



# The Influence of Women's Economic Empowerment on Technology Entrepreneurship Intention Through Self-Efficacy in Womenpreneurs in Surabaya

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This study investigates the influence of Women Economic Empowerment on Technology Entrepreneurship Intention through the mediating role of Self-Efficacy among womenpreneurs in Surabaya, Indonesia. This study aims to examine whether the WEE-SE-TEI framework, originally developed in a Middle Eastern context, holds in a Southeast Asian setting. A quantitative survey approach was employed. Data were collected from 120 female entrepreneurs in Surabaya using purposive sampling and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4. The results confirm that Women Economic Empowerment positively and significantly influences both Self-Efficacy and Technology Entrepreneurship Intention, and that Self-Efficacy partially mediates this relationship. Future research should extend this framework to broader geographic contexts and incorporate additional variables such as digital literacy and social capital.

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## 1. INTRODUCTION

As the digital economy continues to expand at a rapid pace, women have emerged as pivotal actors in the business landscape, contributing not only to economic growth but also to innovation and broader social transformation (Al-Ayed & Alateeg, 2025; Brush et al., 2009). This trend is becoming more noticeable as more women are taking part in starting and running businesses, including in the technology sector, which has become a key part of the global economy (Aravik et al., 2025). In Indonesia, the shift towards digital technologies is creating new opportunities for women to take a more active role in technology driven entrepreneurship, whether as owners of small businesses or as innovators within the digital business environment (Aurelly Kamal & Sukmawati, 2022; Pinem, 2019). As Indonesia's second-largest metropolitan area and a recognized center

for creative and digital economic activity, Surabaya serves as a compelling illustration of this growing potential. Surabaya has a growing startup environment, backed by strong technology systems, government initiatives, and an active business network, positioning it as a key area where women can actively engage in tech-based entrepreneurship.

According to We Are Social (2025), internet penetration in Indonesia has risen markedly, climbing from approximately 22% in 2015 to more than 74% by 2025, reflecting a significant shift in digital engagement across the population. This rise shows how more people are using the internet in business activities, such as starting online companies and conducting electronic commerce. These conditions offer significant opportunities for women entrepreneurs to use digital platforms to manage and grow their businesses in a more efficient and flexible way. The fast growth of digital technology in online shopping allows women business owners to access larger customer bases, lower running expenses, and improve their ability to compete in the market. (Kusuma et al., 2020).

Despite the abundance of opportunities present in the digital landscape, women's inclination to engage in technology-driven entrepreneurship remains considerably constrained. This shows there is a difference between how much women could potentially be involved in the technology field and how much they are participating in it. Entrepreneurial intention plays a vital role as the first step in deciding whether a person will proceed to start and grow a business (Al-Ayed & Alateeg, 2025; Liñán & Chen, 2009). The relatively low level of technology entrepreneurship intention observed among women can be attributed to a combination of factors, including limited access to financial capital, prevailing sociocultural barriers, inadequate digital competencies, and insufficient confidence in initiating technology-oriented business ventures that involve high risk and require specialized technical knowledge (Gupta et al., 2009; Hassan et al., 2022).

Women's economic empowerment involves various aspects such as access to money, education, and training programs, as noted by Tang (2022). Economic empowerment gives women the means to improve their financial standing and gain greater control over their economic future, as noted by Laszlo et al. (2020). In the Indonesian context, women's economic empowerment is closely associated with their access to digital infrastructure, participation in microfinance programs, and engagement in business training. Women who are economically empowered are more likely to exhibit a strong intention to initiate their own entrepreneurial ventures. This is because they have the financial resources and the mental preparedness needed to take on business opportunities (Hassan et al., 2022). Research has shown that when women have more economic power, it tends to increase their desire to start their own businesses, especially in developing countries (Bui & Long, 2021; Manzoor et al., 2018).

In addition to economic empowerment, self-efficacy, defined as an individual's belief in their capacity to execute the actions required to attain specific goals, plays a significant role and serves as a key psychological factor influencing outcomes. This idea, which is key to social cognitive theory, highlights how a person's view of themselves influences their actions (Bandura, 2001). Based on research Abele & Spurk (2009), Self-efficacy influences different areas of life, such as academic performance, career accomplishments, and personal development. In the world of entrepreneurship, having high self-efficacy helps business owners deal with challenges, adjust to new situations, and take advantage of available opportunities (Gielnik et al., 2020; Liñán & Chen, 2009). For women who want to start a career in technology, having confidence in their abilities can help turn the desire for economic independence into real plans to become entrepreneurs in the tech field (Aurelly Kamal & Sukmawati, 2022).

According to Mivehchi (2019), Technology Entrepreneurship Intention is the willingness and desire of individuals to initiate and run businesses that focus on

technology. Factors that affect a person's decision to start a technology-based business include their interest in technology, the availability of market opportunities, access to necessary resources, and their willingness to participate in technological innovation (Paoloni et al., 2019). Studies in Indonesia indicate that the desire of women to start technology-based businesses remains lower than their interest in traditional business ventures, even as the digital economy continues to expand.

Despite numerous studies examining how women's economic empowerment affects their entrepreneurial intentions, there are still several gaps in the available empirical research. Earlier research has concentrated on the broader aspects of entrepreneurship and has not specifically addressed Technology Entrepreneurship Intention within the digital era (Al-Ayed & Alateeg, 2025; Hassan et al., 2022). Moreover, a significant number of studies were carried out in developed nations or the Middle East, which may not accurately reflect the local circumstances, especially for women entrepreneurs in major Indonesian cities such as Surabaya. Research on this topic in the Indonesian context has not been extensively conducted, particularly regarding the role of self-efficacy as a mediating factor in the relationship.

This study aims to address this gap by investigating how women's economic empowerment influences technology entrepreneurship intentions through self-efficacy among women entrepreneurs in Surabaya. This study uses the research model developed by Al-Ayed & Alateeg (2025) and applies it to the Indonesian context, providing empirical evidence on whether the relationship between WEE, SE, and TEI remains consistent across various cultural and socioeconomic environments. The novelty of this study lies in its contextual application of the WEE-SE-TEI framework within a Southeast Asian developing-country setting specifically urban Indonesia where socio-cultural norms, digital infrastructure development, and microfinance ecosystems differ substantially from the Middle Eastern context in which the model was originally developed. By doing so, this study offers a cross-cultural validation of the framework and contributes to a more nuanced understanding of how structural and psychological empowerment mechanisms operate across diverse socioeconomic environments.

## 2. RESEARCH METHOD

The present study adopted a quantitative research design utilizing a structured survey instrument to examine the extent to which Women's Economic Empowerment influences Technology Entrepreneurship Intention, with Self-Efficacy serving as a mediating variable. Data collection was conducted from February 27 to March 8, 2025, using a questionnaire distributed through Google Forms. A total of 170 responses were received. To ensure data quality, a screening process was carried out by excluding respondents who gave identical answers throughout the questionnaire. Following this screening process, 120 respondents were deemed valid and included in the final analysis. The sample size of 120 is considered adequate for PLS-SEM analysis based on the ten-times rule proposed by Hair et al. (2019), which requires a minimum sample size equal to ten times the maximum number of structural paths directed at any single construct. In this study, the maximum number of paths directed at any construct is two, yielding a minimum requirement of 20 respondents. Furthermore, Hair et al. (2019) recommend a minimum of 100 observations for models of this complexity to achieve sufficient statistical power. The final sample of 120 therefore satisfies both criteria, supporting the adequacy of the analysis.

The study population was womenpreneurs in Surabaya, namely women who already own and operate active businesses. A purposive sampling technique was employed, whereby eligible respondents were required to meet specific inclusion criteria such as they must be female, reside in Surabaya, and be actively operating or in the

process of establishing a technology-related business venture. All female respondents were selected because the study concentrated on empowering women economically and entrepreneurship driven by technology.

Data were collected and subsequently analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the aid of SmartPLS software. The analysis process involved descriptive statistics, assessment of the outer model (validity and reliability), evaluation of the inner model, hypothesis testing via bootstrapping, and predictive model assessment using blindfolding (Hair et al., 2019).

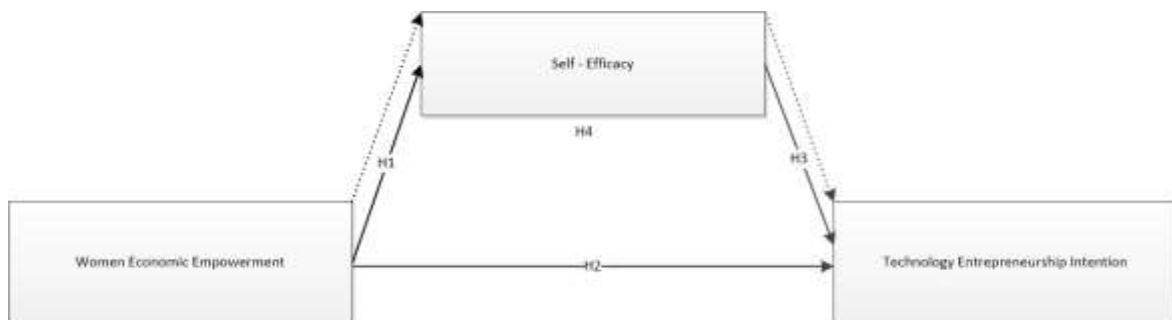


Figure 1. Research Model

H1: Women's economic empowerment significantly and positively impacts self-efficacy.

H2: Women's economic empowerment significantly and positively affects the intention to engage in technology entrepreneurship.

H3: Self-efficacy has a significant positive effect on the intention to pursue technology entrepreneurship.

H4: Self-efficacy serves as a mediator in the relationship between women's economic empowerment and the intention to engage in technology entrepreneurship.

### 3. Results And Discussions

A total of 120 valid respondents were all female entrepreneurs actively operating businesses in Surabaya. In terms of age, the largest group was aged 18-23 years (33.5%), followed by 41-45 years (29%), 36-40 years (17%), 24-29 years (13.1%), and 30-35 years (7.4%), reflecting the diverse age range of women engaged in technology-based entrepreneurship in Surabaya. Regarding business scale, the majority were running small-to-medium scale online businesses (75.6%), followed by medium to large scale (13.6%), while 10.8% were planning to start a business. In terms of business duration, most respondents had been operating for 1-3 years (42%), followed by more than 6 years (25.6%), 4-6 years (22.2). In terms of educational background, the majority were pursuing or had completed an undergraduate degree (S1) at 86.9%, followed by senior high school (SMA/SMK) at 8%, with the remaining holding postgraduate (S2) qualifications. These demographic profiles reflect the growing participation of young and mid-career women in digital based entrepreneurship in Surabaya.

#### 3.1 Outer Model (Measurement Model)

The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4, following the two-stage analytical procedure recommended by Hair et al. (2019). In the first stage, the outer model (measurement model) was evaluated to assess convergent validity through outer loadings and Average Variance Extracted (AVE), construct reliability using Cronbach's Alpha and Composite Reliability

(CR), and discriminant validity based on the Fornell–Larcker criterion and the Heterotrait Monotrait (HTMT) ratio. In the second stage, the inner model (structural model) was assessed through R-square values and path coefficients, with hypothesis testing conducted via bootstrapping.

Table 1. Measurement Model

Items and Constructs	Loadings	Cronbach's Alpha	Composite Reliability	AVE
<b>Women Economic Empowerment</b>				
WEE1 : "My online business provides sustainable economic benefits to local people and communities".	0.820	0.788	0.876	0.701
WEE2 : "The income from my online business can help meet the needs of several households around me".	0.822			
WEE3 : "There are real signs of increasing prosperity from my online business income".	0.869			
<b>Self-Efficacy</b>				
SE1 : "I am confident that I can solve problems that arise in running my business".	0.759	0.884	0.915	0.684
SE2 : "I have full control over important decisions in managing my business".	0.840			
SE3 : "If I set a business target, I believe I can achieve it effectively".	0.826			
SE4 : "I am confident that the innovations I make in the technology business will provide the results I expect".	0.862			
SE5 : "I am capable of developing and improving my business to be better in the future".	0.844			
<b>Technology Entrepreneurship Intention</b>				
TEI1 : "I am interested in running a digital e-commerce/SME based business.	0.801	0.764	0.864	0.680
TEI2 : "I intend to continue developing a business based on e-commerce/digital MSMEs.	0.802			
TEI3 : "I aspire to make e-commerce/digital MSME based businesses an important part of my future activities".	0.869			

Table 1 presents the results of the measurement model, confirming the reliability and validity of the study's constructs. Women's Economic Empowerment demonstrates a Cronbach's Alpha of 0.788, Composite Reliability of 0.876, and an Average Variance Extracted (AVE) of 0.701, indicating that the construct is reliable and exhibits strong convergent validity. Self-efficacy shows a Cronbach's Alpha of 0.884, Composite Reliability of 0.915, and an AVE of 0.684, reflecting high internal consistency. Meanwhile, technology entrepreneurship intention among women records a Cronbach's Alpha of 0.764, Composite Reliability of 0.864, and an AVE of 0.680, suggesting acceptable reliability. Furthermore, all indicator loadings exceed the recommended

threshold of 0.70, ranging from 0.759 to 0.869, thereby providing additional support for the model's convergent validity, as suggested by Hair et al. (2019).

Table 2. Discriminant Validity

Items and Constructs	Self-Efficacy	Technology Entrepreneurship Intention	Women Economic Empowerment
Self-Efficacy	0.827		
Technology Entrepreneurship Intention	0.777	0.825	
Women Economic Empowerment	0.661	0.750	0.837

Table 2 shows how well the different constructs are distinct from each other. The values along the diagonal indicate the square root of the average variance extracted for each construct (Self-Efficacy = 0.827, Technology Entrepreneurship Intention = 0.825, Women Economic Empowerment = 0.837). All of these values are higher than the correlations between different constructs, which shows that the constructs are clearly separate from each other based on empirical evidence (Fornell & Larcker, 1981). In addition, the HTMT values for all pairs of constructs were beneath the 0.85 threshold: SE-TEI had a value of 0.777, WEE-SE had 0.661, and WEE-TEI had 0.750, which further supports the discriminant validity as noted by (Hair et al., 2019).

This section presents the results of the data analysis conducted using the PLS-SEM (Partial Least Squares Structural Equation Modeling) approach. The findings illustrate how women's economic empowerment influences self-efficacy and technology entrepreneurship intention, as well as the mediating role of self-efficacy in the relationship between women's economic empowerment and technology entrepreneurship intention. To facilitate understanding, the structural relationships between variables are visualized in a path diagram in Figure 2.

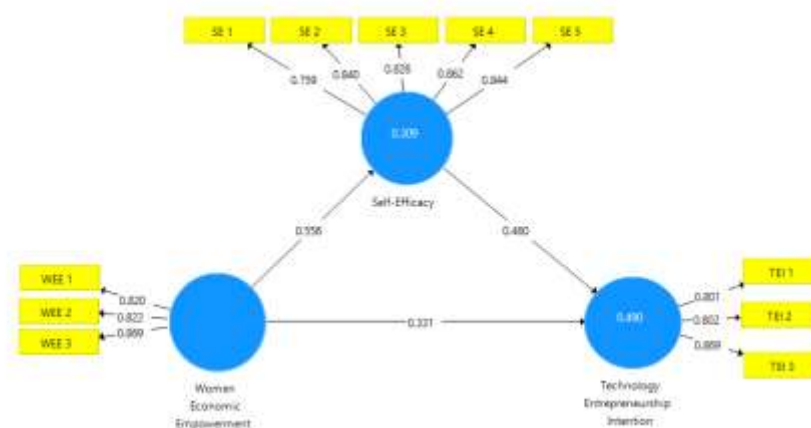


Figure 2. Structural Model

### 3.2 Inner Model (Structural Model)

The R-square values provide important insights into the explanatory power of the structural model. The  $R^2$  value for Self-Efficacy of 0.309 indicates that 30.9% of its variance is explained by Women's Economic Empowerment, which according to Cohen's (1988) benchmarks represents a moderate level of explanatory power. This suggests that while economic empowerment is a meaningful predictor of self-efficacy, other factors

such as social support networks, cultural norms, or prior entrepreneurial experience may also contribute to women's perceived capabilities. For Technology Entrepreneurship Intention, the  $R^2$  value of 0.490 indicates that 49.0% of its variance is explained jointly by Women's Economic Empowerment and Self-Efficacy, reflecting a moderate-to-substantial explanatory capacity. This level of explained variance is considered meaningful in behavioral research (Hair et al., 2019), suggesting that the WEE-SE-TEI model captures a substantial portion of the factors driving technology entrepreneurship intention among women entrepreneurs in Surabaya. The assessment of effect sizes using the F-square criteria established by Cohen (1988) revealed that the path from Women Economic Empowerment to Self-Efficacy demonstrated a large effect (0.446), indicating a substantial contribution of Women Economic Empowerment in explaining variance in Self-Efficacy. The path from Self-Efficacy to Technology Entrepreneurship Intention also yielded a large effect size (0.287), while the path from Women Economic Empowerment to Technology Entrepreneurship Intention demonstrated a medium effect size (0.149), these results confirm that all hypothesized paths exhibit practically meaningful effect sizes.

The predictive relevance of the structural model was evaluated using the blindfolding procedure recommended by (Hair et al., 2019; Wynne W. Chin, 1998), yielding Q-square values for all endogenous constructs. The Q-Square value for Self-Efficacy was 0.205, indicating medium predictive relevance, while the Q-Square value for Technology Entrepreneurship Intention was 0.320, reflecting large predictive relevance. As both values exceed zero, the structural model demonstrates satisfactory predictive relevance for all endogenous constructs.

Table 3. Path Coefficients

Paths	Original Sampel	Standard Deviation	T-Statistics	P-Values	Results
Women Economic Empowerment → Self-Efficacy	0.561	0.060	9.315	0.000	H1 supported
Women Economic Empowerment → Technology Entrepreneurship Intention	0.337	0.071	4.655	0.000	H2 supported
Self-Efficacy → Technology Entrepreneurship Intention	0.457	0.071	6.481	0.000	H3 supported
Women Economic Empowerment → Self-Efficacy → Technology Entrepreneurship Intention	0.256	0.047	5.404	0.000	H4 supported

Table 3 presents the path coefficients along with the statistical significance of the proposed relationships. A significant and positive relationship was identified between Women's Economic Empowerment and Self-Efficacy ( $\beta = 0.561$ ,  $p < 0.000$ ), suggesting that enhanced access to economic resources and opportunities substantially elevates women entrepreneurs' perceived capability to manage and sustain their businesses successfully. The link between women's economic empowerment and their intention to pursue technology entrepreneurship is also statistically significant ( $\beta = 0.337$ ,  $p < 0.000$ ), showing that economic empowerment directly encourages the desire to launch ventures in the technology field. Additionally, the relationship between Self-Efficacy and Technology Entrepreneurship Intention ( $\beta = 0.457$ ,  $p < 0.000$ ) demonstrates that belief in one's own skills and capabilities is crucial in forming the intention to start a technology-based business. Lastly, the indirect effect of Women's Economic Empowerment on Technology Entrepreneurship Intention through Self-Efficacy ( $\beta = 0.256$ ,  $p < 0.000$ ) underscores the mediating role of Self-Efficacy in transforming economic empowerment into motivation for entrepreneurial endeavors.

### 3.3 Discussion

The findings of this study yield valuable theoretical and empirical insights into the interrelationships among women's economic empowerment, self-efficacy, and technology entrepreneurship intention within the context of women-owned enterprises in Surabaya. Overall, the results support the applicability of the Women Economic Empowerment-Self-Efficacy-Technology Entrepreneurship Intention (WEE-SE-TEI) framework beyond its original Middle Eastern context. This suggests that the interaction between structural empowerment and psychological capability remains relevant in explaining women's entrepreneurial intentions across different socio-economic and cultural environments, including Southeast Asia.

The study demonstrates that women's economic empowerment plays a significant role in strengthening self-efficacy among women entrepreneurs. Access to economic resources such as capital, business training, and digital infrastructure appears to increase women's confidence in their ability to manage and grow their businesses. Economic empowerment therefore functions not only as a structural support mechanism but also as a catalyst for psychological empowerment. This finding is consistent with previous studies emphasizing that empowerment initiatives enhance perceived competence based on Somià (2026) and confidence among women entrepreneurs, enabling them to participate more actively in entrepreneurial activities (Al-Ayed & Alateeg, 2025; Al-Qahtani et al., 2020).

The results also indicate that women's economic empowerment encourages the intention to engage in technology-based entrepreneurship. When women gain greater economic independence and access to resources, they become more capable of identifying and pursuing opportunities within the technology sector. This relationship is particularly relevant in the context of Indonesia's rapidly expanding digital economy, where access to digital platforms and technological resources creates new entrepreneurial opportunities. In this regard, economic empowerment can serve as an enabling factor that motivates women to participate in technology-driven business activities (Tang, 2022).

Self-efficacy also emerges as a critical psychological factor influencing technology entrepreneurship intention (Madawala et al., 2025). Women who possess strong confidence in their entrepreneurial capabilities are more likely to develop the motivation and persistence required to initiate technology-based ventures. This finding aligns with the broader entrepreneurship literature, which highlights self-efficacy as a key determinant of entrepreneurial intention and behavior (Ali et al., 2021; Vallerine & Handoyo, 2023). For women entrepreneurs, self-efficacy may be particularly important in overcoming structural constraints, perceived risks, and socio-cultural barriers associated with entering technology-oriented industries.

The findings further reveal that self-efficacy functions as an important mechanism linking women's economic empowerment to technology entrepreneurship intention. Economic empowerment provides women with the resources and opportunities necessary to pursue entrepreneurial activities, while self-efficacy strengthens their confidence to transform those resources into entrepreneurial action. This mediating role highlights the complementary relationship between structural empowerment and individual psychological factors in shaping entrepreneurial motivation. Consequently, initiatives aimed at promoting women's participation in technology entrepreneurship should not only focus on improving access to financial and economic resources but also emphasize capability development programs that strengthen entrepreneurial confidence and skills (Chatterjee et al., 2020).

#### 4. CONCLUSION

This study investigated the interplay between women's economic empowerment, self-efficacy, and technology entrepreneurship intention among female entrepreneurs

operating within the urban business ecosystem of Surabaya, Indonesia. The findings provide empirical evidence supporting the applicability of the Women Economic Empowerment-Self Efficacy-Technology Entrepreneurship Intention (WEE-SE-TEI) framework within a Southeast Asian developing-country context. The empirical results indicate that women's economic empowerment constitutes a significant determinant of technology entrepreneurship intention, exerting its influence both through a direct pathway and indirectly via the mediating mechanism of self-efficacy. In this regard, economic empowerment not only provides access to resources and opportunities but also strengthens women's confidence in their entrepreneurial capabilities, which in turn encourages their engagement in technology-based entrepreneurial activities.

From a theoretical perspective, this study contributes to the entrepreneurship literature by extending the cross-cultural validity of the WEE-SE-TEI framework beyond its original Middle Eastern context. The findings also reinforce the relevance of Social Cognitive Theory Bandura (2001) in explaining entrepreneurial intention, particularly by demonstrating that economic empowerment influences entrepreneurial behavior through both structural and psychological mechanisms. Self-efficacy emerges as a critical link that translates economic resources into entrepreneurial motivation and intention.

From a practical standpoint, the findings highlight the importance of developing integrated support systems to promote women's participation in technology entrepreneurship. Policies and programs aimed at empowering women entrepreneurs should not only focus on improving access to financial resources but also emphasize capacity-building initiatives such as entrepreneurship training, mentorship programs, peer networking, and digital literacy development. In the context of Surabaya's growing digital economy, strengthening women's access to technology, digital platforms, and entrepreneurial ecosystems may further enable women-owned MSMEs to transition toward more technology-oriented and innovation-driven business activities.

This study is not without limitations. First, the use of purposive sampling and the geographic focus on Surabaya may restrict the generalizability of the findings to other regions of Indonesia or other Southeast Asian contexts with different socio-cultural and economic conditions. Second, the cross-sectional research design captures data at a single point in time, which limits the ability to draw causal inferences or track changes in women's entrepreneurial intention over time. Third, the study relies on self-reported data, which may introduce common method bias, though PLS-SEM partially mitigates this through its structural separation of measurement and structural models. Fourth, the measurement of Women's Economic Empowerment using only three indicators may not fully capture the multidimensional nature of the construct.

Future research could address these limitations by employing longitudinal research designs that track changes in WEE, self-efficacy, and technology entrepreneurship intention over time. Expanding the geographic scope across multiple Indonesian cities or other ASEAN countries would enhance the external validity of the WEE-SE-TEI framework. Additionally, incorporating variables such as digital literacy, social capital, cultural norms, access to mentorship networks, and government policy support as potential mediators or moderators would provide a more comprehensive understanding of the mechanisms shaping technology entrepreneurship intention among women in emerging economies

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