

Assessing the Impact of the COVID-19 Epidemic on the Socio-Economic Status of Rural Communities: Study in Udon Thani Province of Thailand

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Abstract: This study aimed to assess the impact of COVID-19 epidemic on socio-economic status of rural communities in the Udon Thani province of Thailand. Method: A total of 1050 participants were approached to partake in a cross-sectional online survey and share their experiences regarding the ongoing epidemic. Descriptive statistics were used to analyze the data. Results: Our analysis revealed that the epidemic has significantly affected local people psychologically, leading to socio-economic vulnerability. Notably, we find that local households are worried about their income losses regardless of their socio-economic status (42–47%), level of income (32–43%) and industry involvement (38–41%). However, as the income increases, the level of stress decreases. The results show that government transfer payment is a significant factor in reducing stress due to its reliable and uninterrupted income flow. Contrary to our proposition, the epidemic stress was less observed, which might be because of people's trust in the government and effective anti-epidemic countermeasures to contain the disease. Conclusion: This study finds that COVID-19 has a significant impact on local people's health, psychology and income. This study is one of the first to provide empirical evidence regarding the early health and socioeconomic effects of COVID-19 at the household level in rural communities, which are critical in devising policies to ease the outbreak and prevent further losses at the local community level.

Keywords: impact assessment, COVID-19 epidemic, rural community, Udon Thani province.

評估新冠肺炎流行病對農村社區社會經濟狀況的影響：在泰國烏隆他尼省的研究

摘要：本研究旨在評估新冠肺炎疫情對泰國烏隆他尼省農村社區社會經濟狀況的影響。方法：共有 1050 名參與者參與了一項橫斷面在線調查，並分享了他們對持續流行的經驗。使用描述性統計來分析數據。結果：我們的分析表明，該流行病在心理上對當地人產生了重大影響，導致社會經濟脆弱。值得注意的是，我們發現無論社會經濟地位 (42–47%)、收入水平 (32–43%) 和行業參與度 (38–41%)，當地家庭都擔心他們的收入損失。然而，隨著收入的增加，壓力水平會降低。研究結果表明，政府轉移支付因其可靠且不間斷的收入流動而成為減輕壓力的重要因素。與我們的提議相反，疫情壓力較少被觀察到，這可能是因為人們對政府的信任和有效的抗疫對策遏制了疾病。結論：本研究發現新冠肺炎對當地人的健康、心理和收入有重大影響。這項研究是最早提供有關新冠肺炎在農村社區家庭層面的早期健康和社會經濟影響的經驗證據的研究之一，這對於製定緩解當地社區層面疫情和防止進一步損失的政策至關重要。

关键词：影響評估，新冠肺炎流行病，農村社區，烏隆他尼省。

1. Introduction

The COVID-19 outbreak and government-led measures to contain it have widespread effects on rural economies across global. This disease affects all aspects of rural society, both directly when people from rural communities fall ill, but also because of the social distancing restrictions that are in place to limit the progress of the disease. It is affecting household incomes and rural businesses in every sector of Asian's diverse rural economies, as well as charitable and community organizations. Some of these impacts will also be medium- or long-term.

The literature also indicates that past crises such as foot and mouth disease outbreaks in the UK have significantly affected rural economies. We only targeted rural areas for various reasons: first, rural communities usually face financial constraints, and the ongoing pandemic has exacerbated the financial stress in rural economies around the globe. Furthermore, in rural areas, usually, healthcare infrastructure is also relatively low, including limited diagnostic facilities, healthcare staff, isolation rooms and personal protective equipment (PPE) [1, 2] that may adversely affect rural communities.

Since COVID-19 is a very different and unprecedented disease, its adverse effects on local communities in Thailand were much higher during its initial spread period. Moreover, given the devastation in Thailand and other parts of the world caused by the epidemic, it is necessary to explore its psychological, social and economic effects on local households. Therefore, we are particularly interested in investigating the health and socioeconomic impact of COVID-19 on local communities in rural areas of Udon Thani province of Thailand. We hypothesize that the COVID-19 epidemic psychologically and socio-economically affected local people considerably regardless of their socio-economic status and income level.

This study is theoretically and practically important because we attempt to help maintain the sustainable wellbeing and livelihood of local communities. It is important to devise policies to ease the burden of the outbreak and prevent further losses at the local community level. Additionally, it is also essential to retain everyday socio-economic life for sustainable development for all people in a similar situation worldwide.

2. Materials and Methods

2.1. Data Collection

The data were collected during in Udon Thani province of Thailand. The period of collection was from June to August of 2022.

2.2. Participants

A total of 1,050 participants were residents of different rural villages across the Udon Thani province of Thailand. This cross-sectional study's criteria included a minimum of 18 years of age, a resident of Udon Thani province and, most notably, a village representative.

2.3. Survey Scale and Measurement Instruments

In this research, we have used closed-ended questions and adopted various factors from previous studies to investigate the psychological and socioeconomic impact of COVID-19 on rural communities in the Udon Thani province of Thailand. The questionnaire comprised several questions regarding the effect of COVID-19 on the health and livelihoods of rural communities.

2.4. Reliability Tests

Cronbach's alpha for the reliability or consistency of data, the value of Cronbach's alpha is measured. The threshold value of Cronbach's alpha should be above 0.7 in order for the data to be reliable. In this study, the value is 0.712 for the questionnaire, which is above the threshold value and is thus acceptable. This value suggests that the factors used are internally consistent and reliable.

2.5. Data Analysis

The current research used descriptive statistics to analyze the data. The descriptive statistical analyses of all demographic and other variables of interest were performed through Statistical Package for Social Science (SPSS), and Microsoft Excel was used to produce graphs and charts. Descriptive statistics were employed to explain the sample features, psychological and socioeconomic impacts on local households by the income level, socio-economic status and main sources of income. We also assessed the reliability of the data using Cronbach's alpha. The value of Cronbach's alpha was 0.712, which shows sufficient reliability of our data.

3. Results

The sample description most participants' annual income was less than 13,000 baht, while only 0.57% of respondents earn the more than 25,000 baht per year. Additionally, in our sample, 27.62% of participants belong to high socio-economic status, while 72.38% belong to low socio-economic status. Furthermore, in terms of primary sources of income, most of the respondents reported that they are mainly engaged in farming (40.00%), followed by employment outside the country (17.05%), while 28.67% are locally employed and 4.47% do business. However, only 9.81% of the survey participants reported that they received a government transfer payment. Details of the sample are presented in Table 1.

Table 1 Sociodemography of rural communities in the Udon Thani province of Thailand (n = 1,050)

Characteristics	Number	Percentage
Gender		
Male	475	45.24
Female	575	54.76
Age		
18 – 29	357	34.00
30 – 49	526	50.09
50 – 60	167	15.91
Mean ± SD	39.05 ± 4.24	
Median (Min : Max)	39 (18:60)	
Yearly income level		
<10,000	305	29.05
10,001-13,000	397	37.81
13,001-15,000	179	17.05
15,001-20,000	111	10.57
20,001-25,000	52	4.95
>25,000	6	0.57
Main sources of income		
Family farming	420	40.00
Business	47	4.47
Local employment (salaried/wages)	301	28.67
Employment outside the village	179	17.05
Government transfer payments	103	9.81
Main industries where the villagers are involved		
Agriculture	342	32.57
Food	219	20.86
Livestock	255	24.29
Tourism	48	4.57
Others	186	17.71
Socio-economic status		
High	290	27.62
Low	760	72.38

3.1. Psychological Impact of COVID-19

The results reveal that the most significant psychological pressure on the rural community is related to income (52.0%), followed by an increase in spending (28.0%), health concern (11.0%) and, ultimately, COVID-19 epidemic concern (9%). Similarly, when we analyzed the data in terms of socio-economic status, the results indicate that most participants are concerned about income regardless of their socio-economic status. Notably, people with low socio-economic status were mostly worried about their income (47%), followed by increased expenses (26%), health (23%) and epidemic (4%). The situation of people with high socio-economic status also remains relatively similar (Table 2). It suggests that local people are anxious about their income because some industries were partially operating due to the COVID-19 epidemic, while others were closed entirely. Moreover, many products' demand tremendously decreased, leading to economic and employment losses globally. Additionally, due to business closures and supply chain disruptions, the price of many commodities increased, which resulted in psychological stress among local people about meeting the increased expenditures.

We further analyzed the impact of COVID-19 on

rural people's psychology by income level. We found that income was the most crucial driver of psychological stress. Mainly, people with an annual earning of < 13,000 baht faced a higher level of stress. However, as income increases, the level of stress reduces, the value ranges between 32% and 43% of the total, which is followed by the pressure of spending (30%–41%), health concerns (15%–28%) and the least worries about the pandemics (3%–10%). These results show the uniformity of the values of the different types of pressures across the given income levels. It can be inferred that regardless of the income level, everyone is more concerned and worried about the income in crisis times. The results are presented in Table 2.

Table 2 Psychological impact on rural communities

	Income pressure	Spending pressure	Health pressure	Epidemic pressure
Psychological pressure	52	28	11	9
Psychological pressure by socioeconomic status				
Household status				
High	42	21	19	18
Low	47	26	23	4
Psychological impact on different factors by income levels				
< 10,000	43	30	19	8
10,001-13,000	41	33	20	6
13,001-15,000	41	41	15	3
15,001-20,000	35	33	27	5
20,001-25,000	32	35	28	5
> 25,000	39	34	17	10

3.2. Psychological Impact by Main Income Sources

Fig. 1-A shows the psychological impact by primary sources of household income in detail. The results reveal that the worry of income is given the highest priority, followed by spending, health and epidemic, with the range of values in percentages given as 38–43%, 25–29%, 21–26% and 7–11%, respectively. It can be noted that the source of income does not change drastically for the stress/worry levels. Moreover, the government transfer payment shows lower income stress/worry at 38% compared with the rest of the sources. This suggests that people receiving government transfer payments are less stressed because of the reliable and continuous income flow.

3.3. Psychological Impact by Main Industries

Fig. 1-B depicts the impact of different types of worry on local households related to main industries. The trends in primary sectors and types of anxiety are similar to previous results. Income worry is the main issue for all respondents in every industry (38%–41%), and the lowest level of concern was the epidemic itself (7%–10%). These results show that for most households, the worry about income puts more pressure than other types of concerns. This might be because people assume that if they have enough money, they can probably manage their household expenses, including health and pandemic related expenditures. Most importantly, one of the main reasons for high stress related to income is that rural communities are

usually financially fragile, and the COVID-19 epidemic has exacerbated their financial tension;

therefore, they are highly concerned about the flow of income and expenditures.

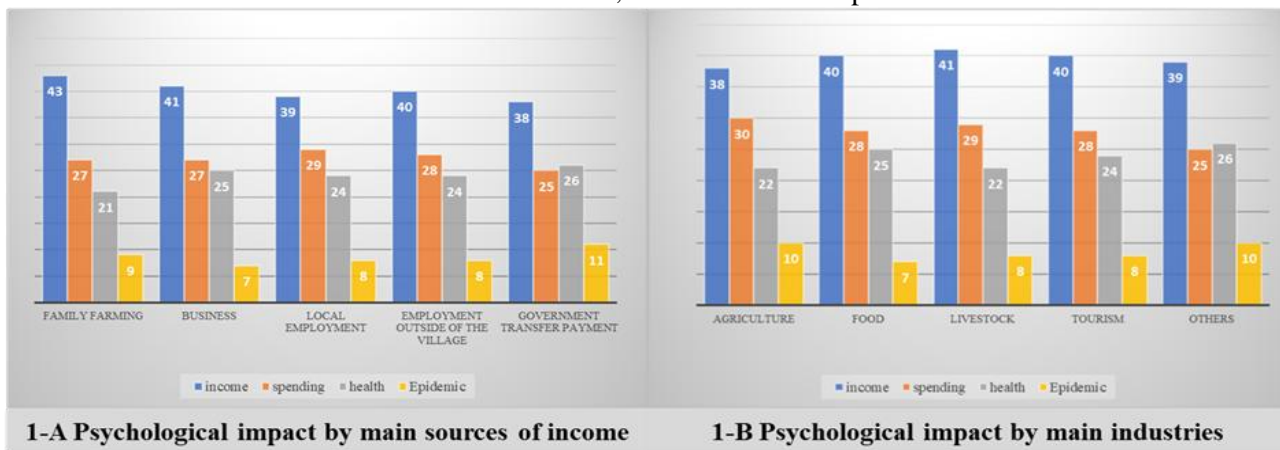


Fig. 1 Psychological impact: 1-A – by main sources of income; 1-B – by main industries

4. Discussion

Due to the unprecedented outbreak of COVID-19, various measures were taken to curb the disease, including business closures, travel restrictions and lockdown, and people were required to maintain social distancing, which resulted in psychological stress related to income, increased expenditure and health [3–8]. Additionally, during the initial outbreak period, many businesses were closed wholly or partially, and the economy was slowed down. Rural economies often strive for financial stability, and in times of highly uncertain and unpredictable situations such as the COVID-19 pandemic, the rural communities are highly vulnerable, mainly due to loss of income and employment. [1, 2, and 7]

This study aimed to examine these issues by taking a sample of 1,050 rural participants in the Udon Thani province of Thailand. This research provides empirical evidence regarding the early health and socio-economic impact of COVID-19 at the household level in rural communities, which is critical in devising policies to ease the burden of the outbreak and prevent further losses at the local community level. This study’s findings reveal that the lockdown, travel restrictions, increased expenses, uncertainty and fear of contracting the infection significantly affected local people psychologically, leading to economic vulnerability.

Particularly, the results reveal that people are worried about their income losses regardless of their socio-economic status, level of income and industry involvement. We also found that the level of income has a direct negative relationship with stress. The study results show that lower income levels pose higher pressure; however, as income increases, the level of stress reduces. The possible reasons for high stress of income are attributed to the loss of income and employment, increased expenditure and commodity price hikes, among others. Furthermore, the local people who receive government transfer payments showed lesser stress due to the reliable and

uninterrupted flow of income and various subsidies provided by the government.

5. Conclusion

Due to the outbreak of the COVID-19 epidemic, Thailand has recently experienced a significant impact of the COVID-19 epidemic on the local people’s health and economy. Moreover, due to lockdown, restrictions on goods’ movement and supply chain disruptions resulted in considerable socio-economic losses. Additionally, the rising price of agricultural input, livestock feed and other commodities led to decreased cash in hand and raised concerns about income. Overall, the COVID-19 resulted in a psychological and socio-economic impact on local people. The findings show that the pandemic adversely affected the health and livelihoods of rural communities in the Udon Thani province of Thailand. The prime concern of the respondents was the loss of income across industries and socio-economic status. We further find that continuous and higher income levels can significantly reduce stress among local households because people believe that income is essential for sustaining well-being and livelihoods during such heightened and unpredictable situations.

This study presents an impact mechanism of a particular public crisis (COVID-19) on local people’s mentality, with which economic and industrial indicators and social status function over local people and families psychologically; thus, governmental policies find their theoretic ground from a psychological perspective. The measures taken by the Thai government to fight against the deadly virus have been praised globally because Thailand successfully controlled the spread of the disease. Therefore, this study occupies an important position for policymakers, research scholars and practitioners

Since the outbreak of the COVID-19 pandemic, a huge number of people around the world have been greatly affected and the number of confirmed COVID-

19 cases has been rising day by day, with serious implications for the lives of humans on earth. Hence, there is a need to consider the adverse effects of COVID-19 on rural people seriously. Moreover, it is necessary to educate people about managing stress to reduce the psychological impact on rural people and protect the general population because 'prevention is better than cure'. Additionally, wearing a face mask potentially reduces the chances of disease spread.

6. Limitations and Further Study

This research has some limitations that provide room for further research. First, the current research was cross-sectional; it is thus not feasible to draw causal inferences. Longitudinal studies are required to produce causal inferences. Second, for future research could compare the difference between the psychological and socioeconomic impact of the COVID-19 pandemic in rural and urban communities.

References

- [1] ADUNLIN G., MURPHY P.Z., and MANIS M. COVID-19: How Can Rural Community Pharmacies Respond to the Outbreak? *Journal of Rural Health*, 2021, 37(1): 153-155. doi:10.1111/jrh.12439.
- [2] OGUNKOLA I.O., ADEBISI Y.A., IMO U.F., ODEY G.O., ESU E., and LUCERO-PRISNO III D.E. Rural communities in Africa should not be forgotten in responses to COVID-19. *International Journal of Health Planning and Management*, 2020, 35(6): 1302-1305. <https://doi.org/10.1002/hpm.3039>
- [3] SHAFI M., LIU J., and REN W. Impact of COVID-19 pandemic on micro, small, and medium-sized Enterprises operating in Pakistan. *Research in Globalization*, 2020, (2): 100018. <https://doi.org/10.1016/j.resglo.2020.100018>
- [4] UNCTAD. *The COVID-19 Shock to Developing Countries: Towards a "whatever it takes" programme for the two-thirds of the world's population being left behind*. United Nations publication issued by the United Nations Conference on Trade and Development, 2020. https://unctad.org/system/files/official-document/osg2020d1_en.pdf
- [5] ZHANG Y., and MA Z.F. Impact of the COVID-19 pandemic on mental health and quality of life among local residents in Liaoning Province, China: a cross-sectional study. *International Journal of Environmental Research and Public Health*, 2020, 17(7): 2381. doi:10.3390/ijerph17072381.
- [6] ALI A., AHMED M., and HASSAN N. Socioeconomic impact of COVID-19 pandemic: evidence from rural mountain community in Pakistan. *Journal of Public Affairs*, 2021, 21(4): e2355. doi:10.1002/pa.2355
- [7] PHILLIPSON J., GORTON M., TURNER R., SHUCKSMITH M., AITKEN-MCDERMOTT K., AREAL F., COWIE P., HUBBARD C., MAIOLI S., MCAREAVEY R., SOUZA-MONTEIRO D., NEWBERY R., PANZONE L., ROWE F., and SHORTALL S. The COVID-19 pandemic and its implications for rural economies. *Sustainability*, 2020, 12(10): 3973. <https://doi.org/10.3390/su12103973>
- [8] ILO. *ILO Monitor: COVID-19 and the world of work. In: Updated estimates and analysis*. 6th ed. International Labor Organization, Geneva, 2020.

参考文献:

- [1] ADUNLIN G.、MURPHY P.Z. 和 MANIS M. 新冠肺炎：農村社區藥店如何應對疫情？農村衛生雜誌，2021，37(1)：153-155。土井:10.1111/jrh.12439。
- [2] OGUNKOLA I.O.、ADEBISI Y.A.、IMO U.F.、ODEY G.O.、ESU E. 和 LUCERO-PRISNO III D.E.在應對新冠肺炎時，不應忘記非洲的農村社區。國際衛生規劃與管理雜誌，2020，35(6)：1302-1305。<https://doi.org/10.1002/hpm.3039>
- [3] SHAFI M.、LIU J. 和 REN W. 新冠肺炎大流行對在巴基斯坦經營的微型、小型和中型企業的影響。全球化研究，2020，(2)：100018。<https://doi.org/10.1016/j.resglo.2020.100018>
- [4] 貿發會議。新冠肺炎對發展中國家的衝擊：為世界上三分之二的落後人口制定“不惜一切代價”的計劃。聯合國貿易和發展會議發布的聯合國出版物，2020年。https://unctad.org/system/files/official-document/osg2020d1_en.pdf
- [5] ZHANG Y.、和 MA Z.F. 新冠肺炎大流行對中國遼寧省當地居民心理健康和生活質量的影響：一項橫斷面研究。國際環境研究與公共衛生雜誌，2020年，17(7)：2381。土井:10.3390/ijerph17072381。
- [6] ALI A.、AHMED M. 和 HASSAN N. 新冠肺炎大流行的社會經濟影響：來自巴基斯坦農村山區社區的證據。公共事務雜誌，2021年，21(4)：e2355。土井:10.1002/pa.2355
- [7] PHILLIPSON J.、GORTON M.、TURNER R.、SHUCKSMITH M.、AITKEN-MCDERMOTT K.、AREAL F.、COWIE P.、HUBBARD C.、MAIOLI S.、MCAREAVEY R.、SOUZA-MONTEIRO D.、NEWBERY R.、PANZONE L.、ROWE F. 和 SHORTALL S. 新冠肺炎大流行及其對農村經濟的影響。可持續性，2020年，12(10)：3973。土井:10.3390/su12103973
- [8] 國際勞工組織。國際勞工組織監測：新冠肺炎和工作世界。在：更新的估計和分析。第6版。國際勞工組織，日內瓦，2020年。