



Identifying the Financial Status Risk Factors for Single Mothers During the COVID-19 Pandemic

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ABSTRACT

Many uncertainties occur across the population's life cycle, especially among vulnerable groups. Macroeconomic and microeconomic factors, including events such as the COVID-19 pandemic and socioeconomic characteristics, may impact households. This study identified the risk factors influencing the financial status of single mothers. The risk factors differentiated single mothers based on their financial status. A cross-sectional survey was conducted using simple random sampling that targeted 465 single mothers in the Malaysian state of Negeri Sembilan. The analysis of the 311 completed questionnaires resulted in income appearing as the highest risk factor, while other significant risk factors were; job sector, number of dependents and housing type. These factors significantly differentiated the sampled single mothers' financial status from the aspects of savings and financial well-being. Insufficient savings to endure the government imposed Movement Control Orders (MCO's), designed to limit the spread of COVID-19, strained them financially. Thus, financial assistance should be focused on single mothers with the following risk factors: those earning meagre incomes, working in the private sector or running their own businesses. Hence, this study identified the most financially at-risk single mother households vulnerable to the COVID-19 pandemic.

JEL Classification: D14, D31

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INTRODUCTION

Malaysia is advancing towards becoming a developed economy. It strives to achieve high-income status by 2024 (Malaysia Productivity Corporation, 2018). The average monthly income of Malaysian households grew by 6.6 per cent, rising from RM4,585 per month in 2014 to RM5,228 in 2016 (Department of Statistics of Malaysia, 2016b). Mean household income reached RM7,901 per month in 2019 (Department of Statistics Malaysia, 2019b). Despite this, many households have experienced financial difficulties, leading to high debt levels. Malaysia's mean monthly household consumption expenditure grew at 6.0 per cent annually in 2016 (Department of Statistics Malaysia, 2016a), which was close to the rate of income increase of 6.6 per cent. Consumption expenditure increased from RM4,033 per month in 2016 to RM4,534 in 2019, growing at 3.9 per cent (Department of Statistics Malaysia, 2019a), which paralleled the rate of income growth of 4.4 per cent during the same period. This situation has resulted in many households having little surplus income for savings and affecting the management of their finances as the difference in growth is less than one per cent.

Many uncertainties occur across the population's life-cycle, especially among vulnerable groups such as single mothers. The World Bank (2014) proposed a definition of vulnerable groups as those whose incomes were less than 2.5 times the Poverty Line Income (PLI), which was 15 per cent in 2014 (United Nations Malaysia and Prime Minister's Department, 2016). There were 235,240 registered single mothers in Malaysia based on the Population and Housing Census of Malaysia, 2010 (Department of Statistics Malaysia, 2010), which comprised 1.7 per cent of the population. Only 83,775 single mothers were registered with the Department for Women's Development. The census indicated that women with divorced or widowed status comprised 7.2 per cent, which was higher than men (1.9%) with a ratio of 1.0 to 3.8. One Malaysian state, namely Negeri Sembilan, which includes the significant conurbations of Seremban, Nilai and Port Dickson, also had a similar ratio of more than three times between single mothers and single fathers. Other countries, especially developed countries, have higher rates, such as Germany (20%), the United States (26%), the United Kingdom (22%) and Japan (12%). These single mothers have dual responsibilities, as both the breadwinner and bringing up their children (Faizah and Azian, 2013; Priyatna et al., 2019) and are linked to poverty and financial struggles (Liddell, 2008). Life-changing events, such as being widowed or divorced, would increase their financial vulnerability and, thus, require effective resource management.

Macroeconomic factors in the environment, such as; changes in politics, the economy and disasters, may impact households, apart from the microeconomic factors that arise from households themselves. Disasters, such as the ongoing COVID-19 pandemic, interrupt everyday life. The pandemic occurrence saw regular income cease for a significant number of Malaysians, as reflected by the rise in unemployment to 5.3 per cent in May 2020 from 2.3 per cent in the previous year (Department of Statistics Malaysia, 2020). In January 2021, the unemployment rate was still high at 4.8 per cent (Department of Statistics Malaysia, 2021). Implementing Movement Control Orders (MCOs) by the government also left many facing severe income reductions due to the limited business operations of companies.

This study identified the risk factors among the socio-economic factors differentiating single mothers for various aspects of financial status. Single mothers were chosen as the population of interest, as many are vulnerable to income shocks. According to the United Nations Development Programme (2014), Malaysian households headed by women were at a higher financial risk of 0.2 per cent compared to households headed by men and, thus, were potentially more financially vulnerable. However, this study limited itself to the population of single mothers in the Malaysian state of Negeri Sembilan. This study has contributed to the existing literature regarding the risk factors influencing the financial status in savings capability and financial well-being of single mothers. Following this introduction, the next section covers the theory used in the study. Following that, the model that was employed in the analysis is presented. Previous studies on the risk factors on financial status are also reviewed. The methods used in this research, the results and a discussion concerning the results of this study are explained. The final section provides the conclusion and implications of the study and offers some suggestions for further areas of study.

LITERATURE REVIEW

Theory and Model

This study applied the System Theory to explain the interaction between the input and the single mothers' environment of the financial management system. The System Theory, developed by Ludwig von Bertalanffy in 1968, is the analytical division of the world into two components: environment and system (Luhmann, 2012). Interaction occurs between system and environment; such changes are measured by observing the outputs to the outcomes or goals of the system (Figure 1). In observing a specific relationship, for example, between income and financial status, other constraints are considered, such as; age, number of dependents, job sector, job type and housing type.

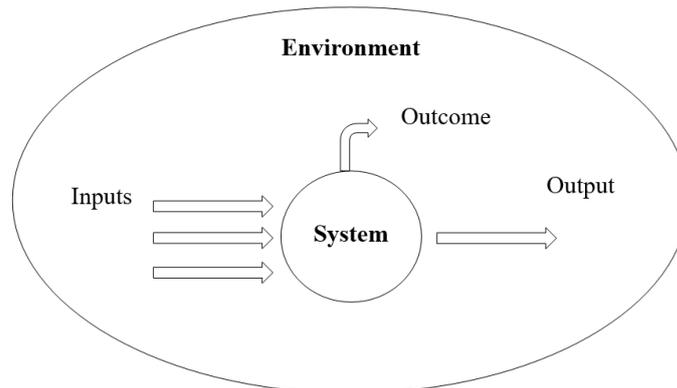


Figure 1 Illustration of the System Theory

Further, the Family Resource Management Model (Deacon and Firebaugh, 1988), developed from the System Theory, built a framework for this study comprising the inputs that go through the throughput stage, resulting in outputs of the financial management process, as displayed in Figure 2. The socio-economic factors are the demand and resources of the input being transformed to the output, namely financial status. In this study, the throughput of financial behaviour is embedded in the transformation process, elevating an individual's financial status, measured with the capability of cash-flow, credit, insurance, savings and financial well-being scales.

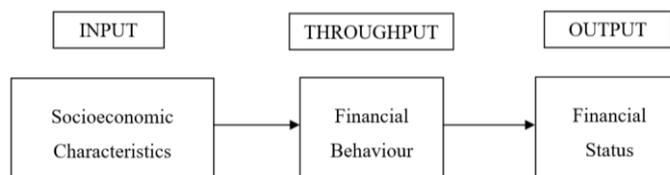


Figure 2 Framework of Financial Status based on the Resource Management Model

Previous Studies

Various measures of households' financial status resulting from their financial management, commonly known as financial well-being, have been used in past studies. Such measures have included; net-worth, savings level, investment level, financial ratios and wealth, as objective measures and financial satisfaction, financial wellness or financial well-being scales, as subjective measures (Abdullah et al., 2019; Gladstone and Ashley, 2018; Mokhtar and Rahim, 2016; Rahim and Abdul Samad, 2012; Zaimah et al., 2013). Negative measures of financial status, including; debt or credit load, financial problems, financial difficulties, cash flow capability and financial vulnerability, have been commonly used when analysing households (Amirah Shazana et al., 2020; Malone et al., 2010; Rahim and Abdul Samad, 2012; Siti Nurazira et al., 2019; Taft et al., 2013).

Financial well-being can be broadly defined as an abstract concept explaining an individual's financial situation (Mokhtar and Rahim, 2016). Meanwhile, the United States Consumer Financial Protection Bureau (2015) defined financial well-being as the status of a person to fully meet their current and ongoing financial obligations, feeling secure in their future finances and capability of making choices to enjoy life. The government bureau used indicators such as; managing money, knowledge-seeking, planning, and goal-setting to measure an individual's financial well-being.

A study concerning financial well-being among Iranians found that women were significantly less well versed than men regarding; financial literacy, financial concerns and financial well-being (Taft et al., 2013). While Malone et al. (2010), when studying women's perceptions of financial well-being in the United States, revealed that single mothers had more significant worries about their financial futures than married women. Single-parent families faced a significantly higher risk of poverty than dual-parent families (Maldonado and Nieuwenhuis, 2015). Kramer et al. (2016) found that single mothers earned significantly lower incomes than single fathers. Malaysia was no exception, as with less work experience, lower levels of education and increased age, single mothers in Malaysia earned lower incomes, rarely saved and experienced a lack of money (Ishak et al., 2009). Concerning the capability to save, low-income households saved at a very low rate compared to the middle or higher income groups due to their need to spend daily, constraining their ability to save (Dolphin, 2009).

Socio-economic status was used as a risk factor in a bowel toxicity study (Laan et al., 2017); hence, socio-economic effects were determined to act as risk factors for financial status among single mothers. Previous studies on households have given rise to significant socio-economic factors influencing their financial situation. Gender, specifically female, was revealed to significantly influence financial vulnerability among Malaysian employees (Amirah Shazana et al., 2020; Sabri et al., 2021). Furthermore, income affected financial vulnerability (Amirah Shazana et al., 2020; Husniyah and Fazilah, 2011; Siti Nurazira et al., 2019). Siti Nurazira et al. (2019) also found that; marital status, age, and education influenced the financial vulnerability of individuals in Malaysia. Respondent's financial vulnerability was significantly affected by lower incomes, being married younger and having lower education levels.

Age and education were also positively correlated with financial literacy and financial well-being among Iranian households (Taft et al., 2013). Among Malaysians, older working respondents were more capable of saving for a higher income (Zaimah et al., 2013) and had better financial health (Husniyah et al., 2017). Apart from income, age, and education, employment was also found to enhance households' financial well-being in Australia (Muir et al., 2017). Due to their lower levels of education and insufficient skills for the job market, single mothers lived in poverty as they found it hard to secure good jobs with regular income (Brady, 2016; Mulia, 2017; Shirahase and Raymo, 2014). Faizah and Azian (2013) found that most single mothers in Malaysia left education after finishing primary school. Among New Zealand's households, irregular income resulted in low financial well-being (Muir et al., 2017). The number of dependents affected current and future financial well-being (Muir et al., 2017), whereas older adults without dependents had higher financial well-being (Plagnol, 2011). Mohd. Taib and Noor Baiduri (2011) in their study on urban single mothers obtained similar results. In line with this, Hsieh and Leung (2015) found that single mothers having young dependent children were the poorest and most disadvantaged among the vulnerable groups. Hence, number of dependents contribute inversely to the wellness of single mothers' finances.

Renters exhibit different levels of financial well-being compared to homeowners. Renters in New Zealand (Muir et al., 2017) and Australia (ANZ, 2018) had moderate financial well-being compared to homeowners. Though both renters and homeowners had monthly commitments of either rental fees or loan repayments, homeowners secured a fixed asset with an appreciating value. However, the housing type factor has not been studied in past research among single mothers regarding its effects on financial status. Other important factors for the financial status of Malaysian households were; financial behaviour, financial stress, work environment, and locus of control (Mokhtar and Husniyah, 2017; Sabri et al., 2019, 2020). For single mothers, self-coping, financial strains, and financial practices were essential factors (Ahmad et al., 2018; Siti Yuliandi et al., 2016). Previous studies have found that income, education and number of dependents were significant risk factors influencing the financial status of single mothers. Although the housing type factor was significant in previous studies' concerning financial well-being, this factor has not been studied in single mothers. Also, no studies have been carried out concerning the risk factors of the job sector and the type of job influencing the financial status of single mothers. Thus, this study has contributed to the existing body of literature regarding the housing type factor influencing single mothers' financial status, including the job sector's risk factors and type of job among single mothers.

Given the results of previous studies, the following hypotheses were developed to determine the risk factors influencing the financial status of single mothers. The five aspects of financial status among single mothers are; cash-flow, credit, insurance, savings and financial well-being.

Null hypotheses:

- H₀₁: Job sector, type of job, income, education, housing type and number of dependents do not significantly influence the cash-flow capability of single mothers.*
- H₀₂: Job sector, type of job, income, education, housing type and number of dependents do not significantly influence the credit capability of single mothers.*
- H₀₃: Job sector, type of job, income, education, housing type and number of dependents do not significantly influence the insurance capability of single mothers.*
- H₀₄: Job sector, type of job, income, education, housing type and number of dependents do not significantly influence the savings capability of single mothers.*
- H₀₅: Job sector, type of job, income, education, housing type and number of dependents do not significantly influence the financial well-being of single mothers.*

RESEARCH METHODOLOGY

This study adopted a quantitative and cross-sectional design and gathered data from a sample of single mothers in Negeri Sembilan, one of the states of Malaysia. Two data sources concerning single mothers were used in the selection process comprising lists of single mothers registered with the Department of Women, Family and Community Development in Negeri Sembilan until 2013 and unregistered single mothers selected from 38 primary schools in the districts of Seremban, Nilai and Port Dickson. Three districts in Negeri Sembilan, namely Seremban, Nilai and Port Dickson, were selected due to their similar ratios of single mothers and single fathers with the Population and Housing Census of Malaysia 2010 (Department of Statistics Malaysia, 2010). The number of single mothers in these three districts was more than three times the number of single fathers, similar to the ratio of 3.8 found in the census.

Based on the total population of 3,187 registered single mothers in Negeri Sembilan as reported by the Department of Women, Family and Community Development in Negeri Sembilan until 2013, the minimum sample required for this study was 341, at a confidence level of 95 per cent and a margin for error of 5 per cent (Dillman, 2007). The Department of Statistics Malaysia (2010) report stated that the total number of single mothers in Negeri Sembilan was 34,017. Thus, those registered accounted for slightly less than 10 per cent. Many of the single mothers in Negeri Sembilan did not register with the department. Thus, there is a need to include unregistered single mothers. The lists of single mothers were obtained from the schoolchildren's record at their schools. This study targeted a ratio of 70 to 30 for the two listed data sources, which resulted in 239 and 102 for registered and unregistered single mothers, respectively. The samples were selected using simple random sampling through lists of names from the government department and primary schools.

Data were collected using a questionnaire to obtain information from the respondents on their socio-economic and financial statuses concerning; cash flow, savings, credit and insurance. The questionnaire used single items with a scale from 1 (never) to 7 (most often). The Malaysian Personal Financial Well-being scale (MPFW) was used, developed from the scale introduced by Jariah and Garman (Jariah, 2007), which had 12 items with responses from 1 to 10 to measure financial well-being. The scale had various responses regarding the status of financial well-being, with lower scores reflecting lower financial well-being and higher scores reflecting higher financial well-being. The questionnaires were distributed to the homes of registered single mothers and the unregistered single mothers via their children attending the 22 selected primary schools with the assistance of the staff at those schools. The 22 selected schools from the 38 primary schools in Negeri Sembilan comprised 16 primary schools in Seremban, three primary schools in Nilai, and three primary schools in Port Dickson. After two weeks, the completed questionnaires were collected for analysis. The total number of completed questionnaires was 311.

This study used the same measurement of financial well-being used in past studies. Thus, the content validity of the variable's measurement had already been established. Furthermore, the MPFW scale has determined its construct validity using factor analysis. The sample was adequate to perform factor analysis (KMO = 0.929, $\chi^2 = 2610.9$; degree of freedom = 55; p-value = 0.0001) with considerably high factor loadings for a single factor ranging from 0.679 to 0.870 and a high reliability, with a Cronbach alpha of 0.94. The assumption of a normal distribution for parametric analyses was checked before conducting the bivariate and multivariate analyses. It was confirmed that the data distributions were normally distributed for the

financial status variables using Exploratory Data Analysis. The skewness and kurtosis values were within the acceptable range of ± 2 .

Descriptive analyses were conducted to describe the profiles of the respondents and their financial status levels. Bivariate analyses, namely; the independent sample t-test and ANOVA test, were performed to compare financial statuses based on socio-economic characteristics to reveal the risk factors. For the two groups used in the independent sample t-test, the type of job was classified into jobs that offered regular income or irregular income. Jobs in management positions, clerical work and security guards were grouped as regular income, while irregular income included own businesses and multitasking jobs. Besides, the housing type variable was categorised as a rent or otherwise. In contrast, the second category included those who owned a house or resided in free accommodation managed by their; employers, parents, relatives, friends or non-profit organisations. The number of dependents was categorised into two groups; less than four and, four and more. While for education, the two groupings were non-graduate and graduate.

The ANOVA test used; public (including statutory bodies), private and business (including self-employed) as the groupings for the job sector. The income categories were; less than RM1,000, RM1,000 to RM2,000 and more than RM2,000 per month. The significance levels for the ANOVA test were adjusted by dividing the significance levels with the number of multiple comparisons (value was 3), following Bonferroni, since the ratio of the highest sample to the lowest sample was more significant than 1.5 for the job sector (ratio = 1.9) and income (ratio = 3.8). In addition, multiple regressions were used to identify the significant risk factors for financial status. Assumptions of normality and equal variance for the multiple regressions were also met. The sample size of 311 was suitable for running a multiple regression as it exceeded the minimum number of 114 ($N = 50+8m$; where m is the number of independent variables, $m = 8$) according to Green (1991), while Van Voorhis and Morgan (2007) suggested ten times the predictors for a minimum of six predictors.

RESULTS AND DISCUSSION

Respondent's Profiles

The profiles of the respondent single mothers in Negeri Sembilan in Table 1 show that the largest group (39.5%) was in the middle age group of 31 to 40 years old. The majority of them (55.0%) had between one to three dependents (or a household size of two to four), which was close to the average household size of 3.9 (Department of Statistics Malaysia, 2019). There was a high financial need for children's upbringing, as almost three quarters (72.3%) of the sampled single mothers had between one to three school-aged children.

Table 1 Respondent's profiles

Socio-economic	Categories	Percentage
Age (years old)	20 – 30	10.0
	31 – 40	39.5
	41 – 50	38.9
	51 – 60	11.6
Number of dependents	1 to 3	55.0
	4 to 6	39.5
	≥ 7	5.5
	Monthly income (RM)	$\leq 1,000$
	1,001 – 2,000	24.1
	2,001 – 3,000	7.4
	$\geq 3,001$	8.4
Education	Non-graduate	82.0
	Graduate	18.0

As for income, the largest group (60.1%) earned below RM1,000 monthly, followed by the range of RM1,001 to RM2,000 (24.1%). Thus, 84.2 per cent earned below RM2,000 per month, placing them into poverty, based on the Poverty Line Income (PLI) of RM2,200 (Department of Statistics Malaysia, 2016). Hence, more than three-quarters of the single mother respondents lived in poverty, paralleled with past studies (Faizah and Azian, 2013; Mulia, 2017). The ratio of the sampled single mother's incomes who were above the poverty line was broadly in line with the ratio of the sampled mothers who had graduated (18.2%).

Table 2 reports that the largest group (40.5%) were employed in the private sector, followed by self-employed or own businesses (37.6%) as their primary source of income. This result indicates the high potential for income loss due to job insecurity, primarily when single mothers work in small companies. Altogether, slightly more than three-quarters of the single mothers (78.1%) were at a higher unemployment risk. Only one-fifth of the single mothers (21.8%) had secured a job in the public sector or a statutory body.

Table 2 Main job sectors

Categories of Job Sector*	Main Job Sector	Percentage
Public	Public	19.9
	Statutory Body	1.9
Private	Private	40.5
Business	Self-employed / Business	37.6

Note: *Groupings in ANOVA

The primary job types are exhibited in Table 3. The largest group, almost half (48.6%), of the respondents, carried out their own businesses or multitasked and were considered to have irregular incomes. Among regular income jobs, almost one-third of the single mothers (29.0%) worked in jobs providing a lower income than other types of work, such as: clerical, unskilled labour, and security guards. Jobs offering higher incomes involved less than a quarter (22.5%) of the respondents. The type of jobs secured by single mothers reflected the income instability most experienced. Single mothers with jobs providing an irregular income, such as carrying out their own business, multitasking or freelancing, have a high potential to lose their income during economic downturns or events like the current COVID-19 pandemic.

Table 3 Main job type

Categories of Job Type*	Main Job Type	Percentage
Regular Income	Professional and Technical	10.0
	Management and Administrative	12.5
	Clerical / Skilled Labour	11.6
	Unskilled Labour	12.9
	Security Guard	4.5
	Others (business, multitasking)	48.6
Irregular Income		

Note: * Groupings in independent sample t-test

Details of the respondent's housing type are shown in Table 4. The most significant group comprising slightly more than half (51.4%) were renting. Renting entails a monthly commitment with continuous spending even during economic shocks, such as the COVID-19 pandemic. Single mothers affected by the pandemic due to the Movement Control Orders (MCOs) may have been stressed when managing finances. Although those owning a house (19.6%) may have had a monthly commitment to loan repayments, the loan repayment moratorium system implemented by the government would have temporarily lifted that burden. The six-month period of automatic non-repayment of loans (moratorium), except for credit cards, helped many individuals affected by the MCOs.

Table 4 Housing Type

Categories of Housing Type *	Housing Type	Percentage
Rent	Rent	51.4
Otherwise	Own	19.6
	Parents/relatives	22.8
	Government	2.3
	Employer/company/others	3.8

Note: * Groupings in independent sample t-test

Financial Status

The mean of the financial status of the single mothers, which were measured in the aspects of; cash-flow, savings, credit and insurance using single items, and also using the measurement of financial well-being, are displayed in Table 5. For the cash-flow (mean score = 3.30), credit (mean score = 3.30) and insurance (mean score = 3.47) aspects of financial status, the mean scores were more than the mid-score of 4.0, reflecting higher incapability of the three aspects. This outcome meant that the single mothers in this study had difficulties with their spending, loan or credit repayments, purchasing insurance or takaful. The savings aspect gave a high mean score of 5.36 out of 7.0, showing that their savings were usually less than three months of their income. A similar trend was shown by the financial well-being mean score of 4.55, which was below the mid-point of 5.5, reflecting slightly unhealthy financial statuses.

Thus, the overall financial status measured using the various aspects of finances were in line with each other, concluding a low financial status among the sampled single mothers.

Table 5 Financial status

Financial Status*	Mean	S. D.
Cash-flow:	3.30	2.049
Incapable of paying utilities	Slightly capable	
Credit:	3.30	1.990
Incapable of paying monthly instalment	Slightly capable	
Insurance:	3.47	2.223
Incapable of buying insurance	Slightly capable	
Savings:	5.36	1.717
My savings are always less than three months of my income	Low level	
Financial well-being:	4.55	1.650
MPFW	Slightly unhealthy	

Note: * Higher scores reflect lower financial status except for MPF. Range scores & mid-score for MPFW are 1-10 & 5.5; others are 1-7 & 4.0 respectively.

Risk Factors of Financial Status Using Bivariate Analysis

The risk for financial status was determined using an independent sample t-test for the factors having two categories, as shown in Table 6. The type of job with irregular income comprising those doing business and multitasking gave significant lower savings among single mothers than jobs with regular income. The financial well-being variable also significantly lowered financial well-being for the same group of irregular income jobs. In contrast, the other aspects of financial status showed lower capability in spending, loan repayment and insurance purchasing. However, the results for these three aspects were not significant. Hence, the type of job giving either regular or irregular income differentiated the financial status of single mothers in this study based on the savings capability and financial well-being measures. These findings resulted in the type of job being one of the risk factors for financial status, based on savings and financial well-being.

Table 6 Risk factors for financial status using t-test

t-test	Cash-flow	Credit	Insurance	Savings	Financial well-being (MPFW)
	Mean (1 - 7; 1 - 10 (MPFW))				
<i>Type of job</i>					
<i>(t-value)</i>					
Irregular income	(-0.644)	(-0.720)	(-1.420)	(-2.758**)	(-2.893**)
	3.23	3.22	3.28	5.63	4.27
Regular income	3.38	3.38	3.64	5.10	4.81
<i>Housing type</i>					
<i>(t-value)</i>					
Rent	(0.755)	(0.818)	(0.604)	(2.776**)	(3.602**)
	3.39	3.21	3.54	5.62	4.23
Otherwise	3.21	3.40	3.39	5.08	4.89
<i>Number of Dependents</i>					
<i>(t-value)</i>					
Less than 4	(0.403)	(0.735)	(2.414**)	(-2.192*)	(0.579)
	3.28	3.21	3.59	5.29	4.60
4 and more	3.36	3.61	3.08	5.70	4.49
<i>Education</i>					
<i>(t-value)</i>					
Non-graduate	(2.337*)	(3.363*)	(1.469)	(-3.310**)	(-7.152**)
	3.41	3.45	3.54	5.50	4.26
Graduate	2.80	2.62	3.15	4.67	5.89

Note: Higher scores reflect lower financial status except for MPFW. * $p \leq 0.05$; ** $p \leq 0.01$.

The housing type factor showed significantly lower savings and lower financial well-being for renters than non-renters. This outcome may be due to the commitment of paying monthly rent, which results in no equity in the house for the long run. The results for the other three aspects of financial status for housing type were similar to those for the job type. The results conflicted with savings and financial well-being and were not significant. However, it can be concluded that housing type was another risk factor for financial status among these single mothers also based on savings capability and financial well-being. As for the number of dependents factor, those with a higher number of dependents had significantly lower savings but had significantly higher capability to buy insurance or takaful. One reason that may explain this result is that, since they were the sole earner of their family, these single mothers

purchased insurance or takaful to protect their income for the benefit of their children. However, the number of dependents was another risk factor for financial status based on the savings aspect. These findings were consistent with Hsieh and Leung (2015) and Plagnol (2011).

The education factor revealed significant results for the four aspects of financial status: cash-flow, credit, savings, and financial well-being. Non-graduates had a significantly lower capability of spending, loan repayments and lower savings and financial well-being than graduates. These results are different from the other factors analysed. Education emerged as one important risk factor for financial status compared with other factors such as job type, housing type, and the number of dependents. Higher education increased the chances to secure good jobs with higher income. Thus, the education factor was identified as one of the risk factors for financial status among these single mothers based on the cash-flow, credit, savings and financial well-being aspects. The education and employment factors that affected financial status were aligned with Muir et al. (2017).

The risk factors for financial status using the ANOVA test are displayed in Table 7. The job sector was also an essential risk factor for financial status based on significant cash flow, savings, and financial well-being results. For financial status based on cash flow, the private sector had the lowest capability, meaning that those single mothers working with the private sector were having difficulties in their cash flow, such as income and spending. At the same time, those carrying out business or self-employed were exhibited the highest capability in earning and spending. Single mothers who were public servants were moderately capable of earning and spending. Financial well-being for the private sector also showed the lowest level; however public sector employees among single mothers displayed the highest financial well-being while business owners and self-employed showed moderate financial well-being. On the other hand, savings capability was lowest among businesswomen or self-employed respondents and highest for public employees. Private-sector employees experienced a moderate savings capability.

Table 7 Risk factors for financial status using ANOVA

ANOVA	Cash-flow	Credit	Insurance	Savings	Financial well-being (MPFW)
Mean (1 – 7; 1 – 10 (MPFW))					
<i>Job sector</i>					
<i>(F-value)</i>	(6.733**)	(2.952)	(3.702)	(7.137**)	(22.919**)
Public	2.97	2.96	3.16	4.78	5.65
Private	3.81	3.62	3.88	5.31	4.12
Business	2.95	3.16	3.21	5.74	4.38
<i>Income (F-value)</i>	(2.507)	(3.776)	(0.926)	(11.477**)	(45.583**)
Less than RM1,000	3.47	3.52	3.58	5.72	3.95
RM1,000-2,000	3.18	3.02	3.33	4.93	5.32
More than RM2,000	2.58	2.81	3.19	4.63	5.96

Note: Higher scores reflect lower financial status except for MPFW. * $p \leq 0.017$; ** $p \leq 0.003$ (Bonferroni adj.).

Further multi-comparison analysis using the Scheffe test revealed that the three job sectors significantly differentiated the financial status of cash flow. Businesswomen and the self-employed had the highest cash-flow capability, followed by the public sector, and the lowest cash-flow capability was in the private sector. The Scheffe test differentiated the job sector based on the savings aspect, with the public sector being the highest compared to the businesswomen or self-employed. At the same time, the private sector was indifferent compared to either the public sector or businesswomen and the self-employed. The public sector single mothers had the highest financial well-being, higher than private sector and businesswomen in the Scheffe test results. In conclusion, the job sector was confirmed as one risk factor for financial status based on cash-flow, savings and overall financial well-being using the ANOVA and Scheffe tests.

Income was determined as another risk factor for financial status. The results of the ANOVA test showed significant differences for savings and financial well-being only. Savings capability and the level of financial well-being were significantly the lowest among the lowest income group, earning less than RM1,000 per month, below the Malaysian PLI of RM2,200 per month. The Scheffe test identified significant savings and financial well-being differences between those earning less than RM1,000 per month and those earning above it. Those earning more than RM2,000 per month had the highest savings and financial well-being. However, there was no significant difference between the middle group (RM1,000 to RM2,000 per month) and more than RM2,000 per month, based on the Scheffe test results. The savings capability and financial well-being level among single mothers earning an income of less than RM1,000 per month were significantly lower than the higher income groups. To conclude, income was determined as a risk factor for financial status, based on savings and overall financial well-being, using the ANOVA and Scheffe tests.

Risk Factors for Financial Status Using Multivariate Analysis

The ANOVA test results supported the validity of the savings capability ($F = 5.085$; p -value = 0.0001) and financial well-being ($F = 14.958$; p -value = 0.0001) models. While the R squared values for the models were 11.5 per cent and 28.4 per cent, respectively. The factors in the savings capability model explained 11.5 per cent of the variance in savings capability. In comparison, the factors in the financial well-being model explained 28.4 per cent of the variance in financial well-being. The cash-flow, credit and insurance capabilities models were not valid, based on the insignificant F statistics. Hence, the null hypotheses for these models, namely; H_01 , H_02 and H_03 , could not be tested. Only the null hypotheses for the savings capability and financial well-being models, namely, H_04 and H_05 , were tested. The hypotheses stated that job sector, type of job, income, education, housing type, and number of dependents did not significantly influence the sampled single mothers' savings capability and financial well-being.

The significant risk factors for savings capability, as shown in Table 8, were income less than RM1,000 ($B = -0.616$; $p = 0.010$), housing type ($B = -0.466^*$; $p = 0.015$) and the number of dependents (less than four) ($B = -0.595$; $p = 0.008$). Thus, the null hypothesis for savings capability, H_04 , was partially rejected, where job sector, type of job, income more than RM2,000 and education did not significantly influence savings capability. Single mothers earning less than RM1,000, which was at the poverty level (PLI = RM2,200 per month in 2019), were unlikely to save more than three months of their salary, and it was the most important factor compared to housing type or the number of dependents, based on the highest beta value (beta = -0.176). Having a large number of dependents (four and more) was the second important risk factor for savings capability. It resulted in high expenditure and reduced the opportunity for single mothers to save more. Being a renter among the single mothers was found to affect savings capability. They were committed to paying monthly rent for their family's accommodation. Housing type status, thus, was shown as the third significant risk factor of financial status, based on the savings capability of the single mothers sampled in this study. The result of the number of dependents factor followed the findings of Hsieh and Leung (2015) and Plagnol (2011).

Table 8 Risk factors for financial status based on savings using multiple regression

Factor	B	Beta	t	Sig.
Constant	3.827		9.507	0.000
Job sector (private)	-0.112	-0.032	-0.393	0.695
Job sector (business)	-0.501	-0.142	-1.641	0.102
Job type (irregular income)	-0.044	-0.013	-0.209	0.835
Income (<RM1,000)	-0.616	-0.176	-2.593**	0.010
Income (>RM2,000)	0.009	0.002	0.024	0.981
Education (non-graduate)	-0.217	-0.048	-0.620	0.536
Housing type (rent)	-0.466	-0.136	-2.439*	0.015
Number of dependents (≥ 4)	-0.595	-0.148	-2.687**	0.008

Note: Dependent variable: Capability to save more than 3 months' salary; $R^2 = 11.5\%$. * $p \leq 0.05$; ** $p \leq 0.01$.

Table 9 displays the risk factors based on the respondents' financial well-being. They show that private sector ($B = -8.769$; $p = 0.003$), income of less than RM1,000 per month ($B = -12.449$; $p = 0.0001$) and housing type ($B = -4.620$; $p = 0.02$) were the significant risk factors influencing the financial well-being of the sampled single mothers. Thus, the null hypothesis for financial well-being, H_05 , was partially rejected where; business sector, type of job, income more than RM2,000 per month, education and the number of dependents were not significant in influencing the financial well-being of the respondents. Earning an income of less than RM1,000 per month was the most important risk factor compared to the job sector and housing type, based on the highest beta value (beta = -0.308). The job sector (private) was the second important risk factor (beta = -0.218), and housing type (rent) was the least important risk factor (beta = -0.117) on the financial well-being of the sampled single mothers. The lowest-income group was constrained in fulfilling their financial needs, making them financially unhealthy. The single mothers working in the private sector with low levels of education were unable to secure good jobs. Housing type emerged as the least significant risk factor for single mothers' financial well-being, similar to savings capability. Rental commitments also limited their spending.

Table 9 Risk factors for financial status based on financial well-being using multiple regression

Factor	B	Beta	t	Sig.
Constant	75.794		18.112	0.000
Job sector (private)	-8.769	-0.218	-2.957**	0.003
Job sector (business)	-4.795	-0.118	-1.512	0.132
Job type (irregular income)	1.036	0.026	0.472	0.637
Income (<RM1,000)	-12.449	-0.308	-5.042**	0.000
Income (>RM2,000)	2.044	0.038	0.507	0.613
Education (non-graduate)	-7.069	-0.136	-1.941	0.053
Housing type (rent)	-4.620	-0.117	-2.328*	0.021
Number of dependents (> 4)	-4.185	-0.090	-1.817	0.070

Note: Dependent variable: MPFW; $R^2 = 28.4\%$. * $p \leq 0.05$; ** $p \leq 0.01$.

CONCLUSION AND IMPLICATIONS

This study focused on single mothers living in the Malaysian state of Negeri Sembilan, specifically those residing in the districts of Seremban, Nilai and Port Dickson. The objectives were to determine the risk factors towards the financial status in four aspects of financial status, namely, cash-flow, credit, savings, insurance and financial well-being. The analysis resulted in education being the common risk factor across the four aspects of financial status. At the same time, income, job sector, housing type, type of job and number of dependents were significant for two to three aspects of financial status based on the independent sample t-test and the ANOVA test. The multiple regression revealed income as the highest risk factor, followed by job sector and housing type for financial well-being. While for savings capability, income was the highest risk factor, followed by the number of dependents and housing type. Income and housing type were the common risk factors identified for financial status, based on savings and financial well-being. Thus, these risk factors significantly differentiated single mothers' financial status in insurance, savings, cash-outflow, credit and overall financial well-being.

These findings will enable the government and interested parties to focus on specific groups among single mothers to enhance their financial stability. During the COVID-19 pandemic, many of them have been affected, especially those earning meagre incomes, in the business sector or self-employed, renting their homes, having a job with irregular income, and having many dependents. Single mothers themselves should be managing their finances better. With the low financial status of single mothers in Negeri Sembilan, even before the pandemic, single mothers were not surviving well in a typical economic environment. They were unprepared for uncertainties due to their financial mismanagement. Income shocks, such as during the MCOs, which were imposed to restrain the spread of COVID-19, significantly affected the financial stability of single mothers. Insufficient savings to endure the MCOs and the loss of income among irregular income earners strained them financially. Nevertheless, financial assistance should focus on single mothers having significant risk factors, such as those earning meagre incomes, working in the private sector or doing business. Government assistance or stimulus packages, especially during MCOs, should also concentrate on single mothers renting and a high number of dependents as risk factors for their financial status.

Hence, this study identified the most at-risk single mother households vulnerable to the COVID-19 pandemic. Future studies that use wealth or other composite indexes of finance as measures of financial status should explore and identify the risk factors among single mothers. It is suggested that further studies involve additional states and not limit themselves to Negeri Sembilan to find consistency in the risk factors related to the financial status of single mothers. This community and other vulnerable groups should be given special attention by the government, especially from the effects of the COVID-19 pandemic, when formulating policies to enhance the socio-economic status of vulnerable groups.

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