
	Interaction with business competitors in terms of access to information		0.746
	Business associations/communities for sharing experiences and knowledge		0.870
Financial Capital (X ₃)	Personal (X _{3,1})	0.908	
	Capital from personal savings		0.959
	Business income to increase capital		0.956
	Financial Institutions (X _{3,2})	0.732	
	Capital from banks		0.924
	Capital from non-bank financial institutions		0.861
	Government (X _{3,3})	0.832	
	Financial cash assistance		0.937
	Subsidized interest rate assistance		0.916
Physical Capital (X ₄)	Property (X _{4,1})	0.888	
	Strategic location and easily accessible business		0.951
	Warehouses for storing raw materials or finished products		0.946
	ICT Equipment (X _{4,2})	0.735	
	Complete ICT devices		0.883
	Smooth Internet connectivity facilities		0.895
Intellectual Capital (X ₅)	Reputation (X _{5,1})	0.845	
	Social media for building a business reputation		0.928
	Reputation/good name in the community		0.933
	Non-Physical Assets (X _{5,2})	0.818	
	Intellectual property rights for business protection		0.937
	Certifications for business competitiveness		0.908
Adoption of Digital Technology (Y ₁)	Infrastructure Use (Y _{1,1})	0.959	
	Marketing and selling products through e-commerce		0.981
	Online ordering and payment systems		0.979
	MIS Use (Y _{1,2})	0.880	
	Customers obtain product information through e-commerce accounts		0.943
	Women entrepreneurs obtain raw material information through e-commerce accounts		0.948
	Internet Use (Y _{1,3})	0.842	
	The Internet is a digital tool in all business processes		0.934
	The Internet creates added value for the business		0.925
Business Performance (Y ₂)	Market Share (Y _{2,1})	0.824	
	Increased market share every period		0.934
	Better market share compared to competitors		0.913
	Sales (Y _{2,2})	0.907	
	Increased sales every period		0.962
	Better sales compared to competitors		0.953
	Profit (Y _{2,3})	0.866	
	Increased profit every period		0.950
	Better profit compared to competitors		0.932

Table 2. Characteristics of respondents

No.	Characteristics	Description	Distribution	
			Frequency	Percentage (%)
1.	Business Sector	Culinary (food/beverages)	172	64.2
		Fashion	29	10.8
		Beauty	25	9.3
		Crafts	15	5.6
		Household needs	13	4.9
		Others	14	5.2
		Total	268	100.0
2.	Marital Status	Married	230	85.8
		Not married	26	9.7
		Widowed	12	4.5
		Total	268	100.0
3.	Age (years)	≤ 20	9	3.4
		21-30	97	36.2
		31-40	88	32.8
		41-50	53	19.8
		≥ 50	21	7.8
		Total	268	100.0
4.	Education Level	Junior High School	46	17.2
		Senior/Vocational High School	124	46.3
		Diploma	13	4.9
		Bachelor's Degree	69	25.7
		Others	16	5.9
		Total	268	100.0
5.	Duration of Running the Business (Years)	≤ 3	133	49.6
		4-6	57	21.3
		7-9	30	11.2
		10-12	16	6.0
		≥ 13	32	11.9
		Total	268	100.0
6.	Number of Employees (people)	1-4	253	94.4
		5-19	13	4.9
		≥ 20	2	0.7
		Total	268	100.0

in Table 2. The culinary sector (food/beverages) dominated the business landscape. The majority of respondents were married. Their most common age range was between 21-30 years. Most respondents' highest education level was Senior/Vocational High School graduates. Furthermore, respondents commonly reported running their businesses for a duration of ≤ 3 years. Lastly, the most common number of employees for respondents was within the range of 1-4 individuals.

The hypotheses were tested using the PLS-SEM analysis technique. The assessment of the analysis results consisted of an evaluation of both the outer and inner models. This evaluation assessed the reflective measurement and the structural models, respectively (Hair Jr. et al., 2022).

The evaluation of the reflective measurement model comprised four distinct steps. The initial step includes assessing indicator reliability by examining the outer loading values, with the standard threshold 0.708 or higher. Accordingly, in the second step, the internal consistency reliability was evaluated with the criteria of Cronbach's Alpha and composite reliability, with values between 0.70 and 0.90 considered satisfactory. The results of the construct reliability test are presented in Table 3. Each indicator had an outer loading value > 0.708, and all the research variables yielded Cronbach's Alpha values greater than 0.70 and composite reliability > 0.80, indicating high reliability levels.

The third step includes establishing convergent validity using the Average Variance Extracted (AVE)

Table 3. Indicator reliability, internal consistency reliability, convergent validity, and VIF

Variable	Indicator	Outer Loading	Cronbach's Alpha	Composite Reliability	AVE	VIF
Human Capital (X ₁)	X _{1,1}	0.864	0.890	0.931	0.818	2.269
	X _{1,2}	0.922				2.868
	X _{1,3}	0.926				2.910
Social Capital (X ₂)	X _{2,1}	0.858	0.710	0.873	0.774	1.436
	X _{2,2}	0.901				1.436
Financial Capital (X ₃)	X _{3,1}	0.715	0.725	0.844	0.645	1.112
	X _{3,2}	0.834				2.980
	X _{3,3}	0.853				3.069
Physical Capital (X ₄)	X _{4,1}	0.825	0.713	0.870	0.770	1.442
	X _{4,2}	0.927				1.442
Intellectual Capital (X ₅)	X _{5,1}	0.949	0.862	0.935	0.878	2.340
	X _{5,2}	0.925				2.340
Adoption of Digital Technology (Y ₁)	Y _{1,1}	0.887	0.853	0.911	0.773	2.247
	Y _{1,2}	0.860				1.898
	Y _{1,3}	0.890				2.273
Business Performance (Y ₂)	Y _{2,1}	0.940	0.928	0.954	0.874	3.712
	Y _{2,2}	0.935				3.864
	Y _{2,2}	0.929				3.477

measure, with the benchmark being an AVE value of 0.50 or higher. Accordingly, each research variable had an AVE value > 0.50 (Table 3), indicating that these constructs explained more than half of the indicator variances.

Lastly, the fourth step comprised the measurement of discriminant validity using cross-loading values. According to this criterion, the outer loading of an indicator on its related construct should be greater than other constructs. The discriminant

validity results (Table 4) showed that each indicator exhibited a high outer loading value, indicating good discriminant validity.

The structural model evaluation procedure consisted of four stages. The first stage assessed the model for multicollinearity by examining the Variance Inflation Factor (VIF) value, which was considered satisfactory in the predictor constructs because the obtained value was below the maximum limit of 5. Table 3 shows that each indicator

Table 4. Discriminant validity

Indicator	Variable						
	X ₁	X ₂	X ₃	X ₄	X ₅	Y ₁	Y ₂
X _{1,1}	0.864	0.393	0.300	0.408	0.391	0.468	0.242
X _{1,2}	0.922	0.440	0.349	0.449	0.415	0.557	0.417
X _{1,3}	0.926	0.503	0.340	0.458	0.451	0.585	0.411
X _{2,1}	0.451	0.858	0.256	0.364	0.316	0.415	0.299
X _{2,2}	0.426	0.901	0.355	0.414	0.338	0.426	0.429
X _{3,1}	0.370	0.331	0.715	0.439	0.476	0.565	0.468
X _{3,2}	0.268	0.264	0.834	0.431	0.407	0.511	0.293
X _{3,3}	0.211	0.226	0.853	0.428	0.391	0.505	0.254
X _{4,1}	0.367	0.378	0.397	0.825	0.467	0.453	0.329
X _{4,2}	0.473	0.403	0.542	0.927	0.606	0.713	0.457
X _{5,1}	0.450	0.374	0.560	0.605	0.949	0.720	0.447
X _{5,2}	0.419	0.318	0.444	0.554	0.925	0.607	0.360
Y _{1,1}	0.501	0.389	0.594	0.620	0.624	0.887	0.518
Y _{1,2}	0.548	0.432	0.582	0.588	0.650	0.860	0.484
Y _{1,3}	0.528	0.439	0.586	0.605	0.608	0.890	0.533
Y _{2,1}	0.408	0.415	0.422	0.456	0.410	0.588	0.940
Y _{2,2}	0.341	0.388	0.395	0.400	0.395	0.506	0.935
Y _{2,2}	0.383	0.370	0.417	0.426	0.414	0.533	0.929

Table 5. Path coefficient, t-statistics, and p-values

	Hypothesis	Path Coefficient	T-Statistics	P-Values	Result
H ₁	Human Capital (X ₁) → Business Performance (Y ₂)	0.033	0.488	0.625	Rejected
H ₂	Human Capital (X ₁) → Adoption of Digital Technology (Y ₁) → Business Performance (Y ₂)	0.086	3.103	0.002*	Accepted
H ₃	Social Capital (X ₂) → Business Performance (Y ₂)	0.162	2.744	0.006*	Accepted
H ₄	Social Capital (X ₂) → Adoption of Digital Technology (Y ₁) → Business Performance (Y ₂)	0.025	1.310	0.190	Rejected
H ₅	Financial Capital (X ₃) → Business Performance (Y ₂)	0.077	1.195	0.232	Rejected
H ₆	Financial Capital (X ₃) → Adoption of Digital Technology (Y ₁) → Business Performance (Y ₂)	0.113	3.158	0.002*	Accepted
H ₇	Physical Capital (X ₄) → Business Performance (Y ₂)	0.057	0.818	0.413	Rejected
H ₈	Physical Capital (X ₄) → Adoption of Digital Technology (Y ₁) → Business Performance (Y ₂)	0.081	2.858	0.004*	Accepted
H ₉	Intellectual Capital (X ₅) → Business Performance (Y ₂)	0.002	0.027	0.978	Rejected
H ₁₀	Intellectual Capital (X ₅) → Adoption of Digital Technology (Y ₁) → Business Performance (Y ₂)	0.119	3.468	0.001*	Accepted

Note: * indicates significance at the 5% level.

had a VIF value < 5, indicating a non-significant effect of multicollinearity on the structural model estimate.

The second stage assessed the significance and relevance of the relationships in the structural model. The estimation of these relationships (path coefficients) represented the hypothesized interconnectedness between the constructs with standardized values ranging from -1 to +1. Furthermore, the significance was evaluated using empirical t-values and p-values for all structural path coefficients. When the empirical t-value is greater than the critical value (1.96) or the p-value is less than 0.05, the coefficient is considered statistically significant at the 5% significance level. The assessment results are shown in Table 5.

Table 5 shows that the path coefficient values of all the variables in this model were positive. In addition, out of the 10 hypotheses proposed, only five were accepted. The hypothesis testing identified one significant direct path and four significant indirect paths in the analysis.

Table 6. Direct, indirect, and total effects

Regression models	Direct Effect	Indirect Effect	Total Effect
Human Capital (X ₁) → Business Performance (Y ₂)	0.033	0.086	0.119
Social Capital (X ₂) → Business Performance (Y ₂)	0.162	0.025	0.187
Financial Capital (X ₃) → Business Performance (Y ₂)	0.077	0.113	0.19
Physical Capital (X ₄) → Business Performance (Y ₂)	0.057	0.081	0.138
Intellectual Capital (X ₅) → Business Performance (Y ₂)	0.002	0.119	0.121

Table 6 presents the results of the direct, indirect, and total effects testing. The total effect of the independent variables, namely human, social, financial, physical, and intellectual capital, was 11.9%, 18.7%, 19%, 13.8%, and 12.1%, respectively.

The third step was carried out to assess the model's explanatory power using the coefficient of determination (R²), where the R² value ranged from 0 to 1. Lastly, in the fourth step, the predictive power of the model was evaluated, which referred to the Q² value as an appropriate measure. Table 7 shows a Q² value of 0.820, indicating that the model explained 82% of the variance in the research data, while external factors explained the remaining 18%. Therefore, the research model was concluded to exhibit a strong goodness of fit.

Table 7. R² and Q² values

Variable	R ² Value	Q ² Value
Adoption of Digital Technology	0.713	0.820
Business Performance	0.371	

5. DISCUSSION

Human capital was found to exhibit no significant effect on the performance of women entrepreneurs; hence, H_1 was rejected. This suggested that human capital, consisting of three dimensions (education, skills/expertise, and experience), did not directly affect the performance of women entrepreneurs. Furthermore, based on the outlined characteristics of the observed respondents, it was evident that the majority (63.5%) of the participants were graduates of junior and senior high schools. Following this observation, it is expedient to acknowledge that different results may occur if they were graduates of higher institutions since education is considered one of the dimensions of human capital (Asif & Lahiri, 2021). In this regard, women entrepreneurs with higher levels of education were anticipated to exhibit superior performance (Queiro, 2022).

Human capital was also found to significantly affect the performance of women entrepreneurs through the adoption of digital technology, thereby leading to the acceptance of H_2 , which was similar to the findings of Che and Zhang (2018) and Salam et al. (2019). Based on the results presented in Table 6, it can be observed that the indirect effect of human capital on business performance (0.086) had a greater value compared to its direct effect (0.033), thereby indicating a more substantial contribution. Furthermore, the contribution provided by the adoption of digital technology made it capable of serving as a mediator between human capital and the performance of women entrepreneurs.

Following human capital, social capital was also found to significantly influence the respondents' performance, making H_3 accepted. This means both the internal and external dimensions of social capital stimulated the improvement of their performance. According to the description of the research variables, two statements fell into the "very good" category. These statements include the fact that women entrepreneurs receive support from family members and maintain strong relationships with customers, thereby enhancing their performance. The results supported the empirical evidence, which indicated business performance as an entity achievable through social capital (Olamide & Ogbechie, 2021; Zaato et al., 2022; Ding, 2022).

Social capital did not significantly affect the performance of women entrepreneurs through the adoption of digital technology; hence, H_4 was rejected. Table 6 shows that the indirect effect of social capital on business performance was smaller compared to the direct effect (indirect effect of 0.025 and direct effect of 0.162), leading to a smaller contribution. In this situation, the contribution of the adoption of digital technology was insufficient to mediate between human capital and the performance of women entrepreneurs. From an empirical perspective, the results did not align with previous research (Olamide & Ogbechie, 2021; Ding, 2022).

Following this, financial capital did not significantly affect the performance of women entrepreneurs, leading to the rejection of H_5 . This suggested that the supporting dimensions of financial capital possessed by women entrepreneurs, whether from personal sources, financial institutions, or the government, needed to be revised to boost their performance. Specifically, the government dimension showed the limited financial assistance still being received by women entrepreneurs, either in cash or through interest rate subsidies. Previous research showed the effect of financial capital on the business performance of MSMEs with a minimum of 5 years of operational experience (Adomako & Ahsan, 2022). Conversely, this study predominantly focused on women entrepreneurs with less than or equal to 3 years of business operation (49.6%), leading to distinct results.

Financial capital was also observed to significantly impact the performance of women entrepreneurs through the adoption of digital technology, supporting H_6 . This finding was in line with Liu et al. (2022). Based on Table 6, the indirect effect of financial capital on business performance was greater than the direct effect, with a value of 0.113 and 0.077, respectively, resulting in a larger contribution. In this context, the contribution provided by the adoption of digital technology made the variable capable of mediating financial capital and women entrepreneurs' performance.

Following this, physical capital did not significantly affect the performance of entrepreneurs, leading to the rejection of H_7 . This implies that physical capital, consisting of property and ICT equipment dimensions, was insufficient to en-

hance the performance of women entrepreneurs. In this situation, it is expedient to comprehend the crucial role of comprehensive tools (computers, smartphones, etc.) and a stable internet connection in the successful and seamless management and operations of online businesses. However, the women entrepreneurs had limited access to ICT equipment (Zheng et al., 2020).

In opposition to the direct effect, physical capital was found to significantly affect the performance of women entrepreneurs through the adoption of digital technology, indicating the acceptance of H_8 . Table 6 indicates that the indirect effect of physical capital on business performance was greater than its direct effect (indirect effect of 0.081 and direct effect of 0.057), resulting in a more considerable contribution. Furthermore, based on the contribution provided by the adoption of digital technology, it was considered capable of serving as a mediator between physical capital and the performance of women entrepreneurs, which corroborated Verdecchia et al. (2022).

Lastly, the effect of intellectual capital on the performance of women entrepreneurs was found to be insignificant, leading to the rejection of H_9 .

This implied that reputation and non-physical assets as dimensions within intellectual capital did not improve entrepreneurs' business performance. Previous research conducted using indicators of human, structural, and relational capital (Khan et al., 2021; Gómez-Valenzuela, 2022; Zakery & Saremi, 2021) showed the effect of intellectual capital on business performance. On the other hand, this study assessed intellectual capital through factors such as reputation and non-physical assets and presented divergent results indicating that intellectual capital did not significantly influence the performance of women entrepreneurs.

However, through the adoption of digital technology, intellectual capital exhibited a substantial impact, indicating the acceptance of H_{10} . This result is in line with Phonthanukitithaworn et al. (2023). According to Table 6, the indirect effect of intellectual capital on business performance was greater than the direct effect, with values of 0.119 and 0.002, respectively, resulting in a more considerable contribution. Finally, based on the contribution provided by the adoption of digital technology, it was considered capable of serving as a mediator between intellectual capital and the performance of women entrepreneurs.

CONCLUSION

This study aimed to analyze the effect of Pentagon capital on the performance of women entrepreneurs directly and indirectly through the adoption of digital technology. Following this, the path analysis results indicated that human, financial, physical, and intellectual capital had a positive and insignificant direct effect on the performance. These four forms of capital were also found to exhibit a positive and significant indirect effect on performance by adopting digital technology, acting as the mediating variable. This implied that the adoption of digital technology played a crucial role in the relationship between human, financial, physical, and intellectual capital and the performance of women entrepreneurs. Furthermore, social capital was found to exhibit a positive and significant direct effect and a positive yet insignificant indirect effect on performance. In terms of their collective impact, the five forms of capital demonstrated varying degrees of influence, with financial capital having the highest effect (19%), followed by social (18.7%), physical (13.8%), intellectual (12.1%), and human capital (11.9%). Based on this observation, it was concluded that financial capital played the most significant role in improving the performance of women entrepreneurs.

As a result, several recommendations were suggested for relevant stakeholders. First, financial institutions, both banks and non-banks (cooperatives, pawnshops), were elicited to provide loans to assist in capitalization and sustain the businesses of women entrepreneurs. Second, the government was advised to provide financial assistance through cash grants for securing adequate capital and interest rate subsidies for business financing. These programs were expected to enhance the performance of women entrepreneurs.

Subsequently, it is expedient to acknowledge that two distinct factors limited this paper. The first limitation was the used sample, which was drawn from various business sectors. In this situation, future works could focus on more specific sectors of women entrepreneurs to obtain relatively homogeneous data. Secondly, the analysis was conducted only among women entrepreneurs in East Java Province. In order to address this limitation, future endeavors could cover a broader geographical area for national generalization.

AUTHOR CONTRIBUTIONS

Conceptualization: Nungky Viana Feranita, Andrias Dwimahendrawan, Asmuni.

Data curation: Andrias Dwimahendrawan.

Formal analysis: Nungky Viana Feranita.

Funding acquisition: Nungky Viana Feranita.

Investigation: Andrias Dwimahendrawan, Asmuni.

Methodology: Nungky Viana Feranita, Asmuni.

Project administration: Nungky Viana Feranita, Asmuni.

Resources: Asmuni.

Software: Andrias Dwimahendrawan.

Supervision: Nungky Viana Feranita.

Validation: Nungky Viana Feranita.

Visualization: Andrias Dwimahendrawan.

Writing – original draft: Nungky Viana Feranita.

Writing – review & editing: Nungky Viana Feranita.

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