A Study of Financial and Non-Financial Determinants Towards Poverty Among B40 Manufacturing Employees in Penang

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ABSTRACT

This study investigates the financial and non-financial factors contributing to poverty among B40 manufacturing employees in Penang, Malaysia. The primary objective is to examine the influence of employment stability, financial inclusion, financial literacy, family size, non-communicable diseases (NCDs), and government financial assistance on poverty among low-income workers in the manufacturing sector. A quantitative research design was employed, where data were collected through questionnaires distributed to manufacturing employees in Penang. A total of 384 questionnaires were distributed, and 312 valid responses were obtained for analysis. Statistical analyses were conducted using the Statistical Package for Social Sciences (SPSS), including reliability analysis, correlation analysis, and multiple regression analysis. The findings indicate that financial factors such as financial inclusion and financial literacy significantly influence poverty levels among B40 employees. In addition, non-financial factors including family size and health conditions also play an important role in determining economic vulnerability. The study highlights the importance of integrated policy approaches that combine financial empowerment with social and health support systems. Such strategies are essential to improve the economic resilience and well-being of B40 manufacturing employees in Penang.

Keywords: Poverty; B40 employees; Financial literacy; Financial inclusion; Manufacturing sector.

INTRODUCTION

Poverty remains one of the most significant socioeconomic challenges affecting low-income households in developing economies. In Malaysia, the B40 group represents the bottom 40 percent of income earners who often face financial insecurity and limited access to resources. Within this group, manufacturing workers constitute a large portion of the labour force, particularly in industrial states such as Penang.

Penang is one of the most important manufacturing hubs in Malaysia, with the sector contributing significantly to employment and economic growth. It is estimated that approximately 329,000 individuals are employed in the manufacturing industry in Penang, and a substantial proportion of these workers fall within the B40 income category.

Although many studies have examined poverty from a financial perspective, fewer studies integrate both financial and non-financial determinants such as health status and family size. This study addresses this gap by investigating the combined effects of financial and non-financial factors on poverty among B40 manufacturing employees in Penang.

The study examines six independent variables:

- Employment stability
- Financial inclusion
- Financial literacy
- Family size
- Non-communicable diseases (NCDs)
- Government financial assistance

These variables are expected to influence poverty levels among B40 employees through economic and social mechanisms.

RESEARCH METHODOLOGY

Research Design

This study adopts a quantitative research approach to examine the relationships between financial and non-financial determinants and poverty among B40 manufacturing employees. Quantitative methods allow the researcher to measure variables and analyse relationships using statistical techniques.

Population and Sample

The population consists of B40 manufacturing workers in Penang. A total of 384 questionnaires were distributed to employees working in various factories.

Out of the distributed questionnaires:

- 312 valid responses were obtained
- Response rate: 81.25%

Data Collection

Primary data were collected using structured questionnaires consisting of several sections:

1. Demographic information
2. Financial factors
3. Non-financial factors
4. Poverty indicators

The questionnaire was designed using Likert-scale items to measure the constructs.

Data Analysis

The collected data were analysed using SPSS version 29. Several statistical analyses were conducted:

- Reliability analysis (Cronbach's Alpha)
- Descriptive analysis
- Correlation analysis
- Multiple regression analysis

A pilot test was also conducted to assess the reliability and validity of the research instrument before the main data collection.

Research Hypothesis

The hypotheses below are developed based on the literature review of the financial and non-financial determinants of poverty to test the relationship between the independent variables and poverty among B40 manufacturing employees in Penang:

H1: There is a significant relationship between employment stability and poverty among B40 manufacturing employees in Penang.

H2: There is a significant relationship between financial inclusion and poverty among B40 manufacturing employees in Penang.

H3: There is a significant relationship between financial literacy and poverty among B40 manufacturing employees in Penang.

H4: There is a significant relationship between family size and poverty among B40 manufacturing employees in Penang.

H5: There is a significant relationship between non-communicable diseases (NCDs) and poverty among B40 manufacturing employees in Penang.

H6: There is a significant relationship between government financial assistance and poverty among B40 manufacturing employees in Penang.

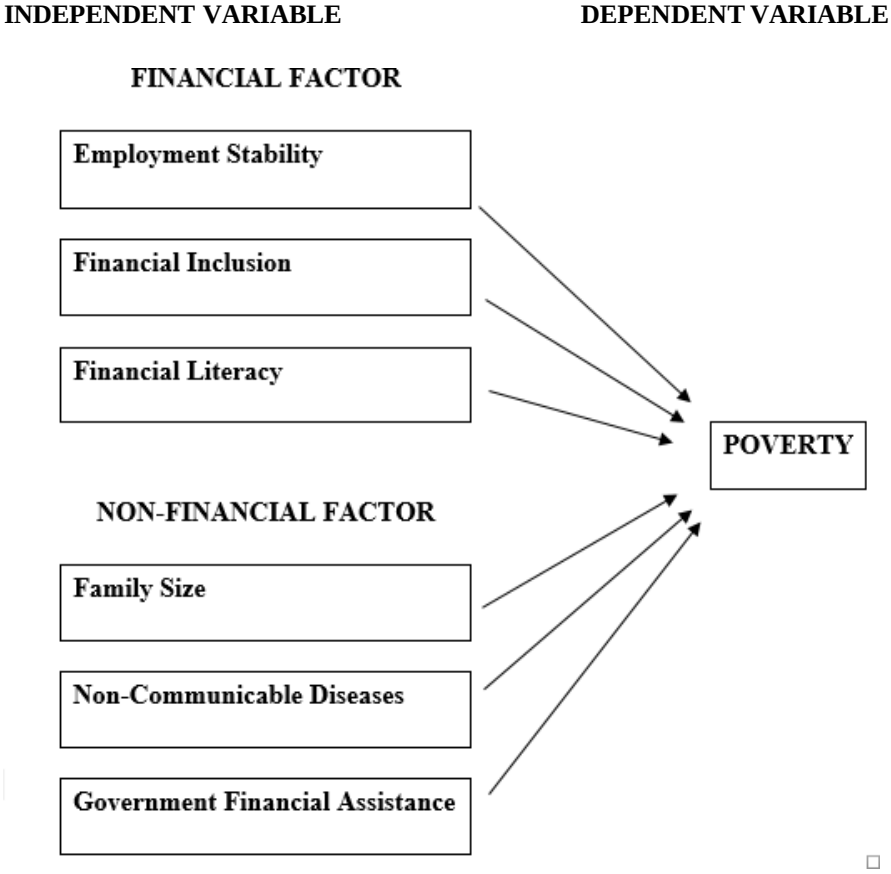
Conceptual Framework

The theoretical model of the research shows the hypothesized correlations between the independent variables and the dependent variable. As shown in Figure 1, the framework is further broken down into two groups of independent variables namely, financial and non-financial, which will be theorized to affect poverty among B40 manufacturing workers in Penang.

The financial aspects include Employment Stability (IV1), Financial Inclusion (IV2), and Financial Literacy (IV3). These variables indicate the economic ability of workers to control income, financial services, and make informed financial choices. The non-financial variables comprise Family Size (IV4), Non-Communicable Diseases or NCDs (IV5) and Government Financial Assistance (IV6), which are the more general socioeconomic and health-related circumstances that determine the economic susceptibility of low-income workers.

Collectively, the six independent variables create a holistic framework that takes into consideration both the monetary and non-monetary aspects of poverty, which forms a holistic foundation of understanding and solution to poverty among B40 manufacturing workers in Penang.

Figure 2.1 Research Framework



Underpinning Theory

Domino Theory

The Domino Theory, which was first coined by U.S. President Dwight D. Eisenhower in 1954, is a theory that explains the occurrence of a chain reaction of bad events caused by one destabilizing event in a network of systems (Eisenhower, 1954). This theory can be applied well in the situation of poverty among B40 manufacturing employees. As a single financial or non-financial variable worsens (loss of employment stability) it triggers a chain reaction that undermines other parts of an economic life of a worker. An example is that loss of jobs will reduce income hence restricting access to healthcare, financial stress and household poverty will rise. This domino effect is a reflection of the domino metaphor, in which the collapse of one state predisposes the conditions around it (Baldwin, 2023). The theory thus substantiates the assumption of the study that poverty is not brought about by any isolated factor but a combination of interrelated financial and non-financial failures that escalate overtime.

Poverty Trap Theory

Poverty Trap Theory is the theory that states that poverty is self-perpetuating in the sense that the poor who are trapped into a cycle of low income, poor health, low education and limited access to financial services, are increasingly finding it harder to get out of the economic situation (Banerjee and Duflo, 2011). This cycle is supported by structural barriers in the form of poor financial markets, insufficient social protection, and low levels of employment opportunities, which do not allow vulnerable groups to move upwards (Barrett and Carter, 2013). In the case of B40 manufacturing workers in Penang, this theory is especially applicable because such employees, with low wages, chronic diseases, and high family size are usually caught in circumstances that consume their resources at a rate that exceeds the rate at which they can attain them. Poverty among this population should thus be addressed through transformative interventions that can address the underlying causal factors both financially and non-financially, as opposed to focusing on any one variable alone (Lode et al., 2017).

Methodology, Results and Discussion

Research Design

The research design used in this study was a quantitative research design with non-experimental survey design to investigate the correlation between the financial and non-financial determinants and the poverty among B40 manufacturing workers in Penang. The choice of this design was based on the fact that it is the only one that enables systematic measurement of variables and testing hypotheses statistically, which leads to the reliable and generalizable results (Creswell and Creswell, 2018).

Population and Sampling

The population of interest was B40 manufacturing workers in Penang. According to 2023 statistics, the number of people working in the manufacturing sector in Penang is about 329,000, 131,600 of whom are in the B40 income bracket (Wikipedia, 2023). Based on the Krejcie and Morgan (1970) table of sample size, a sample size of 384 respondents was obtained as the suitable sample size within this population size with a level of 95% confidence and 5 percent error margin. Convenience sampling was embraced due to the practical limitation of reaching manufacturing employees in different factories in Penang.

Research Instrument

The instrument to be used was a structured questionnaire based on previously validated instruments, and data collection was made possible using the questionnaire. The questionnaire was divided into two parts, where Section A would gather demographic data whereas Section B would measure all the seven constructs on a five-point Likert scale where 1 (Strongly Disagree) was the lowest point, and 5 (Strongly Agree) was the highest point. To ensure that respondents with various language backgrounds could respond to the questions, the

questionnaire was made in English and Malay. The pilot test on 30 respondents ensured satisfactory internal consistency of all the constructs with Cronbach's Alpha of 0.72 to 0.84.

Data Collection

The 384 questionnaires were sent to manufacturing premises in Seberang Perai, Penang in two ways; by physically distributing the questionnaires at the factory premises and through an online survey that was disseminated through WhatsApp and email. Among the 384 questionnaires dispatched, 312 of them were returned and could be analyzed, which resulted in a response rate of 81.25 that is deemed to be very promising when it comes to survey-based research (Sekaran and Bougie, 2016).

Data Analysis

The statistical package social sciences (SPSS) Version 29 was used in the analysis of data. Various preliminary tests were carried out before the hypothesis testing, such as, missing value analysis, non-response bias test, common method bias test by Harman single factor test, normality test in terms of skewness and kurtosis, and reliability test in terms of Cronbach Alpha. Pearson correlation analysis was then conducted to determine the relationships among the variables and then multiple linear regression analysis was conducted to determine the significant predictors of poverty among respondents.

RESULTS AND DISCUSSION

The results suggest that non-financial and financial factors play a significant role in poverty amongst B40 manufacturing employees.

Financial Factors

- There is a strong negative correlation between financial literacy and poverty, which implies that those who are financially literate have low chances of living in poverty.
- Financial inclusion enhances access to banking and credit, and allows workers to better control finances.
- Job security helps to achieve steady income, which decreases the level of economic vulnerability.

Non-Financial Factors

- There is a positive association between family size and poverty, with bigger households resulting in higher financial burden.
- Healthcare expenses and low productivity are some of the reasons why non-communicable diseases (NCDs) contribute greatly to poverty.
- Government funding offers temporary alleviation but does not help in reducing poverty in the long term.

Overall Findings

The regression analysis supports the argument that the financial and non-financial variables play a significant role in explaining differences in poverty levels. The findings are in favor of the Domino Theory and Poverty Trap Theory regarding one disadvantage causing another, which strengthens the poverty cycle.

Descriptive Analysis of Variables

In the descriptive analysis, all the variables obtained a mean of 3.850-3.985 which represents moderately high levels of the variables among the respondents. The highest mean values were recorded in health status and family

size, which indicates that these are eminent among the B40 manufacturing employees. The standard deviations are relatively constant which means that responses were not very varied.

Variable	Mean	Std. Deviation	Interpretation
Poverty Level	3.890	0.765	Moderate-High
Job Stability	3.892	0.773	Moderate-High
Income Level	3.881	0.738	Moderate-High
Financial Literacy	3.867	0.764	Moderate-High
Family Size	3.932	0.806	High
Health Status	3.985	0.816	High
Access to Social Services	3.850	0.756	Moderate-High

Pearson Correlation Analysis

The correlation analysis shows that there are significant positive relationships between poverty and all the independent variables with coefficients that lie between 0.782 and 0.840. The highest correlation is observed between financial literacy and poverty, then income level, and lastly health status. All of the relationships are statistically significant at the 0.01 level, which means that these variables are associated with poverty levels closely.

Variable	Poverty	Job Stability	Income	Financial Literacy	Family Size	Health	Social Services
Poverty	1	0.797	0.821	0.840	0.790	0.809	0.782
Job Stability	0.797	1	0.832	0.854	0.825	0.826	0.799
Income Level	0.821	0.832	1	0.853	0.837	0.842	0.821
Financial Literacy	0.840	0.854	0.853	1	0.860	0.832	0.837
Family Size	0.790	0.825	0.837	0.860	1	0.871	0.841
Health Status	0.809	0.826	0.842	0.832	0.871	1	0.816
Social Services	0.782	0.799	0.821	0.837	0.841	0.816	1

Model Summary

According to the model summary, 76.4% (R 2 = 0.764) of the change in poverty is explained by the independent variables. The fact that the adjusted R2 is 0.759 indicates that the model is robust, and the standard error of 0.375 indicates a good fit. In general, the model has a high explanatory power.

Model	R	R^2	Adjusted R^2	Std. Error	F Change	Sig.
1	0.874	0.764	0.759	0.375	164.538	0.000

Anova

The results of ANOVA indicate that the regression model is statistically significant ($F = 164.538$, $p < 0.001$). This means that independent variables together have a significant predictive power of poverty among B40 manufacturing workers, which proves that the model is correct in its validity.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	139.025	6	23.171	164.538	0.000
Residual	42.951	305	0.141		
Total	181.976	311			

Coefficients

The regression coefficients indicate that financial literacy, income level and health status significantly contribute to poverty positively. The most predictive is financial literacy (= 0.344) and then income level (= 0.222) and health status (= 0.200). Conversely, job stability, family size, access to social services is not statistically significant that means they do not have an independent effect on poverty in this model.

Variable	B	Std. Error	Beta	t	Sig.
Constant	0.271	0.119	–	2.286	0.023
Job Stability	0.105	0.060	0.106	1.746	0.082
Income Level	0.230	0.066	0.222	3.493	0.001
Financial Literacy	0.344	0.068	0.344	5.030	0.000
Family Size	-0.020	0.065	-0.021	-0.305	0.761
Health Status	0.188	0.061	0.200	3.082	0.002
Social Services	0.082	0.060	0.081	1.366	0.173

SUMMARY OF FINDINGS

This table sums up the general findings of the study. It validates that poverty is mainly influenced by financial literacy, income level and health status; job stability, family size and social services are not important predictors. The results indicate that financial capability and health-related factors are important in solving poverty among B40 employees.

Variable	Mean	SD	Correlation (r)	Beta	Sig.	Interpretation
Poverty	3.890	0.765	1	–	–	Moderate-High
Job Stability	3.892	0.773	0.797	0.106	0.082	Not Significant
Income Level	3.881	0.738	0.821	0.222	0.001	Significant
Financial Literacy	3.867	0.764	0.840	0.344	0.000	Significant
Family Size	3.932	0.806	0.790	-0.021	0.761	Not Significant

Health Status	3.985	0.816	0.809	0.200	0.002	Significant
Social Services	3.850	0.756	0.782	0.081	0.173	Not Significant

CONCLUSION

The research concludes that a mixture of financial and non-financial factors contributes to poverty among the B40 manufacturing workers in Penang. Financial literacy and inclusion have a significant role to play in alleviating poverty and employment stability guarantees income security. Non-financial factors like family size and health conditions are however still a major challenge.

The research suggests that policymakers should take a comprehensive approach, which includes financial education, employment policies, healthcare, and specific assistance programs. These factors are related to each other, and it is necessary to tackle them in order to address the cycle of poverty and increase the quality of life of B40 workers.

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Conflict of interest Statement

The author states that there is no conflict of interest in terms of publication of this study.

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