

Received: 25-07-2022 | Revised in Revision: 06-01-2023 | Accepted: 01-03-2023



## Uncovering the indispensable role of women in nurturing resiliency: Evidence from MSMEs in Denpasar

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DOI: <https://doi.org/10.22219/jibe.v6i02.21938>

### Abstract

This study aims to explore the economic resilience of the families of women MSMEs actors in Denpasar City during the pandemic. Non-proportional random sampling was used to select samples, and binary logistic analyzes were used to analyze the data. This study reveals that women actors in MSMEs show greater economic resilience than men. We argue that the finding related to the work ethics of Balinese women that deeply rooted in their cultural beliefs.

*Keywords: Covid-19 pandemic, Woman, MSMEs*

### Introduction

Family economic resilience refers to the ability of families to recover and thrive from economic problems. It not only involves surviving economic downturns but also increasing family income (CLES, 2016). According to the Bank of International Settlements (BIS, 2016), family economic resilience is the ability of families to quickly recover from adverse shocks in the economic aspect that result in financial imbalances. This definition highlights the importance of developing a strategy for family economic resilience, which can help families make the right decisions and take appropriate actions during an economic crisis. The vulnerability of family economies during a pandemic has been observed in various countries, particularly in developing countries where most of the population's activities are in the informal sector. Social restrictions have led to decreased productivity for many workers, particularly in the informal sector, such as small micro and medium enterprises (MSMEs) actors. Job instability in the informal sector often translates into low incomes, making it difficult for families to save and increasing their vulnerability to economic shocks (Nunez et al., 2022). Compared to other groups of workers who tend to have higher incomes, those in the informal sector have fewer cash reserves or savings to survive during an economic downturn.

Economic resilience is vulnerable to shocks that can disrupt household survival (Briguglio, 2006). To address economic vulnerability, communities must be able to adapt to various conditions that can reduce their welfare from an economic perspective. This adaptability can determine how vulnerable a family is in dealing with crisis phenomena. Creating a strategy that aims to encourage the recovery of economic resilience can foster adaptability. One coping strategy used by households to deal with shocks is to increase the supply of labor from household members, including women. However, women often face a double burden in their daily lives, managing domestic work, production, and community management collectively (Moser, 2021). Women from diverse social and economic backgrounds have varying limitations. For many women, especially during a pandemic, the informal sector is the easiest option to enter the workforce. This sector includes MSMEs that operate with low-level organizations or on a small scale, with little or no clear distinction between labor and business capital as factors of production (Central Bureau of Statistics, 2014). One of the main reasons why women choose to work in this sector is the absence of time constraints.

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Empirical studies suggest that women play an active role in maintaining family economic resilience during a pandemic. [Andrean et al. \(2022\)](#) found that women's contribution to family economic recovery is significant, especially in families facing economic vulnerabilities. [Dhamayanti \(2022\)](#) found that the phenomenon of layoffs during a pandemic has led many women to become mompreneurs by starting micro-enterprises to help their families financially. Women's participation in managing the agricultural sector can also boost income, as stated in [Suwena et al.'s \(2021\)](#) research. Women also play a passive role in maintaining family economic resilience by managing household finances. [Putra \(2020\)](#) found that women reduce unnecessary expenses and increase the supply of basic needs, which helps maintain family resilience. Meanwhile, [Ras et al. \(2022\)](#) concluded that women not only maintain family education but also generate additional income in the family economy while managing household finances. In Latin America, women's contribution to the continuity of family businesses was previously considered invisible or hidden, but empirical studies by [Cruz et al. \(2022\)](#) reveal that they play managerial roles and formal service arrangements in their businesses.

Although there have been many studies on the role of women in family economic resilience, studies focusing on Balinese women are still minimal. According to [Purwana \(2010\)](#), Balinese Hindu women also consider the cultural side and local wisdom, which is shaped by the conditions in Bali, emphasizing a high work ethic and work as a form of yadnya or a sincere holy sacrifice. Based on the above, this research aims to examine how opportunities for Balinese women MSMEs actors affect the economic resilience of the family. The results of this research can be used as a reference in policymaking to strengthen competitiveness and women's participation to help maintain family economic resilience.

## Literature Review

### Family Resilience Concept

The concept of family resilience highlights the importance of access to income and resources to meet basic needs during times of economic shocks that disrupt income stability. These basic needs include food, clean water, health, education, shelter, and social participation within the community ([Frankenberger, 1998](#)). Family resilience is identified by the ability to persevere physically, materially, and psychologically, and continue living independently (Regulation of the Government of the Republic of Indonesia Number 21 of 1994). Family resilience is also reflected in a family's ability to solve problems and achieve prosperity. Family economic resilience refers to a family's ability to recover from economic problems and rise above them. It encompasses not only the ability to survive economic adversity, but also the ability to increase family income ([Cles, 2016](#)). The Bank of International Settlements (BIS) defines family economic resilience as the ability of a family to quickly recover from detrimental shocks and problems that cause financial imbalances (BIS, 2016). Therefore, the family economic resilience strategy involves a plan for family decision-making in order to survive and create new conditions when economic shocks occur. Economic resilience is very vulnerable to shocks that can disrupt household survival, as [Briguglio \(2006\)](#) notes, and relates to the ability of a "maintained" economy to recover from the adverse effects of inherent shocks.

Family resilience reflects social resilience because the family is the smallest unit in the social system. Social security within a family is defined by the Central Statistics Agency as the result of the smallest scale of social change. Family resilience can be measured using a systems approach that includes input components, both physical and non-physical resources, family management processes that reflect the ability to manage problems and present solutions, as well as outputs indicated by the fulfillment of physical and non-physical needs. A family is considered to have high resilience in three main aspects: a) Physical resilience is confirmed by meeting needs for food, clothing, shelter, education, and health; b) Social resilience is demonstrated by the role and participation in religious values, effective communication, and high family commitment; and c) Psychological resilience is exhibited by the ability to cope with non-physical problems, positive emotional control, positive self-concept, and caring among family members.

### The Role of Women according to Hindu Values in Bali

Gender reflects social interactions in society that differentiate behavior between women and men, which is proportional to morals, ethics, and culture ([Rahmawati, 2015](#)). Mistakes in reflecting on the roles of women and men in society give rise to gender inequality and injustice, as there is a view that men have a more special position than women. In Bali, culture is still synonymous with the patrilineal kinship system ([Sudarta, 2006](#)), which is contradictory to Hindu religious teachings where women are glorified as a source of strength with an important role. Women in Hinduism are worshipped as goddesses, as stated in the story of the Hindu Puranas "Brahman". According to the story, Lord Brahma with his magic, namely Dewi Saraswati, carries out the task of creating, Lord Vishnu with his magic Goddess Lakshmi as the preserver,

and Lord Shiva with his Sakti Dewi Parwati as the fuser.

Other sacred teachings in Hinduism show gender equality between men and women, called *Kita Seloka*, where God divided himself into men and women. From this explanation, it can be concluded that men and women should have the same position in social life. According to Hindu teachings, gender is not a difference in social treatment, but rather emphasizes consideration of what is appropriate for men and women. Both have an equal role in social life, providing support and complementing each other to create prosperity.

One coping strategy for households dealing with shocks is to increase the supply of labor from household members, including women. In analyzing women's workload in the third world, Moser (2021) found the concept of triple roles, referring to the double burden in women's daily lives. Women handle domestic work, production, and community management collectively. Women have different social and economic backgrounds, and the informal sector is the easiest option for women to enter work, given that informal MSMEs are still dominant compared to formal ones. In accordance with the [Law of the Republic of Indonesia Number 20 of 2008](#), MSMEs can mean businesses run by individuals, households, or small business entities.

Despite the limitations faced by women, there are also positive sides to them. According to research by Indiworo (2017), women possess various advantages, such as diligence, conscientiousness, tenacity, patience, honesty, toughness, a strong sense of responsibility, a strong will, high enthusiasm, and discipline. It is hoped that the government can provide guidance to women-managed MSMEs through soft loans and entrepreneurship training and management, enabling these MSMEs to develop properly. Empirical studies by Alie and Elanda (2020) also shows that women's role in building family economic resilience not only impacts the small family they foster but also has a broader effect on the economic resilience of the families around them. The role of women as the backbone of the family, as partners of husbands, and as agents of change and empowerment for other women is essential. Women can be involved and play a role in family economic resilience due to gender equality within the family. Other research also highlights the importance of women's role in the family.

## Research Method

The logistic regression method utilizes a mathematical function called the logistic function, which generates output values between 0 and 1 and produces an S-shaped curve. The logistic function has three distinct stages: initially, changes in the input values have little effect on the output probability until a certain threshold is reached; once the threshold is exceeded, the probability increases to one and remains there. Equation (1) defines the mathematical form of the logistic function used in logistic regression.

$$f(z) = \frac{e^z}{1+e^z} = \frac{1}{1+e^{-z}}, z \in R \quad (1)$$

The logistic regression model is utilized to predict the probability of Y taking on a specific value. This probability is determined by the formula (2), which includes model parameters  $\alpha_0, \alpha_1, \dots, \alpha_k$  and independent variables  $X_1, \dots, X_k$ . These variables can be either qualitative or quantitative.

$$P\left(Y = \frac{1}{X_1, \dots, X_k}\right) = \frac{e^{\alpha_0 + \alpha_1 X_1 + \dots + \alpha_k X_k}}{1 + e^{\alpha_0 + \alpha_1 X_1 + \dots + \alpha_k X_k}} \quad (2)$$

We use the non-proportional random sampling method from 31,986 populations of MSMEs actors in Denpasar City, Bali Provinces with a selection of 100 MSMEs actors—data collection techniques with surveys and structured questionnaires. In the research model, several variables are used, including economic resilience as the dependent variable, gender as the interest variable, and several control variables, to control the effect of the variable interest on the opportunities for women MSMEs to have solid economic resilience. Family economic resilience is determined using four dimensions: 1) availability of family housing; 2) per capita income per month; 3) sufficient financing for children's education; and 4) family financial security. Meeting at least Three of the four dimensions indicates solid economic resilience with a value of 1, while fulfilling less than three dimensions indicates vulnerability with a value of 0.

## Result and Discussion

Table 1 presents the characteristics of the MSMEs respondents, with 58% being women and 42% being men. Most of them are in their productive age (below 50 years) and have adequate education (high

school graduates), making it easy for them to adapt to the use of technology, especially during the pandemic. In terms of income, 60% of the respondents have a family income ranging from Rp. 2,000,000 to Rp. 6,000,000, indicating the efforts of MSMEs to survive during the pandemic. Financial management skills are crucial during this time, and the household's touch and intelligence, particularly that of women, play a significant role in managing priorities effectively. The study found that most MSMEs respondents in Denpasar City utilized digital technology, primarily Instagram, WhatsApp, and Gojek/Grab. Only a small percentage used Facebook and websites. This suggests that the respondents are knowledgeable about technology and have recognized its importance in running a business during a pandemic.

**Table 1. Characteristics of MSMEs Respondents in Denpasar City**

Observed variable	Number of Respondents	
	Person	%
Gender:		
Man	42	42
Woman	58	58
Age:		
< 30 years	25	25
30 to <40 years	32	32
40 to <50 years	24	24
50 to < 60 years	14	14
≥ 60 tahun	5	5
Education:		
Junior High School	3	3
Senior High School	40	40
Diploma	6	6
Bachelor	51	51
Income:		
< IDR 2,000,000	28	28
Rp. 2,000,000-Rp. 4,000,000	24	24
Rp. 4,000,001-Rp. 6,000,000	36	36
> IDR 6,000,000	12	12
digital technology:		
Instagram	36	36
Whatsapp	26	26
Facebook	13	13
Website	4	4
Gojek/grab	21	21
Total respondents	100	100

The multicollinearity test, which assessed the correlation between independent variables, confirmed that the assumption was not violated. The results showed that no correlation coefficient between independent variables exceeded 0.8, indicating that there is no multicollinearity problem in the model's independent variables. Additionally, a model fit test was conducted to evaluate concordance between predicted results and observations using the Hosmer-Lemeshow Test. The results indicated that the significance value was greater than alpha 0.05 (see Table 2), suggesting that there is no significant difference between the predicted classification and the observed classification. This indicates that the logistic regression model utilized can effectively explain the data and can be employed for further analysis.

Based on Table 2, it can be explained that the possibility of women MSMEs actors having stronger economic resilience is statistically significant at a significance level of 0.045. The results, with an odds ratio of 0.833, indicate that the chance for women to have stronger economic resilience is 0.70 compared to men. Robust tests were carried out by including several control variables in the model. Consistent results were still significant and improved, with a significance level of 0.029 and an odds ratio of 3.127. This indicates that the opportunity for women MSMEs actors to have stronger economic resilience was 0.96 compared to men MSMEs actors.

**Table 2. Binomial Logit Estimation**

Variabel	Odds Ratio	Robust P> Z	Probability
Gender	0.833	0.045	0.70
		with control variable	
Gender	3.127	0.029	0.96
Home Ownership	3,797	0.017	
Income	0.000	1.115	
Education fund	5,433	0.004	
Savings	5,333	0.002	
Health insurance	4,786	0.038	
Respondent's education	0.668	0.137	
Couple's education	-0.092	0.655	
Hosmer dan Lemeshow test			
Step	Chi Square	df	Significant
1	1.105	8	0.997

The Bank of International Settlements (BIS) defines family economic resilience as the ability of families to recover quickly from economic shocks and adverse situations, which can lead to financial imbalances (BIS, 2016). Thus, the strategy of family economic resilience can be seen as a plan for family decision-making during crises. Moreover, as household financial managers, women have a higher chance of survival during crises. Several control variables are also statistically significant in influencing the chances of strong economic resilience, indicating that women are better at managing finances during crisis conditions. Jentina Pakpahan, Director and Founder of the Youth Shine Indonesia Community (YSI), stated that many Indonesian women have become the backbone of their families during the pandemic. Women provide support in times of crisis when the head of the family loses their job due to layoffs (Pakpahan, 2021). With their empathy, effective community, and financial literacy, women can manage their finances well, achieve an adequate standard of living, and survive.

Women, as the majority population group, are challenged to take part in facing the changes that occur in their environment (Pantiasih, 2014). The involvement of working women is not limited to restoring diminished household resources, but they often also play a role as the backbone of the household. Women have the potential to carry out various productive activities that produce and can help the family economy. With this potential, women have the potential to play an active role in the process of economic recovery, such as during Covid-19. Despite limited access in all fields, women entrepreneurs are relatively more resilient in dealing with business dynamics and economic crises, such as the Covid-19 pandemic that is currently sweeping the world (Ministry of Women's Empowerment, 2018).

According to Siti Nur Azizah (2021), working women ensure stable family economic resilience. The role of women in family economic resiliency is also significant in enhancing the strength of the household economy (Anggita, 2018; Aziz, 2018; Hanun, 2017). UN research has stated that survey respondents who are women entrepreneurs make up most of the MSMEs founders. MSMEs led by women show greater flexibility during pandemics, are more adept at contingency planning, and are more likely to adopt conservative business strategies. They are also more likely to choose business continuity mechanisms that require operational adjustments, such as minimizing costs, renegotiating payment terms, and doing philanthropy. This increases their resilience in times of crisis. Additionally, both survey respondents and interviewees generally noted that during the pandemic, it is time for MSMEs to consider changing their business and production models and embracing greater use of ICT (UN, 2020).

## Conclusion, Suggestions and Limitations

The study's findings suggest that women MSMEs actors exhibit stronger economic resilience than their men counterparts. The study attributes this to women's high work ethic, flexibility in adapting to the pandemic, ability to manage finances effectively, and willingness to change business and production models according to the current conditions. These results highlight the need for more gender-responsive policies related to MSMEs. The government could consider focusing on strategies to enhance women's skills and productivity, thereby maintaining household economic resilience. Future research could explore the specific skills and traits that make women more resilient in managing MSMEs during times of crisis. Additionally, it would be useful to investigate the effectiveness of existing government policies in promoting gender equality in the MSME sector.

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