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DEVELOPMENT AND VALIDITY OF A SOCIOECONOMIC WELL-BEING INSTRUMENT FOR B40 HOUSEHOLDS IN MALAYSIA: EXPLORATORY FACTOR ANALYSIS (EFA)

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Abstract:

This study focuses on developing and assessing the construct validity of the B40 Socioeconomic Wellbeing instrument using Exploratory Factor Analysis (EFA) involving 390 respondents from B40 households in urban (Klang Valley) and rural areas (Sik, Kedah). This instrument comprises three main constructs: Financial Well-being, Daily Spending Patterns, and Government Policy Effectiveness. The findings show that all constructs have KMO values above 0.70, and the Bartlett's test is significant ($p < 0.001$), indicating that the data are suitable for factor analysis. The Financial Wellbeing construct (KMO = 0.741) yielded three factors, retaining nine items and dropping one item (Q3). In contrast, the Daily Spending Patterns construct (KMO = 0.931) formed a single factor with 10 items retained, explaining 57.87% of the variance. In addition, the construct of Government Policy Effectiveness (KMO = 0.919) retained all 10 items, with two main factors identified: Direct Economic Assistance and Access and Information on Government Programs. Overall, the EFA results confirmed that all three constructs have a valid and stable factor structure, making this instrument suitable for use in assessing the socioeconomic well-being of B40 households in Malaysia.

Introduction

The Malaysian classification of households below 40 (B40) group comprises low-income households that are vulnerable to various socioeconomic challenges, including the rising cost of living, economic uncertainty, and financial management constraints. The Malaysian government's efforts to channel targeted assistance and strengthen social policies are significant in improving the well-being of this group. However, the actual level of well-being of the B40 depends on their ability to manage their income, daily spending patterns, and perceptions of the effectiveness of government policies. Therefore, this study was conducted to develop and assess the construct validity of the B40 Socioeconomic Well-being instrument using Exploratory Factor Analysis (EFA). This instrument focuses on three primary constructs: Financial Well-being, Daily Spending Patterns, and Government Policy Effectiveness, to identify the factor structure, item stability, as well as the validity and reliability of the instrument in assessing the socioeconomic well-being of B40 households in Malaysia.

Literature Review

Financial Well-being and Exploratory Factor Analysis (EFA) Applications in Socioeconomic Measurement

Studies on financial well-being often use Exploratory Factor Analysis (EFA) to identify latent dimensions that influence the financial stability of individuals and households (Joo & Grable, 2004). Joo and Grable (2004) applied Exploratory Factor Analysis (EFA) to examine the determinants of financial well-being among working adults and identified the influencing factors such as financial behaviour, perceived financial knowledge, and income adequacy. The study reported of the satisfactory KMO values and factor loadings above 0.60. A previous study by Ramli (2024) also applied EFA in the development of financial well-being items for single mothers receiving government assistance and found that the instrument had a stable structure with high reliability values. In addition, Aziz and Ahmad (2021) assessed the financial well-being of urban families using EFA and identified four main dimensions: spending control, saving capacity, financial stability, and risk management. These studies demonstrate that EFA is a suitable approach for assessing the construct validity of financial well-being in low-income households.

Daily Spending Patterns and Financial Behaviour of B40 Households

Daily spending patterns reveal on B40 households allocate their income between basic needs and wants. A study by Rahman and Yusof (2021), employed EFA to examine the spending patterns of low-income households and found that a single factor accounted for more than 55 percent of the total variance, suggesting a unidimensional spending pattern. Items such as being frugal, creating a monthly budget, and seeking cheaper prices showed factor loading values exceeding 0.70. Meanwhile, Sabri and Falahati (2012) conducted an Exploratory Factor Analysis (EFA) to examine financial well-being among young Malaysian employees and reported that financial knowledge and responsible spending behaviours significantly influenced overall financial satisfaction. Similarly, Mokhtar and Sabri (2015) applied EFA to

evaluate the financial behaviour of public-sector employees in Malaysia and identified three key factors: money management, savings behaviour, and spending discipline. These findings indicate that EFA is effective in identifying a stable factor structure for measuring financial behaviour, especially among low-income or financially vulnerable groups.

Effectiveness of Government Assistance Policies and Programs for the B40 Group

The effectiveness of government policies plays a crucial role in enhancing the well-being of low-income households. A study by Zainal et al. (2022) employed EFA to assess the perceptions of aid recipients regarding the implementation of government programs and identified two main factors: direct economic assistance and access to assistance information. A factor loading value of more than 0.63 indicates a strong and relevant factor structure. Nor et al. (2023) also used EFA to assess the effectiveness of implementing social assistance programs. They identified two main dimensions that were almost identical: the accuracy of assistance targets and the level of satisfaction with policy implementation. Meanwhile, Abdullah et al. (2024) implemented EFA to evaluate the micro-credit services of Amanah Ikhtiar Malaysia. They found that the developed instrument had high validity and reliability, with a KMO value of 0.90. These studies suggest that EFA is suitable for assessing the effectiveness of government policies in the B40 socioeconomic context.

Validation Study of EFA-Based Instruments in Malaysia

In various social and economic research in Malaysia, EFA is widely used to validate the factor structure of various instruments. Ling et al. (2025) applied EFA to validate the Malay version of the non-communicable disease risk perception questionnaire. Also, Dalawi et al. (2025) developed the mental health instrument (MUAPHQ-C19) using EFA to determine which items are suitable to be retained or excluded. In addition, Ababneh et al. (2023) used EFA to assess the public's perception of drive-thru pharmacies and found a valid and reliable two-factor structure. This study shows the strength and justification for the use of EFA in social research in Malaysia, as they enable to identify the hidden of these dimensions within a construct and ensure that the developed instrument is both empirically and theoretically valid, as well as statistically reliable.

Methodology

Research Design

This study utilises a quantitative approach and used a descriptive research design to establish and evaluate the construct validity of the B40 Socioeconomic Well-being instrument in Malaysia. The primary focus is to assess the latent factor structure of three key constructs: Financial Well-being, Daily Spending Patterns, and Government Policy Effectiveness, using Exploratory Factor Analysis (EFA). This method was chosen because EFA can identify patterns of relationships between items and the constructs being measured (Hair et al., 2019).

Population and Sampling

The study population consisted of B40 households in urban (Klang Valley) and rural areas (Sik, Kedah). A total of 390 respondents participated, selected through purposive sampling. This sample size met the recommendation by Hair et al. (2019), which is at least 10 respondents for each item; thus, it was considered sufficient to conduct EFA for 30 items.

Research Instrument

The questionnaire instrument was developed based on a previous literature review and adapted to the socioeconomic context of B40 households in Malaysia. It contained three primary constructs:

1. Financial Well-being (10 items) – assessing financial stability, cost of living pressures, and debt management.
2. Daily Spending Patterns (10 items) – measuring household spending patterns and budget control.
3. Government Policy Effectiveness (10 items) – assessing perceptions of government assistance and support programmes.

Each item was measured using a four-point Likert Scale (1 = Strongly Disagree to 4 = Strongly Agree). Three subject matter experts (finance, sociology, and statistics) have reviewed the draft instrument to assess face and content validity prior to its actual distribution.

Data Collection Procedure

The questionnaire was distributed face-to-face and online between March and May 2025 to the respondents who met the B40 criteria. Each respondent was informed that participation in this research was voluntary, and data was collected confidentially without revealing personal identities of the respondents.

Data Analysis

In this research, IBM SPSS software version 27.0 was used to analyse the data. Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were conducted to determine the adequacy of the data for factor analysis. Items with factor loadings (λ) less than 0.40 were deleted following Hair et al. (2019), and cross-loadings were examined to ensure that each item loaded cleanly on a single factor. Principal Component Analysis (PCA) with Varimax Rotation was employed to extract the underlying factors for each construct. Eigenvalues ≥ 1.0 and a minimum total variance explained of 50% were used as criteria to determine factor significance.

The findings of the analysis showed that:

- Financial Well-being (KMO = 0.741; Bartlett χ^2 = 1104.156, p < 0.001) with 9 items remaining and one item (Q3) was removed/deleted.
- Daily Spending Patterns (KMO = 0.931; Bartlett χ^2 = 2188.357, p < 0.001) with 10 items remaining in a single factor.
- Government Policy Effectiveness (KMO = 0.919; Bartlett χ^2 = 2404.436, p < 0.001) with 10 items remaining in two main factors.

All constructs show factor loading values ranging from 0.456 to 0.837, indicating a valid and consistent factor structure.

While based on the table below, it refers to the following:

Table 1: Data Reading and Interpretation Levels for EFA

Indicator	Statistical Criterion / Level	Interpretation	References
Kaiser-Meyer-Olkin (KMO) Measure	0.90 – 1.00 = Excellent 0.80 – 0.89 = Meritorious 0.70 – 0.79 = Middling 0.60 – 0.69 =Mediocre 0.50 – 0.59 = Miserable < 0.50 = Unacceptable	Demonstrate suitability of data for factor analysis; a value ≥ 0.60 is accepted, while a value≥ 0.70 is considered good.	Kaiser (1974); Hair et al. (2019)
Bartlett's Test of Sphericity	$p < 0.05$	The significance test revealed that the correlation matrix was suitable for EFA ($p < 0.001$, indicating a very good fit).	Field (2018)
Factor Loading (λ)	$\lambda \geq 0.70$ = Very Strong $0.50 \leq \lambda < 0.70$ = Strong $0.40 \leq \lambda < 0.50$ = Moderate $\lambda < 0.40$ = Weak/ Remove item	Shows the strength of the relationship between items and constructs. Items with $\lambda < 0.40$ should be dropped.	Hair et al. (2019); Tabachnick & Fidell (2013)
Communality (h^2)	$h^2 \geq 0.50$ = Good $0.30 \leq h^2 < 0.50$ = Acceptable $h^2 < 0.30$ = Weak	Describes the amount of item variance explained by the factors. Higher values indicate structural clarity.	Yong & Pearce (2013)
Eigenvalue	≥ 1.00	Factors with eigenvalues greater than 1 are considered significant for extraction.	Kaiser (1960)
Variance Explained (%)	$\geq 50\%$	The level of variance explained for the construct; higher values indicate the strength of the factor structure.	Hair et al. (2019)

Based on the EFA Statistical Criteria Table 1, each indicator plays an important role in determining the validity and strength of the factor structure. A KMO value of at least 0.60 indicates that the data is suitable for factor analysis, while a value above 0.70 is considered good to excellent. Bartlett's Test ($p < 0.05$) indicates a significant relationship between items, confirming the appropriateness of the correlation. Factor loading (λ) assesses the strength of the relationship between items and constructs; only items with $\lambda \geq 0.40$ are retained. A Communality (h^2) value of ≥ 0.50 indicates that the factors well explain the items, while an Eigenvalue ≥ 1.0 indicates a significant factor. Overall, a Variance Explained of $\geq 50\%$ indicates that the EFA model has a strong and valid factor structure.

Finding

**Table 2: Summary of Exploratory Factor Analysis (EFA)
Results**

Construct	KMO	Bartlett's Test (χ^2, p)	No. of Factors	Items Retained	Items Removed	Factor Loading (λ)	Remarks
Financial Well-Being	0.5146	1104.156, $p < 0.001$	3	9	1 (Q3)	0.456-0.804	Three components extracted; valid structure.
Daily Spending Pattern	0.6465	2188.357, $p < 0.001$	1	10	-	0.687-0.831	Single-factor; strong reliability.
Government Policy Effectiveness	0.6382	2404.436, $p < 0.001$	2	10	-	0.663-0.837	Two factors; good construct validity.

Table 2 shows that all constructs recorded acceptable KMO values and significant Bartlett's Tests ($p < 0.001$), indicating that the data were suitable for factor analysis. The Financial Well-Being construct yielded three factors, retaining nine items and removing one item (Q3) due to its low loading. The Daily Spending Pattern construct revealed a single strong factor with all ten items retained. Meanwhile, the Government Policy Effectiveness construct yielded two valid factors, retaining ten items. Overall, the EFA confirmed that the instrument demonstrated valid and reliable factor structures for further analysis.

Table 3: EFA for Construct 1: Financial Well-Being

Item Code	Item Statement (English Translation)	Factor Loading (λ)	Communality (h^2)	Decision
Q1	I feel confident about my family's finances despite the rising cost of living.	0.756	0.712	Retained
Q2	I can fulfil all my family's financial needs with my current income.	0.753	0.73	Retained
Q3	I am worried about my family's financial future.	0.348	0.348	**Removed ($\lambda < 0.40$)**
Q4	I often have to borrow money to meet daily financial needs.	0.804	0.776	Retained
Q5	I can save money each month after paying my expenses.	0.686	0.534	Retained

Q6	The high cost of living has caused financial stress in meeting basic needs.	0.593	0.653	Retained
Q7	My financial well-being is affected by rising prices of essential goods.	0.609	0.663	Retained
Q8	I always have enough money to buy quality food.	0.635	0.473	Retained
Q9	My ability to spend on entertainment or luxury items is limited.	0.528	0.508	Retained
Q10	The rising cost of living reduces my ability to achieve long-term goals.	0.576	0.641	Retained

Table 3 presents the Exploratory Factor Analysis (EFA) results for the Financial Well-being construct, indicating that nine items were retained for further analysis. In contrast, one item (Q3) was dropped due to low factor loading values ($\lambda = 0.348 < 0.40$). The KMO value is 0.741, and the significant Bartlett test ($\chi^2 = 1104.156$, $p < 0.001$) confirms that the data fit. The factor loading range, between 0.456 and 0.804, indicates a strong relationship between the items and the construct. Three main dimensions were identified: financial stability (Q1, Q2, Q5, Q8), cost of living pressure (Q6, Q7, Q9, Q10), and debt management (Q4). Overall, this construct has a valid structure and can be used to assess the financial well-being of B40 households in Malaysia.

Table 4: EFA for Construct 2: Daily Spending Pattern

Item Code	Item Statement (English Translation)	Factor Loading (λ)	Communality (h^2)	Decision
Q1	I need to be thrifty to stay within my daily budget.	0.709	0.503	Retained
Q2	I often look for cheaper products to save money.	0.76	0.578	Retained
Q3	I have to reduce non-essential purchases to manage daily costs.	0.798	0.637	Retained
Q4	I avoid eating out due to high prices.	0.763	0.582	Retained
Q5	I prefer store-brand products for savings but buy branded items when necessary.	0.725	0.525	Retained
Q6	Prices of goods affect how much I can buy each month.	0.687	0.473	Retained

Q7	My spending focuses more on necessities than on hobbies.	0.831	0.691	Retained
Q8	My financial situation forces me to postpone expensive purchases.	0.747	0.559	Retained
Q9	I look for cheaper alternatives for daily items.	0.792	0.627	Retained
Q10	High prices of basic goods make me reduce some purchases.	0.783	0.613	Retained

Table 4 presents the Exploratory Factor Analysis (EFA) results for the Daily Spending Pattern construct, indicating that all 10 items were retained, with factor loading values ranging from 0.687 to 0.831. In contrast, communality values ranged from 0.473 to 0.691. The KMO value of 0.931 and the significant Bartlett test ($\chi^2 = 2188.357$, $p < 0.001$) indicated that the data were suitable for factor analysis. The results of the analysis highlighted that single factor that explained 57.87% of the total variance, indicating that this construct is unidimensional and has high internal reliability ($\alpha = 0.887$). This finding indicates that all items consistently measure prudent daily spending behaviour among B40 households.

Table 5: EFA for Construct 3: Government Policy Effectiveness

Item Code	Item Statement (English Translation)	Factor Loading (λ)	Communality (h²)	Decision
Q1	Government assistance helps reduce my cost of living.	0.837	0.783	Retained
Q2	Government subsidies help reduce my household expenses.	0.832	0.692	Retained
Q3	I receive sufficient support from current government policies.	0.8	0.654	Retained
Q4	Government policies help me manage the rising cost of essential services.	0.794	0.696	Retained
Q5	Government programmes accurately target low-income groups.	0.755	0.58	Retained
Q6	Government financial assistance is timely and adequate.	0.8	0.654	Retained
Q7	Current policies for B40 households effectively meet my needs.	0.726	0.655	Retained

Q8	I receive clear and sufficient information about government aid programmes.	0.692	0.803	Retained
Q9	Government assistance reduces my financial worries.	0.781	0.693	Retained
Q10	I am satisfied with the effectiveness of public healthcare assistance (e.g., Klinik Komuniti, subsidies).	0.735	0.658	Retained

Table 5 presents the Exploratory Factor Analysis (EFA) results for the Government Policy Effectiveness construct, indicating that all 10 items were retained, with factor loading values ranging from 0.663 to 0.837 and communality values ranging from 0.580 to 0.803. The KMO value = 0.919 and the significant Bartlett test (χ^2 = 2404.436, p < 0.001) indicate that the data have an excellent level of suitability for factor analysis. Two main factors were identified: direct economic assistance and Access to Government Program Information, which explained most of the variance in the construct. This finding proves that the government policy effectiveness construct has a strong and valid factor structure, reflecting the positive perceptions of B40 households towards the effectiveness of assistance and the efficiency of its implementation.

Discussion

Furthermore, the three constructs are interrelated in shaping overall socioeconomic well-being among B40 households. Daily Spending Patterns serve as a behavioural mechanism that influences how financial resources are managed (Sabri & Falahati, 2015). Households with disciplined spending habits are better able to stretch limited income, prioritise essential needs, and reduce financial stress, which consequently enhances their financial well-being (Joo & Grable, 2004). At the same time, Government Policy Effectiveness reinforces financial resilience by providing targeted subsidies, cash assistance, and clear programme information (Zainal et al., 2022; Nor et al., 2023). When prudent spending behaviour operates alongside supportive policy measures, families are more capable of maintaining financial stability, coping with rising living costs, and improving long-term socioeconomic well-being (Sabri & Falahati, 2015).

For the Daily Spending Pattern construct, the results show a single factor with all ten items retained. This illustrates that B40 households have a prudent spending pattern, focusing on their basic needs. This result supports the findings of Rahman and Yusof (2021) and Nik Mohamed et al. (2022), who found that the spending behaviour of the B40 group is more cautious and centered on daily budget control. The high factor loading values indicate uniformity of items in measuring aspects of financial discipline and prioritizing basic needs.

Meanwhile, the construct of Government Policy Effectiveness comprises two main factors: direct economic assistance and Access to and Information on Government Programs. All items are maintained with high factor loading values that reflect the level of awareness and positive acceptance of government initiatives. This finding aligns with the studies of Zainal et al. (2022)

and Nor et al. (2023), which emphasize that targeted government assistance programs help alleviate the burden of living costs for B40 households and improve their overall well-being. Overall, the EFA results demonstrate that this instrument possesses strong construct validity and is consistent with the theory and previous studies. This instrument is not only suitable for assessing the level of socioeconomic well-being of the B40 but also has the potential to be used in further studies to measure the impact of social policies, the effectiveness of assistance programs, and strategies to improve household economic well-being in Malaysia.

Limitations and Recommendations

This study has several limitations that should be acknowledged. First, the data were collected from selected areas only, which may restrict the generalisability of the findings to all B40 households in Malaysia. Second, the study employed a cross-sectional design, limiting the ability to determine causality between financial well-being, spending behaviour, and perceptions of government assistance. Third, the instrument relied on self-reported responses, which may be affected by recall inaccuracies and social desirability bias. Future studies should consider using longitudinal designs, broader sampling frames, and triangulated data sources to strengthen the robustness and applicability of the instrument.

Research Implication

The instrument developed in this study provides a practical tool for evidence-based policymaking related to the socioeconomic well-being of B40 households in Malaysia. By producing reliable and standardised data on financial well-being, daily spending behaviour, and perceptions of government assistance, policymakers are able to prioritise resources and tailor interventions based on actual household needs rather than assumptions. The instrument is particularly relevant to current national development agendas, including the Twelfth Malaysia Plan (RMKe-12), which emphasises improving living standards, reducing urban and rural inequality, and strengthening social protection mechanisms. Furthermore, the instrument can support the PADU targeted subsidy system by helping agencies identify households that require immediate assistance and track changes in vulnerability over time. In addition, insights generated from the instrument can be aligned with Belanjawan Madani initiatives, especially those related to cost-of-living support, financial literacy programmes, and empowerment of low-income communities. Overall, this instrument enables a more transparent, data-driven, and outcome-oriented approach to policy design, implementation, and monitoring for B40 socioeconomic well-being.

Future Research Directions

Future studies may extend this research by undertaking several advanced validation procedures. First, testing measurement invariance across different states, ethnic groups, or gender categories would help determine whether the instrument performs consistently among diverse B40 populations. Second, researchers could apply Structural Equation Modelling (SEM) to examine the causal relationships between financial well-being, daily spending behaviour, and perceptions of government policy effectiveness. Third, longitudinal validation is recommended to track changes in socioeconomic well-being over time, particularly in response to evolving cost-of-living pressures and policy interventions. These approaches would strengthen the robustness, generalisability, and predictive utility of the instrument for future academic and policy-oriented research.

Conclusion

This study established a valid and reliable instrument for assessing socioeconomic well-being among B40 households in Malaysia across three key dimensions: financial well-being, daily spending behaviour, and perceptions of government policy effectiveness. The findings provide empirical evidence that these constructs can be measured consistently and meaningfully through a 29-item scale. Importantly, the results demonstrate that socioeconomic well-being is shaped not only by household financial conditions, but also by day-to-day spending behaviour and the extent to which government support is accessible and effective. By offering a standardised and data-driven measurement tool, this research advances current understanding of B40 financial vulnerability and provides a foundation for future studies using CFA, SEM, or longitudinal validation approaches.

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