

# Impact of COVID-19 on Food Security and Household Income in Herat Afghanistan

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## Abstract

COVID-19 and the lockdown have brought significant effects on the entire economy, especially on food security and the income of households. This study was carried out in Herat, Afghanistan to examine the impact of COVID-19 pandemic and its related lockdown on food security and household income generation. The study site form format of Herat city in Afghanistan experienced a partial lockdown, hence it qualifies for the selection. Both primary and secondary data were used. Using the purposive sampling technique, forty-four respondents were selected as the sample size. The study employed a quantitative and qualitative approach with a descriptive and narrative posture to the presentation, discussion, and analysis of data. A pre-tested semi-structured questionnaire was used for data collection. The results reveal that food insecurity and income reductions are still very common, affecting participants' livelihoods. Disproportionally affected are households whose income comes from Agriculture, transporters, formal and informal labor, as well as sellers. It was concluded that food insecurity is not outside the impact of COVID-19 and its associated partial lockdown in this province.

## Keywords

Food Security, Income, Household, Herat, Regression

## 1. Introduction

COVID-19 is a global pandemic and continues it affect various areas of the national economy not only the agriculture sector which is the main column of most economics (Abroquah, 2020). The main sources of food insecurities around the globe are complex and multidimensional. These sources are associated with several factors, such as poverty, less social and political inclusion, natural disas-

ters, conflicts, and insufficient provision of public services that are also closely related to each other (Abdullah et al., 2019, Sriram & Tarasuk, 2016). Food insecurity includes perspectives such as limited access to food and basic needs including hunger and vulnerability (Devereux & Maxwell, 2001: p. 1). The Food and Agriculture Organisation (FAO) presented that in 2010 almost one billion people in the world were undernourished, which is 40% higher than in the past two decades. Increased occurrences of persistent hunger are mostly in developing countries (Goodall, 2009: p. 4).

The depressive global and regional food insecurity is exacerbated by the effect of the Coronavirus (COVID-19) pandemic. The World Health Organisation (WHO) announced it as a global pandemic in March 2020 (Cucinotta & Vanelli, 2020). COVID-19-related limitations have blocked all phases of the food supply chain, including production, distribution, processing, and consumption (Siche, 2020). The widespread infection of the virus has become a novel public health crisis in most countries and caused consequently significant economic and social crises.

In Afghanistan, the first incidence of infection was reported on February 24, 2020, in Herat City (Afghanistan Ministry of Public Health, 2020). Since then the infection incidences continued to increase day by day all over the country, as the number of incidences with more than 45,000 was the highest among Central Asian countries in early November 2020 (Giap, 2020). The pandemic's effect on food security and prices depends on several factors but the most important is the functioning of the agricultural sector and what occurs to the demand and supply of food items in the country. For that cause, evaluating and analyzing food Security concerns follow from different perspectives (Habtewold, 2018; Mulugeta & Hundie, 2012). The World Bank's recent anticipates showing that, globally, the pandemic is likely to cardamom 49 million people into excessive poverty in 2020 (World Bank, 2020). The United Nations World Food Programme (WFP) approximated that the number of people globally experiencing acute food insecurity would approximately double by the end of 2020 due to income and remittance damages, and the cutting of food systems associated with the pandemic (WFP, 2020a, 2020b). When the pandemic started, many specialists worried that the crisis would lead to sequences of food prices going up (Ravindra et al., 2021). However, global food prices still have been comparatively stable, it will be due to good harvests in the previous season and enough global warehouse conditions (Glauber et al., 2020). Additionally, the COVID-19 pandemic has had several negative impacts on the domestic food supply chain, and it adversely affects food safety through an increase in the prices of different food items (Bene, 2020). The impact of the pandemic is anticipated to differ by type of geography and by type of household, with existing vulnerability to food security likely to be large (Devereux, 2000). So far a considerable number of researchers have evaluated the COVID-19 pandemic implication on global and national economic factors such as global poverty, government spending, GDP growth, employment, budget deficits (ILO, 2020; World Bank, 2020; UN-Habitat & WFP, 2020). Studies on the

impact of the pandemic and its related restrictions on individuals at the household level are rare and limited. Even, the lack of information about the potential effects of the pandemic on households is very obvious. It can be claimed that the economic implication of such a pandemic disproportionately influences the people in the society, related to their socio-economic situation, degree of inclusion in the policy-related action, market access, etc. Therefore, it is important to gain insights into the impacts of this pandemic at the household level to extract appropriate policy implications for support programs and mechanisms to tackle poverty and food insecurity among the population. This research article is going to contribute to the growing body of literature on the economic implications of COVID-19 by investigating its effects on household income and food security in Herat province areas of Afghanistan.

To realize the general objective of the research, the empirical analysis concentrates on answering the following research questions:

- 1) What policy actions and programs have the government undertaken to relieve the impacts of the pandemic at the household level?
- 2) How much (how far) has COVID-19 had effects on the income-generating activities of Afghan households?
- 3) What are the affections of COVID-19 on household food security and nutrition quality?

Firstly, the research focuses on exploring the policy responses of the Afghan government for mitigating the effects of the pandemic on households. Then, the potential influences of the COVID-19 pandemic on the income and food security of households are investigated.

## 2. Literature Review

At the outbreak of the COVID-19 pandemic, governments of several countries decided to lock down their countries to control the spread of the virus and eliminate the increasing case of infected people. The pandemic has affected the service sector including financial markets and banking, as well as weakened trade flows. Effects on firms and the labor market are already observable (OECD, 2020). Food security at the household level can be influenced by various categories of factors. Previous researches found that household' saving (Frongillo et al., 1997); home ownership (Rose, Gundersen, & Oliveira, 1998); financial constraint (Chang, Chattejee, & Kim, 2013); ownership of livestock (Ali & Khan, 2013); education (Kidane, Alemu, & Kundhlande, 2005); access to credit (Gundersen & Gruber, 2001; Ribar & Hamrick, 2003); knowledge of the household about food storage, processing, nutrition and managing illness (Riely et al., 1999); jobs loss and low level of income (Loopstra & Tarasuk, 2013); gender of the household's head (Kassie et al., 2014); family size and better farming practices (Bogale, 2012); remittances and access to market information and age of household's head (Mango et al., 2014); dependency ratio, electricity connection, irrigation availability (Asghar & Muhammad, 2013); monthly income, the structure of the family (Bashir et al., 2013) and infrastructural availability (Gill & Ali Khan, 2010) are

amongst most prominent factors affecting food security at the individual level in household. Where health is the main issue to discuss and the global economy was turbulent. In the labor market, most people lose their jobs, and also the unemployment rate goes high. However, money is the only thing that will be protected to attend to their health. Most of the Covid-19 people are poor. COVID-19 is now even becoming a development of global socio-economic instability with its periodic outbreaks (Zayed et al., 2020).

Reducing hunger and improving food security, particularly in Sub-Saharan Africa, has been the only agenda of World food summits and international developments (Rukuni, 2002), but a considerable number of households are still suffering from insufficient food resources. A qualitative and quantitative investigation in Limpopo province in South Africa revealed that 53 percent of households in rural areas are struggling with food insecurity. Factors such as education, size of household, dependency ratio, household income, and living location were among the most responsible elements of food security in this study (De Cock et al., 2013). The studies found that the gender of the household head has considerable effects on the household's food security. A study in a rural area of Kenya investigating the link between food security and the gender of a household's head revealed that some apparent and non-apparent characteristics are causing different food security situations compared to households with male heads and female-headed households. The study proposed that even with the existence of the same visible characteristics among households' heads, some invisible qualities are accountable for different levels of food security in the household (Kassie et al., 2014). Among all other factors, natural disasters and outbreaks of disease have also directly and indirectly influenced food security around the globe. Kansiime et al. (2020) in a rapid assessment in Kenya and Uganda evaluated the implications of the COVID-19 pandemic on household earnings and food security. The researchers utilized the data from 442 respondents through an online survey. They found out that more than two-thirds of the targeted population has experienced a loss of income due to the pandemic crisis. The study also measured the food insecurity experience scale and the frequency of consuming nutritionally-rich foods and found that the food security and dietary quality of respondents deteriorated. The share of food-insecure households rose by 38% and 44% in Kenya and Uganda respectively. This research study is going to rely on the above-mentioned study to evaluate the effects of the COVID-19 pandemic on household level of income and food security in the Herat province of Afghanistan through utilizing a well-designed survey collecting data directly from households who have no internet access and might belong to the most vulnerable categories of a household during this crisis.

### **3. COVID-19 in Afghanistan and Policy Response**

The Covid-19 pandemic has paralyzed most of the world's countries. This contagious virus, which is currently spreading, has created an unprecedented economic crisis in addition to the unfortunate social, political, and sports effects.

This a crisis that, like the previous crises, is not unique to a certain country and we rarely find a country in the world that is immune from huge economic losses.

Afghanistan, which is a poor country due to long wars, insecurity, political problems, corruption, and other factors, has not remained immune from the spread of COVID-19 and has suffered in every way. The health conditions in Afghanistan are critical and the COVID-19 has spread in all regions of the country. To the extent that the diagnosis of COVID-19 has exceeded the capacity of government hospitals and the Ministry of Public Health of the country (Amin Sahim, 2020).

For this reason, the Ministry of Public Health has also allowed private hospitals and laboratories to diagnose corona disease. Laboratories charge an \$80 fee for diagnosing each patient. A patient who is not immune from the economic crisis of Corona and lives in a bad economic situation closure of ports, the limitation of economic activities, and the quarantine of large and important commercial cities have caused the private sector to suffer on the one hand, and on the other hand, hurt the domestic revenue of the country. Negative economic growth Afghanistan's GDP consists of agriculture, industry, and services. The World Bank had predicted the economic growth of Afghanistan in the conditions before the outbreak of the Corona disease for 2020 at 3.3 percent. However, the lack of economic activity, the lack of business relations, the lack of implementation of government development projects, and the reduction of investment due to the spread of the corona disease, on domestic and air transportation, educational and educational, tourism and tourist services, hotel, and restaurant services, and also on the industry sector. It has left a negative impact.

According to the new perspective of the World Bank, Afghanistan will experience a negative growth of 5.5% during the current year. The agricultural sector accounts for 22% of the gross domestic product and it is the only important sector for economic growth and depends on the climate and rainfall in the country. To compensate for the decline in economic growth, the only hope is the agricultural sector, and this year, due to abundant rains and good climatic conditions, it has provided the ground for the growth of crops. Nevertheless, due to the lack of export and the lack of a suitable market for its sale, the government needs to do something in this field to Increase unemployment and inflation. Holidays, quarantine, establishing social distancing to prevent the spread of this disease, and stopping and limiting work and activities have caused an increase in unemployment in the country. Based on the statistics of the Ministry of Economy, about 69% of the country's population is made up of people who have vulnerable jobs, of which nearly 700,000 people make a living through daily wage work. Among them, 500,000 people are poor and if they are not working, they are not able to provide for their daily needs and expenses. In the conditions before Corona, 24% of the workforce was practically unemployed and 54% of the population lived below the poverty line. With the spread of this virus, the unemployment rate has increased significantly (Amin Sahim, 2020).

In addition to economic problems, the increase in the unemployment rate also

causes social and political problems. An increase in crimes such as robbery and murder in society is one of the social effects of the increase in the unemployment rate. The sudden change in demand for raw materials and the lack of supply due to the closure of borders are important reasons for the increase in prices. The research of the Ministry of Economy, which is based on speculation, shows that a 10% increase in the prices of raw materials can increase the poverty rate by 7%. To prevent the increase in inflation and poverty, the government should keep the supply stable and give subsidies to vulnerable people. So far, an amount of 2.8 billion Afghanis has been spent by the government on the non-dry distribution program to the beneficiaries, and the government is supposed to spend the amount of 300 million dollars to help the needy. Decrease in income and financial power of the government Afghanistan is one of the world's most dependent economies on foreign financial resources. The continuation of the crisis and stagnation of economic activities, the exemption of some high taxes for individuals and companies, the closure of income areas, and the increase in costs for disease management and the supply of health services, significantly reduce the government's financial capacity and increase the country's dependence on foreign financial sources (Fada Ali & Sahim Amin, 2020).

The government of Afghanistan has allocated 26 million US dollars for special measures to fight the spread of COVID-19. Since the beginning of the spread of Covid-19 in Iran, the Afghan health authorities have been screening at the border but not sending the migrants to quarantine. These authorities only advise those who have returned from Iran to stay in home quarantine for 14 days, which is solved by the establishment of a 100-bed hospital in Herat province, which has been completed to 80% within 12 days, and for the current problems. But it was not enough because the number of positive corona cases is increasing every day. Another good and acceptable measure that the Afghan government took to fight the spread of this virus is the creation of an emergency committee to prevent the spread of COVID-19. Raising public awareness about Covid-19 and attracting international aid to fight this virus in Afghanistan are among the duties of the "Emergency Committee", which is a strong opening to fight this virus and save Afghanistan's sinking economic ship is read (Hakimi, 2020).

#### **4. The Impact of COVID-19 on the Economy of Herat**

Herat province in the west of Afghanistan, which borders Iran, has the most positive cases of COVID-19 in Afghanistan. The first COVID-19 was identified in Herat and then increased COVID-19 in this province. To the extent that the Minister of Health has quarantined this province. Herat is facing a serious threat of Covid-19 and Herat industrialists are afraid that their production lines will be stopped due to the lack of supply of raw materials from Iran and China. Most of the raw materials of the manufacturing companies of Herat are supplied from China and Iran, and the spread of COVID-19 in these two countries and the increase in human casualties have caused the supply of raw materials to Herat's

industrial city to be difficult, and now a dark and dark future awaits the industrialists. The statistics of the Herat Chamber of Industries and Mines show that more than 300 factories are operating in the industrial town in this province, and Herat's share in the production of materials needed in Afghanistan is impressive. The head of the Herat Chamber of Industries and Mines mentioned that Iran does not allow the export of raw materials needed for the production of disinfectants and sanitary materials to Afghanistan. Because the demand inside Iran for these materials is high. The head Chamber of Industries and Mines adds that the spread of COVID-19 in neighboring countries and China has hurt work and load in Afghanistan, and manufacturing companies have faced a shortage of raw materials for industrial factories in the detergent, disinfectant, and tissue sectors. Iran's exports of several items of raw materials, including Alcohol, have stopped because of the strong need for these materials, and almost all our factories use the stocks in the warehouses. He warns that in the first step, 32 factories producing disinfectants, detergents, and paper towels will stop working if they run out of raw materials in warehouses. The head of the Herat Chamber of Industries and Mines says 15 factories producing detergents and 12 factories producing paper towels and other sanitary materials are operating in Herat Industrial City, and nearly 50 million dollars have been invested in these factories, and these factories are facing the threat of closure (Rouhani, 2019). The National Union of Workers says that following the spread of Covid-19 in the country and its negative effects on the economy, about two million daily wage and informal workers in the country have lost their jobs (Zaki, 2020). In Herat province, most of the daily workers lost their jobs due to Covid-19 and it has had a negative effect on the economic activities in this province and in the whole part of Afghanistan because Herat is an industrial city in Afghanistan. The spread of Covid-19 in Herat, followed by the suspension of air travel to this province, in addition to the closure and reduction of the city's hotels, has caused the tourism industry of this province to face such a stagnation that its example was only seen in the first Taliban regime in the past. The damage caused by the "Covid-19" epidemic in Herat has brought countless tourist companies to the brink of destruction, and the tourist guides in Herat have also stayed at home in the absence of tourists (Ghafoori, 2020).

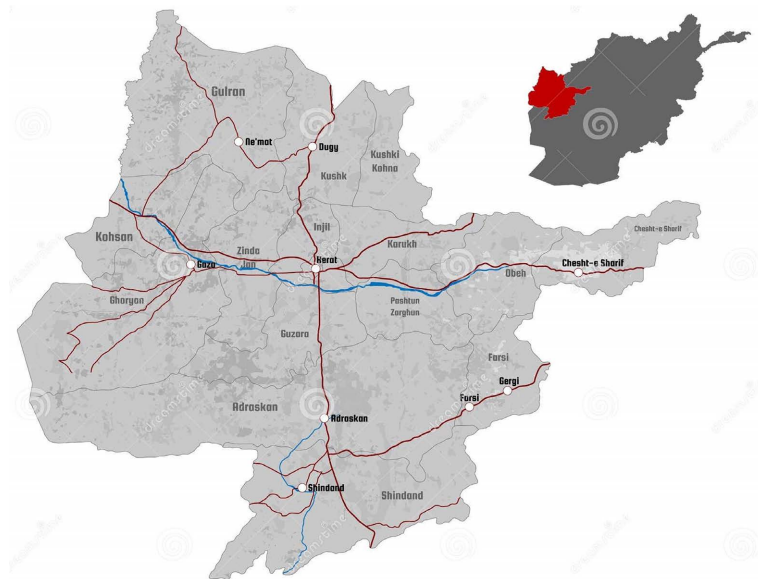
It is clear that the result of the unemployment of poor workers leads to a decrease in the income of families who somehow live below the poverty line. In this way, the amount of their purchasing power is reduced and the situation of their income is getting worse. The decrease in the purchasing power of a large part of society is not only detrimental to poor families, but also leads to a decrease in demand in the general economy and from this, the high supply also has a negative effect, and this negative economic chain continues until the level of public welfare decreases. While, due to the unemployment of poor workers in society, the level of income of poor families has decreased significantly. Due to disruption in supply and demand, the price of raw materials has also gone up.

This, in turn, puts another heavy burden on poor families. If the health costs of the individual and family struggle with Corona are added to the shoulders of the poor, we can say that this class is under economic pressure from three aspects today. Decrease in income, increase in the price of raw materials and spending on health in the fight against Corona. The economic pressure of Corona is putting more pressure on the poor class of our society while the World Food Organization has said: About 20 million people in Afghanistan do not have food security (Zaki, 2020).

## 5. Research Method

### 5.1. The Study Area

The geographical location in which this study was performed in Herat province. Herat is one of the thirty-four provinces of Afghanistan, located in the western part of the country. Together with Badghis, Farah, and Ghor provinces, it makes up the northwestern region of Afghanistan. Its primary city and administrative capital are Herat City. The province of Herat is divided into about 17 districts and contains over 1000 villages. It has a population of about 2,140,662, making it the second most populated province in Afghanistan behind Kabul Province. The population is multi-ethnic but largely Persian-speaking (Central Statistics Organization, 2020-2021).



Herat Province of Afghanistan Confirmed COVID-19 cases  $\geq$  5000 in 2020 (Ministry of Public Health).

Under three-quarters (69.53%) of the population of Herat lives in rural districts while more than a quarter (30.46%) lives in urban areas. Around 50.39% of the population is male and 49.60% is female. Dari and Pashtu are spoken by 98% of the population and 97.7% of the villages (Central Statistics Office, 2020-2021).

## 5.2. Data Source and Research Design

Both primary and secondary data were collected to implement the study. Secondary data was sourced from conference papers, journals, reports, the Ministry of Public health, and internet articles. Primary data was gathered through a standardized questionnaire survey. The sample was 44 from the urban area of Herat Province. The data was collected between July 2023 and September 2023. The questionnaire was divided into three sections. The first section collected information on the demographic characteristics of the Households. This data was obtained to establish the structure of the household population in terms of their age, gender, household members, household size, and the educational experience and other qualifications of the heads of households. The second section was the largest. It collected data on household income, lockdown, Covid-19, Financial problems, and quantity of food. The last part of the questionnaire asked about food consumption. The questionnaire that was already used in this research was a standard questionnaire. The validity and reliability of the questionnaire have already been tested by many researchers who were working on COVID-19 in most of the countries.

## 5.3. Sampling Technique and Data Analysis

A case study design was used to explore new and well-detailed information about the impact of COVID-19 on household income and food security in Herat province. Herat province is the second most populated city in Afghanistan. Extreme case sampling is a type of purposive sampling that is to try to highlight the most unusual variation in the phenomena under investigation, rather than trying to tell something typical or average about the population in question. These samplings are useful because they mostly provide significant insight into particular phenomena. The important consideration to make when determining the sample size is the size of the entire population under the study. The planned sample size in this research was a large sample but unfortunately during the field data, the researcher could not collect it because of some reasons. First The household head was not interested in participating in the interview and the second problem was political. To this reason, the researcher used the analysis of 44 samples for the COVID-19 in Herat City. The criteria for choosing the specific participants were that the person suffered from poverty because of COVID-19 and the person has been sick with coronavirus.

The study employed a quantitative and qualitative approach with descriptive and regression analysis tools to analyze data. The instrument used to collect information in this research is a questionnaire, which is common for data collection in various research. In addition, the questionnaire may have used interview tools because it is likely that some of the respondents do not have excellent literacy to understand the material through the questionnaire. Forty-four respondents were selected as a sample size.

## 6. Empirical Result and Discussion

The study involved 44 participants of which 30 were males and 14 were females, representing 68% and 32% respectively. The independent variables are gender, age group, education level, household size, salaried employment, self-employment, and household income. This study analyzes the Impact of COVID-19 on household income and food security in Herat Afghanistan. The primary data were analyzed with both descriptive and regression approaches. **Table 1** presents the descriptive statistics for the socioeconomic characteristics of the respondents, disaggregated by studies in this province. In descriptive analysis, the mean and standard deviation were calculated. Moreover, most of the respondents were male. Roughly, two-thirds of the respondents were youth aged between 18 and 35 years. A large proportion of the respondents had a tertiary level of education. The data were collected through questionnaire surveys, Most of the respondents were household heads, presiding over households. More than half of the respondents in Herat were salary earners. The other main sources of income were included wages, farming, self-employment, and transfer payments. Majority (41%) of the respondents in Herat earned <200 USD per month, compared to the neighboring countries it was very low, and compared to other developing countries in the world like Ghana in Africa households during the COVID-19 had more than 200 USD per month (Kansiime et al., 2021).

**Table 1.** Summary statistics of the socio-economic characteristics of the respondents. N = 44.

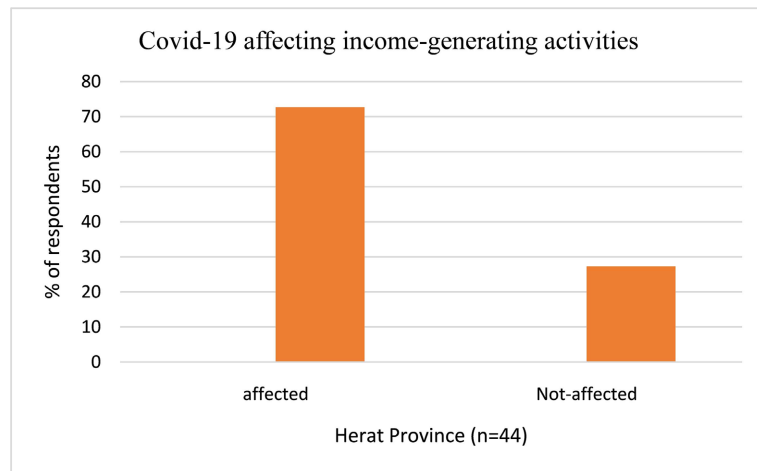
	Mean	Std. Deviation
Gender of the respondent (1 = male)	0.55	0.50
Salaried employment	0.52	0.50
Self-employment	0.48	0.50
Age group (0 = adult; 1 = youth)	0.65	0.47
Education level (1 = tertiary)	0.79	0.40
Monthly household income: <200 USD	0.41	0.49
200 - 500 USD	0.36	0.48
1000 > USD	0.27	0.45
Household size	6.82	2.78

Source: Author's computation.

### 6.1. Impact of COVID-19 on Participants

Not only has the coronavirus reduced income, but respondents also mentioned other things. Social challenges caused by COVID-19 such as limited movement, interrupted work schedules, mental health issues, and social isolation. The limited movements that have existed have also been accompanied by feelings of

fear, uncertainty, and stress have affected families more. Salaried workers were more likely to report these social effects compared to other categories, and there was also an increase in dependency, which increased the pressure on household resources. In the absence of a structured social support system, it is most emphasized that families depended on their relatives and friends. Respondents mentioned extended family support in the form of food, remittances, and buying masks, disinfectants, and medicine. The respondents were asked about the effect of Covid-19 on income and activities. Most of the respondents including 75% answered that the covid-19 had a negative impact on their income and social activities, and on the other hand 25% mentioned that Covid-19 had no impact on their income and social activities. The participants were asked about the effects of Covid-19 on their work area and economic activities. Most of them answered that covid-19 was a negative impact to the whole economic and social activities, they mentioned that building construction, which is a large part of economic activities and has provided thousands of job opportunities to our compatriots, has been completely stopped due to the covid-19 epidemic. The percentage rate of unemployment went to reach an unprecedented level, and this situation directly reduced supply and demand at all levels, and according to economic requirements, when supply and demand decrease, it directly affects the import and export trend, and the decrease in import and export causes the reduction of customs tariffs. Besides these problems, the transportation system was not far from economic damage, and all these cases can be considered as another big blow to the half-life of the Afghan economy. The respondents were asked about the impact of the COVID-19 pandemic income source. Their responses are summarized in **Figure 1**. More than 70% of the respondents asserted that the pandemic had affected their regular source of income, ranging and less than 30% of the respondents answered that the pandemic had no effect on their regular source of income. This is consistent with the widespread perceptions about the negative impacts of the COVID-19 crisis on jobs and incomes. Further, the respondents were asked how COVID-19 had affected their main source of income the most cited effect of the pandemic relates to a reduction or closure of business activities, as a result of restrictions. Similar effects of the pandemic on income sources were reported by respondents across the city. This result is similar to the foundation of COVID-19 induced disruptions of income earning activities have been observed in several other reports (ILO, 2020; Vos, Martin, & Laborde, 2020; World Bank, 2020). Since the last three months of the outbreak of this deadly disease, so many people have travelled back to rural areas of Herat to hide. This has made many businesses weak in the city because most of the customers went away, and the current situation now was nothing but survival. There was no movement after 6 pm, and this was reducing the business activity, hence lowering income. This fatal phenomenon had a negative impact on small and medium business too, Life is hard, generally. The similar result was found by (UN-Habitat & WFP, 2020).



**Figure 1.** Impact of COVID-19 on income-generating activities.

The following equation model was used to investigate the effect of Covid-19 on household income in the research area.

$$Y = \beta_0 + \beta_1 \text{lockdown} + \beta_2 \text{age} + \beta_3 \text{salaried employment} + \beta_4 \text{Educational level} + \beta_5 \text{Monthly income (200 - 500) USD} + \beta_6 \text{Monthly income > 2000 USD} + U \quad (1)$$

The above equation explains the relationship between all the independent variables and the dependent variable. The data on the effect of household income were analyzed with all control variables. The control variables, including lockdown, Age Group, Salaried employment, Educational level, Monthly income (200 - 500) USD, and Monthly income > 2000 USD were analyzed (**Table 2**).

**Table 2.** Effect of COVID-19 on Income of Household.

Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	698.015	82.603	8.450	0.000
Salaried employment	41.853	42.494	0.985	0.331
Lockdown	-62.648	45.449	-2.078	0.046
1 Monthly income (200 - 500) USD	-227.964	43.353	-5.258	0.000
Age Group	-50.542	41.788	-1.209	0.234
Educational level	-42.071	50.132	-0.839	0.407
Monthly income > 2000 USD	-110.187	48.577	-2.268	0.029

Dependent variable: Household income.

Presents OLS estimation results on the factors that determine whether a respondent's regular source of income has been affected by the COVID-19 pandemic. The model indicates that the income-earning activities of poor respon-

dents were more likely to be affected by the pandemic. In particular, respondents whose monthly incomes range from USD200 to USD500 and above USD2000 were significant and a negative sign on household income, which shows a high impact of Covid-19 on these two categories of income holders. This finding indicates that the relatively higher-income respondents were more likely to offset income risks from the pandemic than poorer respondents. However, the lockdown variable has a negative sign on household income and it shows with the high level of lockdown directly decreases household income in the research area. [Husain, Sandström, Greb, and Agamile \(2020\)](#) also report the same result that a combination of working poverty and low social protection coverage exacerbates the negative welfare impacts of lockdowns. The need to expand social security coverage to those populations groups who are not typically qualifying for cash transfers but are now pushed into poverty by the pandemic has been advocated ([Bodewig, Gentilini, Usman, & Williams, 2020](#)).

**Table 3.** Analysis of Variance (ANOVA).

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	524101.020	6	87350.170	5.536	0.000 <sup>b</sup>
Residual	583853.525	37	15779.825		
Total	1107954.545	43			

a) Dependent Variable: Household income; b) Predictors: (Constant), Monthly income > 2000 USD, age group, lockdown, education level Monthly income (200 - 500) USD, Salaried employment.

**Table 3** shows that the regression model predicts the dependent variable (household income) significantly well. The F value is 5.536 and the P-Value is 0.000, indicating that overall the regression model is statistically significant and shows a good fit for the data set.

**Table 4.** Model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.688 <sup>a</sup>	0.473	0.388	125.61777

a) Predictors: (Constant), Monthly income > 2000 USD, age group, lockdown, education level Monthly income (200 - 500) USD, Salaried employment; b) Dependent Variable: Household income.

**Table 4** shows how much changes in the household income are explained by changes in monthly income > 2000 USD, age group, lockdown, education level monthly income (200 - 500) USD, and Salaried employment. The value of R square shows that almost 47.3 percent of the variance or changes in the quantity of income are influenced by all the independent variables that are already used in the forecasting of the model. However, 52.7 percent of the changes in house-

hold income are caused by other factors that are not directly connected with the quantity of income.

## 6.2. Household Food and Nutrition Security Situation in Herat Province

Lack of financial resources to purchase food, unemployment, and lack of food are the three most common reasons for increased food and nutrition insecurity in Herat province. This even feels during normal periods. During a crisis like COVID-19, these problems increased and the situation made be worsened. To understand how the pandemic of COVID-19 has affected household food and nutrition security, the participants were asked if the availability of food items and their prices in the local markets had been affected, directly or indirectly. The participants answered that 40% about the decrease in food availability in the market while 60 % of the participants mentioned the price of the food increased. 70.5% of percent of participants stated that the availability of rice, wheat, Oil, and some other things had negatively been affected in the markets. While the decrease in the availability of vegetables was also observed in this area. There was a sizeable decrease in the availability of fruits in the local markets. This is partly the result of the limited trading and movement during the quarantine period in the study area and the closed border of Iran and Turkmenistan had a negative impact on food availability in this province. To understand how overall food and nutrition security statuses different, the researcher used a set of eight questions to ask about the respondents' experience. **Table 5** shows a clear picture of the number of participants and how the household has been affected by various food insecurity matters.

**Table 5.** Food insecurity constraints.

Parameters	Number of Interviewed Negatively affected	Percentage (%)
Worried about not having enough food to eat because of a lack of money or other resources.	23	52
Ate only a few kinds of food because of inadequate money or lack of resources.	31	70
Went without eating for a whole day because of a lack of money or other resources.	9	20
Households ran out of food because of a lack of money or other resources.	16	36
Had to skip a meal because there was not enough money or other resources to get food.	40	90
Unable to eat healthy and nutritious food because of a lack of money or other resources.	34	77

**Continued**

Hungry but did not eat because there was not enough money or other resources for food.	20	45
Ate less than you thought you should because of a lack of money or other resources.	10	23

Source: Author's computation.

**Table 5** highlights the food insecurity situations of the respondents during the COVID-19 pandemic. The upper part of this table presents the results for the eight questions that constitute the FIES. It is obvious from the results that food insecurity has worsened during the period of the pandemic. For instance, during the COVID-19 period in Herat City. The data on food security in the research area shows, that 23 (52%) respondents were worried about not having enough food to eat because of a lack of money or other resources and they were unable to eat their preferred food. Moreover, 31 (70%) ate only a few kinds of food due to inadequate money or lack of resources, 9 (20%) of participants went without food for a whole day while 16 (36%) ran out of food due to lack of money or other resources. The ratio of participants who have to skip meals due to insufficient money or other resources stood at 40 (90%) and who were unable to eat healthy and nutritious food because of a lack of money or other resources 34 (77%). In addition, those hungry did not eat 20 (45%) because there was not sufficient money or other resources for food. Furthermore, Ate less than you thought you should because of a lack of money or other resources 10 (23%). The researcher believes that one of the causes of food insecurity has been the closed border of Turkmenistan and Iran during the quarantine period because Afghanistan is highly dependent on imported products and that compounded household food and nutrition security issues.

## 7. Limitations/Problems

Conducting empirical research has always been accompanied by some sort of limitations and difficulties. In Afghanistan, alongside some research-specific limitations such as access to proper data, adequate resources, time barriers, etc., some issues might create problems or impose limitations on the research process. Despite its contributions, this includes some limitations.

In Afghanistan, almost less than 25% of the Afghan population was living in urban areas. In other words, more than 75% of the population were living in rural areas. According to common sense and previous empirical research around the globe, the households living in rural areas were more likely to struggle with economic disruption of crisis and shocks compared to the urban population. Furthermore, the rural population is facing more devastating nutrition problems and hunger and they might be hit more hard than the urban population by the

outcomes of the COVID-19 pandemic in Herat Afghanistan. Unfortunately, due to deteriorating security problems in rural Afghanistan these days, this large group of population is omitted from this study and the concluding implication of the study might be questionable. However, a separate research project targeting the more secure rural areas in the country is recommended for appropriate concluding policy implications.

- Another limitation of the study was the time and resource shortage. Therefore, it would be valuable to obtain supplementary data during various periods to investigate the issue more comprehensively.
- The last limitation was that targeted household was more likely redundant to disclose real and accurate information. In most cases, the surveyor might be perceived as help organization agents and access to expected data and information might be deteriorated.

## 8. Conclusion

This study recognized the implications of COVID-19 on household incomes and food security in the Herat province of Afghanistan. The general health and livelihood of especially human beings are in greater danger from the COVID-19 pandemic and partial quarantine. Ever since Herat province experienced the first case of COVID-19 on 24 February 2020, the infection rates have been on a steady rise. It seems likely that it will even take several months before the infection rate could be dropped. The effects of the pandemic must be analyzed based on the dimensions of household income and food security. More restrictions and quarantine periods in the country results show evidence of worsening food security, low income, and dietary quality of respondents in this province during COVID-19. This is attributed to the loss or reduction in income, reduced access to markets due to travel restrictions, and low purchasing power. Most of the participants were more likely to report reduced income during the crisis compared to salary or wage earners. Craftsmen, Businessmen, Shopkeepers, and Farmers rely on markets, and restrictions directly affect their incomes, unlike salaried workers who may improvise mechanisms of working remotely. The results also indicate that impacts of food insecurity vary incommensurate by different households. A considerable number of the respondents were suffering from food insecurity in some index. For example, all the household food insecurity statuses measured by, for example, the occurrence of reducing food consumption, less than you thought you should eat, skipping a meal, and going to bed without eating for the whole day were about 670%, 23%, 90%, and 20% respectively. Therefore, it could be concluded that household income and food insecurity are not outside the impact of COVID-19 and its associated partial quarantined. Food and nutrition security is a global concern in the present situation. The supply chain has been hit hardest by COVID-19 in the whole part of economic activities, which causes food insecurity in the most vulnerable part of the population, which put them at risk.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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