Socioeconomic Profiling and Dynamics: Insights from a Rural Community Study in Kedah

*Azlyn Ahmad Zawawi, Azni Syafena Andin Salamat, Siti Norfazlina Yusoff, Nor Zaini Zainal Abidin
Faculty of Administrative Science and Policy Studies, UiTM Cawangan Kedah, Kampus Sungai Petani, Merbok,
Kedah Darul Aman, Malaysia
*azlyn@uitm.edu.my
Corresponding Author: Azlyn Ahmad Zawawi

Abstract: This study provides a socio-economic profile of Mahang and Nagalilit, two sub-districts in Kulim, Kedah, Malaysia. Residents of Mahang primarily rely on rubber tapping and oil palm cultivation, industries vulnerable to monsoon weather. In Desa Keda Nagalilit, locals are employed in the nearby hi-tech industrial area, oil palm plantations, or as shop assistants. Many households earn below the minimum wage, compelling residents to take on multiple jobs for financial stability. Data was systematically collected through questionnaires focusing on household demographics, socio-economic conditions, and lifestyle patterns. The analysis offers valuable insights into the living conditions and challenges these communities face, especially in light of the COVID-19 pandemic. The research revealed income disparities and variations in living standards between sub-districts, underscoring the socio-economic impact of the pandemic. It further examined how variables such as age, income, employment status, and education correlate with financial strain, mental health issues, and disruptions to daily life. Findings demonstrate significant relationships between socioeconomic factors and the pandemic's effects, emphasizing the need for targeted measures to alleviate poverty, improve education, and enhance residents' overall quality of life while addressing financial and mental health challenges.

Keywords: *Socioeconomic profiling, community dynamics, rural livelihood, Kedah*

1. Background and Historical Context of the Kulim District

Kulim is one of the 12 districts in Kedah, covering an area of 774 km² in the northern region of Malaysia. It is bordered by Sungai Muda to the west, Sungai Sedim and Sungai Kerian to the north and east, and the state of Perak to the south. The district's name is derived from the 'kulim' fruit trees that once densely populated the town (Thow, 1995). Historically, Kulim began as a small settlement in the 1950s, characterized by traditional agricultural practices. Kulim is believed to have been settled in the 18th century by 100 individuals of Pattani Malay descent. It is thought that the town may have been founded by a Chinese artisan named Chin Ah Cheoh (Jaffar, 2007). During the early years, the local economy was primarily based on rubber tapping and small-scale agriculture (Abidin et al., 2013). Over time, significant changes have reshaped Kulim's socio-economic landscape. The establishment of the Kulim Hi-Tech Park (KHTP) in the early 1990s marked a pivotal moment in the district's development. The KHTP, Malaysia's first high-tech industrial park, was inaugurated in 1996 and has since attracted numerous multinational corporations and high-tech industries, thereby transforming Kulim into a key industrial hub in the northern region of Malaysia (Leh, 2016; Abidin et al., 2013).

The district is administratively divided into 15 sub-districts, including Mahang and Nagalilit, which are the focus of this socio-economic study (Department of Statistics Malaysia [DOSM], 2024). Mahang, situated approximately 35 km east of Kulim town, remains largely dependent on traditional economic activities such as rubber tapping and oil palm cultivation. Adverse weather conditions, particularly during the monsoon season, significantly impact the income of rubber tappers, exacerbating economic vulnerabilities. In contrast, Desa Keda Nagalilit, another sub-district, has a more diverse economic base. Residents work in the nearby hi-tech industrial area, oil palm plantations, or as shop assistants in local eateries and grocery stores.

Despite the proximity to industrial development, many residents still earn below the minimum wage level, leading to financial constraints and necessitating multiple simultaneous jobs to sustain their livelihoods (DOSM, 2024). The transformation from a small agricultural settlement to an industrialized district has brought both opportunities and challenges. While industrialization has spurred economic growth and job creation, it has also highlighted disparities in income and living standards among different sub-districts. This socio-economic study aims to provide a comprehensive analysis of the demographic and socio-economic conditions in Mahang and Nagalilit.

This study evaluates the demographic and socio-economic conditions of residents in Mahang and Nagalilit to understand how these factors shape their daily lives. Through systematic data collection on household demographics, socio-economic status, and lifestyle patterns, the research provides valuable insights into the influences affecting these communities. The analysis sheds light on the challenges faced by residents, particularly in the wake of the COVID-19 pandemic, which has disrupted socio-economic stability worldwide and impacted individuals' financial and psychological well-being. Focusing on the Kulim District in Kedah, Malaysia, the research examines how socio-economic variables—such as age, education, employment status, and income—correlate with the pandemic's effects on financial strain, mental health, and disruptions to daily life. By understanding these relationships, the study aims to inform the development of policies that can effectively mitigate the negative socio-economic impacts of the pandemic and improve residents' quality of life.

Figure 1: Kulim District Map

Source: Official Portal of the Local Authorities of Kedah Darul Aman, 2022

Mahang Sub-District
Mahang is a small town situated approximately 35 km east of Kulim District. The town is led by a community leader known as Penghulu, alongside various Village Development and Security Committees (MPKK) appointed by local representatives to oversee administration and management (Official Portal of the Local Authorities of Kedah Darul Aman, 2022). Residential areas within this subdistrict include Pekan Mahang, Kampung Baru Mahang, Kampung Ulu Mahang, Kampung Dingin, Kampung Lobak, Kampung Bukit Kabu, and several surrounding villages. Mukim Mahang also shares a border with the State of Perak Darul Ridzuan, and its terrain is characterized by hilly landscapes. According to the 2020 census, the population of the area is 593 residents. The total land area measures 1.249 km², resulting in a population density of 475 individuals per square kilometer as of 2020 (DOSM, 2023). Over the decade from 2010 to 2020, the area experienced an annual population growth rate of 6.9%.

The majority of the population is ethnically Malay, comprising 80%, while Indian and Chinese ethnicities account for 20% and 15%, respectively, with a small percentage identifying as Sikh (Izani, 2023). The local economy primarily revolves around rubber tapping and oil palm cultivation. Seasonal monsoons and erratic weather patterns adversely affect the livelihoods of those dependent on rubber tapping, often leading to financial struggles. Additionally, the high cost of goods and raw materials in this rural area, situated far from Kulim Town Center, compels some residents to seek supplementary income through other village work or employment in hi-tech industrial areas, small businesses, or private sector jobs. In terms of infrastructure, Mahang is equipped with primary, secondary, and higher educational institutions, alongside essential services such as a police station and the Mahang Health Clinic. Most residents have constructed homes on inherited family land and maintain close-knit relationships with neighbors (Jaafar, 2023).

Nagalilit Sub-District
Mukim Nagalilit covers an area of 30.37 km² and has a population of nearly 23,103 individuals. Located in Padang Serai, Kedah, Nagalilit is led by a community leader known as Penghulu (Official Portal of the Local Authorities of Kedah Darul Aman, 2022). The name "Nagalilit" is derived from local folklore, referring to a hill that once featured a stream resembling a dragon coiling around it (Ibrahim, 2023). The socio-economic focus

of the study in Nagalilit centers on Keda Nagalilit Village. This village is part of the Poor People's Development Program (PPRT) under the Kedah Regional Development Authority (KEDA), which has established various infrastructures, including multipurpose halls and kindergartens. KEDA's initiatives, initiated to foster human capital development, have enabled organized settlements, facilitated aid distribution and promoted community cohesion. Keda Nagalilit Village comprises 165 houses, housing approximately 950 residents (Hashim, 2023). The average resident of Keda Nagalilit Village typically works in the hi-tech industrial area, is employed in nearby palm oil plantations, or serves as a shop assistant in local establishments. Most residents face economic challenges, earning less than RM1,500.00 monthly. As a result, many engage in additional jobs to support their families amidst financial constraints.

2. Socio-Economic Background

Livestock farming, predominantly poultry, constitutes a significant pillar of Kulim's economy, generating a substantial RM 64.8 million in income. This sector, however, is contrasted by a minimal aquaculture industry, occupying a mere 10 hectares. While agriculture remains a fundamental pillar of Malaysia's rural economy, particularly in regions like Kedah, challenges such as a weak marketing infrastructure and a declining interest in agriculture among the youth are impeding its growth potential. This trend is not unique to Malaysia but is reflected across Southeast Asia, where the agricultural sector encounters similar hurdles in attracting young talent. The restriction of movement during the post-Movement Control Order (MCO) period significantly impacted the agricultural sectors, as farmers faced difficulties in managing their farms and selling their products regularly (Shah et al., 2022).

Kulim's development trajectory is marked by disparities. Uneven development across the district has resulted in suboptimal land use, with abandoned plots worsening economic strain. This issue is compounded by Kulim's struggle to compete with neighboring regions for investment and economic growth. A similar pattern of uneven development can be observed in other parts of Malaysia and Southeast Asia, where rapid urbanization and industrialization often leave rural areas lagging (Huang & Song, 2021; Abdul Aziz et al., 2023).

The quality of life in Kulim varies significantly, with rural Mukims such as Mahang, Nagalilit, Karangan, and Sungai Kob experiencing slower development compared to urban centers. This rural-urban divide is a common challenge faced by many ASEAN nations (Li, 2016; Sun et al., 2023). Furthermore, Kulim's proximity to Penang has created a development gradient, with areas like Lunas, Sungai Seluang, Padang Serai, and Padang Meiha benefiting from spillover effects. The construction of the Butterworth Kulim Expressway (BKE) was expected to accelerate this trend, attracting housing and industrial projects to the region. This phenomenon of infrastructure-driven development is a familiar pattern across Southeast Asia, as countries invest in transportation networks to stimulate economic growth (Shatkin, 2022).

COVID-19's Impact
The COVID-19 pandemic significantly impacted the socio-economic well-being of Mahang and Nagalilit residents. The pandemic exposed and exacerbated existing vulnerabilities, as disruptions in supply chains and market access led to increased unemployment and underemployment, particularly among the youth (Rasul et al., 2021). Many residents turned to informal work or small-scale businesses to diversify their income; however, challenges such as a weak marketing system and limited financial resources hindered the establishment of sustainable livelihoods (Bezbora, 2021), (Trotskovskiy & Sabyna, 2021). The uneven development within Kulim and the low population density in remote Mukim areas limit access to essential services and prevent residents from fully benefiting from regional economic growth. Geographic isolation worsens these issues for communities like Mahang and Nagalilit compared to those closer to urban centers. While the development along the BKE offers opportunities, equitable distribution of benefits remains a challenge. Kulim's future development needs to address these disparities to foster a more inclusive and prosperous district.

3. Methodology

Data collection for this study was conducted through the administration of questionnaires specifically designed for residents in the study area. In addition, secondary data was sourced from library studies, printed materials,

public reports, and relevant journal articles. The sample comprised 50 households from Pekan Mahang and Desa Keda Nagalilit in the Kulim District, Kedah, selected via purposive sampling to ensure representation across key demographic groups. The structured questionnaire was developed to assess a range of socio-economic variables, including demographic characteristics, financial well-being, stress levels, financial literacy, and mental health, particularly in the context of the COVID-19 pandemic. The study spanned six months, from June 1, 2023, to December 31, 2023, with field data collection commencing on June 10, 2023. Quantitative data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) Version 24.0, allowing for both correlational and descriptive statistical analysis. This approach provided an examination of variables such as age, marital status, educational attainment, and income, as well as the pandemic's impact on financial stability, stress, and mental health.

4. Results and Findings

Table 1 outlines the demographic profile of the survey participants. The age range spans from 20 to over 80 years old, with the highest concentration falling between 60 and 69 years old. All respondents identified as Malay and Muslim. The marital status breakdown reveals a majority are married (64%), followed by widowed/widowers (16%) and singles (14%). Interestingly, the state of origin shows Kedah as the dominant source (72%), with a smaller mix of respondents from Perak, Penang, and other unspecified locations.

Table 1: Demographic Information

Category	Frequency	Percentage (%)
Age		
20 - 29 years	1	2
30 - 39 years	5	10
40 - 49 years	5	10
50 - 59 years	11	22
60 - 69 years	16	32
70 - 79 years	5	10
80 years and above	7	14
Religion		
Islam	50	100
Ethnicity		
Malay	50	100
Marital Status		
Single	7	14
Married	32	64
Divorced	3	6
Widower/Widow	8	16
State of Origin		
Kedah	36	72
Perak	3	6
Penang	1	2
Others	10	20

Source: Researcher

Table 2 illustrates the educational background and employment status of the survey participants. Educational attainment varies, with a significant portion (44%) lacking formal education beyond primary school (UPSR, SRP/PMR). The majority are unemployed (54%), while the employed population is split between informal

sectors (22%) and private companies (16%). Government jobs and other formal employment categories represent a smaller portion.

Table 2: Education and Employment

Category	Frequency	Percentage (%)
Education Level		
UPSR	11	22
SRP/PMR	13	26
SPM	9	18
Matriculation/STPM/STAM	1	2
Diploma	1	2
Bachelor's Degree	1	2
Postgraduate	1	2
No formal education	8	16
Other types of education	5	10
Employment Sector		
Government	1	2
Private Sector	8	16
Informal Sector	11	22
Unemployed	27	54
Other types of unemployment	3	6

Source: Researcher

The survey provides a glimpse into the financial well-being and living conditions of the residents. While a significant portion (26%) reported no debt, a substantial group (36%) struggled with monthly debt exceeding RM 1,000. Family income reflects this disparity, with 30% earning between RM 1,000 and RM 1,499 and 16% earning even less. Household size varies, with most families having 4-6 members (44%). Notably, home and land ownership are high, with 80% and 64% owning their residences and land, respectively. This suggests potential long-term financial security for some residents. The data also reveals reliance on social safety nets, with 20% receiving assistance from the Department of Social Welfare, primarily in the form of food aid (36%). Necessities seem well-covered, with high ownership rates for refrigerators (84%) and washing machines (82%). While car ownership sits at 54%, motorcycles (66%) remain the dominant mode of personal transportation. Food remains the primary expense, with over half (56%) spending more than RM 500 monthly. Table 4 illustrates the socio-economic data summary for the study.

Table 3: Socio-Economic Data Summary

Category	Description	Percentage
Debt	No Debt	26%
	Monthly Debt > RM 1,000	36%
Family Income	RM 1,000 - RM 1,499	30%
	Below RM 499	16%
Household Size	4-6 Members	44%
Home Ownership	Owns Home	80%
Land Ownership	Owns Land	64%

Social Welfare	Receives Assistance	20%
	Type of Aid (Most Common)	Food Items (36%)
Household Possessions	Refrigerator Ownership	84%
	Washing Machine Ownership	82%
	Car Ownership	54%
	Motorcycle Ownership	66%
Average Family Expenditure	Food (> RM500)	56%

Source: Researcher

The study also investigated the impact of COVID-19 on residents' livelihoods. Nearly half (44%) experienced slight to moderate disruptions to their daily lives, while a significant portion (20%) faced substantial challenges. Financially, the impact was also evident. Over two-fifths (42%) felt their financial situation often mirrored their overall well-being, and a similar proportion (40%) reported frequent financial pressure. Financial literacy levels were mixed, with 42% indicating some knowledge or skills, but 32% feeling they lacked sufficient means to manage finances effectively. Mental health was also affected, as 36% reported occasional negative impacts and 16% experienced frequent struggles. Figure 2 replicates the data.

Figure 2: The Impact of COVID-19 on Residents' Livelihoods (%)

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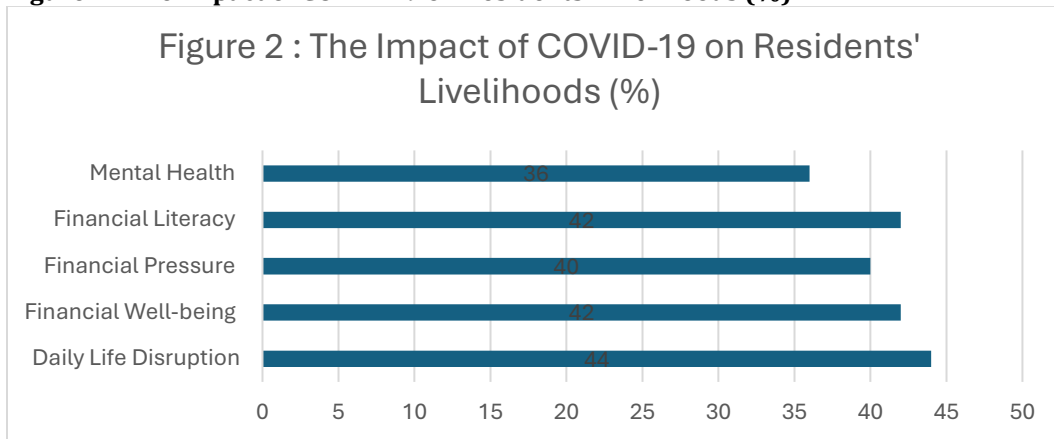
Source: Researcher

**Correlation Analysis Between Socio-Economic Factors and COVID-19 Impact**
A moderate positive relationship was identified between age group and financial pressure, with a correlation coefficient of r=0.47. This suggests that older individuals experience greater financial stress compared to their younger counterparts. The findings indicate that older populations may face more significant financial challenges, likely due to limited income opportunities and the rising medical and living costs associated with aging. Consequently, targeted support for this demographic could be essential in alleviating their financial burdens and enhancing overall well-being. Additionally, the analysis uncovered a strong negative correlation between debt level and financial well-being, represented by a correlation coefficient of r=−1.0. This highlights the substantial impact of debt on individuals' perceived financial stability, where increasing debt levels are associated with a marked decline in financial well-being. A strong positive correlation of r=0.55 was also observed between debt levels and financial pressure, reinforcing the conclusion that higher debt is directly linked to increased financial stress. These insights underscore the necessity for effective debt management strategies to bolster financial resilience. Furthermore, the data demonstrated a strong positive correlation between life disruption and mental health impact, with a correlation coefficient of r=0.73. This finding illustrates the significant connection between disruptions in daily life due to COVID-19 and the deterioration of mental health. The psychological toll inflicted by lifestyle changes—such as job loss and alterations in daily

routines—highlights the importance of mental health support services to address the repercussions of these disruptions. The analysis also revealed a moderate positive correlation of r=0.55 between income level and debt. This suggests that individuals with higher incomes tend to carry more debt, possibly reflecting their capacity to access credit or loans. However, this relationship also indicates that increased earnings do not necessarily equate to reduced financial pressure, necessitating a broader understanding of financial health that considers both income and debt levels. In terms of education, a moderate negative correlation of r=−0.44 was found between education level and financial pressure. Individuals with higher education levels are likely to experience less financial stress, potentially due to better employment opportunities and higher earning potential associated with advanced education. This finding underscores the critical role of educational attainment in mitigating financial pressure, highlighting the importance of accessible education and training programs.

Trend Analysis of Age Demographics and Financial Pressure
Figure 3 shows that financial pressure remains fairly consistent across age groups, with a slight decrease among the youngest cohort. The analysis reveals a clear correlation between age and financial pressure. While younger individuals (20-29) experience minimal financial strain, this burden escalates with age, culminating in the most significant financial pressures among those aged 60-79. Although the 80+ age group reports a marginal decrease in financial stress compared to the preceding decades, it remains notably higher than the younger cohorts.

**Figure 3: Financial Pressure Across Different Age Groups (%)**
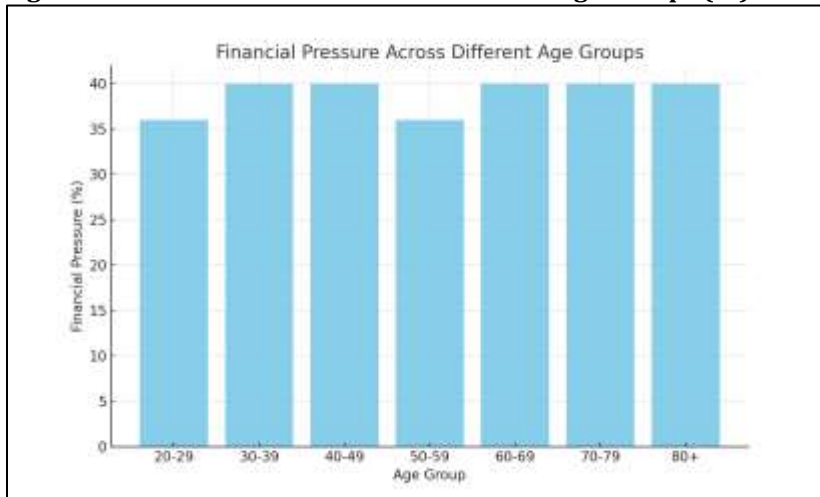
Source: Researcher

Comparative Analysis of Employment Sector and Education Level
Figure 4 reveals significant disparities in educational attainment among various employment sectors. A larger proportion of individuals with bachelor's degrees are employed in the government sector, reflecting a preference for higher education in this field. In contrast, the private sector tends to have a higher prevalence of employees with SPM-level education. The informal sector is predominantly made up of individuals with SRP/PMR qualifications or those lacking formal education entirely. Among the unemployed, there is a diverse range of educational backgrounds, with many individuals holding SPM or SRP/PMR qualifications. Interestingly, the "other types of unemployment" category, which may encompass part-time or temporary work, shows a notably higher representation of individuals without any formal education. This pattern underscores the need for targeted educational initiatives to address these disparities across employment sectors.

**Figure 4: Comparison of Employment Sector and Education Level**
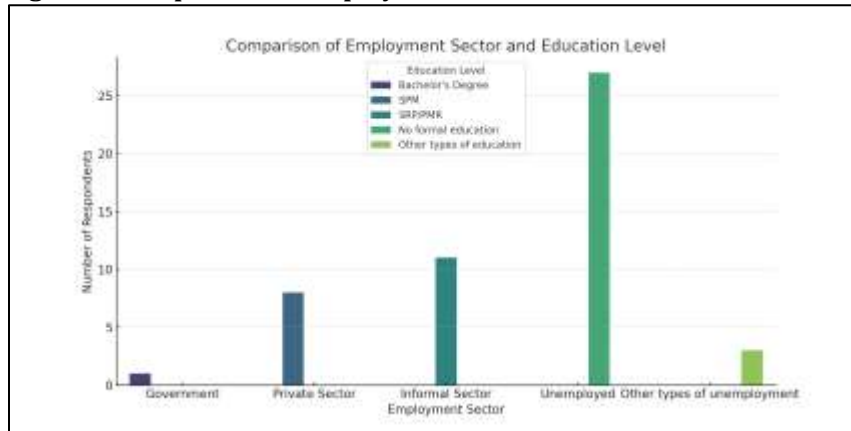
Source: Researcher

Evaluation of Social Welfare Assistance and Its Effectiveness
Figure 5 reveals that a significant portion of respondents (80%) did not receive social welfare assistance. Among those who did, a majority (80%) reported that the assistance positively impacted their food security, while a smaller proportion (30%) indicated that it helped cover necessities. These findings suggest that while social welfare assistance can be effective in addressing immediate needs like food security, its impact on covering broader necessities may be more limited.

Figure 5: Effectiveness of Social Welfare Assistance
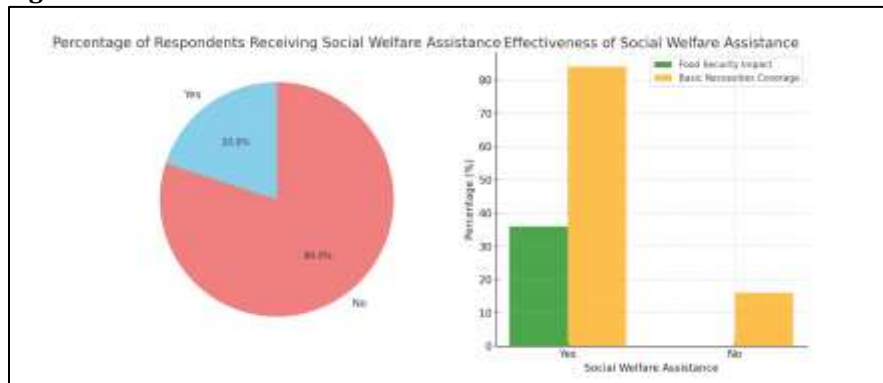
Source: Researcher

Discussion
This study provides valuable insights into the socio-economic conditions of residents in Mahang and Nagalilit, particularly in light of recent challenges such as the COVID-19 pandemic. The demographic profile reveals a predominantly older population, which may require targeted interventions to address their specific socio-economic needs. Given that all respondents identify as Malay and Muslim, this homogeneity suggests that cultural and religious factors could play a significant role in shaping community dynamics and support systems. The high percentage of married individuals (64%) may also influence household structures and the availability of social support networks, which are crucial for coping with economic stressors. The analysis of educational attainment highlights a concerning trend: a significant portion of respondents possess limited formal education, which correlates strongly with the high unemployment rate observed in the sample. This suggests that enhancing educational opportunities could be a vital strategy for improving employability and economic stability in the region. The prevalence of informal sector employment (22%) underscores the need for policies that promote job security and formalize existing non-standard work arrangements. Financial well-being and living conditions paint a mixed picture. While a considerable number of households own their homes and land, indicating some level of long-term financial security, the reliance on social safety nets reveals vulnerabilities. The high percentage of respondents reporting monthly debts exceeding RM 1,000 indicates substantial

financial pressure, reinforcing the necessity for effective debt management strategies and financial literacy programs.

The impact of COVID-19 has been profound, with many respondents experiencing disruptions to their daily lives and financial stability. The pandemic has emphasized the interconnectedness of financial health and overall well-being, suggesting that interventions aimed at enhancing financial literacy and management skills could be beneficial. Furthermore, the mental health implications of these disruptions warrant attention, as a significant portion of the population reports negative effects on their mental well-being. Access to mental health resources and support systems should be prioritized to help residents navigate these challenges. Addressing these challenges will require a multifaceted approach, including enhancing educational opportunities, promoting formal employment, and providing comprehensive financial and mental health support. By focusing on these areas, stakeholders can work towards improving the overall well-being of this community in the face of ongoing and future challenges.

5. Conclusion and Recommendations

This study provides a comprehensive examination of the demographic, socio-economic, and educational profiles of residents in Mahang and Nagalilit, highlighting their current challenges and needs. The analysis reveals a predominantly older population with a significant proportion lacking formal education and facing high levels of unemployment. Despite considerable home and land ownership, many residents experience financial difficulties, including substantial debt and low-income levels. The COVID-19 pandemic has further intensified these issues, impacting financial stability and mental health, consistent with broader regional and global trends. Additionally, the study evaluates the specific impacts of the COVID-19 pandemic on these communities, providing timely data. The findings offer valuable insights for targeted policy interventions, emphasizing the need for diversified economic opportunities, education, vocational training, and financial literacy programs.

To address the findings from this study, several recommendations are proposed. First, there is a clear need for enhanced educational programs targeting adults with limited formal education. Implementing adult education and vocational training initiatives can significantly improve literacy and employability, which are essential for fostering economic stability. Additionally, high levels of unemployment and a reliance on informal sector jobs underline the importance of creating new job opportunities and diversifying the economy. Supporting entrepreneurship and small and medium-sized enterprises (SMEs) could help mitigate economic vulnerabilities and stimulate local job growth. Furthermore, the mixed levels of financial literacy among residents highlight the necessity for comprehensive financial education programs. Such initiatives should aim to improve residents' financial management skills, help address debt issues, and promote long-term financial stability. Strengthening social safety nets is also crucial, given the observed reliance on welfare; expanding food aid and other support mechanisms could alleviate financial pressures on low-income households. Lastly, addressing mental health impacts requires accessible services to help residents manage stress and adapt to socio-economic challenges.

Future research should extend beyond Mahang and Nagalilit to include other sub-districts within the Kulim District for a more comprehensive regional analysis of the Kedah state. Longitudinal studies are needed to track changes over time, offering insights into the long-term effects of industrialization, economic shifts, and policy interventions. Detailed studies on specific sectors like agriculture and small businesses could identify unique challenges and opportunities. Investigating the impact of educational and vocational training programs is essential for understanding their effectiveness. Exploring social and cultural dynamics, health and well-being, technological integration, policy impacts, youth employment, and climate change will provide a richer understanding and more actionable insights for the socio-economic development of these communities.

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