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Neo-SMFRI Index Ranking for Single Motherpreneurs Facing the COVID-19 Pandemic in Malaysia

Saidah Hamizah Ahmad¹, Memiyanty Abdul Rahim^{2*}, Rozainun Abdul Aziz³, Norraidah Abu Hasan⁴ and Mohd Sirajuddin Siswadi Putera Mohamed Shith⁵

¹ *Skinelle Sdn Bhd, Shah Alam, Selangor, Malaysia*

² *Institute for Biodiversity and Sustainable Development (IBSD), ^{2,4} Faculty of Administrative Science & Policy Studies, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia*

³ *UniKL Business School, Kuala Lumpur, Malaysia*

⁵ *Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia*

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ABSTRACT

The Neo-Single Motherpreneurs Financial Management and Resources Resilience Index (Neo-SMFRI) assessed the capability of single motherpreneurs in facing a pandemic. Ultimately, it aimed to offer a significant instrument to combat any financial risk. This study examined the Neo-SMEFRI ranking, which explained the differences in resilience levels among single motherpreneurs across Malaysian states. The study included 13 states in Malaysia: Johor, Melaka, Negeri Sembilan, Pulau Pinang, Perak, Perlis, Selangor, Kedah, Kelantan, Pahang, Terengganu, Sabah, Sarawak, and the Federal Territory of Kuala Lumpur, from 2022 to 2023. The Neo-SMEFRI utilized indicators from four areas, entrepreneurial financial literacy, financial knowledge, self-efficacy, and resilience to assess single mothers' ability to adapt to and recover from unexpected environmental changes. This study combined the scores of these four key indicators into one overall score. The Neo-SMFRI was aggregated by category and then by a weighted category average. Developed with input from single motherpreneurs, strategic experts, academia, practitioners/government agencies, and non-governmental organizations, the Neo-SMEFRI used 22 indicators to identify the pandemic preparedness, mitigation, and recovery needs of single motherpreneurs. Future research might investigate other elements contributing to the disparity in resilience levels among Malaysian states and compare the findings.

^{2*} Corresponding author. *E-mail address:* memiyanty@uitm.edu.my

1. INTRODUCTION

Prior to the COVID-19 pandemic, single-motherpreneurs (SMPs) were already struggling to sustain their businesses and were unable to become successful entrepreneurs, as highlighted by researchers such as Topimin, Fabeil, and Abdullah (2019) and Mahat, Mahat, and Ahmad Mustafa (2019). Despite the increasing number of single mothers, less attention has been given to their plight. The cases of single-motherpreneur failures and difficulties have been rising annually, as observed by Topimin et al. (2019), Mahat et al. (2019), Mulia et al. (2017), and Ismail et al. (2016). In Malaysia, the number of single mothers increased from 50,314 in 2017 to 50,356 in 2018 (Mahidin, 2020). Evidence indicates that a lack of socio-economic support is a major factor contributing to poor mental and physical health among single mothers (Topimin, Fabeil, and Abdullah, 2019; Mahat, Mahat, Ahmad Mustafa, and Wan Ismail, 2019). Consequently, single mothers are likely to remain in a state of inadequate income, with the potential to join the B40 income group, where financial struggles are prevalent (Free Malaysia Today, 2021).

Single mothers often exhibit a fear of risk and low entrepreneurial ability, indicating low self-efficacy and financial literacy necessary for business sustainability (Ye et al., 2019; Owusu et al., 2019; Ismail et al., 2016). They struggle to sustain the knowledge and skills acquired during training for continuous resource management, business transaction recording, income projection, and business sustainability (going concern concept). There is a significant issue stemming from single mothers' lack of knowledge, skills, and social support, impacting their social well-being and business sustainability. To address this, Abdul Rahim et al. (2024) developed the Neo-SMEFRI index, which stands for "Neo-Single Motherpreneurs Financial Management and Resources Resilience Index." This index assesses the pandemic resilience of various Malaysian states, particularly focusing on the experiences of single mother entrepreneurs. It evaluates the ability of each Malaysian state to assist Single Motherpreneurs (SMPs) in enduring and recovering from a pandemic, as well as the extent of women's engagement in resilience-building activities. In this research context, the innovative understanding of the strategic advantage of single-mother entrepreneurs includes EFL, ESE, and ERR as aspects of business competence in the RBV theory.

2. LITERATURE REVIEW

Single mothers are among the most economically and socially disadvantaged groups, experiencing higher rates of financial hardship, poverty, and social isolation. Balancing the dual roles of running a family and being the primary financial contributor is a challenging task (Mahat et al., 2019). Numerous cases of depression and attempted suicide reported in the media highlight the severe impact of being a solo parent. The stigma associated with the term 'single mother' often signals an unfavorable scenario, as these women face the challenges of life and child-rearing without the traditional breadwinner of the family. According to the Single Mother Empowerment Action Plan (2015-2020) by KPWKM, single mothers are defined as: (i) Women (Citizens) who are heads of household and are widowed, divorced, or permanently separated, with unmarried children in the household; (ii) Women with husbands who are unhealthy and unable to work, with unmarried children in the household; (iii) Women who have never married but have children (either adopted or illegitimate).

A recent report from the Department of Statistics Malaysia indicated an increase in the divorce rate by 12.0 percent, from 50,862 in 2018 to 56,975 in 2019 (Mahidin, 2020). Consequently, the Crude Divorce Rate

(CDR) increased from 1.6 per thousand population in 2018 to 1.8 per thousand population in 2019 (Refer to Table 1).

Table 1. Number of Marriages and Crude Marriage Rate, 2018 and 2019

Year	Number of marriages			Rate (per 1,000 population)		
	Malaysia	Muslim	Non-Muslim	Malaysia	Muslim	Non-Muslim
2018	206,352	150,098	56,254	6.4	7.6	4.5
2019	203,821	147,847	55,974	6.3	7.4	4.4

Source: Department of Statistics Malaysia, 2020

Our research on women entrepreneurship using the RBV theory is an evocative study of specific circumstances where broad theoretical frameworks may exist, but the operationalization of concepts and their linkages remain ambiguous. RBV is also commonly used to evaluate resources and explain the competitive advantage of women entrepreneurs (Barney, 1991; Zainol & Al Mamun, 2018). There are persistent differences in the entrepreneurial knowledge of women, and the importance of women's entrepreneurial skills to business success is reflected in the limited academic research on the topic (Kanapathipillai & Azam, 2019; Dalborg et al., 2015; Arshad et al., 2016).

Using the RBV theory, Ye and Kulathunga (2019) demonstrated how financial resource availability and literacy affect corporate sustainability. Our RBV research on women entrepreneurship studies specific circumstances where broad theoretical frameworks may exist, but where the operationalization of concepts and their linkages remain ambiguous. RBV is the most common technique for evaluating resources and explaining the competitive advantage of women entrepreneurs (Barney, 1991; Zainol & Al Mamun, 2018). Differences in entrepreneurial knowledge among women persist. The importance of women's entrepreneurial skills to the success of their businesses is reflected in the lack of academic research on the topic (Kanapathipillai & Azam, 2019; Dalborg, Von Friedrichs, & Wincent, 2015; Arshad, Farooq, Sultana, & Farooq, 2016). Financially illiterate women business owners are more likely to make poor decisions about financial management, loans, mortgages, wealth management, and property development.

3. METHODOLOGY

Data from *Kementerian Pembangunan Wanita, Keluarga dan Masyarakat* was used as a basis for a sampling frame to identify single-motherpreneurs in Malaysia. Research assistants distributed self-administered questionnaires to targeted respondents in thirteen states. There was a lack of data disclosure on SMPs in Malaysia. Based on the inadequate number of recorded and reported Single Motherpreneurs, we estimated 20-30 SMPs for each of the thirteen states to represent the real scenario.

In this research context, the innovative understanding of the strategic advantage that single-mother entrepreneurs possessed came from including EFL, ESE, and ERR as aspects of business competence in the RBV theory. This was comprehensively modified by Abdul Rahim et al. (2024) in their paper on developing the Neo-SMEFRI index model. There were three potential scores (High, Medium, and Low) for the rankings.

4. FINDINGS AND DISCUSSION

A total of 680 single motherpreneurs, aged 20 to 60, from all over Malaysia participated in this study (Table 2). The majority of respondents were 41-50 years old (46.3%), followed by 51-60 years old (23.2%), 31-40 years old (21.9%), 20-30 years old (6%), and above 61 years old (2.5%). The study was conducted among states in Malaysia, with respondents from Selangor having the highest percentage (17.1%), followed by Sarawak (14.9%), Johor (14.6%), Kelantan (13.5%), and Sabah (10%). The rest of the states have less than 10% of respondents: Perak (9.1%), Melaka and Terengganu (3.7% each), Pahang (3.2%), Negeri Sembilan (3.1%), Perlis (2.9%), Kedah (2.6%), Wilayah Persekutuan Kuala Lumpur (1.4%), and Pulau Pinang (1.4%). The respondents came from various religious backgrounds, with the majority being Islam (544 or 80%), followed by Buddhism (49 or 7.2%), Christianity (36 or 5.3%), Hinduism (31 or 4.6%), and others (20 or 2.9%). The majority of respondents were Malay (525 or 77.2%), with other races being 69 respondents (10.1%), Chinese (55 respondents or 8.1%), and Indian (31 respondents or 4.6%).

Among all respondents, the highest percentage worked in the food and beverages business (348 or 51.2%), followed by manufacturing (56 or 8.2%), stockiest business (53 or 7.8%), retail (45 or 6.6%), agriculture (29 or 4.3%), beauty and spa (9 or 1.3%), wholesale (8 or 1.2%), chicken farming (7 or 1.0%), and restaurant business (4 or 0.6%). The servicing and clothing businesses each had 39 respondents (5.7%), while 43 respondents were from other business sectors (6.3%). Regarding family status, 2 respondents had no children (0.3%), 58 respondents had 1 child (9.7%), 96 respondents had 2 children (16.0%), 121 respondents had 3 children (20.1%), 156 respondents had 4 children (26%), and the highest number, 168 respondents, had 5 children (28%). Among the number of children, 344 respondents (51.1%) did not have any working children, followed by 133 respondents (19.8%) with one working child, 95 respondents (19.8%) with two working children, 69 respondents (10.3%) with three working children, 24 respondents (3.6%) with four working children, and 8 respondents (1.2%) with five working children.

Regarding non-working children, 128 respondents had none (19%), 71 respondents had 1 non-working child (10.5%), 110 respondents had 2 non-working children (16.3%), 151 respondents had 3 non-working children (22.4%), 176 respondents had 4 non-working children (26.1%), and 31 respondents had 5 non-working children (5.8%). Additionally, 81 respondents had no school children (11.9%), 100 respondents had 1 school child (14.7%), 123 respondents had 2 school children (18.1%), 173 respondents had 3 school children (25.5%), 168 respondents had 4 school children (24.8%), and 33 respondents had 5 school children (4.9%). All 680 respondents (100%) had experience in conducting business.

Table 2. Distribution of Respondents by Demographic Characteristics

	Demographic information	Frequency	Percent
Age	<20 – 30 years	41	6.0
	31 – 40 years	149	21.9
	41 – 50 years	315	46.3
	51 – 60 years	158	23.2
	≥ 61 years	17	2.5
State	Selangor	116	17.1
	Sarawak	101	14.9
	Johor	99	14.6
	Kelantan	92	13.5
	Sabah	68	10.0
	Perak	62	9.1
	Melaka	25	3.7
	Terengganu	25	3.7
	Pahang	22	3.2
	Negeri Sembilan	21	3.1
	Perlis	20	2.9
	Kedah	18	2.6
	WP Kuala Lumpur	10	1.4
	Pulau Pinang	10	1.4
Religion	Islam	544	80.0
	Buddha	49	7.2
	Kristian	36	5.3

	Demographic information	Frequency	Percent
Race	<i>Hindu</i>	31	4.6
	<i>Others</i>	20	2.9
	<i>Malay</i>	525	77.2
	<i>Other</i>	69	10.1
	<i>Chinese</i>	55	8.1
	<i>India</i>	31	4.6
Type of work	<i>Food and beverages</i>	348	51.2
	<i>Manufacturing</i>	56	8.2
	<i>Stockiest</i>	53	7.8
	<i>Retail</i>	45	6.6
	<i>Others</i>	43	6.3
	<i>Service</i>	39	5.7
	<i>Clothing</i>	39	5.7
	<i>Agricultural</i>	29	4.3
	<i>Beauty and SPA</i>	9	1.3
	<i>Wholesaler</i>	8	1.2
	<i>Chicken farming</i>	7	1.0
	<i>Restaurant</i>	4	.6
	Number of Children	<i>0</i>	2
<i>1</i>		58	9.7
<i>2</i>		96	16.0
<i>3</i>		121	20.1
<i>4</i>		156	26.0
<i>5</i>		168	28.0

	Demographic information	Frequency	Percent
Number of working children	0	344	51.1
	1	133	19.8
	2	95	14.1
	3	69	10.3
	4	24	3.6
	5	8	1.2
Number of non-working children	0	128	19.0
	1	71	10.5
	2	110	16.3
	3	151	22.4
	4	176	26.1
	5	39	5.8
Number of schools children	0	81	11.9
	1	100	14.7
	2	123	18.1
	3	173	25.5
	4	168	24.8
	5	33	4.9
Business experience		680	100.0
		680	100.0

W.P. Kuala Lumpur had taken significant steps to enhance its pandemic resilience and achieved the highest overall score of 82.71/100. It ranked first in all four categories of the index, providing a benchmark for the study's primary focus on Malaysia. Kedah ranked second with an overall score of 81.24/100, largely due to the presence of Langkawi. As one of the country's most established tourist destinations, Langkawi has significantly boosted Kedah's economy and commerce, contributing to the state's high ranking. Approximately half of Langkawi's entrepreneurs were women, who have had to rapidly adopt financial

literacy, knowledge, self-efficacy, and resilience to succeed (Dan, 2019). The remaining states, except Kelantan, had overall scores ranging from 50 to 80, reflecting their various strengths and weaknesses across the four equally weighted index categories. Kelantan, with a total score of 48.24, was the lowest outlier in the index (Figure 1).

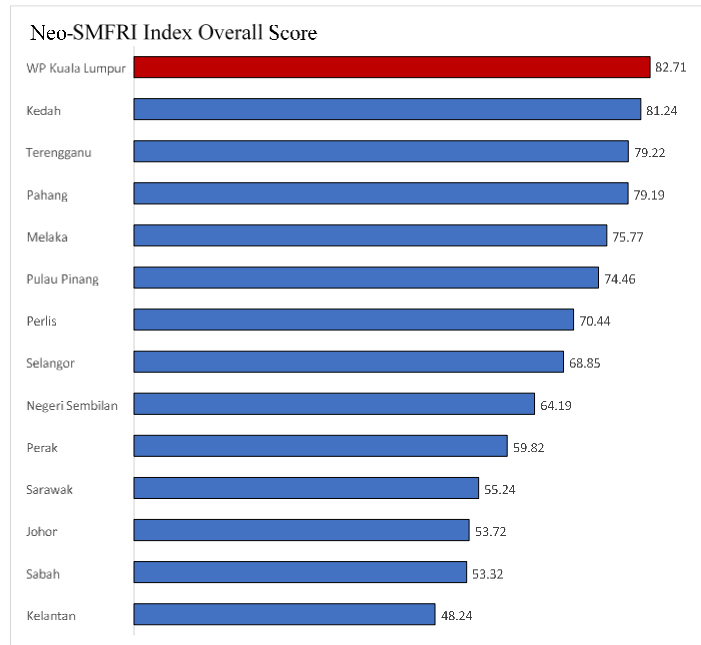
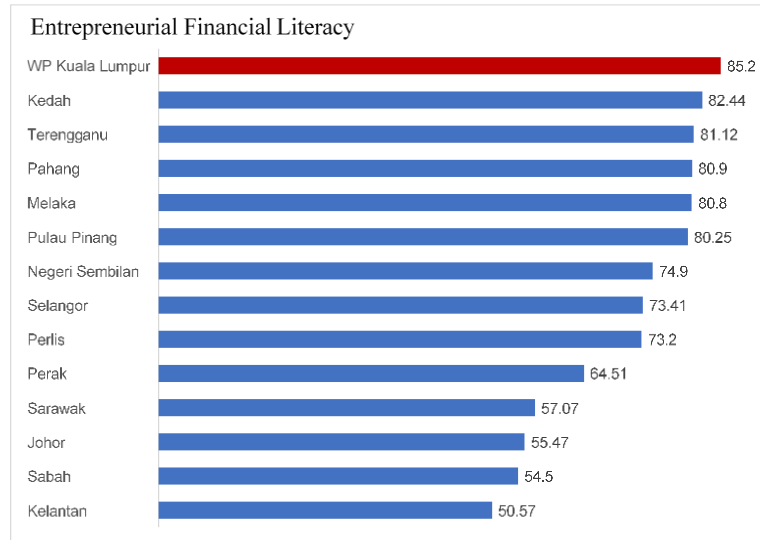


Figure 1. Neo-SMFRI Index Overall

Such findings necessitated a detailed investigation of the factors influencing the ratings in each category, to better understand the areas where policymakers and other stakeholders should focus their efforts to enhance women's resilience to disruptive events. This section covers the results of the Neo-SMFRI's four categories and highlights the most influential factors affecting the ratings in each area.

4.1 Entrepreneurial Financial Literacy

A single mother entrepreneur's ability to plan for and respond to a pandemic is greatly enhanced by strong entrepreneurial financial literacy (EFL), which is demonstrated by the efficient allocation and use of financial resources. This category assessed the overall entrepreneurial financial literacy of a state and the capacity to evaluate risks, manage business returns, engage in financial planning, and analyze financial performance. Key indicators in this category measured the level of knowledge in financial management and information updates, availability of funds throughout the pandemic, capital turnover, and the extent to which economic and financial data were used in business decision-making.



Note: 0 = lowest, 100 = highest

Figure 2. Entrepreneurial Financial Literacy

W.P. Kuala Lumpur had the highest EFL score (80.52), while Kelantan had the lowest score (52.57). This disparity may be attributed to differences in financial levels and social structures. Developed states are more likely to exhibit superior socioeconomic development compared to less developed states, largely due to their higher income levels as measured by GDP per capita.

State	2020	2021
Johor	33,856	36,474
Kedah	22,693	23,575
Kelantan	14,951	15,584
Melaka	42,861	44,610
Negeri Sembilan	41,254	44,495
Pahang	38,010	41,313
Pulau Pinang	55,774	59,685
Perak	31,626	34,338
Perlis	21,099	21,508
Selangor	48,607	51,930
Terengganu	29,462	30,901
Sabah	24,652	29,960
Sarawak	55,931	65,971
W.P. Kuala Lumpur*	108,791	111,292
W.P. Labuan	80,393	81,345
Malaysia	43,702	47,439

Figure 3: GDP Per Capita (RM) By State, 2020-2021

Source: Mohd Yusrizal A. R. (2023), Gross Domestic Product (GDP) By State 2021, Retrieved from <https://www.dosm.gov.my>

Figure 3 highlights economic disparities across Malaysian states in 2021, with affluent states such as Kuala Lumpur boasting a GDP per capita seven times that of the lowest, Kelantan, which has a GDP per

capita of RM15,584. In Kedah, single-mother entrepreneurs exhibited the second-highest financial literacy ratings due to their independence from external financial aid, primarily relying on personal savings (Dan, 2019). This trend was also observed in Pulau Pinang, Melaka, Pahang, Terengganu, Sabah, Negeri Sembilan, Perak, Perlis, and Johor. However, this correlation did not hold for Kedah or Sarawak. Despite Kedah's lower GDP score, it had the second-highest EFL score, attributed to factors such as positive attitudes, motivation, capital and commodities, business ethics, and training programs as noted by Abdul Rashid et al. (2022). Conversely, Sarawak had low EFL ratings despite a relatively high GDP score, due to issues such as lack of accessible government financing, difficulty obtaining funding approval, and a scarcity of online business courses.

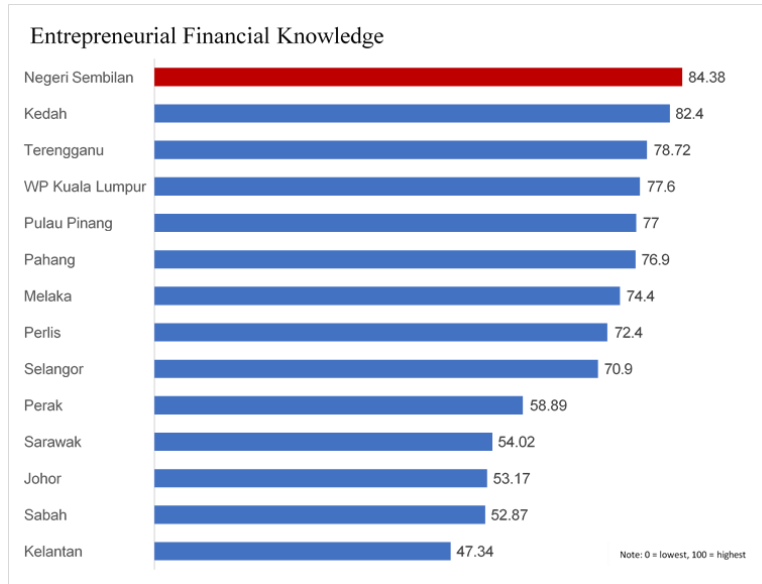


Figure 4: Entrepreneurial Financial Knowledge

4.2 Entrepreneurial Financial Knowledge

Robb & Woodyard (2011) defined financial knowledge as “the ability to understand financial concepts and positively relate to financial practices such as cash flow management, credit management, savings, and investment” (p. 65). Falahati and Sabri (2015) found a correlation between financial knowledge and financial health, and Sabri et al. (2020b) revealed a positive impact of financial knowledge on money attitude. Financial knowledge significantly influenced the financial decisions of single-female households, impacting their financial stability. Lusardi (2015) provided a precise definition of financial knowledge: “The capacity to handle monetary data or economic information and make informed decisions about wealth accumulation, financial planning, pensions, and debt.” This implies that financial knowledge is crucial for single-female households in managing financial matters and personal financial management. In Malaysia, research findings indicated that more financially literate single-female households were more sophisticated in finance compared to those with low-level literacy (Flatø et al., 2017).

Entrepreneurial Financial Knowledge ranked the highest in Negeri Sembilan and Kedah, while Kelantan scored the lowest. This aligned with Sahar et al.'s (2022) findings that small entrepreneurs in

Negeri Sembilan possessed a high level of financial awareness due to external influences (such as mass media and press) and interpersonal influences (social support from parents, spouses, and friends). This awareness enabled them to effectively utilize e-commerce throughout the COVID-19 outbreak and during the enforcement of the Movement Control Order (MCO).

Kedah scored the second highest in Entrepreneurial Financial Knowledge, largely due to the influence of parents as the most dominant factor in providing exposure to financial education, given the prevalence of family businesses in Kedah. The Langkawi district was notable for business owners receiving training on business knowledge before, during, and after the MCO (Fauzi et al., 2023). Additionally, the presence of Langkawi Island as a tourist destination compelled women entrepreneurs to acquire essential financial knowledge to ensure the long-term survival of their businesses (Dan, 2019). In Kelantan, non-partnered females (single mothers) tended to outnumber non-partnered males (single fathers). Single mothers faced more disadvantages, as the lack of a primary income earner in the family reduced family income, thereby limiting expenditure. From a political standpoint, Kelantan has been the poorest state in Malaysia for the past five decades. Despite various Malaysian Development Plans over the years, regional disparities between states remain (Habibullah et al., 2021).

4.3 Entrepreneurial Self-Efficacy

Entrepreneurial self-efficacy is defined as “an individual’s own belief in his/her skills and abilities linked to entrepreneurial activity” (Barakat et al., 2014). Low self-efficacy may lead individuals to avoid certain situations, which can prevent them from facing fears or building competencies (Bandura, 1977). Conversely, individuals with high levels of entrepreneurial self-efficacy are more likely to successfully navigate the entrepreneurship process and face the challenges of launching a new business (Elnadi & Gheith, 2021). Self-efficacy, defined as “an individual’s beliefs in their capacity to execute behaviors necessary to produce specific performance attainments,” is considered crucial (Bandura, 2010, p. 2). Amani & Shabahang (2017) found that money attitude was positively influenced by self-efficacy, and Sabri et al. (2020c) found that money attitude positively influenced financial health.

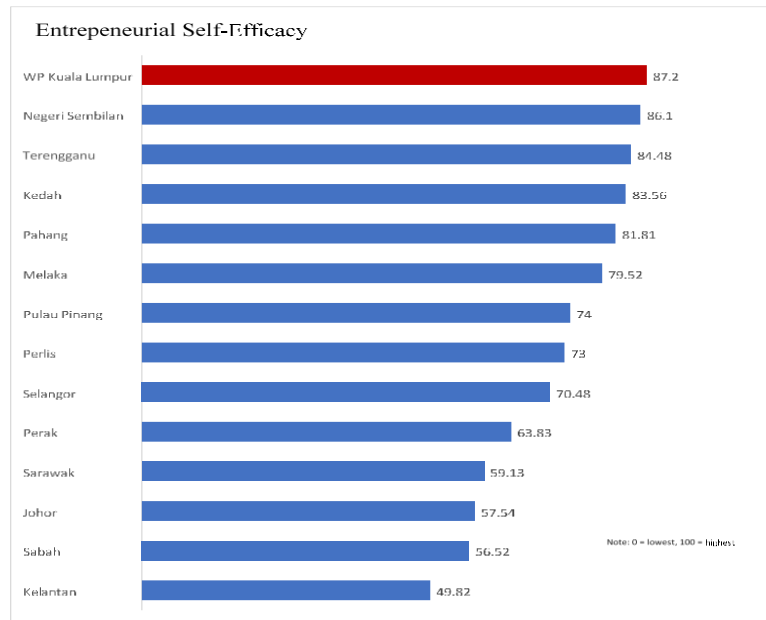


Figure 5: Entrepreneurial Self-Efficacy

The W.P. Kuala Lumpur (87.2) and Negeri Sembilan (86.1) performed well by regional standards in terms of self-efficacy. This success was partly due to their affluence, strategic locations, and relaxed lifestyles, allowing residents to enjoy a carefree and comfortable existence (Pirdaus, 2022). Women entrepreneurs in Terengganu also exhibited a high level of self-efficacy (84.48), primarily driven by the strong Entrepreneurship Culture instilled from an early age, which enhanced their motivation and sense of self-efficacy.

Although Selangor had the largest GDP in Malaysia, its self-efficacy score (70.48) was lower than neighboring states with smaller GDPs. This finding aligned with a study by Safaruddin and Zainuddin (2019) on women-owned SMEs in Selangor, which revealed that despite an increasing number of women engaging in business, the number of successful women entrepreneurs remained low. This is attributed to low levels of active performance factors such as action planning, social strategy for networking, and approach to learning.

Sarawak (59.13) had a low self-efficacy rating, influenced by the risk-averse nature of Malay businesses, where ambiguity was generally avoided, and competition induced fear (Negin et al., 2021). Similarly, Johor (57.54) was a below-average outlier, characterized by unmotivated and lackadaisical single mother entrepreneurs. Responses indicated a need for improved business and marketing skills, along with emotional and financial support. Kelantan (49.82) and Sabah (56.52) were lower outliers in this category due to socioeconomic difficulties that contributed to poor self-efficacy. This was reflected in measures of inner locus of control, self-confidence, independence, and innovativeness, as shown in research on women entrepreneurs in Kelantan and Sabah by Nik Hussin and Aziz (2021). This finding also supported earlier research by Merdeka et al. (2017), which found that three personality traits, locus of control, drive for achievement, and risk-taking propensity, were significantly less prominent among Sabah Bumiputera, resulting in low self-efficacy. Research has often portrayed that rural adolescents were more exposed to

social disorganization and may become involved in unhealthy behaviors, such as substance use and community violence (Nasim, Fernander, Townsend, Corona and Belgrave, 2011). Nonetheless, consistent with the cultural values upheld and strongly practiced, particularly by rural Malaysians, the present study showed that adolescents from rural areas tended to possess better social responsibility than those from urban areas. This finding was supported by past research indicating that rural adolescents tend to build a strong connection with their community and appreciate the rural lifestyle (Petrin et al., 2011). It should be noted that adolescents' abilities, beliefs, and values were influenced by the environment they lived in through an ongoing transactional process (Bergman et al., 2003).

4.4 Resilience

On this front, Kuala Lumpur (80.86) led the category due to the effective handling of challenges by women entrepreneurs through innovative solutions (Figure 6). This aligned with Abdul Rani et al. (2019), who identified resilience (the ability to adapt to new pressures) and optimism (the readiness of entrepreneurs to make choices and take action to mitigate risks and impacts) as key factors for business survival.

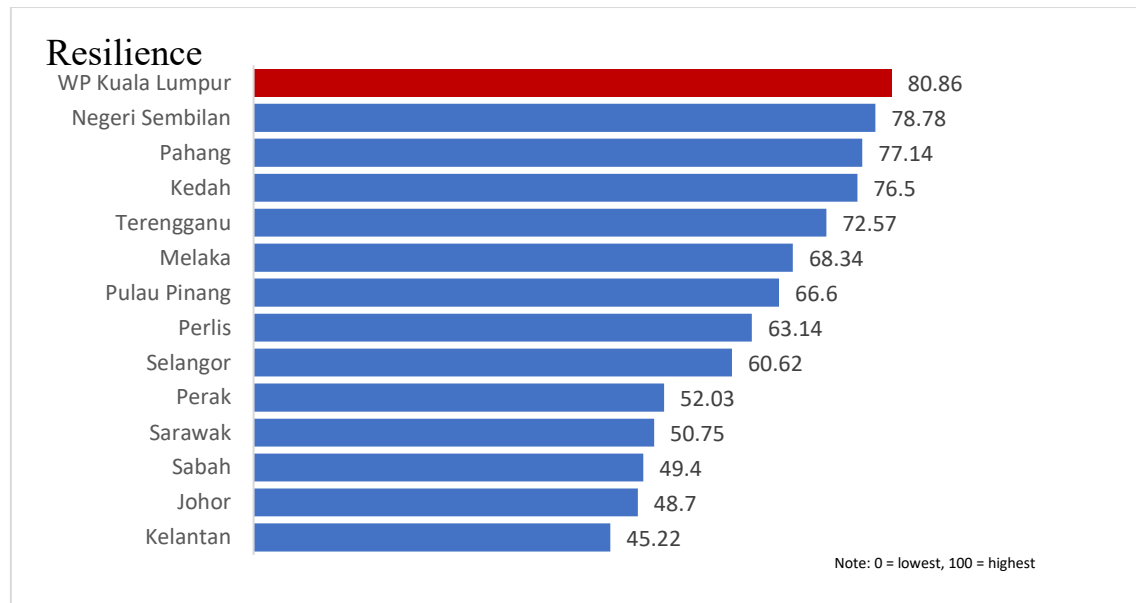


Figure 6: Resilience

The high resilience score for Kedah in this study was attributed to the strong religious faith among Kedah entrepreneurs. Sloane (1999) introduced the concept of *ikhtiar* (effort) and reward, as discussed in Yusuf (2012), which suggested that Malay entrepreneurs and small enterprises in Pendang, Kedah, believed that diligent effort led to success and divine rewards.

5. CONCLUSION

The Neo-SMEFRI was developed to assess the gender sensitivity of pandemic strategies and policies in Malaysia, fostering dialogue among governments, development agencies, civil society, and the private sector. Future iterations of the index will allow nations to track progress over time and benchmark against a wider range of regions, helping identify states that required targeted assistance. This research supported Malaysia's goal of sustainable growth and equitable wealth distribution as outlined in the Shared Prosperity Vision 2030 (SPV2030), the National Entrepreneurship Policy (NEP2030), and Goal 10 of the Sustainable Development Goals (SDG) to reduce inequality. It also aligned with Key Economic Growth Activities (KEGA) 10, which focussed on advanced and modern services to enhance policymaking and training for SMEs. The Neo-SMEFRI index can assist the Ministry in predicting business status and refining training programs, and it holds the potential for empirical testing in other countries.

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7. CONFLICT OF INTEREST STATEMENT

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declare the absence of conflicting interests with the funders.

8. AUTHORS' CONTRIBUTIONS

Memiyanty Abdul Rahim: Conceptualisation, methodology, formal analysis, investigation and writing-outline content; **Saidah Hamizah Ahmad:** Conceptualisation, methodology, formal analysis, investigation and writing-original draft; **Norraidah Abu Hasan:** Conceptualisation, methodology, and formal analysis; **Mohd Sirajuddin Siswadi Putera:** Conceptualisation, formal analysis, and validation; **Rozainun Abdul Aziz:** Conceptualisation, supervision, writing- review and editing, and validation.

9. ETHICS STATEMENT

The authors declare that this research did not involve human or animal subjects. All experimental procedures were performed in accordance with the institutional Safety, Health, and Environmental (HSE) protocols of Universiti Teknologi MARA and were reviewed and approved by the Institutional Ethics Committee (Approval No: FERC/10/2023). All procedures involving human participants/animal subjects complied with the ethical standards of the 1964 Helsinki Declaration. Informed consent was obtained from all participants, and data anonymity was strictly maintained throughout the study.

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