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BEAUTY CULTURE AND SELF-COMMODIFICATION: ANALYSIS OF VISUAL COMMUNICATION IN DIGITAL CONTENT ON TIKTOK SOCIAL MEDIA

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Abstract

This study aims to describe the following variables: (1) digital technology adoption, (2) business resilience, (3) women's empowerment, and (4) financial literacy, and to analyze the effect of digital technology adoption on business resilience mediated by women's empowerment and moderated by financial literacy. The research employed a quantitative explanatory design with structural model analysis using Partial Least Squares Structural Equation Modeling (PLS-SEM). Data were collected through an online questionnaire (Google Form). The population consisted of 1,556 women entrepreneurs who own Micro and Small Industry (MSI) units in the food subsector, with 359 respondents selected using proportionate allocation sampling and located in Tasikmalaya, Sukabumi, Bogor, and Bandung.

The findings indicate that the level of digital technology adoption among women entrepreneurs is in the very high category, while business resilience, women's empowerment, and financial literacy are in the high category with potential for further improvement. Digital technology adoption has a positive effect on business resilience and women's empowerment, implying that higher levels of technology adoption are associated with stronger business resilience and greater women's empowerment. Women's empowerment also positively affects business resilience and mediates the relationship between digital technology adoption and business resilience. In addition, higher financial literacy strengthens the effect of digital technology adoption on business resilience, thus functioning as an enhancing moderator in this relationship.

These results imply that strengthening business resilience among women entrepreneurs can be achieved by enhancing digital technology–based resources and strategies, integrated with women's empowerment as a mediating mechanism and financial literacy as a moderating capability for the strategic use of digital technology. Practically, the findings underscore the importance of advanced training programs and an integrated digital ecosystem to reinforce digital technology adoption, women's empowerment, and financial literacy, while simultaneously building a collaborative ecosystem and continuous interventions focused on sustainable business resilience.

Keywords : *Digital Technology Adoption, Business Resilience, Women's Empowerment, dan Financial Literacy.*

1. INTRODUCTION

Micro and Small Industries (IMK) constitute one of the main pillars of the national economy, as they absorb a large share of the workforce and are distributed across almost all

regions of Indonesia. According to the *2023 Profile of Micro and Small Industries* published by Statistics Indonesia (Badan Pusat Statistik), there were approximately 4.5 million IMK business units in Indonesia in 2023, with the highest concentration located in West Java. In aggregate, Micro, Small, and Medium Enterprises (MSMEs), which include IMK, account for around 99 percent of all business units in Indonesia, contribute approximately 60–61 percent to Gross Domestic Product (GDP), and absorb about 96–97 percent of the national workforce (Hartarto, 2024). The role of IMK and MSMEs extends beyond their contribution to GDP and employment absorption; they are also crucial in promoting inclusive economic growth through job creation, unemployment reduction, and improvements in household welfare (Juanidi, 2024). West Java is one of the regions with the largest concentration of Micro and Small Industry (IMK) enterprises in Indonesia, with a total of approximately 641,639 business units in 2023 (Muhamad, 2024). This province consistently makes a significant contribution to the national economy; in 2023, West Java accounted for about 12.79 percent of national GDP and 22.41 percent of Java Island's Gross Regional Domestic Product (GRDP) (Opendata.jabarprov, 2023). This constellation underscores West Java's position as one of the main engines of economic activity at both the national and regional levels (Ni'mah & Kistanti, 2025).

The large number of IMK enterprises in West Java reinforces the role of this sector as the backbone of the regional economy, particularly in creating value added and absorbing a substantial workforce across various segments of the people's economy (Nurjannah & Muslihat, 2024). The development of IMK and MSMEs in West Java has contributed to reducing unemployment and improving community welfare through the provision of new job opportunities and the strengthening of the local economy (Limanseto, 2022). On the other hand, strengthening the foundation of micro and small enterprises also supports poverty alleviation efforts by increasing household incomes and expanding business opportunities across regencies and municipalities (djpb.kemenkeu.go.id). The reinforcement of the micro and small enterprise base contributes to higher household incomes, which in turn promotes improvements in welfare and reduces vulnerability to poverty in both urban and rural areas (Arifa et al., 2025). Various studies indicate that MSME development serves as a strategic instrument for poverty alleviation, as it is able to expand entrepreneurial opportunities, foster economic self-reliance, and strengthen local economies at the regency and municipal levels (Yolanda & Hasanah, 2024).

The structure of Micro and Small Industries (IMK) in Indonesia is dominated by the food industry subsector, which absorbs the largest share of total micro- and small-scale business units at the national level. Approximately one-third to more than one-third of IMK enterprises operate in food processing activities, making this subsector a key driver of value added creation and employment absorption within the manufacturing sector. The dominant position of the food subsector is also evident across regions, including West Java, which has the largest number of micro and small food and beverage enterprises nationwide and serves as a major base for small- and micro-scale entrepreneurial activities in the region (BPS Jabar, 2023). However, despite their significant economic role, IMK enterprises in West Java face challenges related to business resilience, as reflected in the instability of the number of operating firms from year to year. These fluctuations arise from the dynamic entry of new businesses and the exit of firms that are unable to survive (business mortality). Such conditions indicate instability in the number of active business units, influenced by a variety

of internal and external factors. Changes in the number of enterprises over a given period thus serve as a key indicator of business resilience challenges within this sector (Tang & Zhang, 2022; Fu et al., 2023). Data on fluctuations in the number of enterprises are presented in the following figure.

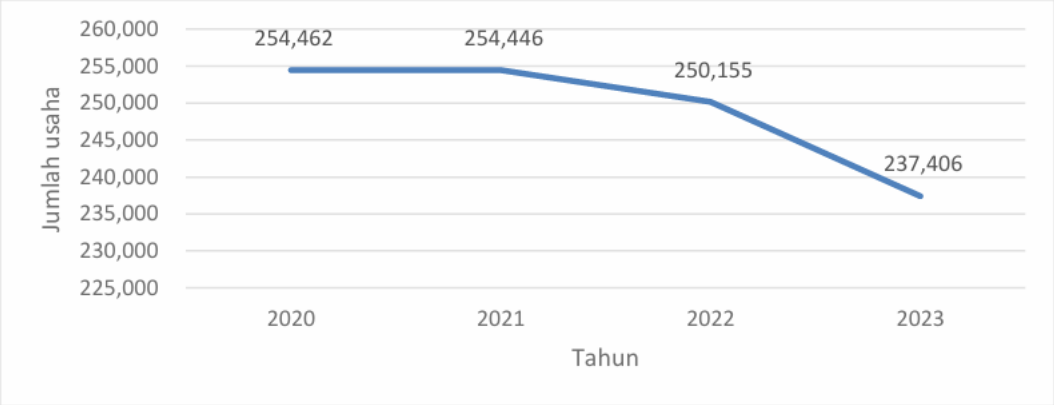

Figure 1. Graph of the Decline in the Number of IMK Enterprises in the Industrial Subsector
Source: *Processed data, 2025.*

The figure presents a graph illustrating growth trends in percentage terms. During the 2020–2021 period, the growth trend was recorded as negative at 0.0063%; in the 2021–2022 period, it remained negative at −1.69%; and in the 2022–2023 period, the decline was the sharpest, reaching −5.1%. The sustained downturn in the food industry subsector indicates the presence of serious challenges faced by business actors. This condition underscores the urgency of strengthening business resilience, namely the capacity of enterprises to survive and continue to grow amid increasingly competitive market dynamics.

Fluctuations in the number of IMK enterprises in the food industry subsector have occurred across all cities and regencies in West Java over the past few years. These fluctuations are dynamic in nature: some regions experience growth, while others face declines, depending on economic conditions, local policies, levels of innovation, and the competitiveness of business actors in each area (Opendata.jabarprov.go.id; BPS Jawa Barat, 2024). For example, variations in the growth of IMK enterprises in the food industry subsector can be observed in four cities in West Java—Tasikmalaya City, Sukabumi City, Bogor City, and Bandung City. These four cities are sufficiently representative of urban-based IMK in the food industry subsector in West Java and will serve as the survey locations, as presented in the following figure.

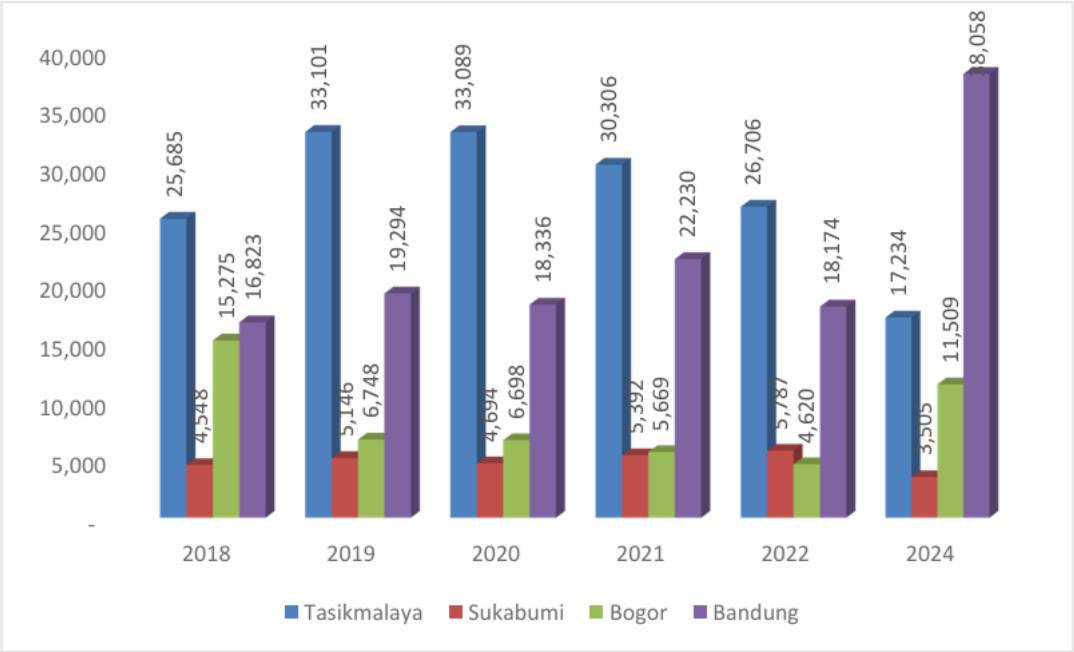

Figure 2. Graph of Fluctuations in the Number of IMK Enterprises in the Industrial Subsector
Source: *West Java Industrial Profile, 2020–2025.*

The following table presents the percentage fluctuations in the number of Micro and Small Industry (IMK) business units in four cities in West Java based on data from 2018–2023, as shown below.

Table 1. Percentage Fluctuations in the Number of IMK Enterprises in the Industrial Subsector

Wilayah	Periode Tahun				
	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Kota Tasikmalaya	28,90%	-0,04%	-8,41%	-11,91%	-35,46%
Kota Sukabumi	13,15%	-8,79%	14,86%	7.31%	-39,43%
Kota Bogor	-55,83%	-0,74%	-15,37%	-18,51%	149,19%
Kota Bandung	14,69%	-0,97%	21,27%	-18,25%	109,34%

Source: *Processed data, 2025, based on BPS data (2020–2025)*

When illustrated in the form of a fluctuation graph, the pattern appears as shown in the following figure.

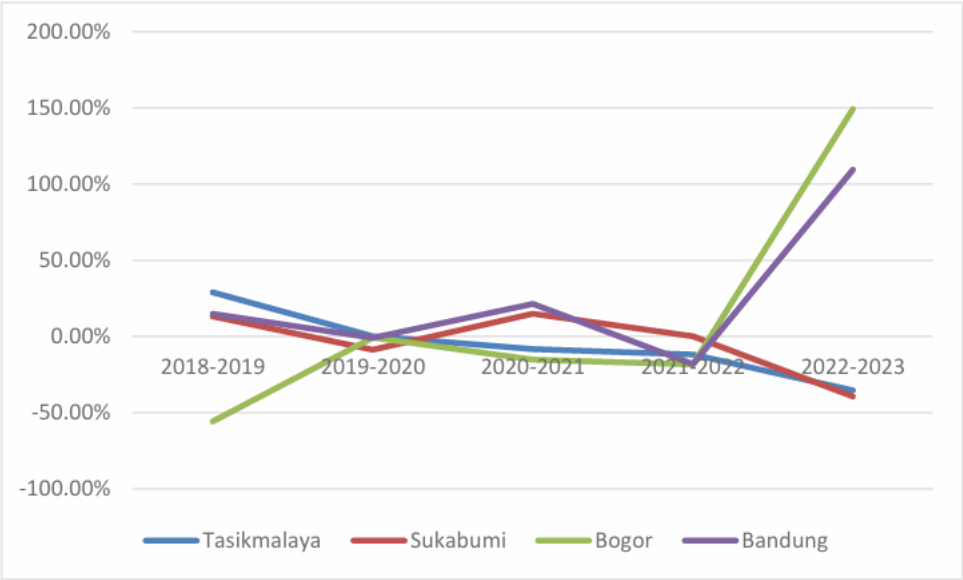

Figure 3. Graph of Fluctuations in the Number of IMK Business Units in the Industrial Subsector

Figure 3 illustrates the fluctuations in the number of IMK enterprises, as described below:

1. Bogor City and Bandung City experienced a sharp surge in growth during the 2022–2023 period after a decline in the previous year. According to the literature on firm growth, such high-growth episodes are generally not repetitive; therefore, growth observed in a single period cannot be regarded as an indication of strong and sustainable performance. What matters instead is the persistence of high growth across multiple time periods (Coad et al., 2019; Erhardt, 2021).
2. Tasikmalaya City and Sukabumi City tend to exhibit a sharp decline during the 2022–2023 period. This pattern of fluctuation in the number of business units reflects the dynamics of firm populations, which are influenced by processes of entry and exit as well as growth episodes that are not necessarily sustained. The literature on firm dynamics shows that many enterprises experience growth only in certain periods, while only a small proportion are able to maintain consistent growth over time (Clementi & Palazzo, 2016; Coad et al., 2014). Year-to-year fluctuations in the number of business units indicate that an increase in a single period is insufficient to be interpreted as healthy growth, as conceptually sound growth requires sustainability (persistence) rather than merely a temporary surge (Daunfeldt & Halvarsson, 2015; Coad et al., 2019).
3. Behind the substantial contribution of the Micro and Small Industry (IMK) sector to the regional economy, women entrepreneurs play a crucial role in maintaining the sustainability and competitiveness of this sector**.** BPS data for 2024 show that 70.26% of IMK enterprises in Indonesia, including those in West Java, are led by women. Approximately 44.75% of IMK enterprises are single-owner businesses, and of these, 70.53% are managed by women. Accordingly, this study places a particular focus on women entrepreneurs. This condition underscores the dominance of women

in the ownership and management of IMK enterprises, especially those operated independently. The Stellar Women BSG Survey (2023) records that the food industry is the most common subsector among women entrepreneurs, indicating that women's role in the IMK ecosystem extends beyond numerical dominance to generating positive impacts through a more inclusive distribution of economic benefits (Choudhary, 2024). Women entrepreneurs contribute significantly to sustainable economic growth through the creation of household-based employment, which often involves vulnerable groups, thereby extending economic impacts to the broader community in line with the sustainable development agenda, particularly in terms of gender equality and poverty reduction (Awalia et al., 2025).

In line with aggregate data at the national level, provincial-level data for West Java reveal a similar reality. Administrative data from the West Java Provincial Office of Cooperatives and MSMEs (DISKOPUMKM) for 2023 provide specific information on the number and distribution of women IMK entrepreneurs reached by regional government programs. A total of 7,446 women IMK entrepreneurs in the food industry subsector are distributed across all cities and regencies in West Java, of whom 1,556 are located in the four survey cities—Tasikmalaya City, Sukabumi City, Bogor City, and Bandung City. This dominance underscores the highly significant role of women entrepreneurs in the Micro and Small Industry sector in driving regional economic growth, particularly in the four survey cities in West Java. Therefore, enhancing business resilience through women's empowerment represents a strategic approach to regional economic development.

Similarly, the dynamics, challenges, and opportunities faced by women IMK entrepreneurs need to become a central concern in efforts to strengthen this sector. During the 2020–2023 period, the growth in the number of women-owned business units experienced fluctuations, as recorded by the Office of Cooperatives and Micro, Small, and Medium Enterprises, as illustrated in the following figure.

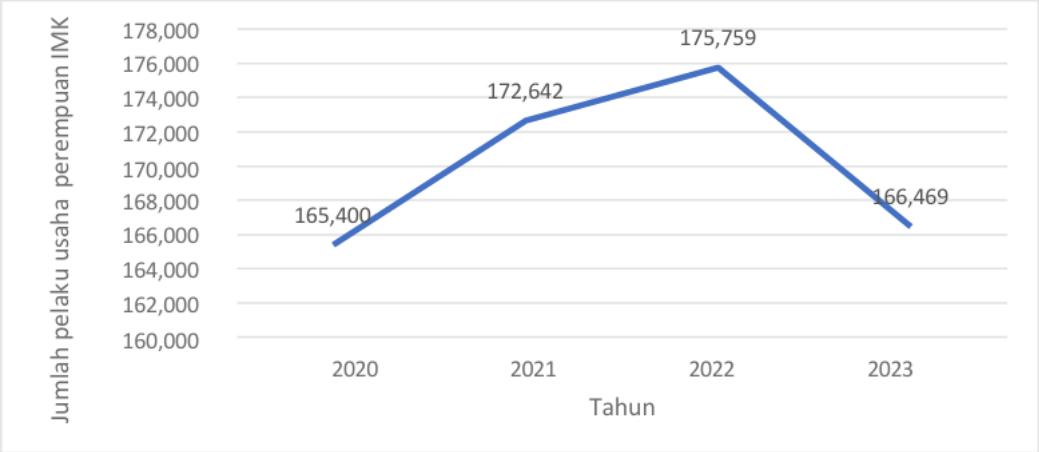

Figure 4. Graph of Fluctuations in the Growth of Women-Owned IMK Enterprises
Source: *Processed data, 2025, based on the West Java Industrial Profile 2022–2025*

The graph illustrates that the growth in the number of women-owned IMK enterprises in the food industry subsector has not been stable. During the 2020–2021 period,

the number of enterprises increased by 7,242 units. This was followed by a further increase of 3,117 units in the 2021–2022 period. However, in the 2022–2023 period, a decline of 9,290 units was recorded. Overall, the figure depicts a downward trend in the growth of women-owned IMK enterprises in the food industry subsector.

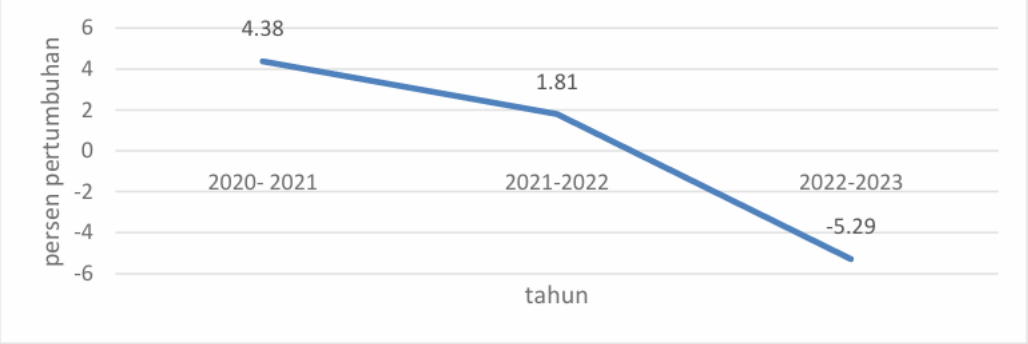

Figure 5. Percentage Growth Graph of Women-Owned IMK Enterprises
Source: *Processed data, 2025, based on the West Java Industrial Profile 2022–2025*

The graph shows a growth trend that tends to decline from year to year. In the 2020–2021 period, the growth trend in the number of women-owned IMK enterprises in the food industry subsector reached a positive 4.38%. However, in the 2021–2022 period, the growth trend decreased compared to the previous period, falling to only 1.81%. In the subsequent 2022–2023 period, the growth trend turned negative, reaching −5.29%.

Fluctuations in the number of women-owned enterprises indicate market instability and change (Cressy, 2006). Such fluctuations are influenced by the magnitude of internal, external, and structural challenges faced by women entrepreneurs (OECD, 2019). One key challenge that can be identified is the era of digitalization and its rapid acceleration, which has significantly transformed the business landscape (Mukhtar et al., 2024). This condition requires women IMK entrepreneurs to adapt quickly and to view digitalization as an opportunity to enhance innovation and business competitiveness (Purnomo et al., 2021). In this context, the adoption of digital technology becomes crucial. Digital technology adoption refers to the extent and intensity of the use of digital technologies—such as e-commerce platforms, social media, and application-based services—in business processes to improve customer experience and overall business performance (Naibaho et al., 2025).

The adoption of digital technology has become an imperative (Manolova et al., 2024; Cherie Blair Foundation for Women, 2024; Jannat et al., 2024; UNCTAD, 2022; Eurochambres, 2025). Weak adoption of digital technologies results in lost market opportunities, low efficiency, and declining competitiveness. In the long run, this condition threatens business sustainability if not promptly addressed through innovation and digital transformation (Junianti & Reza, 2025; Susilowati et al., 2022; INDEF, 2024).

Women-owned IMK enterprises must possess a high level of business resilience in order to cope with market challenges and uncertainty, and to maintain business continuity and growth amid an increasingly complex business environment—particularly in the era of digitalization, which demands continuous adaptation and innovation (Gergerly et al., 2024; Hernandez et al., 2024). Empirical studies indicate that a moderate level of business

resilience is generally sufficient only to support short-term survival, but is inadequate to ensure sustainable business growth, especially when digital technology adoption remains low or has not been fully optimized (Sharma et al., 2023; Khanom, 2023; Balo et al., 2024). When business resilience is at a low level, enterprises become increasingly constrained in their ability to grow and adapt in volatile and highly disruptive markets. Therefore, this study posits that digital technology adoption plays a critical role in enhancing sustainable business resilience in the digital era.

Digital technology adoption is not only viewed as having the potential to directly influence business resilience, but more importantly through its role in enhancing women's capacity, autonomy, and bargaining position across various spheres of life. Through the utilization of digital technologies, women entrepreneurs gain broader access to information, markets, networks, and resources, which in turn strengthens their economic, social, psychological, and political empowerment (women's empowerment) as a prerequisite for reinforcing business resilience (Beizhan et al., 2024). In this context, the Gender Empowerment Index (IDG) of West Java, at 72.76, is categorized as high; however, substantial interregional disparities persist. For instance, Bandung City records a relatively high score (70.49), while Sukabumi City, Tasikmalaya City, and Bogor City fall into the moderate to low categories (66.93; 59.51; and 56.99, respectively). These regional gaps indicate that the benefits of digital technology adoption and the strengthening of business resilience have not been experienced evenly by all women entrepreneurs. This condition underscores the urgency of examining women's empowerment as a mediating mechanism—namely, the extent to which digital technology adoption is effectively translated into enhanced women's empowerment, and how such empowerment subsequently contributes to strengthening business resilience. Accordingly, this study is designed to test whether and how women's empowerment functions as a crucial channel linking digital technology adoption with women entrepreneurs' ability to survive, adapt, and grow in a dynamic business environment, including across regions with differing levels of empowerment.

A number of global studies (UN Women, 2024; Cowater International, 2025; Anten, 2020; Hernandez et al., 2024; Wefi, 2024) indicate that the synergy between digital technology adoption and women's empowerment plays an important role in strengthening business resilience and the economic role of women entrepreneurs. However, these findings remain largely contextual and descriptive in nature. Therefore, more focused empirical testing is needed to examine the extent to which women's empowerment mediates the relationship between digital technology adoption and business resilience among women IMK entrepreneurs in the food industry subsector in West Java.

Furthermore, financial literacy represents a critical resource that can either strengthen or weaken the effect of digital technology adoption on the business resilience of women entrepreneurs. Financial literacy equips women with the knowledge, skills, and confidence to manage economic resources, make more effective financial decisions, and reduce vulnerability to financial risks (OECD, 2013; Tubastuvi & Purwidianti, 2023). Accordingly, in this study, financial literacy is positioned as a moderating variable that is expected to strengthen the influence of digital technology adoption on business resilience. This implies that women entrepreneurs with higher levels of financial literacy are better able to leverage digital technologies more effectively to sustain and enhance the resilience of their businesses.

1. RESEARCH METHOD

Research Design

The methods section should enable readers to clearly understand the research design and procedures applied. This study employs a comprehensive explanatory quantitative approach (George & Merkus, 2023), aimed at both describing the characteristics of the research variables and testing the causal relationships among variables formulated in the conceptual model. A quantitative approach is chosen because it allows variables to be measured objectively and analyzed using statistical techniques that emphasize the validity and reliability of research findings (Creswell, 2014; Hardani et al., 2020).

1) Descriptive research: This component aims to provide a comprehensive overview of the characteristics of the research object, including respondent profiles, the dynamics of the main variables, and the conditions of women-owned IMK enterprises in the food industry subsector in West Java.
2) Explanatory research: This component is used to explain and test the effects (causal relationships) between independent and dependent variables, as well as to examine the roles of moderating and/or mediating variables in strengthening, weakening, or mediating these relationships (Sekaran & Bougie, 2022).
3) Verificative research: This component is intended to confirm or verify the proposed hypotheses based on empirical data collected through surveys and tested using advanced statistical methods, such as Structural Equation Modeling–Partial Least Squares (SEM-PLS) (Chin, 1998; Hair et al., 2021).

The data collection method employed in this study is an explanatory survey, which gathers information from a sample through a structured questionnaire in order to describe and analyze various aspects of the population (Hardani et al., 2020). This method is appropriate for capturing respondents' perceptions, behaviors, and experiences related to the key research variables in a systematic and comparable manner. Furthermore, the research model integrates the Resource-Based View (RBV) to analyze the role of internal resources in supporting competitive advantage and business resilience among women-owned IMK enterprises from descriptive, explanatory, and verificative perspectives. The Dynamic Capability Theory (DCT) complements the RBV framework by explaining how adaptive, innovative, and transformative capabilities are dynamically deployed to respond to rapid and disruptive changes in the business environment. Within this study, DCT is applied particularly in the explanatory and verificative dimensions to understand how women entrepreneurs continuously reconfigure their resources and capabilities to sustain and enhance business resilience.

Research Subjects and Target Audience

The object of this study comprises women-owned IMK enterprises in the food industry subsector located in Tasikmalaya City, Sukabumi City, Bogor City, and Bandung

City. The food industry subsector is selected because it is the most developed subsector and the one most predominantly driven by women entrepreneurs in the province.

The subjects of this study are women entrepreneurs who act as owners and managers of IMK enterprises in the food industry subsector in West Java Province, and who are officially registered with clear and valid legal status at the Provincial Office of Cooperatives and Micro, Small, and Medium Enterprises (DISKOPUMKM) in Tasikmalaya City, Sukabumi City, Bogor City, and Bandung City. The selection criteria include:

1. Women entrepreneurs who own IMK business units in the food industry subsector, with ownership ranging from 51% to 100%;
2. Business units that have been operating for a minimum of three years;
3. Possession of primary business legality, namely a valid Business Identification Number (Nomor Induk Berusaha/NIB);
4. Official registration with the Provincial Office of Cooperatives and Micro, Small, and Medium Enterprises (DISKOPUMKM) of West Java in the respective city or regency where the business is domiciled;

In this study, the sample was determined using stratified random sampling, a probability sampling technique applied when the population consists of members that are stratified or classified into distinct groups. Stratified random sampling is conducted by dividing the population into several mutually exclusive and collectively exhaustive subgroups or strata based on specific characteristics, and then randomly selecting sample units from each stratum. This procedure ensures that each element within a stratum has an equal probability of being selected and that all strata are adequately represented in the research sample (Sekaran & Bougie, 2022; DeYoreo, 2018).

Data Sources

Primary data are data obtained directly from research subjects through data collection methods such as questionnaires (Sekaran & Bougie, 2022). In this study, primary data consist of information collected directly from individual or group respondents by administering structured questions through a questionnaire. Primary data were obtained using an online questionnaire distributed to 1,556 women entrepreneurs operating IMK enterprises in the food industry subsector in West Java, located in Tasikmalaya City, Sukabumi City, Bogor City, and Bandung City. Primary data sources provide direct and specific insights that are highly relevant to the objectives of the study.

Secondary data are data obtained from other previously published sources (Sekaran & Bougie, 2022), such as government reports, statistical publications, research journals, books, and articles. This study utilizes secondary data from various sources, including Statistics Indonesia (BPS), the West Java Provincial Office of Cooperatives and MSMEs (DISKOPUMKM), surveys conducted by government ministries and private institutions, as well as prior empirical studies, with the primary time span covering the period from 2020 to 2023.

Data Collection Techniques

The data collection technique employed in this study is the survey method, in which data are obtained directly from the information source, namely the research subjects. The survey method used is a personally administered questionnaire, which involves direct contact or interaction between the researcher and the respondents—women entrepreneurs who own and manage IMK enterprises in the food industry subsector and are registered with the Provincial Office of Cooperatives and Micro, Small, and Medium Enterprises (DISKOPUMKM) of West Java. This approach is intended to obtain data in the form of respondents' statements regarding their opinions, attitudes, experiences, and characteristics, either at the individual or group level.

The questionnaire was developed based on the research variables, dimensions, and indicators, and was structured in the form of standardized questions. It included predefined response options for demographic data and numerical scale options for variable measurement. The questionnaire was then distributed to the respondents. A five-point Likert scale was employed, allowing respondents to select the option that best reflected their perceptions or opinions.

Table 2. Five-Point Likert Scale

Kategori Jawaban	Skor Peringkat
Sangat Tidak Setuju	1
Tidak Setuju	2
Netral	3
Setuju	4
Sangat Setuju	5

Source: *Processed data, 2025.*

In this study, the use of a five-point Likert scale is intended to facilitate respondents in selecting their answers and to provide a neutral option when the questions are perceived as having little relevance or impact on them. This approach helps address respondents' potential uncertainty and allows for a broader range of responses to be captured. According to Chyung et al. (2017), the inclusion of a neutral option in a Likert scale increases the likelihood that respondents will select the neutral category when questions are perceived as unfamiliar, ambiguous, or socially undesirable.

The researcher developed the questionnaire items in accordance with the operationalization of variables (as presented in Tables 3.5, 3.6, 3.7, and 3.8), which detail the conceptual and operational definitions of the six variables that constitute the focus of this study, along with demographic questions. The questionnaire was then distributed using Google Forms through the following procedures :

a. Obtaining formal permission from the West Java Provincial Office of Cooperatives and Micro, Small, and Medium Enterprises (DISKOPUMKM) and the West Java MSME Field Coordinators;
b. Joining WhatsApp groups of women entrepreneurs in Tasikmalaya City, Sukabumi City, Bogor City, and Bandung City;

c. Working together with the field coordinators to interact with members of these WhatsApp groups in order to explain the objectives of the study and the technical procedures for distributing and completing the questionnaire.

Data Analysis Techniques

1. Pre-Test Instrument Testing with a Sample of 30 Respondents

The validity test in this study was conducted using the Pearson Product Moment correlation technique, by correlating the score of each questionnaire item with the total score of the corresponding variable. An item is considered valid if the calculated correlation coefficient (r-calculated) is greater than the r-table value at a significance level of 0.05.

2. Reliability Test

The reliability test was conducted using Cronbach's Alpha, with the criterion that an instrument is considered reliable if the Cronbach's Alpha value is ≥ 0.60 (Ghozali, 2021).

3. Descriptive Analysis

According to Green et al. (2023) in Descriptive Statistics, descriptive analysis is the process of summarizing numerical and categorical data in a concise and informative manner, with the aim of describing the main characteristics of the data. They emphasize that the mean and standard deviation are the primary descriptive statistics used to represent numerical data and are widely applied in research.

4. Verificative Analysis

Verificative analysis is a type of statistical analysis used to test hypotheses, theories, or findings from previous research. According to Sekaran & Bougie (2022), the purpose of verificative analysis is to verify the relationships between two or more variables and to help confirm or reject the proposed hypotheses based on statistical evidence. In this study, verificative analysis is conducted using Structural Equation Modeling – Partial Least Squares (SEM-PLS). SEM-PLS is a multivariate analysis method used to simultaneously explore and test relationships among variables, with the objectives of predicting, exploring, or developing structural models (Hair et al., 2023).

5. Measurement Model Testing (Outer Model)

Measurement model testing in PLS-SEM involves three main aspects: Convergent Validity, Discriminant Validity, and Internal Consistency Reliability. Convergent Validity is evaluated by examining the Average Variance Extracted (AVE) and the loading factor of each indicator, which indicate the extent to which the indicators within a construct are correlated and consistently measure the intended latent variable.

6. Structural Model Testing (Inner Model)

The evaluation of the structural model in PLS-SEM aims to measure the predictive capability of the model (Ghozali, 2021). This evaluation focuses on understanding whether the relationships between the independent constructs (latent variables that exert influence) and the dependent constructs (latent variables being influenced) adequately explain the hypothesized relationships in the study. In other words, this assessment helps determine whether the proposed model can address the research questions and support or reject the previously formulated hypotheses, while also providing a clearer understanding of the dynamics among latent variables within the model.

7. SEM-PLS Model Estimation Using Bootstrapping Technique

To gain a deeper understanding of the constructed PLS model, the bootstrapping technique can be applied. Bootstrapping is a process used to assess the significance level or probability of various effects in the model, such as direct effects (the direct influence of one variable on another), indirect effects (effects transmitted through a mediator), and moderation analysis. This technique allows for robust statistical inference without assuming a specific data distribution.

2. RESULTS AND DISCUSSION

3.1 The Effect of Digital Technology Adoption on Business Resilience

The study results indicate that Digital Technology Adoption has a positive and significant effect on Business Resilience, with a path coefficient of 0.538, a t-statistic of 9.063, and a p-value of 0.000. These values demonstrate that digital technology adoption is a strong determinant in enhancing women entrepreneurs' ability to survive, adapt, and recover their businesses amid an uncertain business environment. Empirically, these findings confirm that digital technology makes a tangible contribution to building business resilience in the food industry subsector of IMK in West Java.

These findings are consistent with Zhang et al. (2024), who demonstrated that digital technology innovation significantly enhances business resilience by improving operational efficiency and accelerating adaptation to market changes. Digital technology adoption enables entrepreneurs to respond more flexibly to external disruptions, including adjusting business models, marketing strategies, and distribution patterns. In the context of MSMEs, this capability is particularly crucial, as limited resources make entrepreneurs more vulnerable to crises.

Furthermore, Corvello et al. (2022) emphasize that digitalization of business processes helps MSMEs not only to survive but also to become more adaptive and resilient during the COVID-19 crisis. Digital technology adoption enables entrepreneurs to maintain operational continuity through digital channels, expand market reach, and reduce reliance on physical interactions. This aligns with the situation of women entrepreneurs, who often face limitations in mobility and market access, making digital technology a strategic solution for sustaining their businesses.

From a theoretical perspective, these findings reinforce the Resource-Based View (RBV) (Barney, 1991), which considers digital technology as a valuable strategic resource capable of creating sustainable competitive advantage. In addition, the Dynamic Capability Theory (DCT) (Teece et al., 1997; Teece, 2007) explains that digital technology adoption enables entrepreneurs to sense, seize, and reconfigure more effectively in response to rapid changes in the business environment. In other words, digital technology functions as a dynamic capability that underpins business resilience.

These research findings are also in line with Bekele et al. (2025), who found that higher levels of digitalization significantly contribute to business resilience, particularly in sectors and regions characterized by high uncertainty. In the context of women entrepreneurs, digital technology adoption not only enhances operational efficiency but also strengthens the flexibility of business strategies and risk mitigation capabilities.

Overall, the findings of this study confirm that Digital Technology Adoption is not merely an operational tool but a strategic mechanism for building Business Resilience among women entrepreneurs. The strong effect of digital technology adoption on business resilience indicates that the ability to leverage digital technologies effectively can reduce business vulnerability to external shocks, strengthen adaptive capacity, and enhance business continuity amid increasingly volatile and dynamic business environments.

3.2 The Effect of Digital Technology Adoption on Women's Empowerment

The analysis results indicate that Digital Technology Adoption has a positive and significant effect on Women's Empowerment, with a path coefficient of 0.414, a t-statistic of 6.545, and a p-value of 0.000 (< 0.05). The magnitude of the path coefficient and its statistical significance suggest that digital technology adoption is an important determinant in enhancing women's empowerment. These findings confirm that the use of digital technology functions not only as an operational support tool but also as a strategic means to strengthen economic independence, control over resources, and decision-making capacity among women entrepreneurs.

Empirically, the strong influence of digital technology adoption on women's empowerment demonstrates that digital technology opens opportunities for women to overcome structural limitations that have historically constrained their economic roles. Utilizing digital platforms such as social media, online marketplaces, and digital financial services enables women entrepreneurs to access broader markets, build business networks independently, and manage transactions without high dependence on others. This situation enhances women's agency in managing their businesses and making strategic decisions, which serves as a key indicator of empowerment.

These findings align with Salamzadeh et al. (2025), who stated that digital technology adoption significantly enhances women's economic autonomy by expanding access to markets and business information. Similarly, Uddin et al. (2023) found that women's active engagement on digital platforms strengthens business decision-making abilities and financial independence. Furthermore, Verma et al. (2024) emphasized that digital technology acts as an enabler of empowerment by providing access to resources, collaborative networks, and economic opportunities that were previously difficult for women to reach.

Furthermore, Sun et al. (2024) found that digital entrepreneurship directly contributes to increased confidence, digital skills, and social recognition among women entrepreneurs. This indicates that the impact of digital technology adoption is not only economic but also psychosocial, simultaneously strengthening women's positions within social and business structures. These findings are consistent with the results of this study, which show that higher intensity of digital technology adoption is positively correlated with increased levels of women's empowerment.

These findings are consistent with Empowerment Theory (Kabeer, 1999), which emphasizes that access to productive resources is a primary prerequisite for enhancing women's control and autonomy. The results also align with the Resource-Based View (Barney, 1991) and Dynamic Capabilities Theory (Teece, Pisano, & Shuen, 1997), which regard the ability to leverage digital technology as a strategic capability. Through digital technology adoption, women gain access to information, networks, and transactional channels that were previously difficult to reach, thereby strengthening their bargaining power, decision-making autonomy, and roles within both the business and household economic structures.

3.3 The Effect of Women's Empowerment on Business Resilience

The results of this study indicate that Women's Empowerment has a positive and significant effect on Business Resilience, with a path coefficient of 0.347, a t-statistic of 5.760, and a p-value of 0.000 (< 0.05). These findings suggest that the higher the level of women's empowerment, the stronger the business's ability to survive, adapt, and recover from various pressures and uncertainties in the business environment. Empirically, this result confirms that women's empowerment not only enhances individual well-being but also directly contributes to the business resilience of their enterprises.

The positive effect of Women's Empowerment on Business Resilience indicates that women's capacity to control resources, make strategic decisions, and manage risks serves as a critical foundation for business continuity. Women with higher levels of empowerment tend to be more confident in decision-making, more adaptive in responding to market changes, and more proactive in seeking alternative solutions during crises. This strengthens the business's ability to absorb shocks (absorptive capacity), adjust strategies (adaptive capacity), and restore performance (recoverability), which are the key dimensions of business resilience.

These findings align with the Women's Economic Empowerment (WEE) framework proposed by UN Women (2024), which emphasizes that access to economic resources, agency, and decision-making power are fundamental prerequisites for women's economic resilience. In the context of entrepreneurship, empowerment enables women to manage their businesses more independently and strategically, making their enterprises less vulnerable to external pressures.

These results are further supported by Seyfi et al. (2025), who found that gendered entrepreneurial resilience is strongly influenced by empowerment dimensions such as agency, creativity, and women's ability to navigate social norms. Their study shows that women entrepreneurs with higher levels of empowerment are able to leverage limitations as

sources of innovation, making their businesses more resilient during crises. Similarly, Hernandez et al. (2024), through a systematic literature review, concluded that self-efficacy, resilience, and social support are key interrelated capabilities that enhance the success and empowerment of women entrepreneurs. These three factors function not only as psychological and social resources but also as mechanisms that allow women to remain adaptive, innovative, and confident when facing uncertainty. Taken together, these findings consistently demonstrate that the higher the level of women's empowerment—through strengthening self-efficacy, social support, and resilience capacity—the greater their ability to sustain and grow their businesses amid various pressures and crises.

Furthermore, Abidin et al. (2025) emphasize that the leadership and adaptive capacity of women entrepreneurs play a crucial role in maintaining local economic resilience post-crisis. Empowered women are better able to diversify products, leverage digital technology, and strengthen business networks to sustain their enterprises. These findings clarify that empowerment not only enhances individual resilience but also generates a ripple effect on the stability and sustainability of businesses.

From the perspective of resilience theory (Luthans, 2002) and the Resource-Based View, women's empowerment can be understood as a strategic resource that enriches the internal capability base of women entrepreneurs, including knowledge, self-confidence, social networks, and decision-making abilities. This combination of resources enhances the business's capacity for adaptation and innovation in response to a dynamic environment. Accordingly, the findings of this study confirm that women's empowerment is a strategic factor that directly strengthens business resilience, making it not only relevant as a social agenda but also as a sustainable strategy for building business resilience.

3.4 The Effect of Digital Technology Adoption on Business Resilience with Women's Empowerment as a Mediator

The results of this study indicate that Women's Empowerment serves as a significant mediating variable in the relationship between Digital Technology Adoption and Business Resilience. This is evidenced by an indirect effect coefficient of 0.144, with a t-statistic of 3.944 and a p-value of 0.000 (< 0.05). These findings suggest that digital technology adoption not only has a direct impact on enhancing business resilience but also indirectly strengthens business resilience by increasing women's empowerment. Thus, women's empowerment functions as a crucial mechanism that bridges the effect of digital technology adoption on the ability of businesses to survive, adapt, and recover from shocks.

These mediation results indicate that digital technology adoption alone does not automatically enhance business resilience unless it is accompanied by the strengthening of women's roles and capacities as business managers. While digital technology adoption provides access to broader markets, information, networks, and transactional systems, its strategic benefits are maximized when women have control, agency, and decision-making capacity over these resources. In other words, digital technology adoption functions as an enabler, whereas women's empowerment acts as a conversion mechanism that transforms technological potential into tangible business resilience.

These findings are in line with Salamzadeh et al. (2025), who demonstrated that women entrepreneurs' use of social media, e-commerce, and fintech enhances their control

over income, economic independence, and decision-making autonomy, ultimately strengthening business sustainability. Similarly, Gochhait et al. (2025), through a systematic literature review, emphasized that digital technology adoption increases women's empowerment by providing easier access to digital resources, funding platforms, and collaborative networks, which in turn improves business capacity and socio-economic benefits. These findings reinforce the argument that empowerment serves as a key mechanism linking technology adoption to more resilient business outcomes.

These findings are consistent with the Women's Economic Empowerment (WEE) framework (UN Women, 2024) and resilience theory (Luthans, 2002). The WEE framework emphasizes that access to resources, agency, and decision-making opportunities are key prerequisites for economic resilience, while resilience theory views the capacity of individuals and organizations to absorb and recover from shocks as the result of accumulated resources and internal capabilities. Digital technology adoption provides a strategic channel for women to access these resources, but its impact on business resilience is stronger when women are already empowered economically and socially.

Thus, the findings of this study confirm that the role of digital technology adoption in building business resilience is not only direct but also transformative through the strengthening of women's empowerment. These results highlight that policies and interventions promoting digital technology adoption among women entrepreneurs should be accompanied by systematic efforts to enhance women's capacity, agency, and control over technology, ensuring that its impact on business resilience is sustainable.

3.5 The Effect of Digital Technology Adoption on Business Resilience with Financial Literacy as a Moderator

The results of this study indicate that Financial Literacy acts as a significant moderating variable that strengthens the effect of Digital Technology Adoption on Business Resilience. This is evidenced by an interaction coefficient of 0.081, with a t-statistic of 2.177 and a p-value of 0.030 (< 0.05). These findings suggest that the positive impact of digital technology adoption on business resilience is stronger among women entrepreneurs with higher levels of financial literacy. Thus, financial literacy functions as an enhancing factor that determines the effectiveness of digital technology in building adaptive capacity and sustainable business resilience.

These results indicate that digital technology adoption does not operate in a vacuum; rather, its effectiveness heavily depends on the cognitive and managerial capabilities of entrepreneurs in understanding and managing the financial implications of the technology. Digital technology adoption provides systems, data, and access (e.g., through online sales platforms and FinTech services), but financial literacy determines whether this access can be converted into sound financial decisions, risk mitigation, and sustainable business strategies. In other words, financial literacy serves as a mechanism that optimizes the strategic benefits of digital technology adoption.

These findings align with Gosal and Nainggolan (2023), who demonstrated that financial literacy positively influences FinTech adoption and indirectly enhances SME

performance and sustainability through easier access to financing and better financial management. Similarly, Etikonomi (2024) emphasized that entrepreneurs with higher financial literacy exhibit greater confidence and preparedness in effectively utilizing digital financial technologies. In the context of women entrepreneurs, Kurniasari and Lestari (2024) showed that financial literacy enables more productive use of FinTech, ensuring that digital technology truly impacts business success and resilience.

From a theoretical perspective, these findings are consistent with the Resource-Based View (Barney, 1991) and Dynamic Capabilities Theory (Teece et al., 1997). Financial literacy can be regarded as a valuable and hard-to-imitate internal capability that enables entrepreneurs to assess the cost–benefit of digital technology adoption, manage financial risks, and leverage digital information in the processes of sensing, seizing, and reconfiguring. Women entrepreneurs with strong financial literacy are better able to use digital technology to monitor cash flows, maintain liquidity, plan financing, and respond to financial pressures during crises. Conversely, without adequate financial literacy, digital technology adoption may remain superficial and contribute less effectively to strengthening business resilience.

Thus, the findings of this study confirm that digital technology adoption and financial literacy constitute a complementary combination of capabilities in building business resilience. Digital technology adoption provides the tools and infrastructure, while financial literacy determines the effectiveness of their use. Therefore, strengthening financial literacy becomes a key strategy to ensure that digital technology adoption by women entrepreneurs can be optimally translated into sustainable business resilience in the face of uncertainty and economic crises.

The impact of digital technology adoption on business resilience is strongest through the direct pathway, followed by the mediating role of women's empowerment, while the effect moderated by financial literacy is relatively the weakest, although it remains statistically significant.

3. CONCLUSION

a. Variable description**:** Digital technology adoption falls into the *very high* category, while business resilience, women's empowerment, and financial literacy are classified as *high*. The very high level of digital technology adoption indicates that the majority of respondents have extensively integrated digital technologies into their business activities. This condition suggests that women entrepreneurs do not merely use technology as an operational support tool, but also consider it a strategic component of business management, encompassing marketing, transactions, and information management. Although business resilience, women's empowerment, and financial literacy among women entrepreneurs are currently at a high level, substantial opportunities remain to further enhance these aspects to reach a very high category.
b. Digital technology adoption has a significant effect on business resilience. Higher levels of digital technology adoption are associated with stronger business resilience.

c. Digital technology adoption has a significant effect on women's empowerment. Higher levels of digital technology adoption lead to stronger women's empowerment.
d. Women's empowerment has a significant effect on business resilience. Stronger women's empowerment is associated with greater business resilience.
e. Digital technology adoption affects business resilience through women's empowerment. The stronger the effect of digital technology adoption mediated by women's empowerment, the greater the business resilience.
f. Digital technology adoption, when moderated by financial literacy, has a significant effect on business resilience. Higher levels of financial literacy strengthen the effect of digital technology adoption on business resilience.

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