




Effects of government assistance programs on the well-being of urban low-income households during COVID-19 pandemic in Malaysia



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ABSTRACT

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This study aims to investigate the effects of government assistance programs on the well-being of urban low-income households during the COVID-19 pandemic in Malaysia. The COVID-19 pandemic has had a significant impact on Malaysians' well-being, affecting a variety of factors such as income, health, and standard of living. To address the repercussions of the pandemic, the government has implemented diverse economic stimulus packages. Household well-being is assessed using four indicators: income, health, cost of living, and social relations. A cross-sectional survey was conducted in six regions of Malaysia. Data from 706 respondents was analysed using the Structural Equation Modelling (SEM). The main findings reveal that government assistance programs enhance household well-being by reducing the cost of living, increasing income, improving health, and fostering social interactions. Specifically, among the four focused aspects, the programs have the most significant impact on improving the health of low-income households. These programs have the least effect on enhancing well-being through the reduction of the cost of living. Consequently, these findings provide valuable information to policymakers in understanding the effectiveness of government assistance programs during the crisis period. This nationwide evidence-based analysis will contribute additional insights to the formulation of future assistance programs aimed at improving the well-being of low-income households.

Contribution/ Originality: Malaysian government has implemented various assistance programs to improve the well-being of low-income households, and there is a dire need to study their effectiveness. The study investigates this issue from the perspectives of income, health, cost of living, and social relations, and the findings could help shape future assistance programs.

1. INTRODUCTION

In March 2020, the World Health Organization (WHO) declared COVID-19 outbreak a pandemic. The pandemic has rapidly transformed into a worldwide economic crisis and a source of social adversity. It has impacted households and individuals the most in terms of income and wealth, employment quality and job opportunities, physical and mental health, the balance between work and personal life, social connections, and social capital. The

COVID-19 came in line with high world unemployment rates at 6.5 percent (220 million were unemployed), which has risen 1.1 percent from 2019 to 2020. 31 percent of the population in 25 Organization for Economic Co-operation and Development (OECD) countries faced financial difficulties, and this has indirectly affected well-being of the households (Organization for Economic Co-operation and Development (OECD), 2021).

In Malaysia, the COVID-19 pandemic has caused an increase in the unemployment rate, escalating from 3.3 percent in 2019 to 4.5 percent in 2020. There was an increase in the skilled-related underemployment rate among employed persons with tertiary education from 34.4 percent in 2019 to 38.0 percent in 2020 (Department of Statistics Malaysia (DOSM), 2021a). Real Gross Domestic Product (GDP) has declined sharply from 4.4 percent (or in terms of Ringgit Malaysia (RM), it was RM1,424.3 billion) in 2019 to negative 5.6 percent (RM1,343.9 billion) in 2020, the lowest growth rate since the Asian Financial Crisis in 1998 (-7.4 percent), causing 3.1 million households to experience a decline in income.

Malaysians are segmented into three income categories: the top 20 percent (T20), middle 40 percent (M40), and bottom 40 percent (B40). Amid the COVID-19 pandemic, a significant proportion of households experienced income declines, leading to a notable shift as many households from higher income deciles moved to lower income groups. Specifically, 20 percent (0.6 million) of households from the M40 group, with incomes ranging between RM4,850 and RM10,959, transitioned to the B40 group. Additionally, 12.8 percent of the T20 group shifted to the M40 group (Department of Statistics Malaysia (DOSM), 2021b). Given the larger percentage decrease in income for B40 and M40 households compared to T20 households, the income distribution for B40 and M40 declined to 15.9 percent (2019: 16.0 percent) and 36.9 percent (2019: 37.2 percent), respectively, in 2020. In contrast, the T20 group's share of income increased to 47.2 percent in 2020, reflecting a 0.4 percent rise from 2019. The health crisis led to an increase in poor households from 405,400 in 2019 to 639,800 in 2020 (Department of Statistics Malaysia (DOSM), 2021b), potentially subjecting them to financial strain (French & Vigne, 2019) and diminishing overall well-being (Daks, Peltz, & Rogge, 2020).

In order to mitigate the impact of the COVID-19 pandemic on people, businesses, and the economy, the government has implemented a series of economic stimulus measures, both fiscal and non-fiscal, totalling more than RM300 billion. In 2020, the Malaysian government launched the Economic Stimulus Package *Prihatin Rakyat* (PRIHATIN), PRIHATIN SME+, Short-Term Economic Recovery Plan (PENJANA), and PRIHATIN Supplementary Initiative Package (KITA PRIHATIN) (Ministry of Finance Malaysia, 2021). Table 1 shows various government stimulus measures for 2020.

Table 1. Government stimulus packages, 2020.

Date	Government assistance program	Amount (RM billion)
March 2020	Economic stimulus package <i>Prihatin Rakyat</i> (PRIHATIN)	250
	• People welfare (approximately)	128
	• Businesses including small and medium-sized enterprises (SMEs)	100
	• Economic development	2
	• Previous stimulus packages	20
	National caring aid (<i>Bantuan Prihatin Nasional</i> (BPN 1.0))	10
April 2020	PRIHATIN SME+	10
	• Wage subsidy program	7.9
	• Special <i>prihatin</i> grant (<i>Geran Khas Prihatin</i> (GKP))	2.1
Jun 2020	Short-term economic recovery plan (<i>Pelan Jana Semula Ekonomi Negara</i> (PENJANA))	35
September 2020	PRIHATIN supplementary initiative package (KITA PRIHATIN)	10
	• BPN 2.0	7
	• Wage subsidy program	2.4
	• GKP	0.6

The economic stimulus programs have succeeded in strengthening the country's health care services and providing immediate financial assistance to alleviate the cash flow strain on people and businesses through the loan repayment deferral and restructuring credit facilities (Ministry of Finance Malaysia, 2021). Additionally, for the household's well-being during the COVID-19 pandemic, the government offered National Caring Aid (BPN 1.0 and BPN 2.0) in 2020, especially for the B40 and M40 households, which is continuity from the previous cash transfer programs called 1Malaysia People's Aid (BR1M) from 2012 until 2018 and Household Living Aid (BSH) in 2019. Most studies found that cash transfer has desired impacts on aspects such as health (Lagarde, Haines, & Palmer, 2009; Paes-Sousa, Santos, & Miazaki, 2011; Rasella, Aquino, Santos, Paes-Sousa, & Barreto, 2013; Shei, 2013), food security (Miller, Tsoka, & Reichert, 2011; Paes-Sousa et al., 2011), income smoothing (Standing, 2008), poverty reduction (Barrientos & DeJong, 2006; Draeger, 2021; Ferro, Kassouf, & Levison, 2010; Levine, Van Der Berg, & Yu, 2011; Paes-Sousa et al., 2011; Shei, 2013), social protection (Paes-Sousa et al., 2011), and increased school enrolment (Draeger, 2021; Ferro et al., 2010; Oosterbeek, Ponce, & Schady, 2008; Paes-Sousa et al., 2011).

The government has indeed put in great efforts to uplift the well-being of the people during the COVID-19 pandemic. A large portion of the government's funds have been allocated for this reason. To what extent the government assistance programs have effectively helped increase the people well-being is a question that needs to be answered. Furthermore, the COVID-19 pandemic has affected the well-being of a society in terms of income, health, and standard of living. Understanding which aspects of the well-being have been effectively addressed by the government will provide helpful signals to the government for better and more focused assistance program provision in the future. Moreover, the government has implemented a handful of policies for betterment of the household's well-being. Nevertheless, studies on the effectiveness of the policies at a wide-scale national level are rarely done and documented. It is a high time for the government to formulate future policies based on documented evidence. Thus, this study investigates the effect of government assistance programs on the low-income, or specifically the B40 household's, well-being during the COVID-19 pandemic.

This paper contributes to the body of knowledge and government policies in the following forms: First, this study creates dimensions of household's well-being in Malaysia through the Exploratory Factor Analysis (EFA). EFA determines the dominant factors determining the effectiveness of government assistance programs in improving household's well-being. Second, understanding how government assistance works, notably in maintaining household's well-being during the crisis, may help policymakers design assistance programs effectively in the future through an evidence-based policy framework.

This paper is written in five sections. Section 1 describes the subject matter, while Section 2 discusses previous empirical literature. The methods and data are presented in Section 3, and the key conclusions are summarised in Section 4. Section 5 concludes with some policy implications.

2. LITERATURE REVIEW

Well-being is characterized by the encounter with positive emotions such as joy and satisfaction, along with the realization of one's potential, a degree of autonomy in one's life, a sense of purpose, and the cultivation of meaningful relationships (Huppert, 2009). Previous studies reveal that income and consumption are important as they contribute to household well-being (Carver & Grimes, 2019; Grimes & Hyland, 2015; Iyer & Muncy, 2016; Noll & Weick, 2015), and the decline in income will lead to negative feelings in households, which also affect their well-being (Kay & Jost, 2003; Rodrigues, Silva, & Franco, 2021; Sengupta et al., 2012). The study of the relationship between government policies and a society's well-being is consistent with social welfare theory, which seeks to evaluate and improve social welfare or well-being by investigating how various policies, institutions, and economic arrangements affect individuals' utility or satisfaction.

Many governments provide financial assistance, which includes both cash and non-cash transfers (such as food baskets and job security programs), to improve a household's well-being. Cash transfer programs are introduced as

a social assistance program to alleviate poverty and improve the well-being of vulnerable groups (Floate, Marks, & Durham, 2019). Over the last two decades, as a social protection agenda, there has been an increase in the number of government financial assistance programs that provide cash to poor people in developing countries such as Brazil, Mexico, Colombia, Jamaica, Indonesia, Bangladesh, Mongolia, Pakistan, Malawi, and China (Huang, Wang, Zhi, Huang, & Rozelle, 2011; Sadoulet, De Janvry, & Davis, 2001; Yi, Lu, & Zhou, 2016).

Cash transfer programs were preferred because of extensive empirical evidence of their effectiveness in helping low-income households. It is estimated that approximately 700 million to one billion people benefit from cash transfers worldwide (Barrientos & DeJong, 2006). This has led to more research on the effectiveness of assistance programs from various socioeconomic aspects. The following sections discuss the effectiveness of the financial aid programs.

2.1. The Effectiveness of the Financial Assistance Programs

Financial assistance programs have been proven to have positive effects on household's income, health, standard of living, and social interaction. In terms of the effect of financial assistance programs on income and poverty, Barrientos and DeJong (2006) found that cash assistance programs have provided low-income households with a consistent source of income and effectively reduced their poverty. Similarly, a study by Standing (2008) also found that in developing countries, various types of cash assistance function as a source of family income, and further reduce family poverty. Nevertheless, Golan, Sicular, and Umapathi (2017) found that although cash transfer programs provide sufficient income to low-income households, they do not reduce overall poverty in China.

The effects of government financial assistance programs on health have been recorded by Gertler (2004); Standing (2008); Angelucci and De Giorgi (2009); Lagarde et al. (2009); Amarante, Manacorda, and Vigorito (2016); Arnold, Conway, and Greenslade (2011); Bailey and Hedlund (2012), and Shei (2013). According to Gertler (2004), conditional cash transfer programs have improved children's health. However, Lagarde et al. (2009) found further that the conditional cash transfer programs have the potential to improve child health outcomes, but their effectiveness varies across all age groups of the poor in low-income and middle-income countries.

In Brazil, Shei (2013) found that over a five-year period beginning in 2003, the Bolsa Familia conditional cash transfer programs in Brazil succeeded in reducing persistent health disparities and infant mortality by 9.3 percent. In addition to that, cash transfer programs have a significant impact on both the child's and the mother's growth (Amarante et al., 2016) and improvement of nutrition among students, which has helped them learn better (Arnold et al., 2011; Standing, 2008). Furthermore, the cash transfer programs assist households in purchasing a variety of nutritious foods such as vegetables, meat, dairy products, and fruits (Amarante et al., 2016; Bailey & Hedlund, 2012). This has shown that cash transfer programs improve food security, allow low-income households to spend money on health care services, and reduce disease risk (Bailey & Hedlund, 2012).

In another health context, the findings of a study in Zimbabwe found that cash transfer programs reduced the stress and anxiety of family heads trying to earn money and improved their emotional health (Skovdal et al., 2013). Similar to this, a study by Haushofer, Mudida, and Shapiro (2021) in Kenya found that cash transfers contributed to higher levels of psychological well-being and mental health after one year of the intervention program. However, Hjelm et al. (2017) observed that cash transfers did not reduce stress in low-income households in Zambia. Assistance programs have also improved the health of vulnerable populations by increasing vaccination participation among children (Skovdal et al., 2013). Findings from previous studies provide evidence that, despite the fact that a few studies found no significant effect of cash transfers on health disparities, the rest found otherwise.

Past studies also found that aid programs have both direct and indirect effects on the cost of living. For instance, cash transfer programs help low-income households meet their basic needs (Daidone, Davis, Handa, & Winters, 2019) and indirectly empower them to employ coping strategies to boost their food consumption and food security in the face of adverse shocks (Lawlor, Handa, Seidenfeld, & Team, 2019). Furthermore, the cash assistance

programs are very effective in enabling low-income households to pay school fees on time, purchase school materials such as uniforms and stationery, and avoid suspensions (Arnold et al., 2011; Evans & Popova, 2017). The deductions to cash assistance programs between 2001 and 2015 had an impact on the well-being of low-income households (Shaefer, Edin, Fusaro, & Wu, 2020) in terms of saving, expenditure, debt-free status, food security, and child homelessness (Kilburn et al., 2019).

Cash transfers have also been shown to increase community interaction (Selvester, Fidalgo, & Taimo, 2012) and social participation (Skovdal et al., 2013). Additionally, according to Vincent and Cull (2009) and Food and Agriculture Organization (FAO) (2015), cash transfer programs encourage low-income people to participate in society, promote self-esteem and status improvement. Similarly, Yildirim, Ozdemir, and Sezgin (2014) discovered that cash transfers have also improved children's well-being in terms of increased levels of confidence and self-esteem.

2.2. Cash Transfer Initiatives during the COVID-19 Pandemic

In Malaysia, the COVID-19 pandemic has impacted household income (Abd Hadi & Noryati, 2022; Brewer & Gardiner, 2020) due to Movement Control Order (MCO) and business closures that have resulted in job losses and reductions in working hours (Department of Statistics Malaysia (DOSM), 2021a). B40 households are characterised by reliance on a single source of income, employment in low-skilled positions, a low level of education, the inability to own a home, a lack of wealth and ownership of non-financial assets, high indebtedness, and vulnerability to economic risk (Economic Planning Unit, 2010, 2015). Thus, government regularly distributes the cash transfers (e.g., BR1M, BSH, and BPN) to eligible households, especially to the B40 group during COVID-19, to lessen their financial load. According to Malaysia's Ministry of Finance, more than RM36 billion has been spent on BR1M and BSH since government financial aid was introduced in 2012.

Abdoul-Azize and El Gamil (2021) discovered that social assistance programs in different nations lack a comprehensive strategy for effective implementation in the midst of a pandemic. Das and Mishra (2021) evaluate several government initiatives to make aid programs more inclusive during the pandemic. Although various initiatives were immediately launched during the MCO, some vulnerable groups were unable to access social assistance provided by the government (Azeez EP, Negi, Rani, & AP, 2021; Bauza et al., 2021). Thus, evidence from the previous literature shows the importance of having a comprehensive strategy for providing financial assistance to the vulnerable groups of households.

3. METHODOLOGY

3.1. Location of Study and Sampling

This study employed non-probability sampling (stratified random sample), whereby respondents were chosen based on household income and locality. The target respondents in this study were households that lived in urban areas and had a monthly income of less than RM4,850. The designation "B40 households" pertains to those originally identified through the National Household Sampling Frame (NHSF) list, a selection process that involved collaboration with the Department of Statistics Malaysia (DOSM). Subsequently, a second stratification occurred, considering the growth center in each region and further dividing them into local municipalities using a weighted multistage random sampling approach. Population and economic growth are two examples of the factors that determining growth centres. The data collection spanned six regional locations: northern, central, eastern, and southern regions of Peninsular Malaysia, as well as Sabah and Sarawak in East Malaysia. The next stage is to identify the growth center or centers in each region. For the northern part, the growth center is Penang. Shah Alam, Petaling Jaya, Ampang Jaya, Selayang, and Subang Jaya, which are located in Selangor are the growth centers in the central region, Pahang is the eastern region's growth center, Johor Bahru is the southern region's growth center, Kota Kinabalu is Sabah's growth center, and Kuching is Sarawak's growth center. The next step is

to further stratify the growth centers based on local municipal areas for sample selection. Ethical consideration in the research process was ensured because administering the questionnaires to respondents was based on their willingness to respond to the research instrument.

Based on the National Household Sampling Frame (NHSF) provided by DOSM, the total size of the target population for the survey is 3,840 households using the simple random sampling method. The researchers were able to collect data from 2,124 respondents from six states, viz., Johor, Selangor, Pahang, Penang, Sabah, and Sarawak, due to COVID-19 pandemic movement control order restriction. Out of the total respondents, 1,839 households were in the urban B40 category, and only 1,341 B40 households received government assistance program during the COVID-19 pandemic. After the process of removing outliers and unusable survey responses, the final sample size is 706 households. Prior to initiating the data analysis, a thorough examination for missing values and scrutiny for outliers was conducted on the collected data.

3.2. Study Instruments

The research adopted a primary field survey design and developed a questionnaire to capture household perceptions regarding government assistance programs. Each respondent was given a questionnaire that contains three sections. The first section collects the respondent's demographic information, while the second section gathers his or her socioeconomic factors. The third section covers the respondent's perceptions of the adequacy and effectiveness of government assistance programs from the perspectives of cost of living, health, income, and social relations. Each respondent was asked to rate his or her degree of agreement about the effectiveness of government assistance program on a 4-point Likert-type scale such as 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. However, to align with the negative connotation associated with the cost-of-living aspect, reflecting potential impacts on household well-being, we modified the 4-point Likert-type scale to represent 1 = strongly agree, 2 = agree, 3 = disagree, and 4 = strongly disagree in the dataset.

4. DATA ANALYSIS

The study's measurement model was developed using Structural Equation Modelling (SEM). SEM comprises two primary techniques: the measurement model and the structural model. The measurement model focuses on understanding the relationships between latent variables (unobservable constructs representing theoretical concepts) and their observed indicators (measurable variables reflecting the latent variables). This component is vital for evaluating the reliability and validity of the measurements, ensuring that the selected indicators accurately capture the essence of the underlying constructs. Structural Equation Modelling (SEM) incorporates two primary techniques, namely Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). EFA is employed to unveil the latent or factor structure of the variable set through Principal Component Analysis (PCA) with varimax rotation. It encompasses several assessments, including Kaiser-Meyer-Olkin (KMO), Bartlett's test of sphericity, communalities, eigenvalues, and factor loadings. The KMO test gauges sampling adequacy, with values above 0.60 indicating sufficient data for exploratory factor analysis (Tabachnick & Fidell, 2007). Bartlett's test of sphericity, according to Hair, Black, Babin, Anderson, and Tatham (2006), is crucial to evaluating the data's suitability for factor analysis.

Communalities signify the proportion of variance in each variable attributed to the factor. Retention criteria dictate that communalities for each item should be 0.30 or higher, and items falling below this threshold are removed. Eigenvalues represent accumulated factors based on variance, with a criterion that they should exceed 1 (Hair et al., 2006). The cumulative total variance should explain a minimum of 50 percent.

The subsequent analysis involves Confirmatory Factor Analysis (CFA) using the Analysis of Moment Structure (AMOS) software. CFA comprises two steps: First Order (FO) and Second Order (SO). FO CFA confirms that each indicator variable aligns with the social welfare theory. FO combines all variables, including exogenous

and endogenous factors, and estimates factor loadings for each item. Goodness-of-fit indices (GOF) are then evaluated, and modifications are made if necessary. Figure 1 depicts the constructs of FO-CFA.

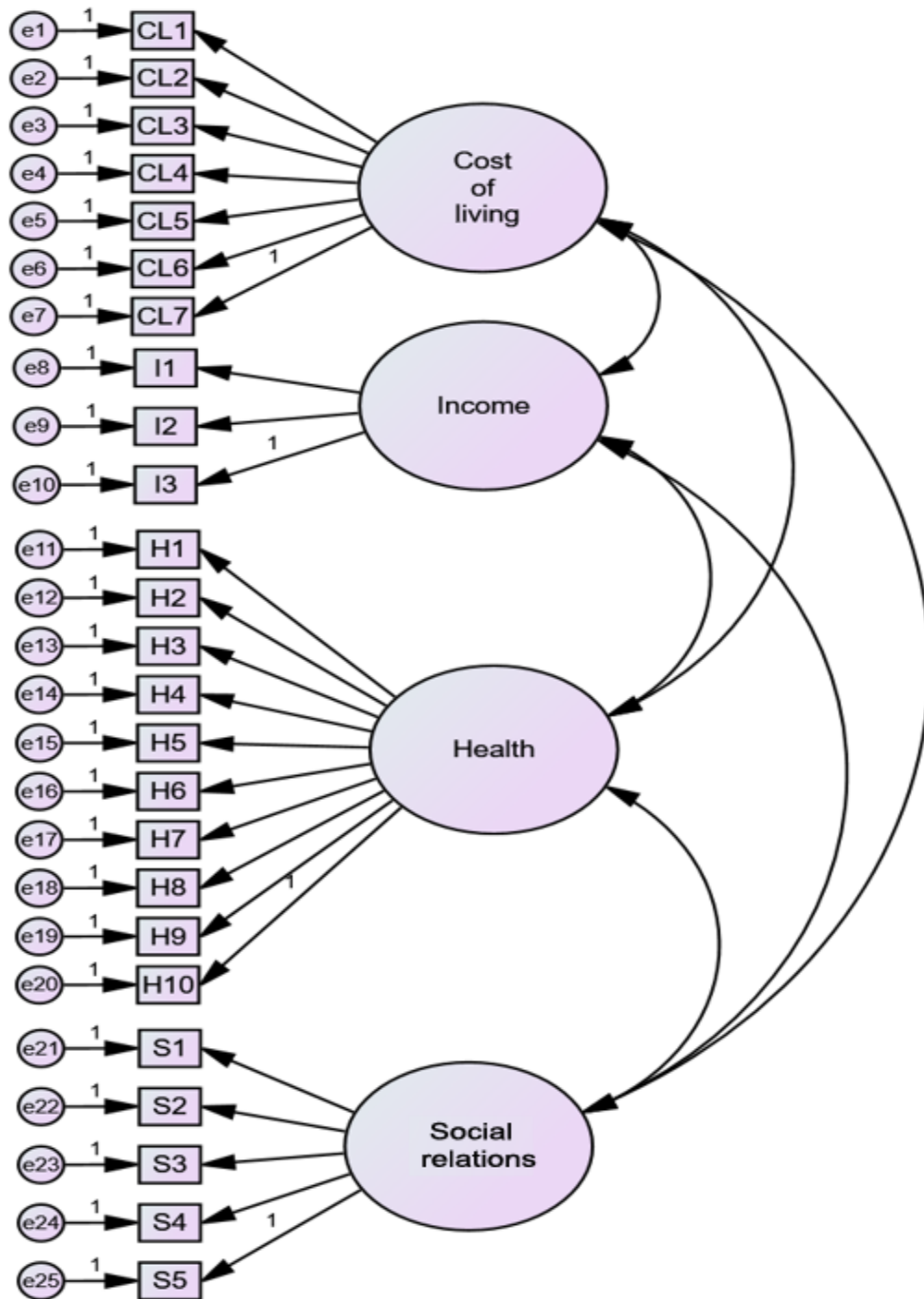


Figure 1. First order (FO).

We looked at different fit indices to see how well the model fit overall. These included χ^2 /degree of freedom ratio (CMIN), goodness of fit index (GFI), root mean square error of approximation (RMSEA), normed fit index (NFI), Tucker-Lewis index (TLI), and comparative fit index (CFI). CMIN values below 5, GFI above 0.80, and RMSEA below 0.080 are indicators of acceptable model fit.

Composite reliability (CR) is considered adequate at a minimum of 0.70 for convergence or internal consistency. The square root of the average variance extracted (AVE) is compared to the correlation between latent constructs

to see if it is discriminant valid. An AVE of at least 0.50 is required to ensure that construct items explain more variance than items of other constructs, as per Fornell and Larcker (1981). If the AVE falls short of 0.50, reliance on CR for reliability testing is recommended (Malhotra & Dash, 2011).

Second Order (SO) estimates the effect (factor loading) of main construct on its factors. In SO, the main construct will become the second-order construct, and the four factors will become the first order constructs (Figure 2). SO will also consider goodness-of-fit indices (GOF), and it should fulfil the requirement.

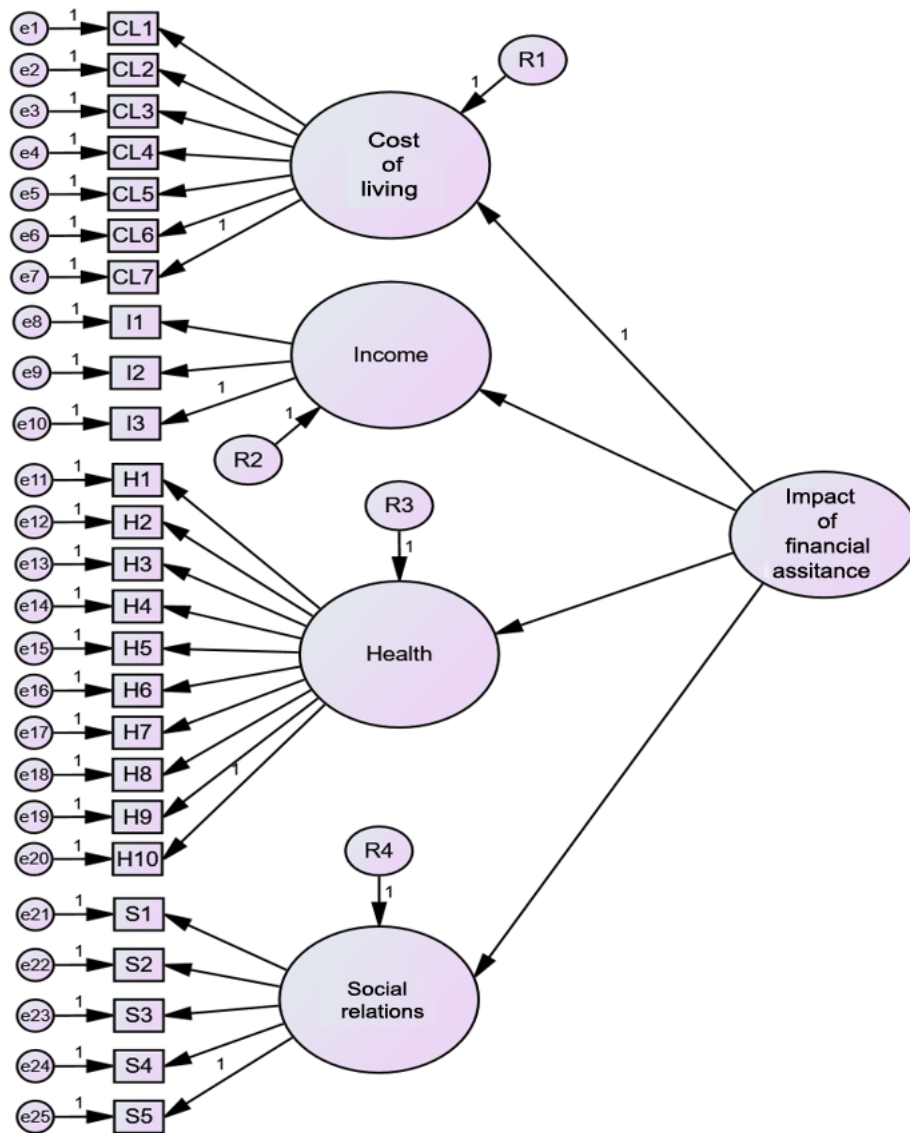


Figure 2. Second order (SO).

5. RESULTS

5.1. Descriptive Analysis of Respondent

Table 2 summarizes the descriptive of respondents by gender, marital status, race, age, and type of home ownership. From the total respondents of screened households, 487 (69.0 percent) were male, and 219 (31.0 percent) were female. Meanwhile, the marital status shows that majority of the respondents (74.8 percent) were married, followed by singles (13.7 percent) and divorcees (11.5 percent). The table also presents respondents by race, whereby the majority of respondents were Malays (74.2 percent), followed by Indians (6.7 percent), Chinese (5.1 percent), ethnic groups of Sabah (4.5 percent), ethnic groups of Sarawak (4.4 percent), and others (5.1 percent, namely Bugis, Bajau, Kagayan, Melanau, Orang Asli, and Suluk). Furthermore, the table summarizes respondents

into seven age group categories ranging from 21 to 90 years old. The majority of respondents (87.7 percent or 619 households) were in the first four age groups, ranging from 21 to 60 years old. The smallest number of respondents belongs to the 71-90 age groups (2.6 percent or 18 households). Besides that, Table 2 also reveals that most of the respondents (52.4 percent) owned a house, followed by 33.7 percent of households who rented a house (33.7 percent), inherited (7.2 percent), and stayed as house guest (6.7 percent).

Table 2. Demographic profile.

Information	Frequency	Percentage (%)
Gender:		
Male	487	69.0
Female	219	31.0
Marital status:		
Single	97	13.7
Married	528	74.8
Divorcee	81	11.5
Race:		
Malay	524	74.2
Chinese	36	5.1
Indian	47	6.7
Ethnic groups of Sabah	32	4.5
Ethnic groups of Sarawak	31	4.4
Others	36	5.1
Age:		
21 – 30 years old	141	20.0
31 - 40 years old	156	22.1
41 - 50 years old	160	22.7
51 - 60 years old	162	22.9
61 - 70 years old	69	9.8
71 - 80 years old	16	2.3
81 -90 years old	2	0.3
Type of home ownership:		
Self-owned	370	52.4
House guest	47	6.7
Renting	238	33.7
Inherit	51	7.2

5.2. The Exploratory Factor Analysis

Utilizing the Kaiser-Meyer-Olkin (KMO) test in conjunction with Exploratory Factor Analysis (EFA) and Principal Component Analysis, we assessed the suitability of the questionnaire items for factor analysis and examined sampling adequacy. The Kaiser-Meyer-Olkin (KMO) result yielded 0.958, while the Bartlett's Test of Sphericity recorded 18,623.720 with 300 degrees of freedom, proving significant at less than 1 percent. These outcomes affirm the appropriateness of conducting a factor analysis, indicating ample correlation between items for factor analysis.

The varimax rotation method, with a minimum eigenvalue of 1.00, was applied. The findings revealed the identification of four factors, as indicated in Table 3. All item loadings exceeded the acceptable threshold of 0.60 (Hair et al., 2006) except for two in the income factor, specifically, "help increase my income" and "allow me to get out of the hardcore poor family category." These items still showed strong correlations despite being just a little bit below the threshold, according to their standardized factor loadings. The cumulative total variance explained reached 77.07 percent, meeting the established criterion.

The first factor, "health," accounts for 26.12 percent of the total variance in the data. The second factor, "cost of living," explains 22.0 percent of the total variance. The third factor, "social relations," represents 19.16 percent of the total variance. The fourth factor, "income," explains 9.81 percent of the total variance in the data.

Table 3. Loading EFA and CFA.

Construct/Item	Communalities	Loading EFA	Loading CFA
Cost of living (CL):			
1. Reduce the cost of living for the family. (CL1)	0.734	0.793	0.827
2. Increase choices of goods and services that can be purchased. (CL2)	0.791	0.804	0.879
3. Help fulfil basic needs (Food, clothing, etc.). (CL3)	0.789	0.828	0.849
4. Help pay utility bills (Water, electricity, etc.). (CL4)	0.773	0.816	0.852
5. Help pay rent and housing loan. (CL5)	0.703	0.725	0.776
6. Help save monthly expenses. (CL6)	0.693	0.730	0.798
7. Help reduce debt affecting monthly expenses. (CL7)	0.712	0.719	0.787
Income (I):			
1. Help increase my income.	-	-	-
2. Help increase family income. (I1)	0.688	0.649	0.772
3. Help increase saving. (I2)	0.861	0.756	0.928
4. Increase financial assets. (I3)	0.752	0.688	0.805
5. Allow me to get out of the hardcore poor family category.	-	-	-
Health (H):			
1. Increase the level of personal health. (H1)	0.757	0.726	0.845
2. Increase the level of family health. (H2)	0.766	0.729	0.855
3. Help cover health expenses. (H3)	0.713	0.701	0.833
4. Help to get three meals per day. (H4)	0.739	0.693	0.837
5. Have more food choices available each day. (H5)	0.694	0.669	0.781
6. Able to get extra food (e.g. vitamins). (H6)	0.705	0.691	0.800
7. Increase understanding of the danger in smoking and drug abuse. (H7)	0.641	0.709	0.758
8. Able to seek medical treatment immediately when having health problems. (H8)	0.806	0.791	0.880
9. Able to always think positively about the future of the family. (H9)	0.787	0.760	0.848
10. Reduce serious stress problems of the family. (H10)	0.752	0.720	0.826
Social (S) relation:			
1. Increase affection among family members. (S1)	0.888	0.836	0.941
2. Increase support among family members. (S2)	0.895	0.852	0.938
3. Increase leisure time with family members. (S3)	0.868	0.822	0.922
4. Strengthen the family bond. (S4)	0.890	0.857	0.909
5. Able to handle stress. (S5)	0.871	0.857	0.888

5.3. First Order (FO)

In the FO measurement model, the four factors were postulated to represent the effects of government assistance programs that explain the variance in their respective indicator variables. Figure 3 depicts the outputs of the FO. In the meantime, Table 3 shows that the standardized factor loadings are more than 0.40 for all items. This provides some support that all items are reasonable indicators of their respective latent factors.

The outcomes indicated that the composite reliability (CR) values surpassed 0.70, and the Average Variance Extract (AVE) values were consistently higher than 0.50, as detailed in Table 4.

Comparing the square root of AVE for each construct with the correlations between that construct and all other constructs (Table 4) showed acceptable high values for discriminant validity. Consequently, the model exhibits robust convergent and discriminant validity. The results of the goodness of fit meet the criteria as indicated in Table 5.

Table 4. Construct reliability and validity and discriminant validity.

Construct	CR	AVE	(1)	(2)	(3)	(4)
Health (1)	0.957	0.693	0.832			
Cost of living (2)	0.939	0.686	0.688	0.828		
Income (3)	0.875	0.701	0.754	0.744	0.837	
Social relations (4)	0.967	0.853	0.749	0.517	0.534	0.924

Table 5. Goodness of fit.

Index	Cut-off value	First order (FO)	Modification indices FO	Second order (SO)
CMIN/DF	≤5.00	7.044	4.471	4.782
RMSEA	≤0.080	0.093	0.070	0.073
RMR	≤0.100	0.025	0.024	0.034
GFI	≥0.80	0.806	0.877	0.870
CFI	≥0.90	0.912	0.951	0.946
TFI	≥0.90	0.902	0.944	0.939
NLI	≥0.90	0.900	0.938	0.933
IFI	≥0.90	0.913	0.951	0.946

5.4. Second Order (SO)

The second-order (SO) factor model is depicted in Figure 4, and it was estimated by utilizing the factor scores from the first-order factor model, demonstrating a highly satisfactory fit to the data. Relying solely on the chi-square GOF test for model fit was challenging; hence, alternative measures were employed for assessment. Notably, the other fit indices, including RMSEA (0.073) and GFI, NFI, TLI, and CFI (Table 5), all exceeded 0.90, affirming the excellent fit of the second-order measurement model.

5.5. The Standardized Regression

The standardized regression coefficients of the model are presented in both Table 6 and Figure 4. This study discovered that all constructs such as cost of living, income, health, and social relations, were significant at the 0.001 significance level and became the impacts of government assistance programs (Table 6). With an estimated value of 0.953, the household's health was found to be the most affected aspect of the government assistance programs, implying that a one-point increase in government assistance will result in a 0.953-point rise in household health. Income and social relations are the second and third most affected aspects of the impact of government assistance programs with estimated values of 0.796 and 0.763, respectively. Meanwhile, the cost of living is the least affected aspect of the government assistance programs, with an estimated value of 0.745.

Table 6. Regression weights of the second order factor model.

Cause and effect		Estimate	Standard error	Critical ratio	P value
Cost of living	←	0.745	Point of reference		
Income	←	0.796	0.079	15.228	***
Health	←	0.953	0.081	16.950	***
Social	←	0.763	0.070	15.958	***

Note: Significant at ***0.001.

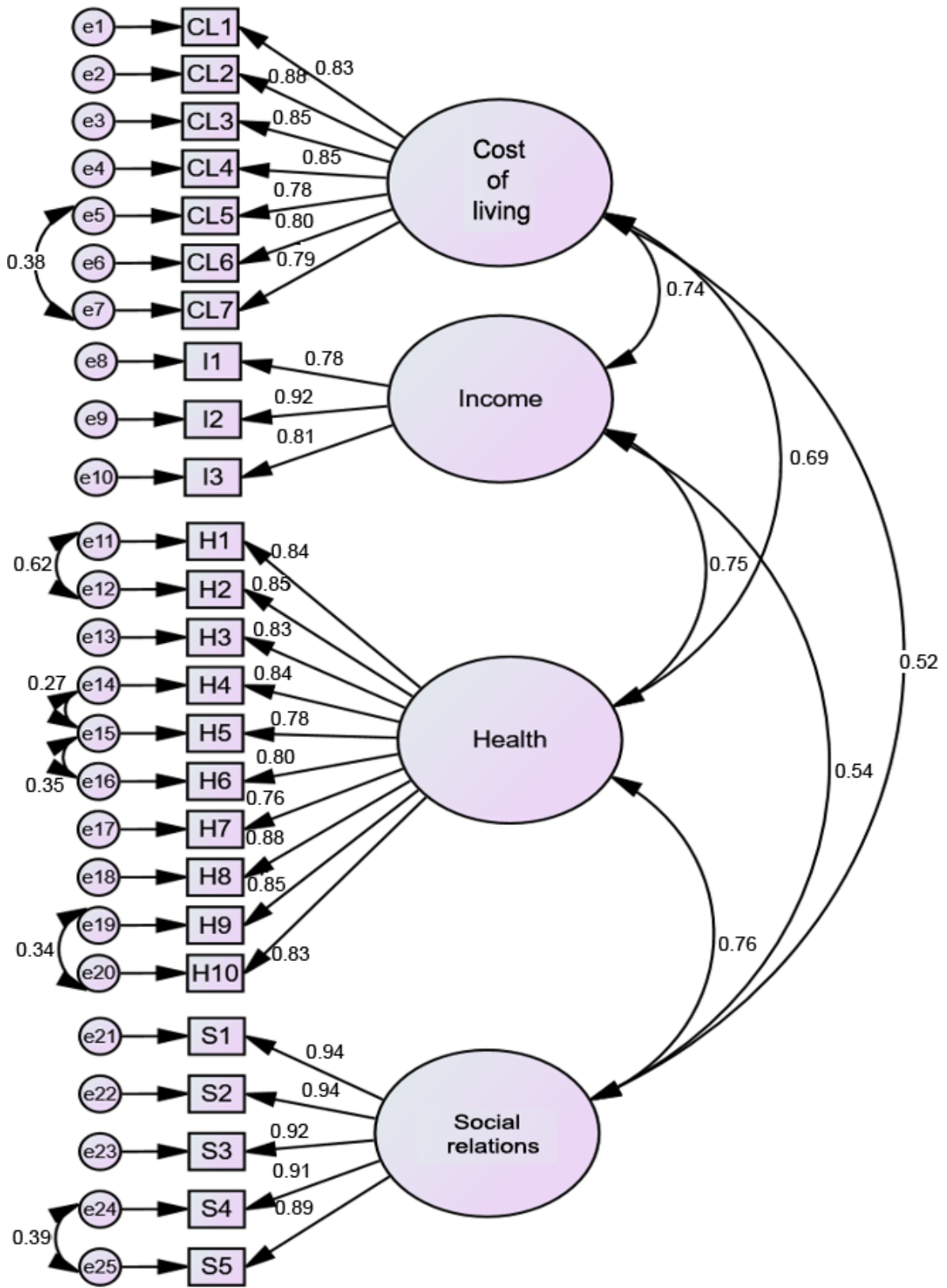


Figure 3. Output of first order (FO).

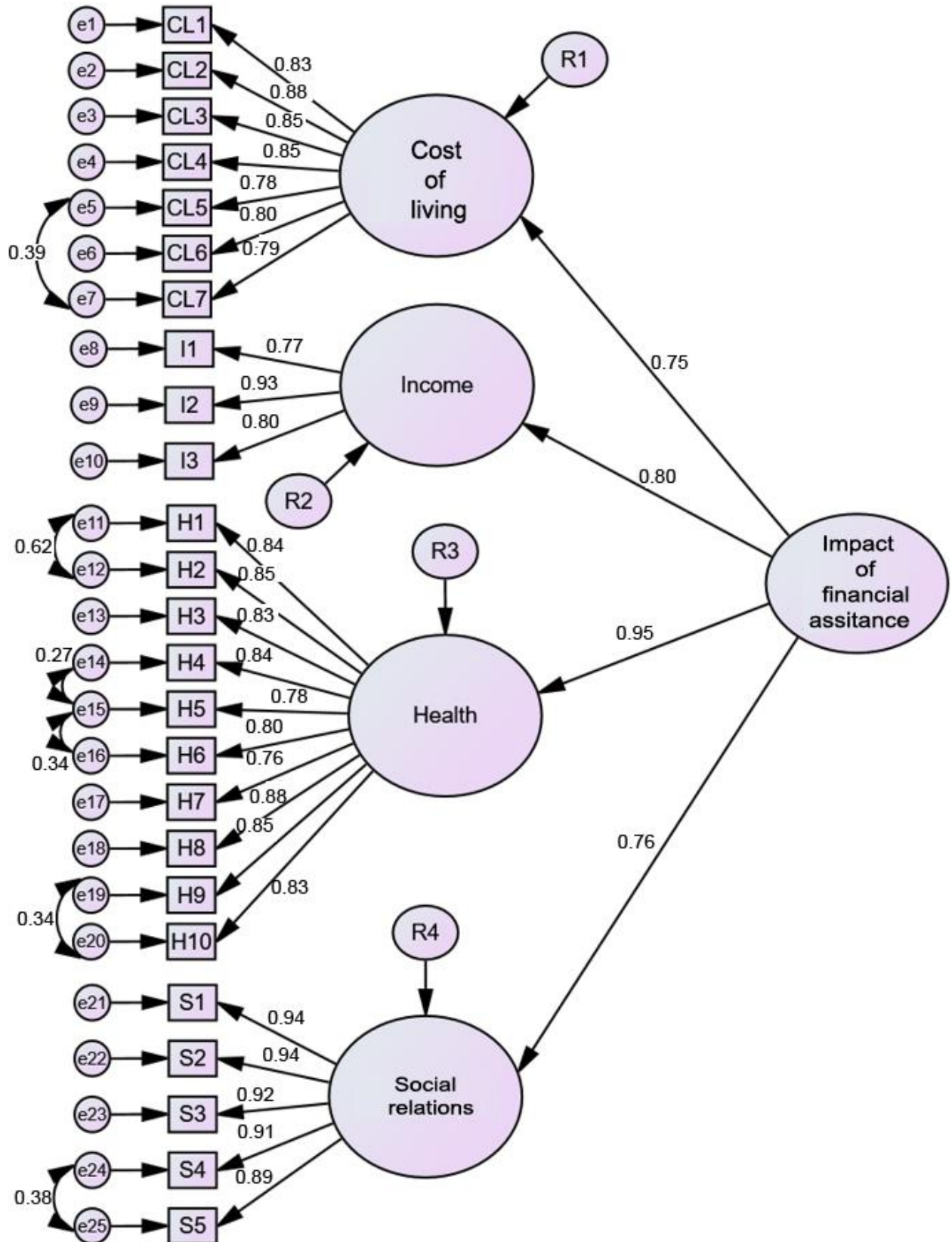


Figure 4. Output of second order (SO).

6. DISCUSSION AND CONCLUSION

Following the financial crises of 1998–1999 and the economic crisis of 2008, COVID-19 has resulted in the worst health crisis in a century as well as the worst economic disaster. In Malaysia, due to the MCO, the unemployment rate grew to 4.8 percent in 2020, with 757.2 thousand individuals unemployed. The loss of

livelihood resources has had an impact on household living standards and well-being. Consequently, the Malaysian government has come up with financial and non-financial assistance incentives such as National Caring Assistance (BPN), moratorium, loans, and food baskets for those mostly affected by the COVID-19 pandemic, particularly B40 and M40 household groups. The aim is to alleviate their financial burden and improve their well-being.

This study investigates the impact of government assistance programs on B40 household's well-being by considering the four well-being indicators, i.e., cost of living, income, health, and social relations. The study employed EFA and CFA to determine the impact of government assistance on household well-being indicators. The results show that the four well-being indicators are significant, indicating that all the items are acceptable indicators of their respective latent factors. In addition, the study found that health is the most affected aspect of the government assistance programs followed by income, social relations, and cost of living aspects. The findings show that the government of Malaysia has successfully taken care of the health of B40 households at a time when the health of the people is being jeopardized by the COVID-19 crisis. The findings are in line with [Amaran, Kamaruzaman, Mohd Esa, and Sulaiman \(2021\)](#), where, according to the study, Malaysia has effectively ensured optimal care for every confirmed COVID-19 patient, regardless of the severity of their symptoms, and the majority of quarantine procedures have been implemented in a socially acceptable manner. In addition, this finding is consistent with prior research that revealed financial aid has enhanced the utilisation of health care in California ([Adams et al., 2022](#)). In Indonesia, however, the government cash transfer programs were able to help the low-income earners survive during the COVID-19 only for a short period of time ([Amin, Tarigan, & Nurbaiti, 2022](#)). In China, due to financial distress, low-income households were more likely to postpone or ignore health care if there was no financial assistance from the government ([Zhuang et al., 2021](#)).

The income aspect has been the second factor that contributes to the well-being of households. This is expected since the government has provided low-income households with various types of financial assistance, be it in terms of wage support or direct cash transfers. The reduction in the cost of living is the least important aspect that affects the well-being of the household. This is consistent with the shift in the consumption patterns among households during the pandemic. Because of MCO, most households have stayed at home, and expenses related to transport, restaurants, and hotels, as well as recreation and clothing, have been on the decline ([Bank Negara Malaysia, 2020](#)).

Hence, government assistance programs during COVID-19 are effective in strengthening B40 household well-being by improving health conditions, increasing household income and social relations, and lowering household costs of living. The government can consider several policy recommendations to achieve better outcomes from the government assistance programs. Since the health well-being of the urban low-income households has improved significantly due to the government assistance programs, policymakers might consider increasing investment in healthcare infrastructure, services, and preventive measures. This could involve expanding access to quality healthcare, promoting health education, and addressing health disparities among different segments of the population. In addition, policymakers may want to focus on implementing or strengthening income support programs such as social welfare, unemployment benefits, or targeted cash transfer programs to help alleviate financial stress and improve overall household stability. Furthermore, in terms of social aspects, the government could focus on policies fostering community engagement, social support networks, and initiatives promoting social cohesion. This could include increasing funding for community centers, recreational facilities, and programs that promote social interaction and community participation.

Since this study provides evidence on the effectiveness of the government assistance program in improving household well-being, policymakers should continue to prioritize data collection, analysis, and rigorous evaluation of the effectiveness of various programs and initiatives to ensure that resources are allocated efficiently and effectively. This is crucial in developing future assistance program through evidence-based policy design where the government consistently evaluates their programs so that they will continuously improve.

The study shows that 27 percent of B40 households did not receive any government assistance programs. In order to improve the inclusivity of the government program, the government needs a more precise method for filtering the recipients of the government assistance to make sure those in need are not spared from getting government aid. Moreover, most of the recipients of the government assistance programs received direct financial aid. This suggests that non-financial government support programs such as the 1AZAM Program, Global Online Workforce (GLOW), and other training programs should be promoted more aggressively. Consequently, the government needs to implement various ways to improve training programs to make them more attractive as well as to convince more B40 households to participate in the programs. Furthermore, the government should strategically strengthen financial and non-financial assistance program for the benefit of households so that they can be resilient to shocks from future economic and health crises.

7. LIMITATIONS

The limitations of this study consist of two main parts. First, there are many other well-being indicators besides health, income, social, and cost of living, that can be analysed, such as the well-being factors associated with the education, employment, and housing. The study only analysed the four indicators since they are the most crucial ones. Second, even though the M40 households were also affected by the COVID-19 crisis, they are not covered in this study.

7.1. Future Research Suggestions

Further study can consider more well-being indicators to measure the effectiveness of government assistance programs as well as other households' income groups, such as the M40 segment. This would contribute to a more inclusive analysis of the societal impact of government assistance initiatives. Examining the differential effects on various income groups allows for tailored policy recommendations that address the unique challenges faced by each segment of the population during crises like the COVID-19 pandemic. This broader perspective ensures that assistance programs are designed to be responsive and adaptable to the diverse needs of households across the socioeconomic spectrum.

In conclusion, the study underscores the positive impact of government assistance programs on the well-being of B40 households during the COVID-19 crisis. Policymakers should consider the identified implications to enhance the effectiveness of assistance programs, address the study's limitations, and explore avenues for future research to provide a more nuanced understanding of well-being dynamics.

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Data Availability Statement: Upon a reasonable request, the supporting data of this study can be provided by the corresponding author.

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