

# Assessing Poverty and Unemployment in Sabah: The Role of Mobile Job Matching Platforms in Reducing Economic Disparities

Aliyyatul Muna Ahmad Roslan<sup>1</sup>, Nur Faizah Mohd Pahme<sup>2\*</sup>, Ahmad Sofiyuddin Mohd Shuib<sup>3</sup>, Nur Hazirah Mohd Fuat<sup>4</sup>

<sup>1</sup> Department of Graphic & Digital Media, College of Creative Arts, Universiti Teknologi MARA (UiTM) Campus Perak, Seri Iskandar Branch, 32610 Seri Iskandar, Perak, MALAYSIA

<sup>2</sup> Academy of Language Studies, Universiti Teknologi MARA (UiTM) Campus Perak, Seri Iskandar Branch, 32610 Seri Iskandar, Perak, MALAYSIA

\*Corresponding Author: [faizahmp@uitm.edu.my](mailto:faizahmp@uitm.edu.my)  
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## Abstract

Sabah, also called the Negeri di Bawah Bayu, is the second largest state in Malaysia, covering 72,500 square kilometres. Sabah is the world's third-largest island in northern Borneo (Press Release Re-Discovering Sabah, 2023). The Sulu Sea also encloses the state in the northeast, the Celebes Sea in the east, and the South China Sea in the west (Sabah Government Official Website, n.d.). Despite its vast population, the state has a high poverty rate. In order to achieve the research aim, which is to identify the reasons for the existence of a population with poverty in Sabah. Quantitative research design has been employed as the primary method to achieve the research objective. A set of online surveys has been conducted with 383 respondents from Kota Marudu to identify the poverty population and the reason for poverty in Sabah. Kota Marudu was chosen as the sampling of the research because it was recorded as the poorest city in Sabah (Chan, 2022; Azzeri et al., 2020). Therefore, the researcher also used Google Forms to analyse the data collected from the online survey. As the results revealed, Sabah has a high poverty rate, which is caused by several reasons: foreign immigration, inadequate infrastructure, and rural neglect. Undoubtedly, the unemployment rate has reached its peak figure, which has led users to use the job matching platform on mobile applications to reduce unemployment in Sabah. This study significantly helps to reduce poverty, offers a better standard of living, and influences Sabah's socioeconomic status.

## 1. Introduction

Malaysia's population has tripled from 10.5 million to 32.6 million between 1970 and 2020. During the same period, Sabah's population expanded sixfold, from 635.4 thousand to an estimated 3.9 million. Sabah contributed to the overall population increase from 6.1% to 12% because of Malaysia's massive growth during the previous five years (Peng et al., 2022). However, despite its large population, Sabah has Malaysia's highest absolute poverty rate in 2019 and 2020, a severe problem in the state. Absolute poverty rates grew from 19.5% in 2019 to 25.3% in 2020. Sabah had the highest rate of absolute poverty since 1997. In 2019, Sabah had eight of the top ten poorest

districts in Malaysia, with an average income of RM2,537 (Shah et al., 2023). Based on the issues mentioned above, the job matching platform on mobile applications might be used as one of the methods in reducing poverty in Sabah. Hence, it may give people in rural and remote areas a broader selection of job options. Unfortunately, the services offered by this platform are mainly focused on traditional information search techniques, which may not be appropriate for job seekers (Alsaif et al., 2022). As a result, job seekers are presented with many results, requiring them to spend more time reading and assessing their search criteria (Alsaif et al., 2022). In addition to the fact that user interface design is crucial in this digital age, the efficacy of websites, software applications, mobile apps, and digital products is assessed based on it. Despite its visual appeal, a well-designed user interface must be an effective tool for enhancing the overall user experience

Nonetheless, many job-matching websites still need to be made more accessible, especially for people looking for jobs and updating resumes (Sundaaram, 2022). This study's gap is that the user interface design and features available on job-matching platforms may need to account for users in Sabah. Thus, this study proposes guidelines for using appropriate elements in creating job-matching platforms on mobile applications that can reduce poverty in Sabah.

## 2. Literature Review

### 2.1 Poverty and Unemployment in Sabah

Malaysia's population has tripled from 10.5 million to 32.6 million between 1970 and 2020. During the same period, Sabah's population expanded sixfold, from 635.4 thousand to an estimated 3.9 million. Sabah contributed to the overall population increase from 6.1% to 12% because of Malaysia's massive growth during the previous five years (Peng et al., 2022). However, despite its large population, Sabah had the highest absolute poverty rate in Malaysia in 2019 and 2020, a severe problem in the state. Individuals who lack money and property are occasionally referred to as poor. The word poverty originated from the Latin word pauper, which means poor. The World Bank (2023) defines poverty as a lack of well-being in several ways. This issue is also related to inadequate income and difficulty getting essential goods and services required for survival (Durojaye & Mirugi-Mukundi, 2020). As shown in Plate 1, absolute poverty rates grew from 19.5% in 2019 to 25.3% in 2020. Sabah had the highest rate of absolute poverty since 1997. In 2019, Sabah had eight of the top ten poorest districts in Malaysia, with an average income of RM2,537 (Shah et al., 2023).

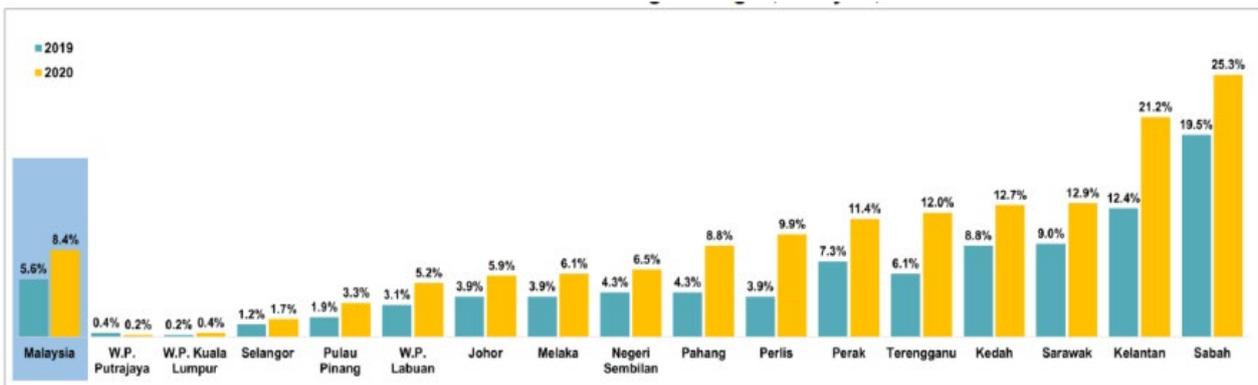


Plate 1 Absolute poverty incidence by state in Malaysia between 2019 & 2020

This poverty in Sabah demonstrates that it is connected to the unemployment rate because Sabah remains far below the poor states in terms of unemployment (Asadullah et al., 2023). Furthermore, previous studies reported comparable evidence of a positive relationship between unemployment, inequality, globalisation, and poverty (Meo et al., 2023). Table 1 shows that Sabah's unemployment rate grew 2.2% between 2020 and 2021. In 2020, the unemployment rate was 5.8%, and in 2021, it was 8.0% (Yong et al., 2022).

Table 1 Unemployment rate in Sabah

Year	2018	2019	2020	2021
Unemployment rate (%)	5.6	5.8	5.8	8.0

## 2.2 Job Matching Platform on Mobile Application

A job matching platform enables companies to communicate directly with employment seekers, publish positions, and review candidate CVs. The Organization for Economic Co-operation and Development (OECD) describes a job-matching platform as an online marketplace. The gig economy platform, also known as the online marketplace, is a two-sided internet platform that links sellers to buyers. However, the job matching platform differs from the online market because it focuses on matching employees with employers rather than self-employed with clients (World Bank, 2023).

Small software application designs known as mobile applications can be operated on portable devices like smartphones, tablets, and personal digital assistants (PDAs). Through digital distribution methods, users can download mobile apps to their phones. Mobile applications are more prevalent than desktop applications (Lotan & Patil, 2023). This occurs for one primary reason, which is social and human connectivity. Mobile apps are less expensive, more accessible, and easier to find. The hybrid mobile strategy improves productivity when developing mobile apps. Since there are so many platforms, a hybrid mobile app is considered sufficient. Applications can be seamlessly incorporated with other devices and managed with incredible speed (Prastyo et al., 2021).

## 3. Method

### 3.1 First Phase: Pilot Study

This research paper concentrates on the first phase of the research study to achieve the first and second objectives. Therefore, a pilot study has been conducted using three stages: problem identification, literature review, and online questionnaire. According to Dayanand and Chaudhary (2023), pilot study is crucial for enhancing the effectiveness and quality of primary research.

Hence, Figure 1 below explains the flow of the pilot study conducted in the first phase of the research study.

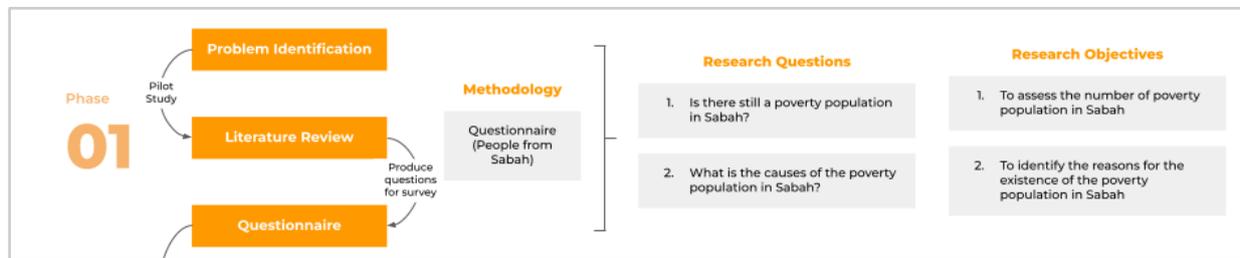


Fig. 1 Research method flowchart

### 3.2 Stage 1: Problem Identification

The implementation consists of three discrete stages, with the first stage concentrating on identifying the problem and investigating the issue of poverty. At this stage, the researcher identified concerns that still need to be addressed in Sabah, including poverty-related issues. Identifying problems related to the study is crucial for various reasons, including gaining a better understanding of research methodology. Furthermore, identifying the problem can make it easier to meet the study's objectives and expectations (PhD Assistance, 2024). Finally, two objectives have been established: to assess the number of poor people in Sabah and to determine the causes of poverty in Sabah. Stage 1 is explained as a foundation for the subsequent literature review mentioned in Stage 2. This review will delve deeper into existing research and poverty-related theories in Sabah. By examining previous studies, the researcher aims to contextualise the identified issues, uncover gaps in knowledge, and develop a comprehensive framework to address the research objectives.

### 3.3 Stage 2: Literature Review

For the second stage, the literature review, the researcher obtains data on the first and second objectives. The researcher uses data from various sources, including reports, articles in newspapers, theses, journal articles, books, and conference proceedings. The reference range is set to 2020 to 2024 to ensure the source's relevancy. The researcher can gain valuable insights by studying various publications on this topic. Additionally, this stage might provide awareness, information, and approach. Finally, an in-depth literature review can provide a better study design and increase the likelihood of finding relevant results (Hattangadi, 2021).

Building on the insights gained from the literature review, Stage 3 involves designing an online questionnaire to gather primary data directly from the target population. The themes and gaps identified in the literature will inform the questionnaire, ensuring it addresses key areas related to poverty in Sabah. This survey aims to validate the findings from literature and capture current, context-specific data, thereby enhancing the study's depth and

relevance. By integrating the literature review with empirical data collection, the researcher can develop a more comprehensive understanding of the issues and achieve the research objectives more effectively.

### 3.4 Stage 3: Online Questionnaire (Survey)

The survey questionnaire allows for consistent and comparable data collecting because it is one of the main methods of gathering primary and qualitative data. As a result, data is collected rapidly and processed efficiently (Taherdoost, 2022). This questionnaire survey approach is used to collect data for the first and second objectives of this study, which relate to the number of poor populations in Sabah and the reasons for the existence of poverty populations in Sabah. For this survey, the researcher chose to use closed-ended questions. This is because this form of question is easy to answer and does not require assistance from others, making it ideal for self-administered questionnaires (Taherdoost, 2022).

#### 3.4.1 Sampling and Sample Selection

Sampling calculation is done using Raosoft calculator. The margin of error is 5%, the confidence level is 95%, the population size of Kota Marudu is estimated at 69,528 and the response distribution is wrong at 50%. Thus, the suggested sample size after doing the calculation is 383 people. Kota Marudu was chosen as a sample for this study because Kota Marudu was recorded as the poorest city in Sabah (Chan, 2022; Azzeri et al., 2020).

Therefore, selecting an accurate number of samples is crucial for ensuring the reliability and validity of the research findings. A well-chosen sample size helps achieve a representative cross-section of the population, reducing bias and enhancing the study's generalizability. For this research, an online questionnaire will be used to gather data from the selected participants. This method offers a practical and efficient way to reach a diverse group, ensuring a comprehensive analysis of the research objectives. By carefully determining the sample size and employing an effective survey method, the study can yield meaningful insights and contribute to addressing the identified issues.

#### 3.4.2 Survey Questions and Its Development

Survey questionnaire is a set of questions used to collect information from respondents. It provides a structure to collect data for research purposes (Kuphanga, 2024). There are two forms of questionnaire which are open ended questions and close ended questions. Open-ended questionnaire allows respondents to answer in their own words and there is no 'yes' or 'no' option. Close-ended questionnaires, on the other hand, provide a limited set of answers to choose from as the respondents must choose from the answer options provided (Indeed, 2024). The researcher chose a close ended questionnaire for this study because a close-ended questionnaire is an organized set, and the answer options are available. In addition, it is easy to use, has less error and provides consistent results as well as easier data control (Taherdoost, 2022).

**Table 2** Survey questions

Research Questions	Survey Questions
<b>RQ 1</b>	<b>Survey Question 1</b>
Is there still a poverty population in Sabah?	What is your estimated monthly household income? Answers option (Low-income, Middle-income, High-income)
	<b>Survey Question 2</b>
	What is your current employment status? Answers option (Employed, Unemployed, Self-employed, Retired, Student)
	<b>Survey Question 3</b>
	What kind of house do you currently live in? Answers option (Own, Rent, Public housing, Temporary shelter)
	<b>Survey Question 4</b>
	Do you have difficulty accessing basic needs or services? Answers option (Very easy, Fairly easy, Normal, Difficult, Very difficult)

**Survey Question 5**

Over the past 10 years, do you think that poverty in Sabah has increased, decreased or remained almost the same?

Answers option (Increasing, Decreasing, Staying about the same, Don't know)

**RQ 2**

What is the cause of the poverty population in Sabah?

**Survey Question 6**

What do you think is the main cause of poverty in your area? Answers option (Unemployment, Lack of infrastructure, Arrival of foreign workers, Unbalanced development, Income inequality)

**Survey Question 7**

Are you facing any financial problems during unemployment?

Answers option (Yes, Neutral, No)

**Survey Question 8**

In your opinion, does unemployment affect the person and society?

Answers option (Yes, Neutral, No)

The development of these questions focuses on being approachable without touching on sensitive terms, such as using negative or judgmental words. It is an option for respondents if they don't want to answer the question. Moreover, the survey questions presented in Table 2 above are aligned with the first and second objectives of the study which are:

- To assess the poverty populations in Sabah.
- To identify the reasons for the existence of the poverty population in Sabah.

With that, the survey questions were carefully developed to ensure sensitivity and inclusiveness, allowing respondents to opt out of any questions they might find uncomfortable. This method promotes a more transparent and respectful discourse while guaranteeing the acquisition of precise facts. The survey results, along with the study's objectives of evaluating the poor population in Sabah and identifying its basic causes, underscored significant aspects such as foreign immigration, inadequate infrastructure, and rural neglect as primary contributors to the elevated poverty rate. Finally, the findings highlight the necessity for focused measures to tackle these difficulties and promote economic development in the subsequent section.

## 4. Results and Discussion

### 4.1 First Phase: Pilot Study

The pilot study that was conducted has justified the data that has been collected regarding the first objective and the second objective through three stages. The stages are problem identification, literature review and online questionnaire on the sample that has been selected.

#### 4.1.1 Stage 1: Problem Identification

There are three problems in this study. The first one is that there is a link between the poverty rate in Sabah and the unemployment problem. The second issue is that users of job matching platforms on mobile applications were provided with incorrect suggestions and mismatches of jobs. Finally, the less appealing user interface of the job matching platform on mobile application for income poverty reduction activities in Sabah.

Firstly, poverty and unemployment are closely related problems in Sabah. Sabah has had the highest poverty rate since 1997 (Department of Statics, 2023). This poverty rate also increased from 19.5% in 2019 to 26.3% in 2020 (Efenday et al., 2022). Average income in Sabah is low and its gross domestic product (GDP) is also lower than the main areas in Malaysia (Huda et al., 2022).

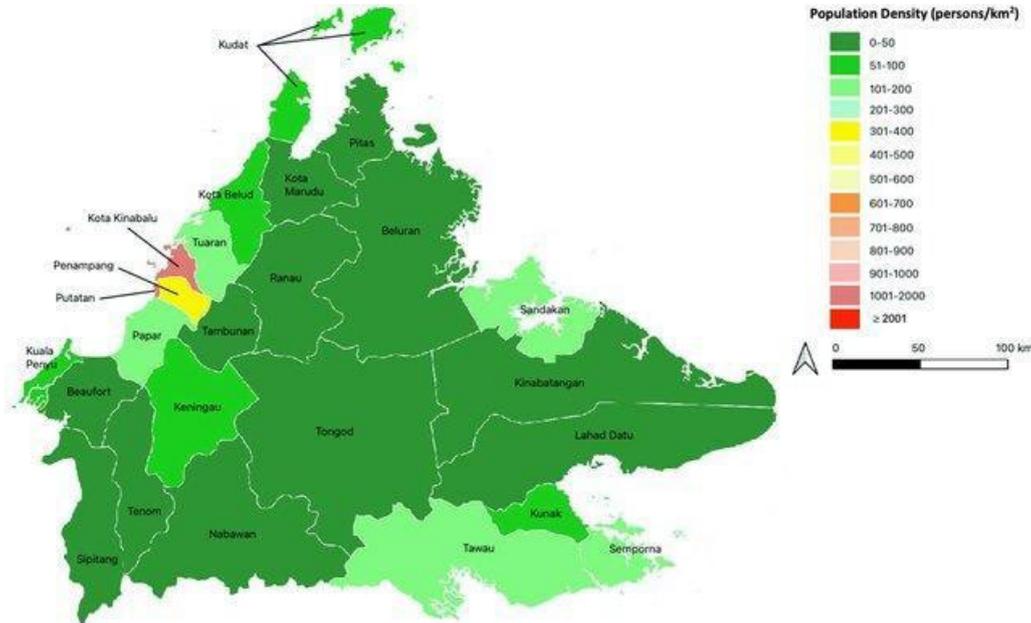
Secondly, job matching platforms can help reduce unemployment and poverty, but there are problems such as mismatches and inaccurate recommendations. These problems are related to the use of text semantic information in job descriptions and resumes (Yang et al., 2022). Previous studies have found that this platform always recommends inappropriate jobs because it relies on traditional information retrieval techniques that can lead to many results (Alsaif et al., 2022). This can make it difficult for job seekers to find relevant jobs.

Last but not least, another problem with the job matching platform is the less attractive user interface to attract many platform users, it is necessary to have a more attractive interface design. Animation can improve the appearance of this platform and make it more modern (Kiew, 2022). Most social networking services (SNS) are

difficult to use, especially when updating resumes and job hunting. Users prefer to use platforms that are easy to use and easy to upload resumes (Sundaaram, 2022).

### 4.1.2 Stage 2: Literature Review

The number of Sabah residents by kilometers in each district was recorded to conduct this pilot study. This is done to guarantee that the information gathered is relevant and provides a thorough description of poverty in Sabah. Plate 2 shows the total population density in Sabah by district.



**Plate 2** Population density by districts in Sabah

**Table 3** Population density by districts in Sabah

District	Population Density (persons/km <sup>2</sup> )
Tawau	101-200
Lahad Datu	0-50
Semporna	101-200
Sandakan	101-200
Kinabatangan	0-50
Beluran	0-50
Kota Kinabalu	1001-2000
Ranau	0-50
Kota Belud	51-100
Tuaran	101-200
Penampang	301-400
Papar	101-200
Kudat	51-100
Kota Marudu	0-50
Pita	0-50
Beaufort	0-50
Kuala Penyu	51-100
Sipitang	0-50
Tenom	0-50
Nabawan	0-50

According to Table 3, the areas with the highest population density are Kota Kinabalu, Putatan, and Penampang. However, according to the Department of Statistics Malaysia (2020), the district with the highest population is Kota Kinabalu, with 413,799 citizens and 86,622 non-citizens. Sandakan is the second-highest district, with 298,024 citizens and 141,026 noncitizens.

#### 4.1.3 Stage 3: Online Questionnaire (Survey)

To fulfill the first and second objectives of this study, an online questionnaire was conducted on 383 respondents. Eight questions were asked to identify the views of whether respondents experienced poverty and the reasons for poverty. The questions provided are guided by two research questions, which are:

- RQ1: Is there still a population of poverty in Sabah?
- RD2: What is the cause of the poverty population in Sabah?

The survey found that most of the respondents stated that poverty is still high in Sabah based on household income, employment status, the type of house occupied, the difficulty in obtaining basic needs and services, and respondents' views on the poverty rate in Sabah in the last 10 years. Most respondents also chose unemployment as the main cause of poverty in Sabah because of the financial problems faced and affected when unemployed.

### 4.2 Achieving The Research Objectives

The three stages conducted above are conducted to achieve the research objectives below:

#### 4.2.1 Objective 1: Assessing the Poverty Population in Sabah, Malaysia

In 2019 and 2020, Sabah has the highest poverty rate in Malaysia. The state's poverty rate grew from 19.5% in 2019 to 25.3% in 2020. Since 1997, Sabah has been identified as the state with the highest poverty. Furthermore, Sabah has eight of the lowest rate of poverty districts, each with an estimated income of RM2,537. According to one dataset, the poverty rate for poor and extremely poor household heads climbed by more than 100% between 2019 and 2023. In 2019, 21,373 people were identified as low-income family heads, with 16,938 classified as extremely poor household heads. As previously stated, this rate has climbed by 48,277 for the heads of poor families, while the heads of extremely poor households have increased by 23,260 (Shah et al., 2023).

**Table 3** Poverty rate for poor and extremely poor household heads

Year	2019	2023
Low-income family heads	21,373	48,277
Extremely poor household heads	16,938	23,260

In accordance with Akhter (2021), rural areas saw a modest growth in family income of 3% to 9% between 2014 and 2019, compared to the gross household income of 12% to 14%. Sarawak, Sabah, and Kelantan are among the states with a large rural population. Semporna, Beluran, Kota Belud, Kuala Penyu, Ranau, Kudat, Kota Marudu, Toongod, and Pitas are among Sabah's regions with gross family incomes less than RM3,828. Furthermore, approximately half of the population in Sabah's coastal areas live in poverty. The coastal areas include Semporna, Pita, Kota Marudu, Kudat, and Kunak (Azzeri et al., 2020).

Four years after the New Economic Policy (NEP) was implemented, in 1976, Kelantan was discovered to be the poorest state with 67%, followed by Kedah (61%), and Terengganu (60%). But in 2019, this percentage of poverty shifted. The top three states with the highest rates of poverty were Sabah (19.5%), Kelantan (12.4%), Sarawak (9%), followed by Kedah (8.8%), Perak (7.3%), and Terengganu (6.1%) (Asadullah et al., 2023).

#### 4.2.2 Objective 2: Identifying the Reasons for the Existence of the Poverty Population in Sabah, Malaysia

There are three main reasons for poverty in Sabah. The first factor is the entry of foreign immigrants (Shah et al., 2023). The state government and the federation offered assistance to industries that are less adaptive in terms of technology and labor force. In line with this is the drive for the industry to save costs in employee salary. Thus, additional job possibilities for foreign workers become available because the people of Sabah seek higher-paying jobs. As a result, not only will the rural community, like the natives, remain poor, but so will those who live closer to the city and are wealthier (Somiah & Domingo, 2003).

The second reason is infrastructure facilities (Shah et al., 2023). It is difficult for the state governance to attract outside investors, and job possibilities are limited due to Sabah's underdeveloped infrastructure. This is the reason for the state's high poverty and unemployment rates (Bernama, 2022).

The last factor is related to the rural areas in Sabah. The government only focuses on helping certain areas because Sabah has a diverse demographic population and ignores areas with low populations such as rural areas (Chong, 2022). It is also difficult to assess the current condition in this rural area (Shah et al., 2023). As a result, numerous locations in Sabah have imbalanced development rates (Chong, 2022).

## 5. Conclusion

In order to achieve the research's aim which is to provide appropriate features for creating an appealing user interface on a job matching platform for mobile applications to support income poverty reduction initiatives in Sabah. This study concentrates on the first stage of the research execution. It is found that Sabah continues to have a high prevalence of poverty because of the main causes which is unemployment as well as other factors such as underdeveloped infrastructure, foreign immigrants, and rural neglect. A potential focus for future research is to investigate the socioeconomic aspects of Sabah taking into account employment, income, and interpersonal skills.

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## Conflict of Interest

The author declares that there are no interests or conflicts that could influence the study, publication and authorship of this paper

## Author Contribution

*The authors confirm contribution to the paper as follows: **study conception and design:** Aliyyatul Muna Binti Ahmad Roslan; **data collection:** Aliyyatul Muna Binti Ahmad Roslan; **analysis and interpretation of results:** Aliyyatul Muna Binti Ahmad Roslan; **draft manuscript preparation:** Aliyyatul Muna Binti Ahmad Roslan, Nur Faizah Mohd Pahme, Ahmad Sofiyuddin Mohd Shuib, Nur Hazirah Mohd Fuat. All authors reviewed the results and approved the final version of the manuscript.*

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