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The Effects of The COVID-19 Pandemic on Household Finances and Management in Laos

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ABSTRACT

This research explores the borrowing situation in major cities of Lao PDR and assesses the impact of the Covid-19 pandemic on borrowing activities. Data was collected from Lao Telecommunication Customers between August 2021 and January 2022 via a Google Forms questionnaire, involving participants primarily from Vientiane Capital, Luangprabang, Savannakhet, and Champasack. The study employed descriptive and econometric methods to analyze the data. It revealed a substantial portion of participants engaged in borrowing, with patterns influenced by factors such as gender, ethnicity, and borrowing experience. Interest rates increased significantly during the pandemic. Borrowing was mainly for household goods and food consumption. The pandemic led to an increased tendency to borrow and higher borrowing amounts. Policymakers need to address the rising debt and interest rates by providing financial compensation to those adversely affected and implementing measures to control interest rates, loan conditions, and repayment periods. Additionally, government and aid organizations should support those impacted by the pandemic in sustaining their livelihoods.

1. Introduction

The COVID-19 outbreak in Lao PDR resulted in the enforcement of a nationwide lockdown from 30th March to 19th April 2020, which was extended to 1st June 2021. As of December 21, 2022, 06:15 GMT, the country has recorded 217,526 COVID-19 cases and 758 deaths. The pandemic's economic impact began before the first confirmed cases, causing a decline in travel and tourism, international trade, and delaying major investment projects. The lockdown and closing of international checkpoints halted the economy and disrupted supply chains, resulting in a sudden increase in unemployment. These effects spread to all sectors of the economy, including the public, business, and household sectors. The impact on households is essential as households need food, basic livelihoods, and health care. Lao PDR has

many households still do not have enough income, and they need to spend their reserve to pay for food, medical care, children's education, clothing, shelter, and other necessities of life beyond their means. The lack of savings will directly affect livelihoods, likely increasing borrowing. Additionally, the outbreak increased the health cost of protection and prevention activities. The current COVID-19 outbreak has significantly impacted economic development, both direct and indirect channels. The direct effect includes an increasing health cost of protection and prevention activities such as vaccination, medicines, health service, etc. The indirect effect is through decreasing economic activity, reduced household income, and increased borrowing. The study aims to investigate how the pandemic has affected household borrowing behavior and estimate the pandemic's effect on borrowing activity and volume using descriptive and econometric

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techniques. The research specifically aims to analyze the debt activity of individuals, estimate the pandemic's effect on debt propensity and volume, and analyze the partial effect of the pandemic on debt propensity and volume by gender and ethnicity. The impact of the outbreak on households is crucial as they need basic necessities, and those without enough income may resort to borrowing to cover their expenses.

2. Literature Review

The global socio-economic and development landscape has been significantly affected by the outbreak of COVID-19. Developing countries like Laos have faced particularly challenging situations due to the pandemic's adverse effects. The impact of the pandemic on Laos has been diverse and has affected various aspects of the country's socio-economic development. Lao socio-economics has been significantly impacted by COVID-19. The World Bank (2020) reports that the country's economic growth is projected to decrease by 0.6% in 2020, which is down from 6.8% in 2019. Several factors have contributed to the decline, including the disruption of supply chains, the decrease in foreign direct investment, and the decline in international trade. Tourism, which is a significant contributor to the country's economy, has also declined due to the pandemic. The COVID-19 pandemic has caused households' debt levels to rise significantly as individuals have struggled to make ends meet with job losses and reduced income.

A recent study conducted by the Federal Reserve Bank of New York (2020) has revealed that household debt increased by $87 billion in the third quarter of 2020, with mortgage and credit card balances being the major contributors to the rise. The study further highlighted that delinquent accounts had also increased, with credit card delinquencies reaching the highest level since 2011. Due to the pandemic, households have altered their spending habits, with a decrease in non-essential expenditures like travel and entertainment. The National Bureau of Economic Research (2020) conducted a survey that indicated households reduced non-essential spending by approximately 40% during the pandemic. However, spending on essential items such as food and healthcare increased. As a result of the pandemic, consumer spending patterns have undergone significant changes, with individuals and households prioritizing essential expenses while limiting non-essential spending, according to Freedman and Kuester (2020). These shifts have affected businesses and the economy as a whole.

The COVID-19 pandemic has resulted in a considerable impact on the financial wellbeing and administration of individuals and households globally. The outbreak of the virus has created a widespread economic disturbance, causing reduced income, job losses, and increased debt. As a result, many individuals and households are facing significant financial challenges, such as difficulties in bill payment, accessing credit, and

managing debt. Multiple studies have been conducted to assess the influence of COVID-19 on financial health, management, and household debt. The pandemic has resulted in a significant increase in household debt burdens, with many households experiencing elevated debt levels due to job losses and decreased income. Several studies have demonstrated that household debt has increased substantially in various countries, including the United States, Canada, and the United Kingdom, as reported by Barrero et al. (2020), Brown et al. (2020), and Xu & Gupta (2021).

During the pandemic, financial management and literacy have become even more critical as individuals and households face the challenges of reduced income and increased debt. Research has demonstrated that individuals with higher levels of financial literacy are better equipped to handle their finances during times of crisis, as highlighted by Lusardi & Mitchell (2020). The pandemic has emphasized the significance of social safety nets and government support programs in shielding households from financial hardship. Studies have shown that programs such as unemployment insurance and stimulus payments have been effective in reducing financial stress for many households, according to Cajner et al. (2020). The COVID-19 pandemic has significantly impacted the financial wellbeing and administration of individuals and households worldwide, resulting in job losses, reduced income, and increased debt. Consequently, many individuals and households are encountering substantial financial challenges, such as bill payment difficulties, credit access, and debt management. Additionally, the pandemic has led to a shift in financial management practices, with households increasingly using digital channels for banking and financial services. The usage of digital channels for banking and financial services increased by 20% during the pandemic, according to McKinsey & Company's survey (2020). The survey also indicated that households were more likely to seek financial advice and guidance during the pandemic.

3. Research Methodology

To achieve the study's objectives, a quantitative approach was utilized. A descriptive data approach was employed to analyze the borrowing activity's status, and an econometric technique was utilized to measure the COVID-19 outbreak's impact on borrowing behavior, including propensity and volume. The econometric technique consisted of two main models: the Logit model for measuring the effect of COVID-19 on borrowing propensity and the OLS model for measuring the effect of COVID-19 on borrowing volume. The equations used for the econometric estimation are provided below:

$$P(\text{borrow\_p} = 1) = f(\text{Covid}, \text{borrow}_{\text{pre}}, \mathbf{x})$$

$$\ln(\text{borrow\_v}) = b_0 + b_1\text{Covid} + b_2\text{borrow}_{\text{pre}} + w\theta + u$$

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Where *borrow_p* is a binary variable, it takes the value 1 if the individual borrows during the Covid-19 outbreak and 0 if the individual does not borrow during the Covid-19 outbreak. While *borrow_v* shows the volume of borrowing. *Covid-19* is a variable showing if an individual is receiving impact from the covid-19 outbreak. This study defines individuals who live in the lockdown village from an authority, namely the ***red village*** as a proxy to identify the total effect of Covid-19.

The borrow$_{pre}$ variable shows a borrowing experience before the outbreak. **x** and **w** are the vector of the individual's characteristics, including the head of household, female, age, education, marital status, ethnicity, occupation, and income level. The definition of the variables in equations is shown in the table below.

Table 1. Variable definition

Variable	Measurement
borrow_p	1 = borrowing decision within 18 months after April 2020, 0 = otherwise
borrow_v	borrowing amount within 18 months after April 2020,
Covid	1 = resident of the red village, 0 = otherwise
borrow$_{pre}$	1 = borrowing decision with 18 months before April 2020, 0 = otherwise
Head of household	1 = head of household, 0 = otherwise
Female	1 = female, 0 = otherwise
Age	Age in years
Education	Education level in years
Marriage	1 = marriage, 0 = otherwise
Ethnicity	1 = Lao, 0 = otherwise
Occupation	1 = employee, 0 = otherwise
Income	Income in a million LAK

Source: Author's compilation (2022)

. The ***borrow_v*** is a continuous variable estimated by the least squared method. The estimation would account for potential homoscedasticity. On the other hand, the variable of ***borrow_p*** is a binary variable suitable to be estimated by the maximum likelihood, namely the ***logit model.*** The results from the model are calculated into the marginal effect at the mean.

4. Results and Discussion

4.1 Participants' Socio-Demographic Profile

A questionnaire created with Google Forms was used to gather information from Lao Telecommunication Customers across the nation, except for Khammuane Province, for the study. The sample size was 707, and data was collected from August 2021 to January 2022. The majority of participants were from major provinces such as Vientiane Capital, Luangprabang, Savannakhet, and Champasack, accounting for 27.02%, 13.15%, 10.18%, and 9.62% of the total, respectively (see the appendix for the rate of participants from all provinces). Out of the respondents, 52.76% identified as male, while 47.24% identified as female. The majority of respondents were between the ages of 20 to 30, which made up 43.56% of the total number of respondents. 37.91% of respondents reported having an undergraduate degree, while 22.35% and 22.07% had a higher secondary school and vocational school education, respectively. Only 7.64% reported having an education higher than an undergraduate degree.

Regarding marital status, 51.91% of respondents were single, while 45.54% were married. Household sizes were distributed as follows: 12.3% had a household size of 1-3, 62.52% had 4-6 members, and 26.97% had 7 or more members. In terms of ethnicity, the majority, at 86.42%, belonged to the Lao-Thai group, followed by 5.94% from the Mong-Emeng group, 5.8% from the Mon-Khmer group, and 1.84% from other ethnic groups.

Table 2 Participants' socio-demographic profile

Characteristics	Participants	Percent (%)
Gender		
Male	373	52.76
Female	334	47.24
Age (year)		
19 or younger	110	15.56
20-30	308	43.56
31-41	174	24.61
42-52	70	9.90
53 or older	45	6.36
Education level		
No school	8	1.13
Primary school	14	1.98
Lower secondary school	49	6.93
Higher secondary School	158	22.35
Vocational school	156	22.07
Undergraduate	268	37.91
Higher than undergraduate	54	7.64
Marital status		
Single	367	51.91
Married	322	45.54
Others	18	2.55
Household size (person)		
1 - 3	87	12.3
4 - 6	442	62.52
7 or more	178	26.97
Ethics group		
Lao-Thai	611	86.42
Mon-Khmer	41	5.8
Mong-Emeng	42	5.94
Others	13	1.84

Source: Author's compilation (2022)

Based on the table 3, it can be observed that the majority of the respondents, 40.88%, are not employed or are working as government staff, 36.78%, are employed as employees, and 13.58% being business people. With a small percentage, 0.85%, being employers, when it comes to the total household income per month, the highest percentage, 61.53%, earn less than 4,000,000 LAK. On the other hand, 21.07% earn between 4,000,000 and 8,000,000 LAK, while only 6.08%, earn more than 16,000,000 LAK.

Tabel 3 Participants' employment profile and income

Employment status		
Employees	260	36.78
Employer	6	0.85
Business man	96	13.58
Self employed	56	7.92
Others (not working or government staff)	289	40.88

Total household income per month (LAK)		
Less than 4,000,000	435	61.53
4,000,000 – 8,000,000	149	21.07
8,000,001 – 12,000,000	46	6.51
12,000,001 – 16,000,000	34	4.81
More than 16,000,000	43	6.08

Source: Author's compilation (2022)

4.2 Data Analysis and Econometrics Results

In this section, the results are presented separately for two aspects: the borrowing situation and correlation of covid 19 and borrowing.

a. Borrowing Situation

Regarding the borrowing situation, Figure 1(a) shows that 35.5% of the total sample borrowed money after the 18-month outbreak period. The percentage of borrowing varies by gender and ethnicity, with males showing a higher proportion of borrowing at 39.5% compared to females at 32.4%, and the Lao-Tai ethnic group having a higher share of borrowing at 39.7% compared to the non-Lao-Tai group at 34.7%. Figure 1(b) shows that there is a difference in the share of borrowing between those who had borrowed before the outbreak and those who had not. Specifically, 12.67% of people who had borrowed before also borrowed after the outbreak, while 66.4% of those who had borrowed before continued to borrow after the outbreak. It is also worth noting that the interest rates of loans increased from 4.5% to 5.76%, indicating that there is potentially an increased demand for loans leading to an increase in interest rates as presented in Figure 1(c)

Figure 1. Propensity of borrowing by gender and ethnicity
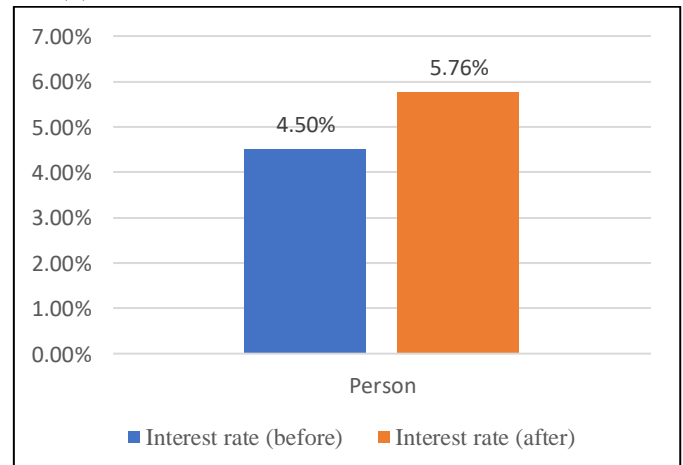(a) Proportion of borrowing
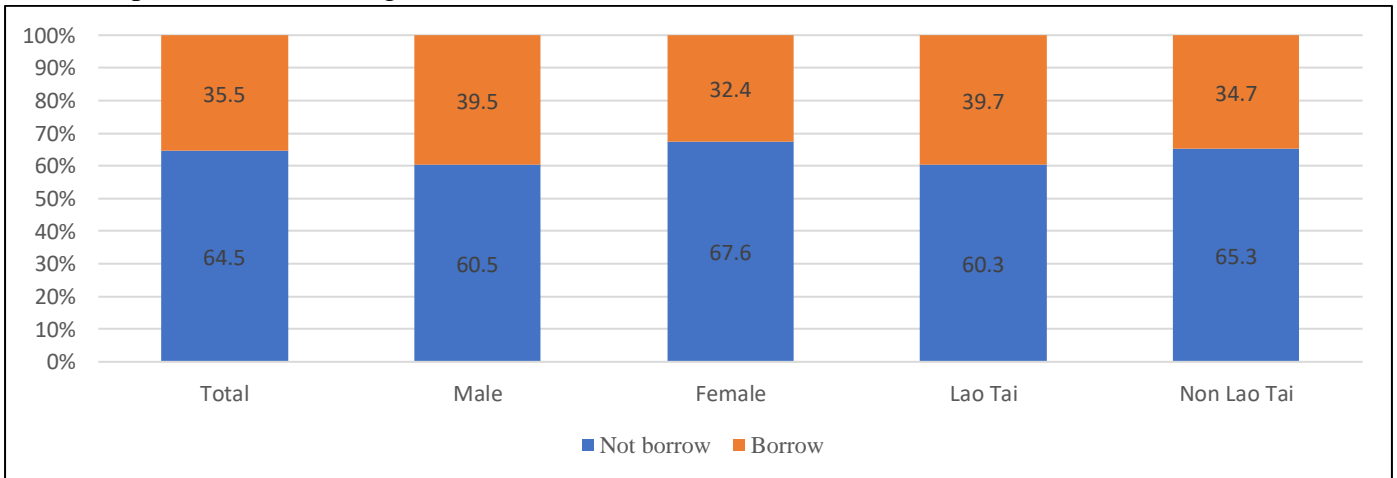
(b) Experience of borrowing
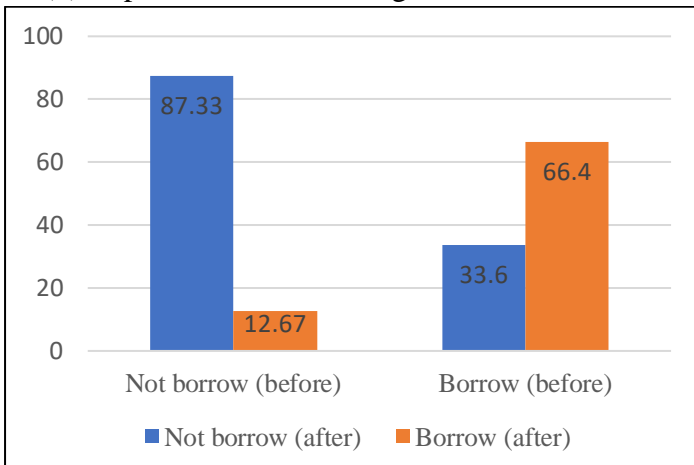
(c) Interest rate

Source: Authors based on survey(2022)

The purpose of borrowing varies depending on the occupation type. Borrowing money is most commonly done for purchasing household goods (28%), followed by food (20%), investment (17%), health care (11%), and events (5%). Other purposes account for 19% of borrowing. Employees and household laborers tend to borrow more for household goods compared to those who work on their own. On the other hand, those who work on their own have a higher share of borrowing for investment, accounting for up to 45%, while households with labor workers use up to 29% of their borrowing for investment. This information is presented in Figure 2.

Figure 2-Displays the purpose of borrowing
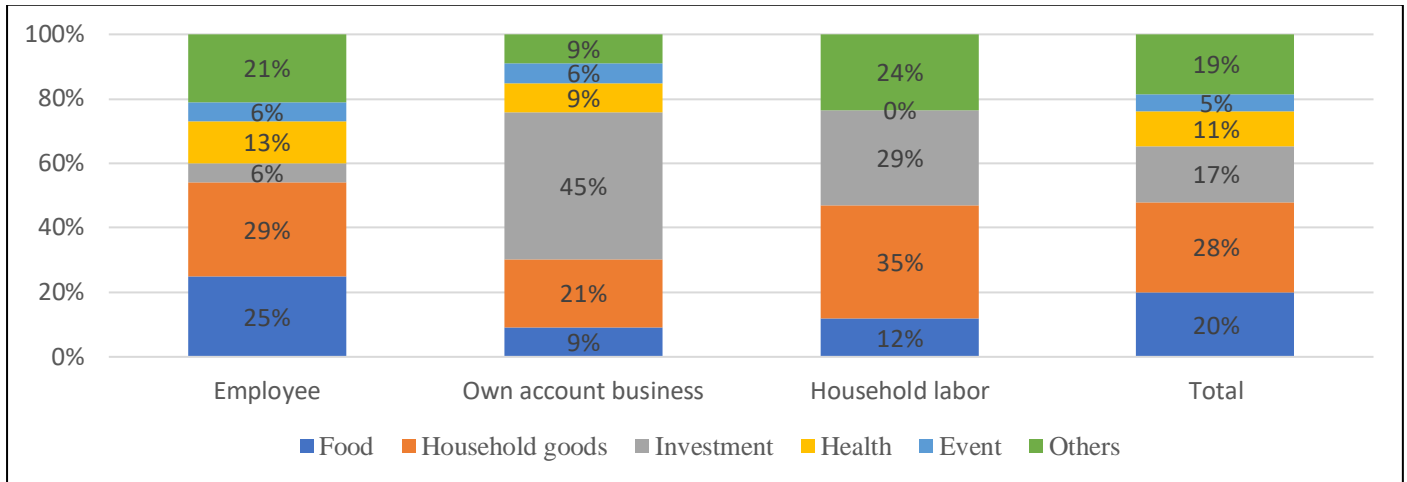
Source: Authors based on survey(2022)

b. Correlation of Covid 19 and Borrowing

There are four distinct types of the Covid 19 outbreak's impact, which include (1) a household member or the respondent contracting the virus, (2) residing in a declared lockdown village (red village), (3) residing in a village with a high number of infections, and (4) having close relatives who are infected. The study reports the overall percentage of each sample. The prevalence of Covid infection in households is 7%, while the share of respondents living in red villages and highly infected villages is 59.5% and 60.1%, respectively. Additionally, 36.5% of the total sample had infected relatives. The red village serves as a standard for measuring the impact of Covid, as it is an official notification that restricts travel and business operations, resulting in both direct (high infection rate) and indirect (reduced business activity) effects.

Figure 3 – Proportion of Covid influence on respondents
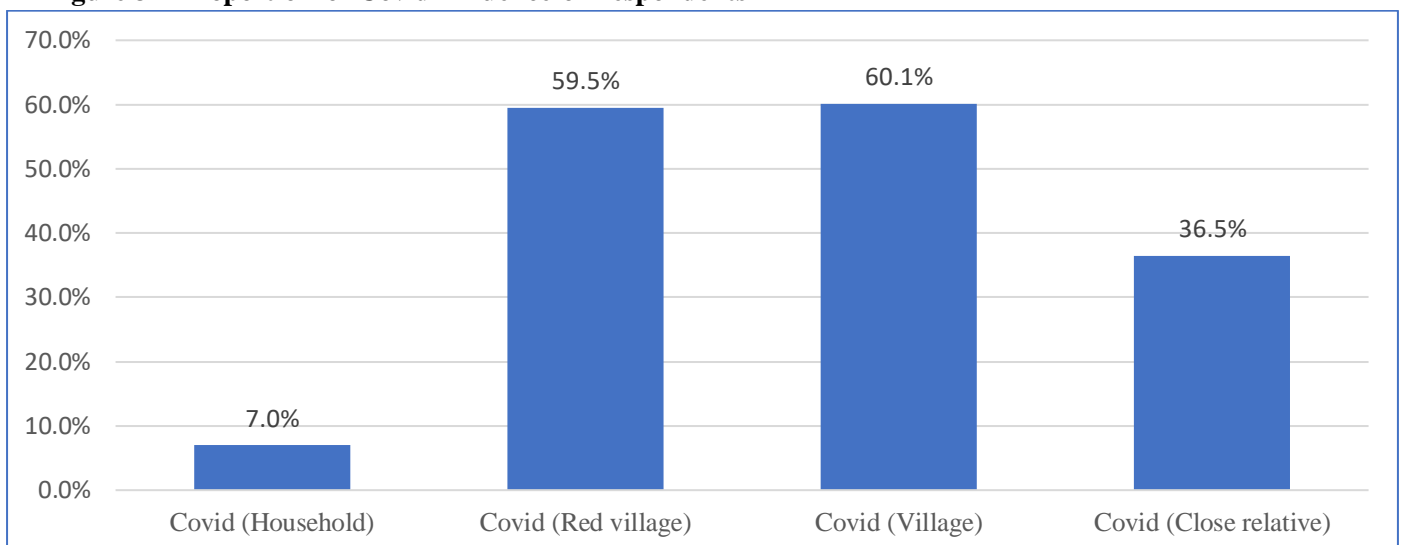
Source: Authors based on survey(2022)

c. Econometrics Results

Table 4 displays the estimation results of the Covid-19 impact on borrowing propensity, while table 5 shows the results for borrowing volume. Each table consists of 5 columns for the total and sub-sample groups (male, female, Lao-Tai, and Non-Lao-Tai), and includes variables such as Covid and borrowing behavior prior to the outbreak. The individual characteristics were used as control variable when running regression, however they were omitted for simplicity. The author also check for multicollinearity as well as heteroscadasticity problem but it does not exist. After data cleaning and restricting the sample for estimation, the sample size differs across the estimations. The pseudo-R square ranges from 0.23 to 0.32, and the R square ranges from 0.18 to 0.38, indicating a sufficient level of explanation for the variance of the independent variables.

Previous borrowing behavior strongly influenced borrowing during the Covid period. The marginal effect suggests that respondents who had borrowed before the outbreak were 54% more likely to borrow again, with the effect on the volume of borrowing ranging from 32% to 43%. The effect on the entire group was approximately 39%.

The Covid-19 outbreak had a positive impact on both borrowing propensity and volume. In table 4, the effect of Covid increased the likelihood of borrowing by 15%, with statistical significance at a 5% level. The effect varied by gender, with a statistically significant effect of 18% for males and 8% for females. Among ethnicity groups, the Lao-Tai group had a significant increase in borrowing propensity of 17%, while the effect on the Non-Lao-Tai group was weak at 3% and statistically insignificant.

Table 4: Results from the marginal effect of Logit estimation

	Total	Male	Female	Lao-Tai	Non Lao-Tai
Covid	0.15**	0.18**	0.08	0.17**	0.03
	(2.24)	(2.15)	(0.73)	(2.37)	(0.17)
Borrow before	0.54***	0.49***	0.60***	0.54***	0.55***
	(10.99)	(7.14)	(8.28)	(9.94)	(4.02)
Individual or household characteristics	Yes	Yes	Yes	Yes	Yes
Observations	301	163	138	255	46
Pseudo R-square	0.26	0.23	0.32	0.26	0.32

Source: Authors based on survey 2021. Note: Z statistics are in parentheses and * $p<0.1$ ** $p<0.05$ *** $p<0.01$.

In table 5, the results on volume to borrow are similar to the propensity to borrow. The effect is seemingly high, and a potential reason is that individuals borrow for use in the household. The effect of the Covid outbreak is high for every group, but it is statistically significant only in the total and Lao-Tai group. The effect on the whole group is 1.82, or approximately 182%. Similar to the propensity to borrow, the effect on male individuals is higher than on female individuals; the effect on the Lao-Tai group is higher than on the non-Lao-Tai group. Although the effect on several sub-group is statistically insignificant, the economic impact is very high.

Table 5: Results from ordinary least square estimation

	Total	Male	Female	Lao-Tai	Non Lao-Tai
Covid	1.82**	1.93	1.16	1.75*	1.50
	(2.09)	(1.60)	(0.92)	(1.84)	(0.63)
Borrow before	0.39***	0.32***	0.43***	0.37***	0.41***
	(7.16)	(4.30)	(5.39)	(6.41)	(2.50)
Individual or household Characteristics	Yes	Yes	Yes	Yes	Yes
Observations	317	171	146	271	46
R square	0.20	0.18	0.29	0.19	0.38

Source: Authors based on survey 2021. Note: Z statistics are in parentheses and * $p<0.1$ ** $p<0.05$ *** $p<0.01$

5. Conclusion

In this study, the aim is to examine the borrowing situation and assess the impact of the Covid outbreak on borrowing activity in major cities in Lao PDR. Both descriptive and econometric methods were used to analyze the data. The results indicate that 35.5% of the sample borrowed money, and the share of borrowing varied depending on gender, ethnicity, and borrowing experience. Furthermore, the interest rates increased by 4.5% before the outbreak and 5.76% after the outbreak. The primary purpose of borrowing was for household goods (28%) and food consumption (20%).

The study suggests that the Covid outbreak led to a rise in both the propensity to borrow and the volume of borrowing. Specifically, there was a 15% increase in the propensity to borrow and a 182% increase in the volume of borrowing. Male individuals were more affected than female individuals, and the Lao group was more affected than the Non-Lao group.

The study highlights the need for policymakers to address the rising debt and interest rates by providing financial compensation to those affected by the Covid 19 outbreak. Additionally, financial management measures, such as controlling interest rates, return periods, and loan conditions, should be implemented. The government and aid agencies could also provide support for livelihood factors to those directly affected by Covid-19.

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