

EMPOWERING WOMEN, SUSTAINING ENTERPRISES: A STUDY ON THE SUSTAINABILITY FACTORS OF FELDA MICRO-ENTERPRISES

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ABSTRACT

This study examines the sustainability factors influencing micro-enterprises operated by FELDA women entrepreneurs in rural Malaysia. The primary objective is to identify the key determinants affecting the long-term sustainability of these enterprises. Employing a quantitative research design and a snowball sampling technique, data were collected through structured questionnaires from 50 FELDA women entrepreneurs in FELDA Lok Heng, Kota Tinggi, Johor. The survey focused on entrepreneurial characteristics, infrastructure, financial support, and socio-cultural dimensions. Descriptive analysis using mean scores revealed that market access, infrastructure availability, financial assistance, and social roles are pivotal in sustaining rural micro-enterprises. The findings highlight the interdependence of physical and non-physical factors in shaping business resilience and continuity. This study contributes to a deeper understanding of women's entrepreneurship in rural contexts by emphasizing the importance of integrated development strategies and strengthened support systems for FELDA women entrepreneurs. Ultimately, the study provides insights for policymakers and development agencies seeking to foster inclusive and sustainable rural economic growth through targeted interventions.

Keywords: Women entrepreneurs, FELDA, rural micro-enterprises, capacity building, business sustainability

1.0 INTRODUCTION

Rural women entrepreneurs in Malaysia have increasingly gained attention in recent years due to their potential contributions to rural development, poverty alleviation, and socio-economic transformation. Micro-enterprises, according to Samsudin et al. (2021), represent approximately 76% of all micro, small and medium enterprises (MSMEs) in Malaysia, and play a critical role in income generation, community resilience, and localised economic activity. Furthermore, the Ministry of Entrepreneur and Cooperative Development (KUSKOP, 2024) stated that MSMEs are projected to contribute 41% to the national GDP in 2024, compared to 39.1% in 2023 (equivalent to RM613 billion). From January to June 2024 alone, 206 entrepreneurship and cooperative development programs were implemented, benefiting nearly 400,000 MSMEs and cooperative entrepreneurs. This data, as reported by SME

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Corporation Malaysia (2024), highlights the vital role of MSMEs in driving economic growth and generating employment across the country.

Globally, women's participation in rural entrepreneurship is widely recognised as an important driver of poverty reduction, inclusive growth, and community resilience, particularly in regions with limited formal employment opportunities. Rural women typically operate micro- and small-scale enterprises that contribute to household income and local economic activity (De Vita et al., 2014; Cho et al., 2020). Despite their significance, these entrepreneurs face persistent challenges, including limited access to capital, markets, infrastructure, and business networks, alongside restrictive gender norms (Ahl, 2006). Consequently, recent scholarship has shifted attention from participation alone to the sustainability and resilience of women-owned rural enterprises, emphasising adaptive capacity, social support systems, and institutional linkages.

Recognising the potential of MSMEs to foster inclusive development, the government has expanded entrepreneurship programmes to focus on enhancing the micro-enterprises programme for rural regions, including areas managed by the Federal Land Development Authority (FELDA) (Ministry of Rural Development, 2021). These regions, often centred on agriculture and remote settlements, stand to benefit significantly from micro-enterprises-driven initiatives. By equipping FELDA residents with entrepreneurial skills, infrastructure, and financial access, the government seeks to cultivate a new generation of rural entrepreneurs who can strengthen community welfare and contribute to the sustainability of the rural economy (Ahmad, 2025). In particular, efforts to empower women through these programs have gradually transformed traditional gender roles, with more women becoming active contributors to household income and local economic activities (Kamaruddin & Vincent, 2020).

Despite this progress, rural women entrepreneurs continue to face significant structural and socio-economic challenges. Studies by Ahmad (2025), Radzi et al. (2017), and Azis et al. (2017) identified several barriers, including limited access to infrastructure, market information, digital technologies, financing, and institutional support, compounded by persistent gender norms. Within FELDA schemes, the success of small enterprises is further influenced by internal factors such as entrepreneurial competencies, leadership capabilities, technological literacy, and effective networking (Radzi et al., 2017). Moreover, scholars have emphasized the importance of equipping women-led micro-enterprises with entrepreneurial competencies such as digital literacy, innovative thinking, and strategic business planning to enhance resilience and competitiveness (Al Mamun, Fazal, & Muniady, 2019). Entrepreneurial training and exposure to development programs are also proven to improve business sustainability and adaptive capacity in response to socio-economic changes (Al Mamun, Muniady, & Fazal, 2019).

Given these dynamics, there is a pressing need to investigate not only the challenges confronting rural women entrepreneurs in FELDA areas but also the key strategies and skill set that enable their resilience and business continuity. In this context, micro-enterprises resilience refers to the ability of rural enterprises to survive, adapt, and grow amidst various economic, social, and environmental pressures (Kamarudin et al., 2020). The expansion of micro-enterprise programs into FELDA territories is expected to catalyse the transformation of rural communities by diversifying the local economy beyond monocrop commercial agriculture, particularly oil palm, thereby reducing dependency and promoting more sustainable and inclusive livelihoods (Ahmad, 2025; KUSKOP, 2023). Therefore, this study was to explore the key sustainability factors that supported the continuity and empowerment of women-led micro-enterprises in FELDA communities, with the broader objective of contributing to more inclusive and effective rural enterprise development strategies.

2.0 LITERATURE REVIEW

2.1 FELDA and Rural Economic Development

The Federal Land Development Authority (FELDA) was established in 1956 as a central pillar of Malaysia's rural development strategy, with the primary objective of alleviating poverty among landless rural households through structured land settlement and agricultural development (Mohamad Hashim, 2018). Initially focused on large-scale commercial agriculture, particularly oil palm and rubber, FELDA settlements were designed to provide settlers with land ownership, stable income, housing, and access

to basic infrastructure, thereby transforming rural livelihoods and reducing regional economic disparities. Over several decades, FELDA has been widely recognised for its role in improving rural living standards and contributing significantly to national agricultural output. The establishment of planned settlements, cooperative structures, and downstream processing facilities enabled income stability and socio-economic mobility among settler communities (Kamaruddin & Vincent, 2020). FELDA's development model has often been cited internationally as a successful example of state-led rural transformation, particularly during Malaysia's post-independence development phase.

In recent years, however, FELDA has faced evolving challenges that necessitate economic diversification beyond plantation-based activities. Issues such as fluctuating commodity prices, ageing settler populations, limited employment opportunities for second-generation settlers, and governance and financial restructuring have prompted renewed emphasis on entrepreneurship and downstream economic activities (BERNAMA, 2019; Bait Al Amanah, 2019). As part of this shift, FELDA has increasingly promoted micro-enterprise development, cooperatives, and value-added activities to strengthen local economies and reduce dependency on monocrop agriculture. Women's entrepreneurship has emerged as a key component of this diversification strategy (Ahmad, 2025). Women in FELDA settlements are actively involved in micro-and small-scale enterprises, particularly in food processing, catering, home-based businesses, and service-oriented activities that utilise local resources and flexible business models (Idris & Daud, 2014; Ahmad, 2025). These enterprises not only supplement household income but also contribute to job creation, social cohesion, and community resilience. Various programmes implemented by FELDA and related agencies aim to support women entrepreneurs through training, financial assistance, and market access initiatives.

Despite these efforts, the sustainability of women-led micro-enterprises within FELDA settlements remains uneven. Structural challenges persist, including limited access to updated business information, uneven programme implementation, dependency on informal family support systems, and varying levels of institutional follow-up (Radzi et al., 2017; Hassan, 2025). Furthermore, socio-cultural expectations and domestic responsibilities continue to shape women's entrepreneurial capacity and growth trajectories. These dynamics underscore the importance of examining FELDA women's entrepreneurship not only as an economic activity but as a complex interaction between institutional frameworks, social structures, and individual agency.

2.2 FELDA Women Entrepreneurship

Since its establishment in 1956, the Federal Land Development Authority (FELDA) has played a pivotal role in Malaysia's rural transformation, particularly through large-scale commercial agriculture (Mohamad Hashim, 2018). Over the decades, many FELDA settlements have developed into vibrant rural centres with active socio-economic activities. However, initiatives to diversify beyond agriculture, especially in cultivating entrepreneurship, have not received equal emphasis. This imbalance is particularly evident among women entrepreneurs, who often remain on the margins of FELDA's development agenda (Ahmad, 2025; BERNAMA, 2019). Although women have traditionally contributed economically within households and the informal sector, their entrepreneurial aspirations often face structural misalignments. These include policy orientations that continue to prioritise agricultural development over non-agricultural enterprise pathways more relevant to women (Idris & Daud, 2014). Moreover, these challenges are compounded by socio-cultural expectations and domestic obligations, which restrict women's capacity to engage fully in entrepreneurial ventures (Nadzri et al., 2014). Physical and environmental constraints, such as limited transportation infrastructure and inadequate market access, also exacerbate the problem. These limitations result in increased logistics and operating costs, reduced profit margins, and ultimately hinder business scalability and long-term resilience (FELDA, 2018; Bait Al Amanah, 2019).

At the policy level, women entrepreneurs in Malaysia are formally defined as those who manage or own businesses in which women hold at least 51% of equity shares (Ministry of Entrepreneurial and Cooperative Development, 2021). This definition recognises not only women's ownership but also their decision-making power in business operations. Women-led micro-enterprises in FELDA communities span sectors such as food processing, home-based businesses, and agriculture-based value-added activities. These ventures often leverage local resources and informal networks, contributing both to household income and to the wider economic vitality of their settlements (Ahmad, 2025). Importantly,

women entrepreneurs in FELDA are also agents of local job creation. As noted by Amad (2025) and Idris et al. (2014), small-scale enterprises, such as food stalls, catering services, homestays, grocery shops, and handicraft production, not only generate income for business owners but also create employment for other residents, particularly women and youth. Ahmad & Kamarudin (2025) further observed that women often participate in downstream economic activities like food processing and cottage industries, helping to reduce local unemployment and diversify livelihoods.

In addition, these women-led ventures contribute to community resilience by stimulating microeconomic activity through localized production and consumption patterns. Many products are sold both within FELDA settlements and to broader regional markets, enhancing income circulation and reinforcing the community's economic base. Despite the multifaceted challenges discussed, there are success stories that point to promising levels of entrepreneurial resilience. Notably, micro-enterprises in FELDA Lok Heng, Kota Tinggi, Johor, have demonstrated sustainable business practices that warrant closer examination (Ahmad, 2025; Zainury, 2022). These examples highlight the importance of identifying the types of entrepreneurial activities involved, the motivations behind them, and the enabling factors that contribute to sustainability among FELDA's women entrepreneurs.

2.3 Enablers and Barriers to FELDA Women's Entrepreneurial Participation

Women's participation in rural entrepreneurship, particularly among FELDA settlers, is shaped by a variety of interconnected enabling and restraining factors. These include structural elements like access to infrastructure and capital, as well as socio-cultural dynamics such as family support and social norms. The literature highlights several key factors that either facilitate or inhibit the entrepreneurial aspirations of FELDA women (Idris & Daud, 2014). Table 1 below outlines these factors, reflecting both institutional and individual dimensions.

Table 1: Enablers and barriers to FELDA women entrepreneurs' sustainability and resilience

Category	Enablers	Barriers
1. Education, Skills and Technological Access	<ul style="list-style-type: none"> Basic education and vocational training Use of social media for marketing (e.g., Facebook, WhatsApp Business) Digital entrepreneurship training Entrepreneurship workshops (e.g., WeJANA, DeWI) 	<ul style="list-style-type: none"> Limited formal education Poor internet access in rural areas Low business literacy (e.g., finance, marketing, digital illiteracy)
2. Access to Capital, Markets and Competition	<ul style="list-style-type: none"> Micro-financing schemes (e.g., TEKUN, AIM) Government grants and loans Local demand for food products, crafts, and services Opportunities to join expos or e-commerce platforms 	<ul style="list-style-type: none"> Lack of personal savings Difficulty accessing formal credit due to collateral or documentation issues Small or saturated local markets Limited access to larger/niche markets
3. Family and Social Support	<ul style="list-style-type: none"> Encouragement from spouse or children High motivation and personal initiative Family members sharing domestic tasks Flexible business types (e.g., home-based food production) 	<ul style="list-style-type: none"> Household responsibilities (childcare, caregiving) Low self-confidence or fear of failure Time poverty due to domestic workload No access to childcare services

		<ul style="list-style-type: none"> Community-based support systems (e.g., cooperatives, KRT) 	group (e.g.,	<ul style="list-style-type: none"> Male-dominated decision-making in family or community
4. Infrastructure and Mobility		<ul style="list-style-type: none"> Adequate road access and business premises Public transport availability 		<ul style="list-style-type: none"> Poor connectivity to markets or suppliers Limited transportation access for women
5. Institutional, Professional Networks and Policy Support		<ul style="list-style-type: none"> Government-led entrepreneurship programmes (e.g., SME Corp, MARA, FELDA initiatives) National Women's Policy (1989) alignment 		<ul style="list-style-type: none"> Bureaucratic red tape Lack of follow-up support or continuity of programs
6. Social and Cultural Norms		<ul style="list-style-type: none"> Positive role models within the community Acceptance of women in business in progressive areas Entrepreneurial confidence built through success stories 		<ul style="list-style-type: none"> Traditional gender roles Fear of community criticism for women in leadership roles Reluctance to take risks or scale up

Source: Adapted from Asitik (2023); Hasan (2025); Bhindi & Jangra (2025) and Ahmad (2025).

Table 1 outlines the enablers and barriers influencing the sustainability of FELDA women's micro-enterprises, categorized into six key dimensions. These factors were subsequently integrated into the design of the survey questionnaire used for data analysis, which will be presented in the following section of this article. The table highlights key enablers such as access to education, digital tools, micro-financing, family support, and government programs. However, barriers such as limited formal education, poor digital literacy, credit access issues, household burdens, and restrictive gender norms persist. Infrastructure gaps and weak policy implementation further challenge business resilience. The table emphasises the need for targeted interventions that address both structural limitations (e.g., financing schemes, infrastructure improvements) and socio-cultural dynamics enablers (e.g., family engagement, mind-set shifts) to effectively support the long-term sustainability and empowerment of rural women entrepreneurs. Interventions should also aim to mitigate persistent barriers such as traditional gender roles or limited financial literacy, which may hinder long-term entrepreneurial sustainability.

2.4 Resilience of FELDA Women Entrepreneurs

As highlighted in the previous section, a combination of enablers, such as access to training, capital, family support, and progressive social norms, play a critical role in fostering women's participation in entrepreneurial activities within FELDA communities. However, sustaining this participation over time requires more than initial support. It calls for resilience that is the capacity rural micro-enterprises to endure, adapt, and thrive despite social, economic, and environmental adversities (Lehan & Kamarudin, 2023). In general, resilience in entrepreneurship refers to the ability to sustain and adapt business activities in the face of challenges. For FELDA women, business resilience is shaped not only by financial factors but also by internal motivations, social support systems, and the ability to innovate (Ahmad, 2025). Many women entrepreneurs navigate multiple barriers, ranging from limited market reach and infrastructure gaps to cultural expectations, yet persist by adjusting their business models, such as embracing home-based operations or leveraging digital platforms (Hasan, 2025; Bhindi & Jangra, 2025). A synthesis of the literature identifies the following core resilience factors, presented in Fig. 1.

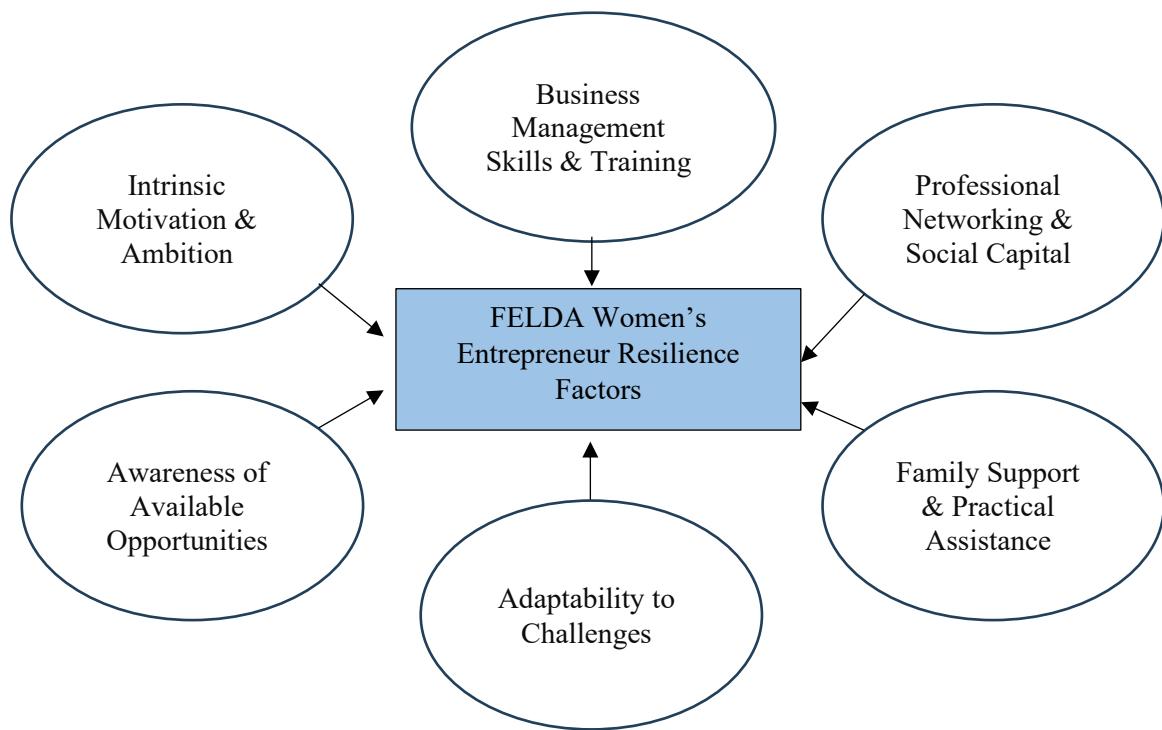


Fig. 1: Core resilience factors for FELDA women's entrepreneur. Source: adapted from Ahmad (2025); Hasan (2025); Bhindi & Jangra (2025) and Lehan & Kamarudin (2023).

As shown in Figure 1, several key resilience factors contribute to the sustainability of FELDA women's micro-enterprises. First factor, motivation and ambition are intrinsic drivers, as many FELDA women engage in entrepreneurship to achieve self-reliance, pursue personal goals, or supplement household income (Idris & Abu Bakar, 2019). This internal motivation forms the psychological foundation for business continuity, especially during periods of hardship. The business management skills and training factor is equally critical. Exposure to formal and informal training, such as those offered by NADI FELDA or state-level entrepreneurship programmes, equips women with essential competencies in marketing, financial management, and the use of digital tools (Yusuf & Tahir, 2021). These skills enhance their ability to make informed decisions and adapt to changing market conditions.

Professional networking and social capital also play an essential role. Participation in events like the Malaysian Women Entrepreneur Carnival or involvement in women's cooperatives fosters relationships that provide business advice, access to markets, and emotional support (Abd Rani et al., 2019). Trust-based networks are especially valuable for the exchange of knowledge and resources. The role of family support and practical assistance is another significant enabler. Beyond emotional encouragement, families frequently contribute financial support, child care, and labour, allowing women to concentrate on business development (Ismail & Harun, 2017). In terms of adaptability to challenges, the ability to respond to competitive pressures, technological change, and financial limitations is crucial. Entrepreneurs who embrace digital marketing, diversify their products, or innovate in operations tend to demonstrate higher levels of business resilience (Noor et al., 2024).

Finally, awareness of available opportunities remains a limiting factor. Despite the existence of government grants, training schemes, and cooperative support, many women fail to utilize these resources due to limited access to relevant information. Enhancing outreach and awareness can significantly boost their entrepreneurial capacity (Razak et al., 2025). In short, by acknowledging and strengthening these resilience factors, stakeholders, including FELDA agencies, women's NGOs, and

policymakers, can formulate targeted strategies to promote the long-term sustainability and economic empowerment of rural women entrepreneurs.

3.0 METHODOLOGY

3.1 Study Area

This study was conducted in FELDA Lok Heng, a settlement within the Kota Tinggi District of Johor, Malaysia. FELDA Lok Heng is one of 42 schemes under the Johor Bahru Region, which, together with the Segamat Region, comprises the two main FELDA management zones in the state (FELDA, 2023). The settlement consists of three distinct areas: FELDA Lok Heng Timur (East), FELDA Lok Heng Barat (West), and FELDA Lok Heng Selatan (South) (Fig. 2). FELDA Lok Heng offers a suitable context to examine micro-enterprise resilience, particularly among women entrepreneurs involved in downstream agricultural activities, food processing, crafts, and service sectors. The area benefits from planned infrastructure and centralised facilities such as a palm oil processing plant, alongside institutional support mechanisms that include capital, training, and marketing platforms under various entrepreneurship programmes. These elements provide a fertile ecosystem to explore how rural women adapt and sustain their enterprises amidst economic and geographical challenges.

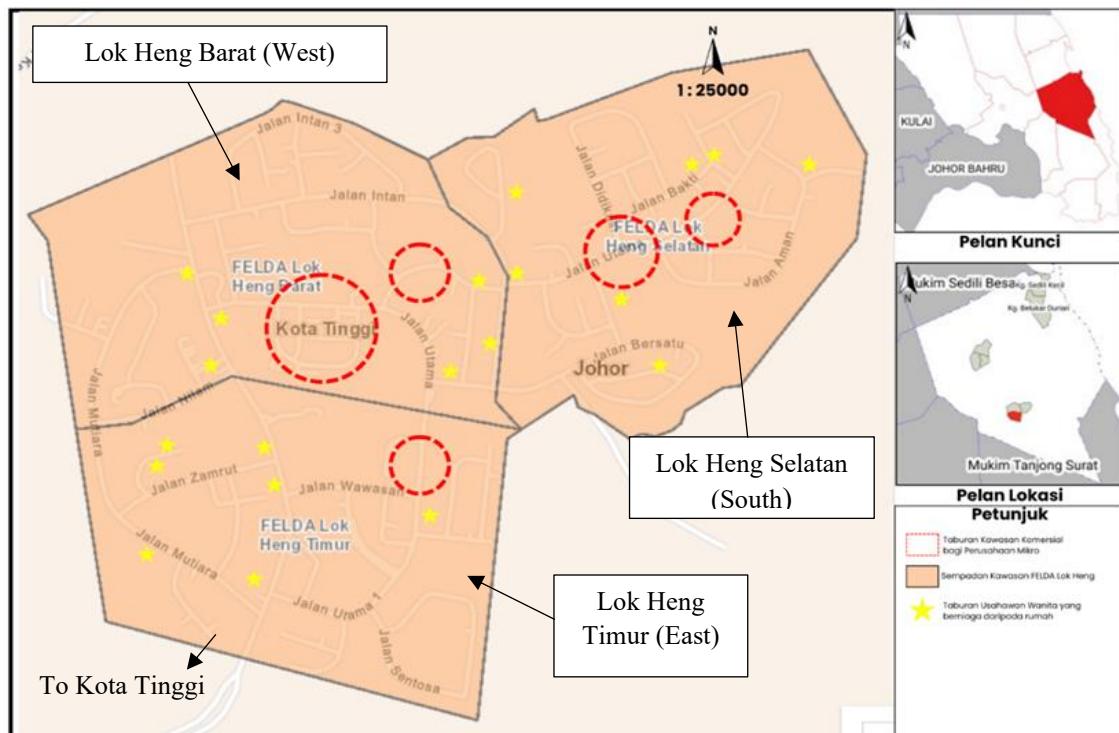


Fig. 2: Study area of FELDA Lok Heng, Kota Tinggi, Johor. Source: Ahmad (2025).

3.2 Data Collection and Analysis

This study targeted women entrepreneurs in the FELDA Lok Heng area. Due to the absence of official data on their numbers (FELDA officer interview, 24 February 2025), a snowball sampling approach was adopted to identify eligible respondents. This method was chosen because: (1) the target population is hard to reach and dispersed, and (2) no accessible sampling frame exists. The sampling began in FELDA Lok Heng Selatan, where the first respondent recommended others meeting the study's criteria. The process continued through FELDA Lok Heng Timur and Barat until data saturation was reached. In total, 50 respondents were interviewed using a structured questionnaire. The sample reflected a diverse

entrepreneurial profile, including: (1) Generational variation, from older women in traditional businesses (e.g., livestock, food processing) to younger entrepreneurs in digital or e-commerce ventures; (2) Business maturity, from start-ups (<5 years) to long-standing enterprises (>10 years). This diversity allowed for comparative insights into resilience, capital access, technology use, and intergenerational business evolution. The study was conducted in collaboration with *Gerak Persatuan Wanita* (GPW), a local women's group/association that facilitated access to active entrepreneurs and ensured alignment with local development efforts.

Even though snowball sampling was appropriate for accessing a hard-to-reach population with no formal sampling frame, it had inherent limitations. The method relied on social networks, which might result in selection bias, as respondents were more likely to recommend individuals with similar backgrounds or business characteristics. Consequently, the sample might over-represent more active or better-connected women entrepreneurs, whereas marginal or less visible groups may be underrepresented. As such, the findings were context-specific and not intended for statistical generalisation beyond the study area. Nevertheless, snowball sampling remains a widely accepted approach in exploratory and community-based research, particularly in rural settings, and provides valuable insights into lived entrepreneurial experiences within FELDA communities (Ahmad, 2025).

Data were analysed using descriptive statistics and mean score analysis (Table 2). To interpret the mean scores from the survey responses, this study adopted a customized categorization scale to reflect the distribution pattern observed in the data.

Table 2: Categorisation of the Mean Score Range

Mean score range	Interpretation
0.00 - 2.99	Less influential
3.00 - 3.24	Moderately influential
3.25 - 3.49	Influential
3.50 - 4.00	Strongly influential

Preliminary analysis revealed a clustering of responses within the upper range of the Likert scale (particularly between 3.0 and 4.0), indicating a general tendency among respondents to perceive most factors as influential. This trend, common in perception-based surveys, made it challenging to distinguish between different levels of influence. To address this issue and enhance interpretive clarity, an adjusted mean score classification was developed as shown in Table 2. This refined categorization allowed for greater differentiation among perceived factors, especially within the upper spectrum of responses. It provided a clearer understanding of which elements were acknowledged as relevant, and which were viewed as critical in shaping outcomes. Moreover, this methodological approach offered a more precise analytical foundation for identifying the sustainability factors influencing women's participation in micro-enterprise activities within FELDA communities.

4.0 RESULTS AND DISCUSSION

4.1 Profile of Respondent and Nature of Micro-Enterprise Activities

The demographic profile of the 50 FELDA women entrepreneurs surveyed is presented in Table 3. The majority of respondents (66%) fell within the age range of 36–55 years, indicating a concentration of economically active, mid-life women engaged in entrepreneurial activities. A smaller proportion comprised younger entrepreneurs aged 18–25 (10%) and older individuals above 65 years (10%), reflecting some generational diversity. In terms of residence status, most respondents (80%) were born and raised in FELDA Lok Heng, whereas only 20% had migrated into the settlement. This suggests a strong rootedness of women entrepreneurs within the local community. Regarding marital status, 70% were married, followed by 20% widowed and 10% single, indicating that most women entrepreneurs were managing businesses alongside family responsibilities.

Table 3: Profile of respondents (n=50)

Attribute	Category	Frequency (%)
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Age group	18-25 years	10.0
	26-35 years	6.0
	36-55 years	66.0
	56-65 years	8.0
	Above 65 years	10.0
Place of Origin	Born and raised in FELDA Lok Heng	80.0
	Migrated to FELDA Lok Heng	20.0
Marital status	Single	10.0
	Married	70.0
	Widowed	20.0
Employment status	Housewife	10.0
	Entrepreneur/Business owner	74.0
	Government employee	6.0
	Private sector employee	2.0
	Self-employed (freelance)	8.0

Furthermore, most respondents (74%) identified as businesswomen by occupation, with smaller percentages engaged as housewives (10%), self-employed (8%), or working in the government or private sectors (combined 8%). This underscores the prominence of entrepreneurship as a primary economic activity among FELDA women. Table 4 provides an overview of the micro-enterprises operated by the respondents. In terms of monthly income, half of the businesses (50%) earned between RM1001-RM2000, with 20% earning above RM7000. The data suggested a polarized income distribution, where a notable minority earned a significantly higher income, while 10% still operated with incomes below RM1000. Regarding the contribution to household income, majority of respondents stated the micro-enterprises contributed more than 50% to their household income, signified the growing importance of the activities. The remaining respondents did mention they enjoyed 11-50% of micro-enterprise contribution (30%) and only a small fraction of 20% mentioned the income contribution of less than 10%.

Table 4: Profile of respondents' micro-enterprises (n=50)

Attribute	Category	Frequency (%)
Monthly business income (RM)	Below RM1000	10.0
	RM1001-RM2000	50.0
	RM2001-RM3000	10.0
	RM3001-RM5000	10.0
	RM5001-RM7000	10.0
	Above RM7000	10.0
Contribution to household income	Below 10%	20.0
	11-50%	30.0
	Above 50%	50.0
Type of micro-enterprise	Food & beverage	40.0
	Agriculture-related	10.0
	Grocery store	8.0
	Spa & beauty services	10.0
	Tailoring	10.0
	Catering	10.0
	School bus services	2.0
	Tuition / education services	10.0
Business registration status	Registered	88.0
	Not registered	12.0
Employment type	Local, full-time workers	60.0
	Local, part-time workers	40.0
Current business performance	Slightly declined	10.0
	No change	0.0

Slightly increased	20.0
Significantly increased	70.0

The majority of FELDA women's micro-enterprises concentrated in the food and beverage sector (40%), followed by catering, beauty, tailoring, and education services (each 10%), with fewer in agriculture, retail, and transportation. These businesses are typically low-barrier, home-based, and service-oriented. A high rate of formalisation was evident, with 88% of enterprises registered, and 60% employing local full-time workers, indicating some degree of job creation. Business performance was generally positive, with 70% reporting significant growth. These trends align with earlier studies on rural women entrepreneurs in Malaysia, which highlight a dominance of small-scale, food-based enterprises, limited diversification, and constrained access to high-value markets. The findings reinforce the importance of targeted capacity-building, digital inclusion, and supportive policy interventions to enhance the sustainability and growth potential of rural women-led micro-enterprises.

4.2 Assessment of Sustainability Factors of Women's Micro-Enterprises

As presented in Table 5, the assessment of sustainability factors for FELDA women's micro-enterprises revealed a generally positive outlook on key enablers of resilience and continuity. Among the six thematic domains evaluated (refer to Table 1 for details), "Family and Social Support" emerged as a critical pillar, with factors such as business continuity through family assistance and family capital assistance scored the highest (mean = 3.60), indicating they were strongly influential. This underscores the centrality of familial networks in sustaining women-led enterprises in FELDA Lok Heng communities. Furthermore, "Education, Skills, and Technological Access" also showed strong influence, particularly in decision-making and technology adoption (3.40), suggesting that women entrepreneurs in FELDA Lok Heng are increasingly responsive to capacity-building initiatives. However, access to up-to-date business opportunity information scored lower (3.00), hinting at possible gaps in information dissemination.

In the "Access to Capital, Markets and Competition" category, factors such as market exploration and marketing awareness scored relatively well (3.40). In contrast, the ability to source raw materials at affordable prices was rated lower (2.70), possibly due to a wide range of suppliers and minimal supply chain limitations in the area. "Infrastructure and Mobility" factors received the lowest ratings overall (2.70), implying that physical and logistical constraints are not significant challenges, likely because FELDA Lok Heng is an established FELDA settlement and well-connected to nearby towns by main roads.

Table 5: Assessment of sustainability factors for FELDA women's micro-enterprises (n=50)

Thematic Domains and Key Factors	Sample Mean (M)	Level of Influence
<i>Education, Skills and Technological Access</i>		
1. Making effective decisions as the foundation of a resilient business	3.40	Influential
2. Optimal use of technology and digital platforms	3.40	Influential
3. Participation in courses/workshops to acquire up-to-date knowledge and skills	3.30	Influential
4. Ability to adapt to changing situations and challenges	3.20	Influential
5. Ability to access information on business opportunities	3.00	Moderately influential
<i>Access to Capital, Markets and Competition</i>		
1. Ability to explore market opportunities	3.40	Influential
2. Awareness of product and service marketing training programs	3.40	Influential
3. Knowledge of government and agency support schemes	3.00	Moderately influential
4. Ability to meet requirements for capital or funding applications	3.00	Moderately influential

5. Ability to source raw materials at reasonable prices	2.70	Less influential
<i>Family and Social Support</i>		
1. Early exposure to business	3.40	Influential
2. Nurturing entrepreneurial interest without direct parental involvement	3.40	Influential
3. Motivated by the success of other family members in business	3.40	Influential
4. Business continuity through family assistance	3.60	Strongly influential
5. Family capital assistance	3.60	Strongly influential
<i>Infrastructure and Mobility</i>		
1. Availability of road access connecting to markets and customers	2.70	Less influential
2. Efficiency in product delivery and supply procurement	2.70	Less influential
3. Adequate business infrastructure in FELDA to support women entrepreneurs	2.70	Less influential
<i>Institutional, Professional Networks and Policy Support</i>		
1. Strong relationships with suppliers and customers	3.40	Influential
2. Awareness of support initiatives provided by the government or relevant agencies	3.40	Influential
3. Active networking to improve access to information and resources	3.40	Influential
4. Access to capital assistance through FELDA	3.00	Influential
5. Support from FELDA offices through entrepreneurship encouragement programs	3.00	Influential
<i>Social and Cultural Norms</i>		
1. Careful management of business expenses	3.40	Influential
2. Engaging in discussions with employees to resolve problems	3.40	Influential
3. Providing equal opportunities for women entrepreneurs	3.40	Influential
4. High confidence in exploring new ventures	3.30	Influential
5. Awareness of the important role women entrepreneurs in enhancing family well-being	3.20	Influential
6. Consciousness of maintaining a healthy work-life balance	3.20	Influential
7. Awareness of effective time management	3.20	Influential

Meanwhile, the domain of “Institutional, Professional Networks and Policy Support” also demonstrated a consistent level of influence across multiple indicators. Strong ties with suppliers and customers, as well as awareness of available government and agency initiatives, scored highly (3.40). This suggests that micro-entrepreneurs are tapping into informal and formal networks for support, information, and trust-building. Active participation in networking activities and access to FELDA-specific entrepreneurship encouragement programs, though slightly lower (3.00), indicated potential areas for strengthening engagement. Overall, these results highlight the importance of institutional scaffolding and relational capital in fostering long-term business continuity and adaptability.

On the other hand, “Social and Cultural Norms” also emerged as an influential factor in shaping entrepreneurial behaviour and sustainability. Several key items, such as careful business expense management, employee engagement, and gender-equal opportunities, scored highly (3.40), indicating that local values and work ethics positively influence micro-business practices. Other factors, including confidence in exploring new ventures (3.30) and time management awareness (3.20), suggest that internalized norms related to discipline, self-motivation, and social responsibility support women’s ability to maintain business operations. Additionally, the relatively high score for awareness of women’s roles in family well-being reinforces the notion that entrepreneurship is seen not only as a source of income but also as a means of contributing to household resilience. These findings are consistent with prior literature on the interplay between cultural expectations and women’s economic agency in rural Malaysia. Overall, while the findings suggest that social support, entrepreneurial motivation, and

institutional awareness are key enablers, greater emphasis is needed on improving capital access and real-time information availability to support holistic and sustainable business growth among FELDA women entrepreneurs.

5.0 CONCLUSION

This study examines the sustainability factors influencing women-led micro-enterprises in FELDA Lok Heng, Kota Tinggi, Johor. The findings indicate that enterprise sustainability is shaped by a combination of individual capabilities, family and social support systems, institutional linkages, and socio-cultural norms. Among these, family assistance, particularly in the form of capital support and operational help, emerge as the most influential factor, underscoring the deeply embedded nature of rural women's entrepreneurship within household and community structures. Education, skills development, and access to digital tools further enhance women's decision-making capacity and ability to adapt to changing market conditions, reinforcing business continuity. Beyond identifying key sustainability factors, the findings suggest important implications for rural entrepreneurship policy and practice. Support programmes for women entrepreneurs in FELDA settlements should move beyond individual-focused interventions and adopt more holistic approaches that acknowledge the role of family and community networks. Strengthening digital literacy, improving access to timely business information, and ensuring sustained institutional engagement are essential to enhance women's participation in markets and support long-term enterprise growth. At the institutional level, locally tailored and gender-sensitive implementation of entrepreneurship initiatives may further improve programme effectiveness and responsiveness to rural realities.

This study however, is not without limitations. The use of snowball sampling and a relatively small sample size limits the generalisability of the findings beyond the study area, while the cross-sectional research design captures entrepreneurial sustainability at a single point in time. Nevertheless, the study offers valuable context-specific insights into the lived experiences and sustainability dynamics of women entrepreneurs within FELDA communities, contributing to the growing body of rural entrepreneurship literature. Future research could build on these findings by extending the analysis to other FELDA schemes or rural regions to allow for comparative assessment of sustainability factors across different contexts. Longitudinal studies would be particularly valuable in understanding how women-led micro-enterprises evolve over time in response to policy interventions, economic fluctuations, and social change. In addition, qualitative or mixed-method approaches could provide deeper insights into intra-household dynamics, informal support systems, and decision-making processes that underpin entrepreneurial resilience among rural women.

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