

Impact of COVID-19 Pandemic on Households Income and Food Security in Afghanistan: Case Study of Kabul, Kandahar, Nangarhar and Balkh

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ABSTRACT: *This research project aims 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 four large urban areas of Afghanistan. The research collected primary data at the household level in Afghanistan through a pre-tested semi-structured questionnaire from 400 households in Kabul, Balkh, Kandahar, and Nangarhar. Socio-economic characteristics, income-generating activities, nutrition and food security situation, and consumption of specific categories of food in the Afghan household were evaluated through qualitative and quantitative empirical analysis. In addition to a comprehensive descriptive statistic, the Probit regression model was employed to evaluate the effects of the economic disruption of the COVID-19 pandemic on income-generating activities, food insecurity, and the dietary quality of Afghan households in three different scenarios. The findings mapped out a picture of the food security situation of Afghan households in urban areas before the COVID-19 crisis and after they were hit by this crisis including the induced economic implications. The results provide some insights for concluding policy implications for the interested bodies at national and international levels.*

KEYWORDS: Afghanistan, Covid-19, income, food insecurity, household

INTRODUCTION

The challenges and struggles to provide food have always accompanied mankind. Worldwide, more than 800 million people are struggling with daily hunger and more than two billion have not access to vital micronutrients which leads to the deterioration of their health and life expectancy (FAO, IFAD, UNICEF, WFP, and WHO, 2019). 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 disasters, conflicts, and insufficient provision of public services that are also closely related to each other's (Abdullah et al., 2019, Sriram & Tarasuk, 2016). Afghanistan, with a very fragile economy, accompanied by prolonged conflict, a

weak and chaotic political system, and natural catastrophes (like draught), is intensively struggling with poverty and food insecurities of its people in the last decades. The country has been confronted with a major disruption of productive investment, employment, and consequently regular household incomes, especially after the major withdrawal of foreign troops in 2014. Hence, Poverty and vulnerability remained as widespread dilemmas both in rural and urban areas in Afghanistan. It is imaginable that this increasing national wide poverty and food insecurity picture is going to be compounded by the emerging effects of the Coronavirus Disease 19 (COVID-19) pandemic in the country. As it is known, the virus was reported first in the Hubei province of China in December 2019 (Singhal, 2020) and rapidly spread all over the world. Then in March 2020, it is declared as a global pandemic (Cucinotta & Vanelli, 2020). The widespread infection of the virus has become a novel public health crisis in most of the countries and caused consequently significant economic and social crises. The first incidence of infection was reported on February 24, 2020, in Herat City in Afghanistan (Ministry of Public Health, 2020) and since then the infection incidences continued to increase day by day all over the country, so as the number of incidences with more than 45000 was the highest among Central Asian countries in early November 2020 (Giap, 2020). The Afghan government in line with World Health Organization (WHO) guidelines and global practices undertaken various actions to prevent the significant widespread of the virus infection in the country. Movement restrictions, border closure, quarantine for infected patients, and closure of schools, universities, and non-essential services were among the practiced actions. Nevertheless, these restrictions or somehow lock-down in the country and as well as in the neighboring countries have adversely affected people's life with severe consequences on income and food security. This is particularly true in Afghanistan, where the poverty rate rose significantly from 36% during 2011–2012 to 55% during 2016–2017. The deterioration in welfare has become more widespread across the country. With an additional 2.3 million Afghan returnees since 2015, the country experienced a large increase in the number of poor people (World Bank, 2020). According to FAO, Afghanistan experienced severe localized food insecurity due to the decrease in employment opportunities and remittances in recent years. FAO reported that approximately 10.9 million individuals (roughly 35% of the population) are considered under acute food insecurity before the pandemic. The prevalence of severe food insecurity in the total population of Afghanistan deteriorated from 17.3 % to 22.70% and the prevalence of undernourishment deteriorated from 28.9 % to 29.90% (FAO, 2020).

Like in most developing countries, the COVID-19 pandemic might have brought about considerable disruptions in Afghan households' socioeconomic situation in various ways. The people working in the informal sector, who often rely on hand-to-mouth wages, have lost their incomes. Households have more likely to experience decreases in income from remittances. The food systems of the household got deteriorated and thereby causing significant economic shocks and food security risks for them (UN-Habitat & WFP, 2020). Moreover, the lack of opportunities to work from home, less diversified income sources, limited access to health systems, and the non-existence of systematic state welfare systems to secure households against income losses put

people in greater danger of food insecurity and malnutrition. There is an argument in McKibbin and Fernando (2020)'s paper that infectious sicknesses with pandemic nature can influence households, governments, and businesses in other ways through higher business costs, higher public health spending, and changes in labor supply because of mortality and illness. COVID-19 lockdowns have somehow blocked all stages of the food supply chain, such as production, distribution, processing, and consumption (Siche, 2020; Torero, 2020). Consequently, this might cause shortages of food that more probably lead to increases in prices. The movement limitations prevented farmers from accessing markets, purchasing inputs, and selling products and led thus to a waste of food at the production level (Galanakis,2020). Multiple food supply networks have been unsuccessful, as food is abandoned to putrefaction in fields or burnt due to transportation limitations (FAO,2020d). Much academic research on the impacts of the COVID-19 pandemic on food systems and meals has been unevenly distributed across regions, with most studies concentrated on Western and Southern Europe, North America, and China (Colafemmina et al., 2020). COVID-19 has already affected food expenditure patterns and meals in various aspects. Moreover, the longer these measures are imposed, the greater will be the socioeconomic cost (ESCWA, 2020a). So far a considerable number of researchers have evaluated the COVID-19 pandemic implications on global and national economic factors such as global poverty, government spending, GDP growth, employment, budget deficits, et. (Nicola et al., 2020; Sumner, Hoy & Ortiz-Juarez, 2020; ILO, 2020; World Bank, 2020a; 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.

Purpose of the Study

As it was indicated above, due to unsolved ongoing peace negotiations, prolonged conflict, and pessimistic projections on the aftermath of the complete withdrawal of international military support, the economic situation in Afghanistan has got worsening in the last few years. Most of the macroeconomic indicators are recently showing a downward trend. In addition to this adverse economic situation, the widespread COVID-19 pandemic and its associated restrictions as well as lockdowns have been intensively deteriorating the situation in the country. However, insights and information regarding the potential impacts of this pandemic and its consequences on individual members of society are to a great extent unknown in the country.

This research aims 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 four large urban

areas of Afghanistan. Furthermore, the studies on the economic implications of COVID-19 in other countries, e.g. India, reveal relatively a large degree of heterogeneity in the impact of COVID-19 responses on income and food security (Ceballos, Kannan and Kramer, 2020; Harris et al., 2020), this research aims to evaluate all potential range of effects at the household level.

To realize the general objective of the research, the empirical analysis addresses the following research questions:

1. What measures and policy programs has the government taken into account to reduce the effects of the epidemic at the household level?
2. What are the impact of Covid-19 on food security and the quality of nutrition of households?
3. Which coping measures have households implemented to alleviate the adverse effects of the pandemic?

Firstly, the research focuses to explore the policy responses of the Afghan government for mitigating the effects of the pandemic on the household. Then, the potential influences of the COVID-19 pandemic on the income and food security of households are investigated. Furthermore, the determining factors in worsening the income and food security of the household are scrutinized. Lastly, the coping responses and strategies of the household to avert the adverse impacts of the pandemic on their income and food security are also investigated.

LITERATURE REVIEW

As food security is a multidimensional issue embracing climate changes, civil conflicts, natural catastrophes, and social standards, various factors can determine it when focusing on it from a global to regional and national to household and individual level. Food insecurity more likely brings about hunger and malnutrition among people. Researchers and policymakers got attracted to food insecurity issues after the world food crisis during 1972-74 and the food price shock in 2006-08 intensified the attraction of program implementing and policy-making bodies (Gebre, 2012; Sasson, 2012). The evidence from these two phenomena showed that poor households, particularly in developing countries, could be significantly influenced by these crises, as they had not access to sufficient food and the shocked prices made them unable to afford necessary food needs (Gebre, 2012; Tyner, 2013).

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, Chatterjee & Kim, 2014); 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, structure of the family (Bashir et. al., 2013a) and infrastructural availability (Gill & Khan, 2010) are amongst most prominent factors effecting food security at individual level in household.

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).

Bogale (2012) investigated determinants factors that influence the vulnerability of individuals to food insecurity at the household level in Ethiopia through the expected poverty method. The finding revealed that food insecurity can be linked to various factors such as family size, size of land available for cultivation, the fertility degree of soil, access to the irrigation system, utilization of fertilizer, and improved seed. Owusu et. al. (2011), in the study of household food security in Ghana, found that work outside the farm also affects food insecurity and it proved the commonly accepted point that non-farm income improves the households' situation and contributes to poverty elimination. The same research study on household food security in the Mudzi district of Zimbabwe revealed that the age and level of education of the household's head, size of the household's labor, owning livestock, receiving remittances, and access to market information can have a positive impact on food security (Mango et. al., 2014).

According to World Bank (2001), availability of food, i.e. availability of sufficient food through personal production, accessibility of food, i.e. the ability of even poor households to pay for the food, and utilization of food, i.e. the food having accepted quality of nutrition in it (Doppler, 2002). Appendini and Quijada (2016) suggested encouraging small farmers to produce high-quality maize through their study evaluating food security and quality in Mexico. A report by the Economic Research Service (ERS) of the United States Department of Agriculture (USDA) revealed that about 14.9 percent of households in America are struggling with food insecurity, in which they have sufficient food and sometimes have difficulties maintaining their style of living. Moreover, 5.7 percent of the household ought to decrease the quantity of their food consumption, which is equivalent to very low food security defined by USDA (Coleman-Jensen et. al., 2011).

Arene and Anyaeji (2010) examined the factors influencing food security at the household level in Nigeria through the application of logistic regression analysis. The results showed that about 60

percent of households in the study suffered from food insecurity and households' level of income and age of head have been the factors significantly affecting food security. Another study in Nigeria through the application of logistic regression revealed that the size of a household is one of the key determining factors of food security. Households with a smaller number of family members experience a higher degree of food security (Amaza et. al., 2006).

The studies found that the gender of the household's 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 household heads revealed that some apparent and non-apparent characteristics are causing different food security situations comparing households with male head 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. Kansime 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 have experienced 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. The probit regression analysis of the research revealed that the household with lower levels of income and the household relying on labor income have been the categories more vulnerable to income shock and they also consumed less quality food or nutritionally-rich food during the COVID-19 crisis in comparison to other household categories.

This research study relies on the above-mentioned study to evaluate the effects of the COVID-19 pandemic on household level of income and food security in urban areas in Afghanistan through utilizing a well-designed survey collecting data directly from households that have no internet access and might belong to the most vulnerable categories of the household during this crisis.

Impact of Covid-19 on Afghan Economy and Household Income

Covid-19 is an epidemic virus not only in Afghanistan; But in all the countries of the world, it is not only a cause of concern; Bell has caused great economic crises, the likes of which have not been seen in the history of mankind. Before the Corona phenomenon was felt in the world, the International Monetary Fund said in its 2019 report on the world economy, especially the economy of South Asian countries, which includes Afghanistan, that "there is not much optimism in the next two years." In addition to this prediction, it can be seen that the entire production force of the world

is focusing on preventing the spread of the Covid-19 virus, which gives more fulfillment to this prediction. Compared to the countries of the world, in the face of the challenge of the coronavirus, Afghanistan has several internal factors or other internal anomalies, such as Drought, unemployment, and poverty, which have added to the trickery of the economic situation of Afghanistan, which will undoubtedly have a crisis and a bad impact on the Afghan economy (Hakimi, 2020). Unfortunately, Afghanistan is considered one of the poorest countries in the world, so more than half of its population lives in poverty (of course with varying degrees). Based on the findings of the Ministry of Economy of Afghanistan, 52% of the country's population is in the circle of absolute poverty. However, due to the problems facing the research process in Afghanistan, the percentage of poverty can be higher than what was mentioned in the findings of the Ministry of Economy. Since there are not many clear and accurate statistics about poverty in the country from other channels, in this research the same statistic of 52% of the Ministry of Economy is considered valid. The World Bank has set the poverty line at \$1.9 per person per day. Based on this, we can say that more than half of the country's population earns less than 1.9 dollars per day. Although the negative effects of the spread of the coronavirus affect all sections of society. However, the pressure caused by the quarantine and the closing of the markets in the first step is more towards the poor class of society (Zaki, 2020). The coronavirus caused more damage to business activities, especially small and medium enterprises, which made up 80% of Afghanistan's business. Like other countries where companies have been closed, during the pandemic national and international flights had been suspended indefinitely in Afghanistan too. Other factories and service companies had temporarily or permanently stopped their activities. The pandemic had hurt informal businesses the most because they have neither insurance nor access to bank loans. the coronavirus in Afghanistan had a decisive impact on the supply and demand of the market. According to the statistics of the World Bank, the unemployment rate in Afghanistan was about 1.52 percent. If, on the one hand, the current political crisis, and on the other hand, the number of people infected with the virus increased exponentially, the unemployment rate in the country rose dramatically. The National Union of Workers and Employees of Afghanistan announced during the pandemic that about two million workers and employees have lost their jobs due to the spread of the coronavirus and preventive measures such as shutdowns in cities. The Ministry of Economy had previously warned that unemployment in Afghanistan would increase by 40% and poverty by 70% due to unemployment and the spread of Corona. And considering that informal jobs make up 80% of the country's economic activities, the quarantine of cities increased unemployment and thus was intensify economic restrictions (Sufi Zadeh, 2021). Although the word corruption in Afghanistan is familiar to all the people of the country. However, the corona crisis also created the basis for the emergence of corona financial corruption. In that time situation where chaos had increased, the scope for embezzlers and professional corruption also increased. This increased the cost of fighting against Corona in all dimensions for the government. And fiscal accounting at the central and provincial levels was necessary to prevent corruption (Zaki, 2020). 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 (with more than 52% of the population) is not only detrimental to poor families (they cannot meet their living needs), 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.

RESEARCH METHOD

Study area

The study area on which this research is based is the four largest provinces of Afghanistan namely Kabul in the central part of Afghanistan, Kandahar in the south, Nangarhar in the east, and Mazar-Sherif in the north, the country is located in central Asia. The area of Afghanistan is 652,826 km², and the country is mountainous and landlocked. According to Afghanistan National Statistics and Information Authority (NSIA, 2020) of the total population (33.06 Million) only 24.5% have resided in urban areas. 60 percent of this population is living in these four cities included in the survey. The Afghan population is very young 42% under the age of 15 years old and only 3.5% older than 65 years old. The Afghan populations belong to various ethnic groups such as Pashtuns, Tajiks, Hazaras, and Uzbeks and the other minor ethnic groups are Nuristani, Baluchi, Turkmens, etc. The official languages of the county are Pashto and Dari (CSO, 2020).

Method of Data Collection

As mentioned in the literature review, socioeconomic characteristics, income-generating activities, and food security situation in the Afghan household were evaluated through empirical analysis. Therefore, to tackle the research questions and test the research hypothesis, data for the variables such as overall socio-economic features of households and particularly their main sources of income, level of earning and durable assets, size of the family, age, education, and gender of household head are gathered. And indicators relating to the experience-based scale of food insecurity before and during the COVID-19 pandemic are incorporated into the empirical analysis. To evaluate the impact of economic disruptions of the COVID-19 crisis on household income and food security level both quantitative and qualitative research framework was going to be applied in the empirical analysis. The effects of the pandemic on sources and level of income, frequency, and level of food consumption were quantitatively investigated. The research collected primary data at the household level in Afghanistan. The data was gathered through a pre-tested semi-structured questionnaire. The semi-structured questionnaire consisted of two specific parts. The first part of the questionnaire was an inquiry about the socio-economic characteristics of households before and during the COVID-19 pandemic. The second part of the questionnaire included eight questions relating to the food insecurity experienced-based scale survey developed by FAO specified for Afghan households.

Sampling technique and data analysis

The research used the stratified sampling method. To determine the sample of the target population, we use Cochran's formula, which is the most common method for determining the number of sample sizes. Later, we specify each part of the sample based on the percentage

$$n = \frac{\frac{z^2 pq}{d^2}}{1 + \frac{1}{N} \left[\frac{z^2 pq}{d^2} - 1 \right]} \quad (1)$$

Based on the formula the sample is 400. It means 400 respondents were selected to answer the questionnaire. First of all, the most populated urban areas in the country which include Kabul, Nangarhar, Mazar-e-Sharif, and Kandahar are covered in the analysis. According to Afghanistan National Statistics and Information Authority (NSIA, 2020) of the total population (33.06 Million) only 24.5% have resided in urban areas. 65 percent of this population were living in these four cities included in the survey. The following table shows the distribution of the sampling among these four urban for the collection of data:

Table 1. Research Sampling

Nr.	Urban	Population		Number of the household included in the survey
		Exact number	Percent	
1	Kabul	4500867	76	304
2	Balkh	589370	10	40
3	Kandahar	527454	9	36
4	Nangarhar	279533	5	20
Total urban population		<u>5897224</u>		

Source of data: Afghanistan National Statistics and Information Authority, 2020

For surveying each city, a list of streets where households live based on the data available in NSIA provincial offices (in case the list was not available, the satellite map was marked with numbers) and a random selection of 5 streets for the survey (in case streets were small more streets were selected), except in Kabul city. These 30 streets are randomly selected to conduct the survey. Quantitative and qualitative data were going to be analyzed using descriptive statistics and regression models. Descriptive statistics contained frequencies, means, and standard deviations, and a t-test was applied to highlight the socio-economic characteristics of the household and how the COVID-19 crisis has influenced their income-generating activities. Regression analysis was applied to evaluate the factors determining whether a household's sources of income have been influenced by the pandemic.

Empirical Result

The study involved 400 participants in four popular provinces in Afghanistan. In this section, the researcher used various methods of analysis to answer the developed question. Therefore, it is necessary to mention that the analysis of the obtained data alone is not enough to find the answers to the research question, the interpretation of these data is also necessary. The data should be analyzed first and then the results of this analysis should be interpreted. The necessary information for the present research was collected from a questionnaire survey. This section describes the characteristics of the sample. First, the collected data are summarized and classified using descriptive statistics indicators, then descriptive statistics such as mean, and standard deviation related to research variables are done.

Table 2. Summary statistics of the socio-economic characteristics of the respondents. N= 400

	Mean	Std. Deviation
Gender of respondent(1= male)	1.61	.486
Age of respondent	32.98	12.780
Monthly income: < \$200	3.07	.635
\$200-\$500	2.54	.796
\$500-\$1000	3.02	.845
\$1000and Above	2.74	.645
Education Level	2.11	1.043
Job-lost	1.82	.403

Source: Authors Computation

Impact of Covid-19 on Participants

Afghanistan is vulnerable from every point of view. Fragile security, uncertain political stability, more than 50% of citizens below the poverty line, and the survival of the government depends on the continuation of foreign aid. Despite the dire security, political and economic conditions, the Corona epidemic was another serious challenge that plagued Afghanistan. In addition to income effects, respondents in the research area mentioned other things Social challenges caused by COVID-19 such as limited movement, disrupted work schedules, and mental health issues. Limited movements were also associated with feelings of fear, uncertainty, and stress due to not being able to attend social gatherings have affected families more. Salaried workers were more likely to report these social impacts compared to other categories of afghan Households. Increased dependency on families was also reported, which increased pressure on household resources. In the absence of an organized social support system, most stressed families depended on relatives and friends. Respondents mentioned supporting the extended family in the form of providing food, remittances, and medicine. The respondents were asked about the effect of Covid-19 on income families and other activities. Most of the respondents in the research area including 73% mentioned

that Covid-19 had a negative impact on their income and other activities, and on the other hand, 27% answered that Covid-19 had no effect on their income and other social activities. The respondents were asked about the impact of Covid-19 on their work situation and other economic activities. They explained that workers of restaurants, urban transportation, schools, universities, repair workers, shopkeepers, peddlers, etc. were the ones who face the greatest economic threat of covid-19. The unemployment rate had increased dramatically. 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 was 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 were important reasons for the increase in prices during the covid-19 in Afghanistan. The respondents were asked about the impact of the Covid-19 pandemic on household income sources. Their response was summarized in Fig. 1. Most of the respondents claimed that the pandemic has affected their sources of income, and less than 30 % of the respondents mentioned that Covid-19 had no effect on their sources of income. And less than 30 % of the respondents mentioned that Covid-19 had no effect on their sources of income.

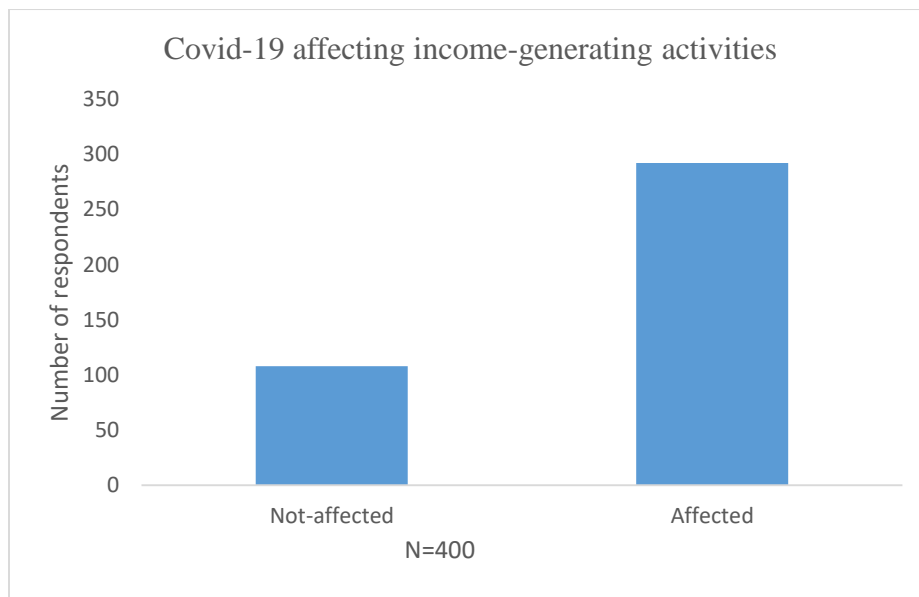


Fig. 1. Impact of Covid-19 on income-generating activities

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

$$Y = \beta_0 + \beta_1 lockdown + \beta_2 age + \beta_3 unemployment + \beta_4 onlineshopping + \beta_5 Food\ security + \beta_6 Monthly\ income < 200USD + \beta_7 Monthly\ income(200 - 500)USD + \beta_8 Monthly\ income(500 - 1000)USD + U \quad (2)$$

The above equation clarifies the relationship between all independent variables and the dependent variable in the regression model. The data on the impact of household income were analyzed with all control variables. The control variables including lockdown, age, unemployment, food security, online shopping, and three categorical incomes in the form of control variables were analyzed.

Table 3: Effect of Covid-19 on Income of Household

Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	.769	.247	3.108	.002
Online-Shopping	.028	.038	.744	.457
Lockdown	.105	.037	2.858	.004
Unemployment	.648	.055	11.715	.000
Monthly income < \$200	.018	.041	.435	.664
Monthly income \$500-\$1000	-.083	.030	-2.754	.006
Food-Security	-.034	.040	-.856	.392
Age	-.003	.002	-1.464	.144
Monthly income \$200-\$500	.093	.034	2.711	.007

Dependent variable: Household income

The model investigates the effect of Covid-19 on household income. This model indicates that the income-earning activities of poor households were more likely to be affected by the pandemic. In particular, respondents whose monthly incomes range from 200\$ to 500\$ were significant and had a negative sign on household income, but the families' income range between 500\$ to 1000\$ was significant and a positive sign on the income of the household, which shows a high impact of Covid-19 on these two categories of income holders. This finding indicates that the relatively higher-income respondent was more likely to offset income risks from the pandemic than the poorer respondents. Furthermore, the unemployment and lockdown variables have a positive impact on household income and it clarifies that increases in these two variables directly decrease household income in the research area.

Table 4. Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	69.664	8	8.708	35.201	.000 ^b
Residual	96.726	391	.247		
Total	166.390	399			

a. Dependent Variable: Household income

b. Predictors: (Constant), \$200-\$500, Age, food Security, online-Shopping, Monthly income < \$200, Monthly income \$500-\$1000, Lockdown, Unemployment

Table 4. Indicate the regression model predicts the dependent variable (Household income) significantly well. The F value is 35.201 and the P-value is 000, which explained that overall the regression model is statistically significant and shows a good fit for the data set.

Table 5. Model Summary

Model	R	R Square	Adjusted R Square	Std. The error in the Estimate
1	.647 ^a	.419	.407	.49737

a. Predictors: (Constant), Monthly income (\$200-\$500), Age, Security, online-Shopping, Monthly income < \$200, Monthly income (\$500-\$1000), Lockdown, Unemployment

b. Dependent variable: Household income

Table 5 shows how much changes in household income are explained by changes in monthly income < 200\$, age, lockdown, unemployment, monthly income (200\$-500\$), monthly income (500\$-1000\$), online shopping, and food security. The value of R square shows that almost 41.9 percent of the variance or changes in the quantity of income are more influenced by all the independent variables that are already used in the forecasting of the model. Moreover, 57.1 percent of the changes in household income are caused by other factors that are not directly connected with the quantity of income.

The household food security situation in Afghanistan

Insufficient sources, bad economic conditions, high rate of poverty, and lack of financial resources to purchase food or lack of food are the most common reasons for increased food and nutrition insecurity, even during normal periods in these provinces and the whole part of Afghanistan. But in the duration of the COVID-19 pandemic, these problems were worsened. To figure out how the pandemic 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. Participants answered 55% about the decrease in food availability in the market while 70.6% of participants mentioned the price of food increased. More than 68% of participants stated that the availability of rice, wheat, Oil, potato, and some other things had negatively been affected in the markets. 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 closed borders in the country. To understand how overall food and nutrition security statuses are different, the researcher used a set of eight questions to ask about the respondent's experiences. Table 6 shows a clear picture of the number of participants and how the household has been affected by various food insecurity matters.

Table 6. Food Insecurity Constraints

Parameters	The number of Interviewed Negatively affected	Percentage (%)
Unable to eat preferred food due to inadequate money or lack of resources	280	72.72
Had to skip a meal because there was inadequate money or a lack of resources to get food.	350	90.90
Unable to eat healthy and nutritious food because of inadequate money or lack of resources.	310	80.51
Worried about not having enough food to eat because of inadequate money or lack of resources.	330	85.71
Hungry but did not eat because there was not enough money or other resources for food.	90	23.37
Went without eating for a whole day because of a lack of money or other resources.	80	20.77
Households ran out of food because of a lack of money or other resources	110	28.57
Ate less than you thought you should because of a lack of money or other resources.	70	18.18

Sources: Author's computation

Table 6 above shows food security in four provinces including Kabul, Nangarhar, Kandahar, and Balkh, the data represent 280 (72.72%) respondents who were unable to eat their preferred food due to lack of money and other resources. The ratio of participants who have to skip meals due to insufficient money or other resource stood at 350 (90.90%) and who were unable to eat healthy and nutritious food because of a lack of money or other resources at 310 (80.51%). Furthermore, the data display that 330 (85.71%) were worried about having enough food to eat due to inadequate money or lack of other resources, 90 (23.37%) of those hungry did not eat because there was not sufficient money or other resources for food. Moreover, 80 (20.77%) of the participants mentioned that went without food for a whole day 110 (28.57%) of the households ran out of food because of a lack of money and other resources. In addition, 70 (18.18%) of the participants in the research

area mentioned eating less than they thought you should because of a lack of money and other resources. The researcher believes that many reasons indicate this situation in the research area forty years of continuous war, successive natural disasters, the coronavirus pandemic, and closed borders during the pandemic have caused poverty and hunger to increase in Afghanistan.

CONCLUSION

The study identified the implications of COVID-19 on household incomes and food security in Afghanistan including four popular provinces like Kabul in the center part, Kandahar in the south part, Nangarhar in the east part, and Balkh in the north part of Afghanistan. As stated, the corona epidemic increased the unemployment rate, decreases income, lack of purchasing power, increased health costs, and inflation, and directly increased food insecurity in the research area. The pandemic also provided fundamental changes in the economic status of households in these four provinces and the whole area of Afghanistan. What was investigated in this research was the effects of the corona epidemic on the economic status of households in Afghanistan and food security. First, an overview of the concepts of Corona, the history of the spread of Corona and its consequences, as well as the food security of families were examined. And then the relationship independent variables above the dependent variable were implemented and analyzed in the framework of the regression model. The finding indicates that the relatively higher-income respondent was more likely to offset income risks from the pandemic than the poorer respondents. Furthermore, the unemployment and lockdown variables have a positive impact on household income and food security too. This clarifies that increases in these two variables directly decrease household income in the research area. The result also indicates that the impact of COVID-19 on food insecurity was very incommensurate by different households. Remarkable members of the respondents were suffering from food insecurity in most of the indicators. For example, by reducing food consumption, Households ran out of food, had to skip meals, went to bed without meals, and were hungry but did not eat were about 18.18%, 28.57%, 90.90%, 20.27%, and 23.37% respectively. Therefore, it would be concluded that household income and food insecurity are not outside of the COVID-19 and partial lockdown. Food security is a global concern in the present situation. Meanwhile, due to the unemployment of poor workers in society, the income level of poor families has decreased significantly. Due to disruption in supply and demand, the price of raw materials has also increased. This in turn places another heavy burden on poor families. In general, small businesses have suffered the most. If the health costs of the individual and family fight against Corona are added to the shoulders of the poor, it can be said that this group is under economic pressure from three aspects today. Decrease in income, increase in the price of raw materials, and health costs in the fight against Corona. Which by itself has caused food insecurity and economic pressure of Corona 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.

References

- Abdullah Zhou, D., Shah, T., Ali, S., Ahmad, W., Din, I. U., & Ilyas, A. (2019). Factors affecting household food security in the rural northern hinterland of Pakistan. *Journal of the Saudi Society of Agricultural Sciences*, 18(2), 201–210.
- Ali, A, and MA Khan. 2013. Livestock ownership in ensuring rural household food security in Pakistan. *The J. of Animal & Plant Sci* 23 (1):313-318.
- Afghanistan Ministry of Public Health (2020) accessed at: <https://moph.gov.af/en/covid-19-pandemic>, on 10.04.2021.
- Amaza, PS, Joseph Chinedu Umeh, J Helsen, and AO Adejobi. 2006. Determinants and measurement of food insecurity in Nigeria: some empirical policy guide. In the international association of agricultural economists' annual meeting, August.
- Appendini, Kirsten, and Ma Guadalupe Quijada. 2016. Consumption strategies in Mexican rural households: pursuing food security with quality. *Agriculture and Human Values* 33 (2):439-454.
- Arene, CJ, and C Anyaeji. 2010. Determinants of food security among households in Nsukka Metropolis of Enugu State, Nigeria. *Pakistan Journal of Social Sciences* 30 (1):9-16.
- Asghar, Zahid, and Ahmed Muhammad. 2013. Socio-Economic Determinants of Household Food Insecurity in Pakistan.
- Ballard, T. J., Kepple, A. W., & Cafiero, C. (2013). The food insecurity experience scale: Development of a global standard for monitoring hunger worldwide. Technical paper. Rome: FAO.
- Bashir, MK, S Schilizzi, and R Pandit. 2013a. Impact of socio-economic characteristics of rural households on food security: the case of Punjab, Pakistan. *JAPS, Journal of Animal and Plant Sciences* 23 (2):611-618.
- Bogale, Ayalneh. 2012. Vulnerability of smallholder rural households to food insecurity in Eastern Ethiopia. *Food Security* 4 (4):581-591.
- Chang, Yunhee, Swarn Chatterjee, and Jinhee Kim. 2014. Household finance and food insecurity. *Journal of Family and Economic Issues* 35 (4):499-515.
- Ceballos, F., Kannan, S., & Kramer, B. (2020). Impacts of a national lockdown on smallholder farmers' income and food security: Empirical evidence from two states in India. *World Development*, 136, 105069.
- Coleman-Jensen, Alisha, Mark Nord, Margaret Andrews, and Steven Carlson. 2011. Statistical Supplement to Household Food Security in the United States in 2010: AP-057, USDA, Economic Research Service.
- Cucinotta, D., & Vanelli, M. (2020). WHO declares COVID-19 a pandemic. *Acta bio- medica: Atenei Parmensis*, 91(1), 157–160.
- De Cock, Nathalie, Marijke D'Haese, Nick Vink, Cornelius Johannes Van Rooyen, Lotte Staelens, Hettie C Schönfeldt, and Luc D'Haese. 2013. Food security in rural areas of Limpopo province, South Africa. *Food Security* 5 (2):269-282.

- Doppler, W. 2002. Farming and rural systems approaches. Published Lecturing Material. Hohenheim. FAO. 2006.
- FAO (2006). The state of food insecurity in the world. Rome: Food and Agriculture Organization of the United Nations.
- FAO (2015). Modeling food insecurity in bivariate and regression analyses, guidelines prepared by the voices of the hungry team. Rome Italy: FAO.
- FAO (2016a). Global food insecurity experience scale survey modules, [http:// www.fao.org/3/a-bl404e.pdf](http://www.fao.org/3/a-bl404e.pdf).
- FAO (2016b). Methods for estimating comparable rates of food insecurity experienced by adults throughout the world. Rome Italy: FAO.
- FAO IFAD UNICEF WFP & WHO (2019). The State of Food Security and Nutrition in the World 2019. Safeguarding against economic slowdowns and downturns. Rome: FAO. License: CC BY-NC-SA 3.0 IGO.
- FAO. (2020d). Impacts of Coronavirus on food security and nutrition in Asia and the Pacific: building more resilient food systems. <https://doi.org/10.4060/ca9473en>
- Frongillo, Edward A, Christine M Olson, Barbara S Rauschenbach, and Anne Kendall (1997). Nutritional consequences of food insecurity in a rural New York State county. Institute for Research on Poverty, University of Wisconsin--Madison
- ESCWA. (2020a). COVID-19 Economic Cost to the Arab Region. <https://www.unescwa.org/sites/www>.
- Galanakis, C. M. (2020). The Food Systems in the Era of the Coronavirus (CoVID-19) Pandemic Crisis. *Foods*, 9, 523. <https://doi.org/10.3390/foods9040523>
- Gebre, Girma Gezimu. 2012. Determinants of food insecurity among households in Addis Ababa city, Ethiopia. *Interdisciplinary Description of Complex Systems* 10 (2):159-173.
- Gill, Abid Rashid, and Rana Ejaz Ali Khan. 2010. Determinants of Food Security in Rural Areas of Pakistan, SSRN Working Paper Series.
- Colafemmina, D., El Bilali, H. and Capone, R. (2020), “Impacts of COVID-19 on food security and food system sustainability”, Book of Proceedings of the XI International Scientific Agriculture Symposium “Agrosym 2020”, Virtual Conference, 8-9 October, pp. 925-933.
- Gundersen, Craig, and Joseph Gruber. 2001. The dynamic determinants of food insufficiency. In *Second food security measurement and research conference: Food Assistance and Nutrition Research Report*.
- Giap, Bui Minh (2020): COVID-19 pandemic impacts on food security in central and West Asia – Key issues and strategic options, ADB Central and West Asia working paper series No. 9, Asian Development Bank, Manila Philippines
- Hakimi,B.(2020). The effects of the coronavirus (COVID-19) on the economy of Afghanistan <https://www.khaama.com>

- Kansiime, Monica K., Tambo, Justice A., Mugambi, Idah, Bundi, Mary, Kara, Augustine & Owuor, Charles (2020): COVID-19 implications on household income and food security in Kenya and Uganda: Findings from a rapid assessment, *World Development* 137, 105199, Elsevier Ltd.
- Kassie, M., Ndiritu, S. W., & Stage, J. (2014). What determines gender inequality in household food security in Kenya? Application of exogenous switching treatment regression. *World Development*, 56, 153-171.
- Kidane, H., Alemu, Z. G., & Kundhlande, G. (2005). Causes of household food insecurity in Koredegaga peasant association, Oromiya zone, Ethiopia. *Agrekon*, 44(4), 543-560.
- Loopstra, R., & Tarasuk, V. (2013). The severity of household food insecurity is sensitive to changes in household income and employment status among low-income families. *The Journal of Nutrition*, 143(8), 1316-1323.
- Mango, N., Zamasiya, B., Makate, C., Nyikahadzoi, K., & Siziba, S. (2014). Factors influencing household food security among smallholder farmers in the Mudzi district of Zimbabwe. *Development Southern Africa*, 31(4), 625-640.
- National Statistic and Information Authority (2020): *Statistical Year Book*, Kabul, Afghanistan.
- Owusu, V., Abdulai, A., & Abdul-Rahman, S. (2011). Non-farm work and food security among farm households in Northern Ghana. *Food policy*, 36(2), 108-118.
- Ribar, D., & Hamrick, K. (2003). *An analysis of poverty and food sufficiency dynamics*. Washington, DC: USDA Economic Research Service.
- Riely, F., Mock, N., Cogill, B., Bailey, L., & Kenefick, E. (1999). *Food security indicators and framework for use in the monitoring and evaluation of food aid programs*. Nutrition Technical Assistance Project (FANTA), Washington, DC.
- Rose, D., Gundersen, C., & Oliveira, V. (1998). *Socio-Economic Determinants of Food Insecurity in the United States*: United States Department of Agriculture, Economic Research Service.
- Rukuni, M. (2002). Africa: addressing growing threats to food security. *The Journal of Nutrition*, 132(11), 3443S-3448S.
- Sasson, A. (2012). *Food security for Africa: an urgent global challenge*. *Agriculture & Food Security*, 1(1), 1.
- Sriram, U., & Tarasuk, V. (2016). Economic Predictors of household food insecurity in Canadian Metropolitan Areas. *Journal of Hunger & Environmental Nutrition*, 11 (1), 1–13.
- Sufizadeh, H. (2021). The impact of the coronavirus on the economy of Afghanistan <https://khabarnama.net/blog/1399/03/21>
- Tyner, W. E. (2013). National and global market implications of the 2012 US drought. *The Chicago Council on Global Affairs*, 2 May 2013.
- World Bank (2001): *Nuts and Bolts*. downloaded at <http://wbinfo18worldbank.org/rdv/food.nsf>.
- World Bank in Afghanistan (2020): *Poverty Status Update–Progress at Risk*; and World Bank. *The World Bank in Afghanistan* (accessed 10 April 2021).
- Zaki, B. (2020). *The effects of the coronavirus on the economy of Afghanistan* <https://csrskabul.com>

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