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Building Competitive Advantages in Women's Cooperative Member Businesses: The Role of Digital Capability, Market Orientation, and Strategic Agility

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ABSTRACT

Changes in the business environment and the development of digital technology require micro and small business actors to improve their adaptability and competitiveness. In facing these dynamics, digital capabilities, market orientation, and strategic agility are important aspects for business sustainability. This study aims to analyze the influence of digital capabilities and market orientation on the competitive advantage of women's cooperative members' businesses in Jombang Regency, with strategic agility as a mediating variable. This study uses a quantitative approach through a survey of 220 women's cooperative members who own and manage active businesses. Data were collected using a five- point Likert-scale questionnaire and analyzed using the *Partial Least Squares–Structural Equation Modeling* (PLS-SEM) method using SmartPLS 3. Hypothesis testing was conducted through a *bootstrapping procedure* . The results show that digital capabilities have a positive and significant effect on competitive advantage (β = 0.313) and strategic agility (β = 0.549). Market orientation also has a positive and significant effect on competitive advantage (β = 0.204) and strategic agility (β = 0.342). In addition, strategic agility has a positive and significant effect on competitive advantage (β = 0.406). The results of the mediation test indicate that strategic agility partially mediates the influence of digital capabilities (β = 0.223) and market orientation (β = 0.139) on competitive advantage. The results of this study can be concluded that digital capabilities and market orientation supported by strategic agility play a significant role in building competitive advantage. These results emphasize the need for business training and mentoring

Keywords: Digital Capabilities, Competitive Advantage, Strategic Agility, Women's Cooperatives, Market Orientation

that integrate digital skills, market understanding, and the ability to respond to changes in the business environment.

INTRODUCTION

Digital transformation, intensifying competition, and changing consumer preferences have changed the foundation of small businesses' competitive advantage: business success is now determined by the ability to leverage technology, read market dynamics, and adapt timely responses. This urgency is particularly acute for women's cooperative members, as this group sits at the intersection of women's economic empowerment, MSME strengthening, and cooperative modernization. Nationally, women manage approximately 64.5% of MSMEs in Indonesia, or approximately 37 million business owners. By the first semester of 2025, QRIS had reached 39.3 million *merchants* , 93.16% of which were MSMEs. At the local level, Jombang Regency comprises 21 sub-districts, 301 villages, and 5 urban villages, with women's cooperatives spread throughout the region (Mutiarni, 2017). This configuration shows that women's cooperatives in Jombang are a broad economic institutional base, so that the competitiveness of their members' businesses is relevant to be studied from a strategic management perspective (Bank Indonesia, 2025; Jombang Regency Cooperative and Micro Enterprises Office, 2024; Jombang Regency Community and Village Empowerment Office, 2024; Ministry of Communication and Digital, 2024).

Digital capability is understood as a strategic resource that expands access to information, increases efficiency, strengthens marketing reach, and improves decision quality, thus helping some small businesses build a more sustainable competitive advantage (da Silva et al., 2025; Saeedikiya et al., 2024; Valdez-Juárez et al., 2024; Van Hoang et al., 2025). In Indonesia, digital capability is associated with the competitiveness of MSMEs, including *women-owned MSMEs* (Henryanto et al., 2025; Hidayati et al., 2025; Susanti et al., 2023). Business mentoring at the village level in Jombang Regency has also introduced social media, WhatsApp Business, and Google Maps as marketing tools for village-owned enterprises (BUMDes) and MSMEs (Mutiarni & Fitriani, 2021; Rofiah et al., 2024). Market orientation, namely the ability to obtain, interpret, and respond to market intelligence, is positively related to SME performance and *competitive advantage* , including in Indonesia (Alhakimi & Mahmoud, 2020; Arifin et al., 2025; Butkouskaya et al., 2024; Hidayati et al., 2025; Sinaga, 2025), and is relevant for micro-scale women's cooperative member businesses.

However, this relationship is not always straightforward. *Strategic agility* , the ability to act nimbly when the environment changes, deserves to be positioned as an explanatory mechanism between resources, strategic orientation, and competitive outcomes (Adomako et al., 2022; Alkandi & Helmi, 2024; Onngam & Charoensukmongkol, 2024; Tufan & Mert, 2023); in digitalized businesses, *agility* also bridges *digital capability* with *competitiveness*

(Cuong et al., 2025; Henryanto et al., 2025; Onngam & Charoensukmongkol, 2024). However, most studies position digital capability or market orientation as a direct explanation of performance without elaborating on the transmission mechanisms. Research on women's businesses generally focuses on *women-owned MSMEs* , digital literacy, financial literacy, or business sustainability (Asandimitra et al., 2024), while studies on women's cooperatives in Jombang Regency have focused more on institutional and administrative aspects, such as the implementation of electronic data processing in transaction recording and the punctuality of annual member meetings (Mutiarni, 2017, 2019). Consequently, the competitiveness of women's cooperative member businesses has not been widely studied. The key question is whether digital capabilities and market orientation directly form a competitive advantage or are strengthened through *strategic agility* (Adomako et al., 2022; Asandimitra et al., 2024; Henryanto et al., 2025; Susanti et al., 2023).

Theoretically, this gap is important because the *dynamic capabilities perspective* views competitive advantage as the result of the ability to sense change, seize opportunities, and reorganize resources, with digital transformation as the activation of dynamic capabilities and *strategic agility* as the translation mechanism (Adomako et al., 2022; Saeedikiya et al., 2024; Valdez-Juárez et al., 2024; Van Hoang et al., 2025). This study aims to analyze the influence of digital capabilities and market orientation on the competitive advantage of women's cooperative members' businesses in Jombang Regency with *strategic agility* as a mediating variable. Its contributions: (1) positioning *strategic agility* as an explanatory mechanism, not a complementary variable; (2) enriching the evidence in the context of village-based women's cooperative members; and (3) provide implications for women's cooperatives, local governments, and business actors (Bank Indonesia, 2025; Jombang Regency Cooperative and Micro Enterprise Service, 2024; Jombang Regency Community and Village Empowerment Service, 2024; Henryanto et al., 2025; Susanti et al., 2023).

RESEARCH METHODS

C.1 Design, Population, and Sample

This study uses a quantitative approach with a *cross-sectional explanatory survey design* to test a theoretically formulated structural model. The unit of analysis is businesses run by women's cooperative members in Jombang Regency, East Java, chosen due to its broad institutional base of women's cooperatives down to the village level; the population is all women's cooperative members in the regency who own and operate active businesses. The sample was drawn using a combination of *multistage purposive sampling* and proportional distribution: cooperatives with active business members were identified through coordination with administrators or related parties, respondents were selected based on inclusion criteria, and questionnaires were distributed proportionally according to member availability. Inclusion criteria: registered members of women's cooperatives who have managed active businesses for at least one year and are directly involved in daily operational decisions. Considering a model

containing several reflective latent constructs, one mediator, and testing of direct and indirect effects, this study involved 220 respondents, which is considered adequate for predictive-oriented PLS-SEM.

C.2 Data Collection and Ethical Considerations

The questionnaire was distributed offline with the assistance of women's cooperative administrators or online through a digital form, depending on respondent accessibility. Respondents received an explanation of the research objectives, the voluntary nature of participation, the right to not answer or stop answering, confidentiality of identity, and assurance that the data would be used only for academic purposes and presented in aggregate. Field access was subject to permission from cooperative administrators or relevant parties. The instrument underwent *expert review* to assess content relevance, wording clarity, and item contextual appropriateness, and a *pilot test* on approximately 30 respondents with similar characteristics to identify ambiguous or overly technical items. Because the data came from a single source and a single point in time, *common method bias* was anticipated procedurally (guaranteed anonymity, reduced evaluative pressure, logical item grouping, and clear and concise item wording) and statistically through diagnostics such as *Harman's single-factor test* and *the full collinearity variance inflation factor* (VIF) in a PLS environment, to transparently evaluate potential bias.

C.3 Measurement of Variables

All reflective constructs were measured using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree), which is easily understood by micro and small business owners, with five indicators per construct in first-person sentences (e.g., “My business is capable of…”); Table 1 summarizes the indicators and their sources of adaptation. Digital capability is defined as a business’s ability to utilize digital technologies, platforms, and information for business communications, marketing, transactions, information management, and decision-making; the items are targeted adaptations because there is no established item set for this context. Market orientation is defined as the tendency to understand customer needs, monitor competitors, and use market information in decisions, referring to Narver and Slater (1990) (*customer orientation* , *competitor orientation* , and *interfunctional coordination*); because the respondents’ business structures are simple, interfunctional coordination translates into market intelligence-based business responses. *Strategic agility* is defined as the ability to sense change, make quick decisions, and shift resources flexibly but purposefully, referring to Doz and Kosonen (2008, 2010) (*strategic sensitivity* , *leadership unity* , and *resource fluidity*) and is operationalized for small businesses managed directly by the owner. Competitive advantage is defined as the ability to create more value than competitors (price or value, quality, service reliability, innovation, and speed of market response) and is measured perceptually.

Table 1. Operationalization of Variables and Sources of Indicator Adaptation

Construct	Code	Indicator	Adaptation sources
Digital Capabilities (KD)	KD1	Digital communication with customers	Saeedikiya et al. (2024); Van Hoang et al. (2025)
	KD2	Use of digital platforms for marketing/sales	Henryanto et al. (2025); Van Hoang et al. (2025)
	KD3	Digital business information management	Saeedikiya et al. (2024)
	KD4	Integration of digital tools in business processes	Henryanto et al. (2025)
	KD5	Utilizing digital information for business decisions	Saeedikiya et al. (2024); Henryanto et al. (2025)
Market Orientation (OP)	OP1	Understanding customer needs	Narver and Slater (1990)
	OP2	Pay attention to customer feedback	Narver and Slater (1990); Alhakimi and Mahmoud (2020)
	OP3	Monitoring competitors	Narver and Slater (1990)
	OP4	Comparing business offerings with competitors	Narver and Slater (1990); Butkouskaya et al. (2024)
	OP5	Market information-based decisions	Narver and Slater (1990); Hidayati et al. (2025)
Strategic Agility (SA)	SA1	Sensitivity to change/opportunities	Doz and Kosonen (2008, 2010)
	SA2	Speed of decision making	Doz and Kosonen (2008, 2010); Adomako et al. (2022)
	SA3	Flexibility to change strategies/channels	Doz and Kosonen (2010); Tufan and Mert (2023)
	SA4	Flexibility to shift resources/efforts	Doz and Kosonen (2010)
	SA5	Speed of executing changes	Adomako et al. (2022); Tufan and Mert (2023)
Competitive Advantage (CEA)	KB1	Price/value	Li et al. (2006)
	KB2	Quality	Li et al. (2006); Susanti et al. (2023)
	KB3	Service reliability/fulfillment	Li et al. (2006)

Construct	Code	Indicator	Adaptation sources
	KB4	Innovation	Li et al. (2006); Tufan and Mert (2023)
	KB5	Market response speed	Li et al. (2006); Susanti et al. (2023)

Note: The strategic agility (SA) indicators are operational adaptations of the listed sources. In the results section, constructs are labeled according to the SmartPLS output: KD = Digital Capability (X1), OP = Market Orientation (X2), SA = Strategic Agility (M), and KB = Competitive Advantage (Y).

C.4 Data Analysis Strategy

The hypotheses were tested using *Partial Least Squares–Structural Equation Modeling* (PLS-SEM) using SmartPLS 3 (Ringle et al., 2015) because the study is predictive, contains latent constructs with multiple indicators, and tests direct and indirect effects in one model. First, the measurement model was evaluated through *outer loading* , Cronbach's alpha and *composite reliability* , *average variance extracted* (AVE), and the Fornell–Larcker and *heterotrait–monotrait ratio* (HTMT) criteria (Fornell & Larcker, 1981; Henseler et al., 2015). Second, the structural model was evaluated through collinearity, path coefficients, R^2, effect size, model fit, and the significance of indirect effects through *bootstrapping* . H1–H5 were tested through direct effects, while H6 and H7 through indirect effects *of strategic agility* .

RESEARCH RESULTS

The analysis used SmartPLS 3 (Ringle et al., 2015) on 220 observations with four reflective constructs: *Digital Capability* (X1), *Market Orientation* (X2), *Strategic Agility* (M), and *Competitive Advantage* (Y), each with five indicators (a total of 20). Reporting follows PLS-SEM guidelines (Hair et al., 2019; Ghozali, 2021).

D.1 Evaluation of Measurement Model and Discriminant Validity

Table 2 summarizes the reliability and convergent validity. All *outer loadings* ranged from 0.802 (SA3) to 0.867 (KD1), well above 0.700 (Hair et al., 2019), so all 20 indicators were retained. Cronbach's Alpha was 0.880–0.900, rho_A 0.880–0.901, and *Composite Reliability* (rho_C) 0.912–0.926. AVE 0.676–0.714 exceeded 0.500 (Hair et al., 2019).

Table 2. Summary of Measurement Model

Construct	Outer loading per indicator	Cronbach's Alpha	rho_A	Composite Reliability (rho_C)	AVE
Digital Capability (X1)	KD1 0.867; KD2 0.832; KD3 0.818; KD4 0.848; KD5 0.858	0.900	0.901	0.926	0.714
Market Orientation (X2)	OP1 0.858; OP2 0.813; OP3 0.815; OP4 0.813; OP5 0.827	0.883	0.885	0.914	0.681
Strategic Agility (M)	SA1 0.807; SA2 0.850; SA3 0.802; SA4 0.834; SA5 0.817	0.880	0.880	0.912	0.676
Competitive Advantage (Y)	KB1 0.848; KB2 0.825; KB3 0.854; KB4 0.857; KB5 0.837	0.899	0.900	0.925	0.713

Note. All values are sourced from the PLS Algorithm output in the final measurement model; all indicators were retained because outer loading ≥ 0.700.

Discriminant validity (Table 3) was met (Fornell & Larcker, 1981; Henseler et al., 2015): the square root of the AVE of each construct (0.822–0.845) was greater than its correlation with other constructs (the highest being 0.708, between *Strategic Agility* and *Competitive Advantage*), and all HTMTs (0.308–0.795) were below the conservative limit of 0.850 (Henseler et al., 2015), with the highest value in the *Strategic Agility – Competitive Advantage pair* (0.795). The loosest correlation was between *Digital Capability* and *Market Orientation* (HTMT = 0.308; r = 0.275).

Table 3. Discriminant Validity: Fornell–Larcker and HTMT

Construct	X1	X2	M	Y
Digital Capability (X1)	**0.845**	0.308	0.721	0.698
Market Orientation (X2)	0.275	**0.825**	0.558	0.549
Strategic Agility (M)	0.643	0.493	**0.822**	0.795
Competitive Advantage (Y)	0.630	0.490	0.708	**0.844**

Note. Diagonal (bold) = square root of AVE; lower triangle = interconstruct correlation (Fornell–Larcker criterion); upper triangle = HTMT. All HTMT < 0.850.

D.2 Structural Model Evaluation

Collinearity did not affect the estimates: *inner* VIF 1.082–2.091 and *outer* VIF 1.885–2.587, all below 3.30 (Kock & Lynn, 2012). The two predictors together explained 52.2% of the variance in *Strategic Agility* (R^2 = 0.522; *adjusted* R^2 = 0.517), and the three constructs explained 58.5% of the variance *in Competitive Advantage* (R^2 = 0.585; *adjusted* R^2 = 0.579); both were moderate (Hair et al., 2019). According to effect sizes (Cohen, 1988; Table 4), *Digital*

Capability was the strongest contributor to *Strategic Agility* ($f^2 = 0.582$; large), followed by *Market Orientation* ($f^2 = 0.227$; medium); towards *Competitive Advantage* , *Strategic Agility* contributes moderately ($f^2 = 0.190$), while the direct contribution of *Digital Capability* (0.138) and *Market Orientation* (0.076) is small, so that *Strategic Agility* appears to act as a connecting path.

Table 4. Collinearity and Effect Size of Structural Model

Structural relationships	Inner VIF	f^2	Category f^2
Digital Capability (X1) → Strategic Agility (M)	1,082	0.582	Big
Market Orientation (X2) → Strategic Agility (M)	1,082	0.227	Currently
Strategic Agility (M) → Competitive Advantage (Y)	2,091	0.190	Currently
Digital Capability (X1) → Competitive Advantage (Y)	1,711	0.138	Small
Market Orientation (X2) → Competitive Advantage (Y)	1,327	0.076	Small

Note. f^2 guidelines: 0.02 (small); 0.15 (medium); 0.35 (large). All inner VIFs < 3.30.

Model fit was assessed using SRMR and NFI. SRMR = 0.047, well below 0.08 (Henseler et al., 2016), while NFI = 0.898, approaching the 0.90 threshold. The values of d_ULS (0.461), d_G (0.232), Chi-square (293.519), and RMS Theta (0.135) are reported descriptively because comparable HI95/HI99 *bootstrap values* for d_ULS and d_G are not available. SRMR serves as the primary reference, and NFI is read alongside the results of the measurement and structural models.

D.3 Hypothesis Testing: Direct, Indirect, and Total Effects

Testing was performed through *bootstrapping* 5,000 subsamples, two-tailed test, 5% significance level, and 95% *bias-corrected and accelerated* (BCa) confidence interval (Table 5; Figure 1).

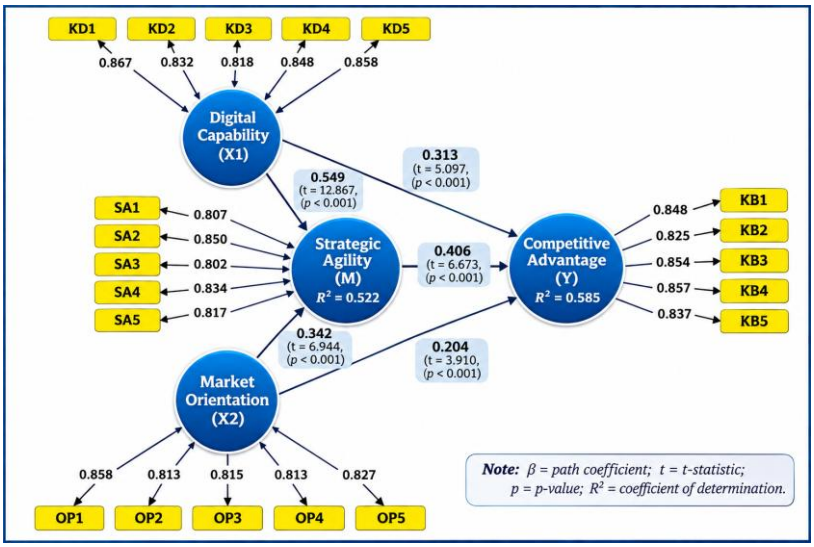


Figure 1. Final PLS-SEM Structural Model

Note: The numbers on the arrows indicate the path coefficient (β), t-statistic, and p-value; the numbers on the endogenous constructs indicate R^2; the numbers near the indicators indicate the outer loadings. Source: data processing results using SmartPLS.

All direct influence hypotheses are supported (H1–H5) and no intervals include zero. *Digital Capability* → *Strategic Agility* is the strongest path (β = 0.549), followed by *Market Orientation* → *Strategic Agility* (β = 0.342). For *Competitive Advantage* , *Strategic Agility* has the largest direct influence numerically (β = 0.406), followed by *Digital Capability* (β = 0.313) and *Market Orientation* (β = 0.204). For *Competitive Advantage* , the intervals of the three direct paths overlap so the order of magnitude should not be interpreted too strictly.

Strategic Agility's role as a mediator is also evident: the indirect effect of *Digital Capability* is 0.223 and *Market Orientation* is 0.139, both with intervals that do not include zero, thus supporting H6 and H7. Since the direct effects of both predictors remain significant and unidirectional, the mediation is partially complementary (Zhao et al., 2010): *Strategic Agility* acts as an additional channel that strengthens, rather than replaces, the direct effect. Approximately 41.5% of the total effect of *Digital Capability* (0.536) and 40.5% of the total effect *of Market Orientation* (0.343) are channeled through it; the total effect of each is approximately 1.7 times its direct effect, so ignoring the mediation pathway would underestimate the usefulness of both constructs. In line with the dynamic capabilities perspective (Teece, 2007), both capabilities need to be accompanied by the ability to quickly adjust strategic direction to achieve competitive advantage.

Table 5. Hypothesis Testing Results

Hypothesis	Structural relationships	β	t	p	BCa 95% CI	Decision
H1	Digital Capability (X1) → Competitive Advantage (Y)	0.313	5,097	< 0.001	[0.193; 0.434]	Supported

Hypothesis	Structural relationships	β	t	p	BCa 95% CI	Decision
H2	Digital Capability (X1) → Strategic Agility (M)	0.549	12,867	< 0.001	[0.459; 0.628]	Supported
H3	Market Orientation (X2) → Competitive Advantage (Y)	0.204	3,910	< 0.001	[0.099; 0.304]	Supported
H4	Market Orientation (X2) → Strategic Agility (M)	0.342	6,944	< 0.001	[0.239; 0.433]	Supported
H5	Strategic Agility (M) → Competitive Advantage (Y)	0.406	6,673	< 0.001	[0.290; 0.528]	Supported
H6	Digital Capability (X1) → SA → CA (indirect)	0.223	5,547	< 0.001	[0.152; 0.311]	Supported
H7	Market Orientation (X2) → SA → CA (indirect)	0.139	4,875	< 0.001	[0.089; 0.201]	Supported
Total	Digital Capability (X1) → Competitive Advantage (Y)	0.536	10,550	< 0.001	[0.432; 0.631]	Total influence
Total	Market Orientation (X2) → Competitive Advantage (Y)	0.343	6,553	< 0.001	[0.238; 0.443]	Total influence

Note. Two-tailed test, α = 5%, 5,000 bootstrap subsamples, 95% BCa interval; very small p-values in SmartPLS output are reported as $p < 0.001$. SA = Strategic Agility; CA = Competitive Advantage.

DISCUSSION

All hypotheses (H1–H7) were supported in 220 women cooperative members in Jombang Regency; digital capabilities and market orientation operate through both direct channels and *strategic agility* , in line with the *dynamic capabilities perspective* (Teece, 2007).

E.1 Digital Capabilities for Competitive Advantage (H1)

H1 is supported ($\beta = 0.313$; $t = 5.097$; $p < 0.001$), in line with evidence that digital capabilities and technology increase the competitiveness of manufacturing SMEs in emerging markets (da Silva et al., 2025; Van Hoang et al., 2025), Mexican SMEs (Valdez-Juárez et al., 2024), and women-owned businesses in Indonesia (Susanti et al., 2023). The use of social media, *marketplaces* , and business communication applications expands customer access, speeds up transactions, and streamlines business information. The direct effect is relatively small ($f^2 = 0.138$) and only about 58% of the total effect (0.536), so the value of digital capabilities does not stop at the direct path. In contrast to research on women entrepreneurs that generally focuses on digital and financial literacy (Asandimitra et al., 2024), these results indicate that digital capabilities as a strategic capability also explain the competitiveness of women cooperative members' businesses.

E.2 Digital Capabilities towards *Strategic Agility* (H2)

H2 is supported and becomes the strongest path (β = 0.549; t = 12.867; f^2 = 0.582), consistent with studies that read digital transformation in SMEs as the activation of dynamic capabilities (Saeedikiya et al., 2024; Valdez-Juárez et al., 2024), evidence on Indonesian culinary MSMEs (Henryanto et al., 2025), and the findings of Cuong et al. (2025) who place *organizational agility* in the continuum of digital transformation and business performance. In small businesses that make decisions within a short horizon with limited information, digital technology shortens the distance between knowing and acting: changes in customer interest are read from sales conversations, then promotions, prices, or sales channels are changed quickly without multiple decisions. The strength of this path does not come from overlap with market orientation (inner VIF 1.082; r = 0.275).

E.3 Market Orientation towards Competitive Advantage (H3)

H3 is supported by the smallest magnitude among the three direct paths to competitive advantage (β = 0.204; t = 3.910; f^2 = 0.076), in line with the findings that market orientation drives *innovativeness* , marketing performance, and *competitive advantage* in SMEs, including in Indonesia (Alhakimi & Mahmoud, 2020; Arifin et al., 2025; Butkouskaya et al., 2024; Hidayati et al., 2025; Sinaga, 2025). According to Narver and Slater (1990), understanding customers, monitoring competitors, and utilizing market information enable businesses to deliver relevant value. The smaller influence of digital capabilities can be interpreted interpretively: in village-based micro-enterprises, closeness to customers is common among almost all business actors, resulting in low differentiation power, while technological mastery varies more widely across businesses. Mutiarni's (2017) findings suggest a similar pattern at the institutional level: in 2017, only about 6% of women's cooperatives in Jombang used computers for transaction recording, although the data concerned the cooperatives, not their members' businesses. Because the confidence intervals for the three direct pathways overlap, this explanation still needs to be empirically tested.

E.4 Market Orientation towards *Strategic Agility* (H4)

H4 was supported (β = 0.342; t = 6.944; f^2 = 0.227), extending Kurniawan et al.'s (2020) evidence on telecommunications technology providers in Indonesia and aligning with findings on *business process agility* (Kurniawan et al., 2021) and *customer agility* (Wang et al., 2022). The difference is that those studies were conducted on medium-sized and large companies or in more formal markets, while this research focused on micro and small businesses managed directly by their owners. In Doz and Kosonen's (2010) formulation, strategic sensitivity is one of the foundations of agility, with customer and competitor information as the raw material. This pathway is weaker than the digital capabilities pathway (confidence intervals do not overlap, although not formally tested); a plausible explanation, which still needs to be tested, is that market orientation primarily provides information, while digital technology facilitates change execution in addition to providing information.

E.5 *Strategic Agility* towards Competitive Advantage (H5)

H5 was supported (β = 0.406; t = 6.673; f^2 = 0.190) and numerically had the largest direct effect on competitive advantage, corroborating evidence that *strategic agility* is related to organizational performance, competitiveness, and sustainable competitive advantage in SMEs (Adomako et al., 2022; Alkandi & Helmi, 2024; Onngam & Charoensukmongkol, 2024; Tufan & Mert, 2023): the market rewards businesses that adapt quickly to offerings. This relationship is the closest in the model (HTMT 0.795; inner VIF 2.091, both below the threshold) and some of the closeness may stem from the similarity of the measurement content, as the KB5 indicator asks about the speed of adaptation to market needs; the direction of the effect is also based on theoretical arguments, not causal proof.

E.6 The Mediation Role of *Strategic Agility* (H6 and H7)

H6 is supported: the indirect effect of digital capabilities through *strategic agility* is 0.223 (t = 5.547; BCa CI 95% [0.152; 0.311]) with complementary partial mediation (Zhao et al., 2010); approximately 41.5% of the total effect (0.536) is channeled through *strategic agility* . This pattern is in line with Henryanto et al. (2025) on Indonesian MSMEs as well as Saeedikiya et al. (2024) and Valdez-Juárez et al. (2024) on technology as part of dynamic capabilities. In Teece's (2007) framework, digital capabilities provide potential in the form of information access and speed of communication, while *strategic agility* turns it into timely action.

H7 is supported: the indirect effect of market orientation is 0.139 (t = 4.875; 95% CI BCa [0.089; 0.201]), also partially complementary, with approximately 40.5% of the total effect (0.343) flowing through *strategic agility* ; the absolute magnitude is smaller because the H4 path is weaker. This result is in line with Kurniawan et al. (2020), who concluded that market orientation alone is not sufficient and that organizations need *strategic agility* to achieve performance, and with Kurniawan et al. (2021). Alkandi and Helmi (2024) positioned market orientation as a mediator between *strategic agility* and organizational performance, while this study positions it as an antecedent of *strategic agility* ; this difference in order indicates that the causal position of the two constructs remains open to testing, especially with a longitudinal design.

E.7 Theoretical Implications

First, this study enriches the literature *on the antecedents of competitive advantage* by positioning *strategic agility* as an explanatory mechanism: approximately four-tenths of the total influence of both capabilities flows through it, making the direct model of most previous studies insufficient. Second, complementary partial mediation indicates that resource-based explanations (direct effects) and dynamic capability-based explanations (effects through agility) operate concurrently. Third, digital capabilities and market orientation are relatively separate (r = 0.275; HTMT = 0.308) but converge on *strategic agility* as the integrating node of technological resources and strategic orientation. Fourth, Doz and Kosonen's (2008, 2010) operationalization *of strategic agility* into five indicators for micro and small enterprises

demonstrates good reliability and convergent validity (Cronbach's alpha = 0.880; AVE = 0.676).

E.8 Practical Implications

For cooperative member businesses, investing in digital capabilities is more beneficial when accompanied by a habit of reading the market and the courage to change products, prices, promotions, and sales channels quickly; digital capabilities have the largest total influence (0.536 compared to 0.343 for market orientation) so they deserve to be the first priority, without neglecting market orientation.

For women's cooperative administrators, mentoring should sequentially combine digital tool mastery, market literacy, and rapid decision-making training, for example through member-based study groups that periodically review sales. Relevant institutional mentoring pathways appear to already exist: Mutiarni (2019) notes that the punctuality of annual membership meetings of women's cooperatives in Jombang is supported by regular training at the women's cooperative center, monthly financial reporting, and the use of computerized record-keeping tools, allowing digital skills and market literacy materials to be integrated into existing training forums. For local governments, particularly the Jombang Regency Cooperatives and Micro Enterprises Office, training should not stop at technological literacy: digital infrastructure is already available (Bank Indonesia, 2025, noted that QRIS reaches 39.3 million *merchants* , 93.16% of which are MSMEs), the challenge is transforming access into business agility. Digitalization mentoring for village MSMEs in Jombang, which has so far focused on *branding* , product photos, and business listings on Google Maps (Rofiah et al., 2024), needs to be continued with a stage that trains business actors to use these digital channels to quickly adjust offers, and is evaluated based on the participants' ability to adjust their businesses.

E.9 Research Limitations and Future Research Directions

This study has several limitations. First, the *cross-sectional design* does not allow for causal conclusions, particularly regarding the direction of the relationship between *strategic agility* and competitive advantage and the sequence of market orientation and *strategic agility* ; a longitudinal design is necessary. Second, all constructs were measured through the perceptions of one respondent at a time, so *common method bias* cannot be completely ruled out, especially since the HTMT *of strategic agility* – competitive advantage (0.795) approaches 0.850; objective data such as turnover can complement this. Third, *multistage purposive sampling* in one district limits generalizability to other regions or types of cooperatives. Fourth, the instrument is a targeted adaptation: the digital capability scale was constructed because there was no established item set, the *strategic agility indicator emphasizes operational aspects, so the leadership unity* dimension in Doz and Kosonen (2010) was not explicitly covered, and competitive advantage was measured perceptually. Fifth, the NFI (0.898) is slightly below 0.90, and comparative values for d_ULS and d_G are not available. Sixth, 47.8% of the variance in

strategic agility and 41.5% of the variance in competitive advantage remain unexplained, while institutional support for cooperatives (e.g., training at women's cooperative centers and monthly financial reporting; Mutiarni, 2019), business size and duration, and environmental dynamics have not been modeled, and differences in magnitude between pathways have not been formally tested.

CONCLUSION AND SUGGESTIONS

F.1 Conclusion

This study analyzes the influence of digital capabilities and market orientation on the competitive advantage of women's cooperative members' businesses in Jombang Regency, with *strategic agility* as a mediator. Based on 220 respondents and PLS-SEM, digital capabilities and market orientation have a positive effect on competitive advantage (H1, H3) and *strategic agility* (H2, H4), *strategic agility* has a positive effect on competitive advantage (H5), and *strategic agility* partially mediates the influence of both capabilities (H6, H7). Digital capabilities are the strongest determinant, both on *strategic agility* ($\beta = 0.549$) and in the total effect on competitive advantage (0.536), while market orientation contributes a smaller but significant contribution (0.343). The model explains 52.2% of the variance in *strategic agility and 58.5% of the variance in competitive advantage. The competitive advantage of women's cooperative members' businesses is thus formed from a combination of digital capabilities, market sensitivity, and agility in responding to change, not from a single source alone, which confirms the relevance of the dynamic capabilities* perspective in cooperative-based micro and small businesses. This finding addresses the gap in the introduction: about four-tenths of the total influence of both capabilities flows through *strategic agility* , within the limits of *a cross-sectional design* , perceptual data, and a single-district sample.

F.2 Suggestions

For cooperative member businesses, strengthening digital capabilities should be directed at leveraging customer data and sales conversations to quickly modify offers, promotions, and sales channels, while maintaining the practice of recording customer complaints and comparing competitor prices. For female cooperative administrators, mentoring can be structured in stages, from digital literacy and practices, through market analysis, to rapid decision-making training through member-to-member study groups. Cooperatives can also act as intermediaries for the exchange of market information.

For local governments, particularly the Jombang Regency Cooperatives and Micro Enterprises Office, digital training should be integrated with marketing strategy and change management materials, evaluated based on participants' ability to adapt their businesses, and utilize women's cooperative networks down to the village level to suit the type of business and members' technological readiness. For future researchers, longitudinal or multi-source designs (e.g., combining perceptions with sales data), expanding the sample to other districts or non-

women's cooperatives, models with moderation (cooperative institutional support, business size, or environmental turbulence) and formal testing of differences in magnitude between channels are recommended, and qualitative research on how members make quick decisions when demand changes suddenly.

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