Evaluating Impacts of COVID-19 on Microeconomy of Poor

▶▶ **TECHNICAL** ▶
PAPER

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1. Background: The Pandemic

As of January 2021, the COVID-19 pandemic had infected more than 0.54 million people in Pakistan, resulting in 11,683 deaths[1]. It has severely impacted Pakistan's economy in the last quarter of FY20. Estimated annualized economic growth for FY20 is between -0.4% and -1.3%, driven primarily by a contraction in the Industry and Services sectors. Adverse effects of the pandemic, exacerbated by the locust attacks and recent floods, could remain damaging in FY21. The locust attacks and floods led to widespread crop damage, food insecurity, and inflationary pressures[2]. The projected GDP growth rate for FY21 varies between 1.33% and -1.4% (Nasir, Khalid, Jalil, Faraz, & Iqbal, 2020). While Pakistan faced double-digit inflation in FY20 due to economic and climatic shocks, the second wave of COVID-19 further increased economic uncertainty (GoP, 2020a; Lakner et al., 2021).

Macroeconomic shocks, caused by COVID-19, floods, and locust attacks, present a substantial decline in GDP with high inflation, and are expected to push millions of people into poverty and cause a significant rise in unemployment (Cuesta & Pico, 2020; Janssens et al., 2021; Liu et al., 2021; Suryahadi, Al Izzati, & Suryadarma, 2020; Valensisi, 2020)[3]. Poor workers, especially those dependent on a daily wage and having no savings, would be faced with a particularly daunting challenge in coping with possible lockdowns in response to the COVID-19 pandemic. Vulnerable employment is around 56% in Pakistan (71% among females; 52% among males) (Iqbal, 2020)[4]. These macroeconomic shifts pose enormous implications for vulnerable employment and, therefore, categorically for the poor as they constitute a large percentage of those in vulnerable employment.

Various studies have shown that macroeconomic shifts especially due to COVID-19 resulted in a significant increase in global poverty. For example, Cuesta and Pico (2020) show that COVID-19 resulted in a roughly 3 to 9 percentage point increase in headcount poverty (in Columbia). Another study shows that in the absence of COVID-responsive social protection, the poverty rate would increase from roughly 17% to 26% in the San Francisco Bay Areas (Martin, Markhvida, Hallegatte, & Walsh, 2020)[5]. Suryahadi et al. (2020) find that the poverty rate will increase between 0.5 and 7 percentage points in Indonesia under different economic growth scenarios.

These studies suggest that the COVID-19 pandemic would increase poverty and unemployment due to economic recession and business closures, especially in developing countries. Pakistan has also witnessed a significant decline in economic activities and business closures during first wave of COVID-19 along with floods and locust attacks[6]. A recent survey conducted by the Pakistan Bureau of Statistics (PBS) shows that

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[1]. covid.gov.pk. Figures taken on January 31, 2021.
[2]. https://www.worldbank.org/en/country/pakistan/overview and
http://www.fao.org/pakistan/resources/in-depth/desert-locust-situation-in-pakistan/en/
[3]. The COVID-induced global new poor are estimated to be 124 million in 2020, and set to rise up to 143-163 million in 2021 under different economic growth scenarios (Lakner et al., 2021).
[4]. Vulnerable employment is measured as the proportion of own-account workers (also including daily wage earners) and unpaid family workers in total employment. Approximate sectoral allocation of vulnerable employment in Pakistan is over 80% in Agriculture; 75% in Wholesale and Retail; over 60% in Real Estate; 50% in Hospitality; and 40% in Transport and Communication.
[5]. The San Francisco Bay Area is a region in Northern California.
[6]. Pakistan was severely hit by monsoon rains and urban flooding during August-September 2020, resulting in 409 deaths and damages across Pakistan, mainly in Sindh and KPK, also including Gilgit-Baltistan and Azad Jammu and Kashmir (NDMA, 2020). The floods destroyed main crops including cotton, wheat, and chili. The locust attacks adversely damaged crops in Pakistan, mainly in Balochistan, Punjab, and Sindh. FAO estimates show that the losses to agriculture due to these locust attacks is around PKR 205 billion, considering a 15% damage level of the production of wheat, gram, and potato only (FAO, 2020).

37% of Pakistan's working population lost their jobs due to these shocks and around 12% experienced a reduction in income (GoP, 2021)[7]. This implies that half of the country's working population was adversely affected due to closure of economic activities and lockdown due to COVID-19. Nationally, approximately 53% households in Pakistan reported reduction in income, either earned or unearned, during COVID-19's first wave (April-July 2020)[8]. Around 10% households reported facing severe food insecurity, and 30% households reported moderate food insecurity during the first wave (GoP, 2021)[9].

Our Study examines the impacts of these recent macroeconomic shocks, on the microeconomy of poor and ultra-poor households which are targeted as beneficiaries by the Benazir Income Support Program (BISP) and Pakistan Poverty Alleviation Fund (PPAF) in Pakistan[10]. We assess these impacts by quantifying changes to the microeconomy of poor and ultra-poor households in terms of their income, poverty, employment, and educational levels. We also categorially quantify these macroeconomic impacts on women and youth among the poor.

2. Evaluation Method for Microeconomic Analysis

We survey 423 poor and ultra-poor households targeted under NPGP and BISP, sampled using a three-stage stratified random sampling technique. We obtain relevant administrative datasets from PPAF to develop a sampling framework. This dataset covers detailed information on target beneficiary households along with their Proxy Mean Test (PMT) poverty scores. Based on this administrative data, we sample households for the field survey.

Stepwise elaboration of this sampling methodology is

(a) Stage 1: Our primary sampling units are districts covered under NPGP[11]. We purposely select 2 districts from each province based on poverty ranking, geographic diversity, and NPGP target coverage using PPAF's administrative data.

(b) Stage 2: Then, we purposely select 2 Union Councils (UCs) from each selected district, where maximum existing and potential NPGP and/or BISP beneficiary households are present. To capture regional heterogeneities, we ensure that both UCs selected from each district fall in different tehsils[12].

(c) Stage 3: From selected UCs, we randomly choose around 40 NPGP and/or BISP beneficiary households to survey 400 households across 8 districts[13]. PPAF provided us with contacts of NPGP Partner Organizations (POs) with local offices in our sampled districts, to obtain administrative data which contains complete addresses of beneficiary households to enable us to sample survey households randomly. These POs also facilitated our survey teams in locating sampled households and conducting surveys with them. This sampling framework enabled us to survey a total of 423 households across Pakistan, as indicated in Figure 1[14] (on page 3).

We developed a survey questionnaire to collect information on family roster, employment, impacts of the COVID pandemic on socioeconomic wellbeing, adaptation strategies used by households to mitigate adverse consequences of macroeconomic shocks, and role of State during these shocks as perceived by households. To determine impacts of macroeconomic shocks on income, expenditures, and other socio-economic wellbeing indicators of households, we collected information for 3 timeslots using the recall method:

- Before COVID-19 (January-March 2020)
- During COVID-19: The 1st Wave and Lockdown (April-July 2020)
- Relaxation in Lockdown (August-November 2020) [15]

[7]. PBS figures are based on a nationally representative sample.

[8]. Households have different sources of income including earned income from jobs/businesses and unearned income from remittances, gifts, and assistance.

[9]. Food security exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food which meets their dietary needs and food preferences for an active and healthy life (FAO, 2016). PBS uses 3 scales to measure food security: i) Food Secure ii) Moderate Food Insecure iii) Severe Food Insecure (GoP, 2021).

[10]. BISP provides unconditional cash transfers to ultra-poor while PPAF provides assets through National Poverty Graduation Program (NPGP) to both ultra-poor and poor households.

[11]. At the time of our HH Survey, NPGP had not yet rolled out its interventions in our sampled districts of Balochistan. Therefore, from Balochistan we surveyed only BISP beneficiaries.

[12]. Where there was only one tehsil in a district, both UCs were selected from the same tehsil. Only one tehsil is sampled from Lower Kohistan (KPK) as there is only tehsil present in the district.

[13]. We over-sampled the households (600 households) to achieve the desired sample size, in view of a 30% non-response rate. The representative sample is calculated using the formula: n=(z^2 NP(1-P))/(e^2 (N-1)+z^2 P(1-P)) where n represents sample size, N represents NPGP and/or BISP Beneficiary Population Size, P represents Households' Population Proportion, and e represents Margin of Error.

[14]. The survey teams conducted surveys with 445 households in 16 UCs across 8 districts. After reviewing data, we excluded surveys with incomplete information and were left with 423 households in sampled districts.

[15]. The 2nd COVID-19 wave started in Pakistan in late November 2020 with an increase in positivity rate of cases. In early March 2021, the 3rd COVID-19 wave started in major cities of Pakistan. The Government of Pakistan then reimposed few restrictions on business activities and partial closure of schools in few cities across Pakistan.

Figure 1: Sampling Framework

Source: Author's Formulation
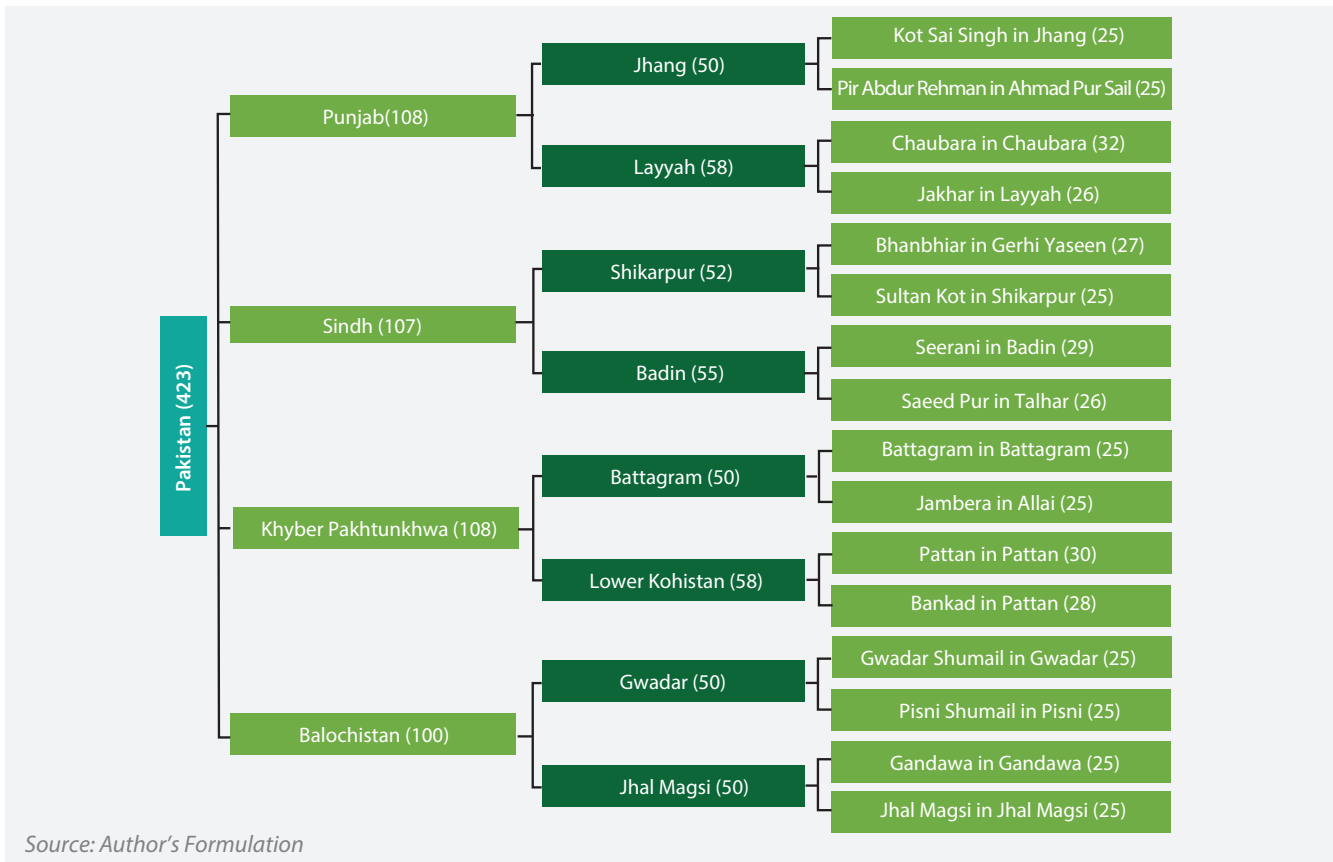
We digitized our survey questionnaire using a survey design application developed by the World Bank[16]. The Computer-Assisted Personal Interviewing (CAPI) method was used to collect and enter survey data in real time over Android tablets and mobile phones, using online software 'Survey Solution' also developed by the World Bank. We hired 4 enumerators (2 females, 2 males) and 1 field supervisor to conduct the surveys. The supervisor reviewed field activities and data collected, on a daily basis. The supervisor also shared daily progress report with survey teams to ensure data quality and timely completion of field activities.

2.1. Socioeconomic Profile of Surveyed Households

We find that the national average household size is 7.7 members among our surveyed households (HHs). Our analysis further establishes that differences exist in HH size among provinces. The average HH size is 8.6 members in KPK, 8.1 members in Sindh, 7.2 members in Punjab, and 6.3 members in Balochistan. The head of HH's average age is 47 years across Pakistan, with the lowest age in Punjab (45 years) and the highest age in Sindh (50 years). Around 97% heads of our surveyed HHs are married (Table 1).

**Table 1: Household (HH) Demographic Characteristics**

Indicators	Punjab	KPK	Balochistan	Sindh	Pakistan
HH size (Average)	7.2	8.6	6.3	8.1	7.7
Gender Composition					
Male	50.3%	56.5%	48.6%	51.0%	52.0%
Female	49.7%	43.5%	51.4%	49.0%	48.0%
Age of HH Head (Average)	44.9	47.0	45.4	49.8	46.9
Married HH Heads	98.0%	98.0%	99.0%	92.5%	96.8%

Source: Author's Formulation

16. Survey design application is an online platform to develop survey questionnaire. For further details, see https://dimewiki.worldbank.org/wiki/Questionnaire_Design. The Survey design application is integrated with Survey Solution for data collection. Survey Solution provides a platform to collect data using Android tablets and mobiles. For further details on use of Survey Solution, see https://mysurvey.solutions.

Around 66% of our surveyed individuals have no formal education, followed by 21% individuals who have primary education (Grades 1-5), and nearly 11% individuals with Grades 6-10 education[17]. A small portion of the surveyed population (2.5%) had Grade 11 and above education (Figure 2). [18]

Figure 2: Educational Attainment among Surveyed Household Members
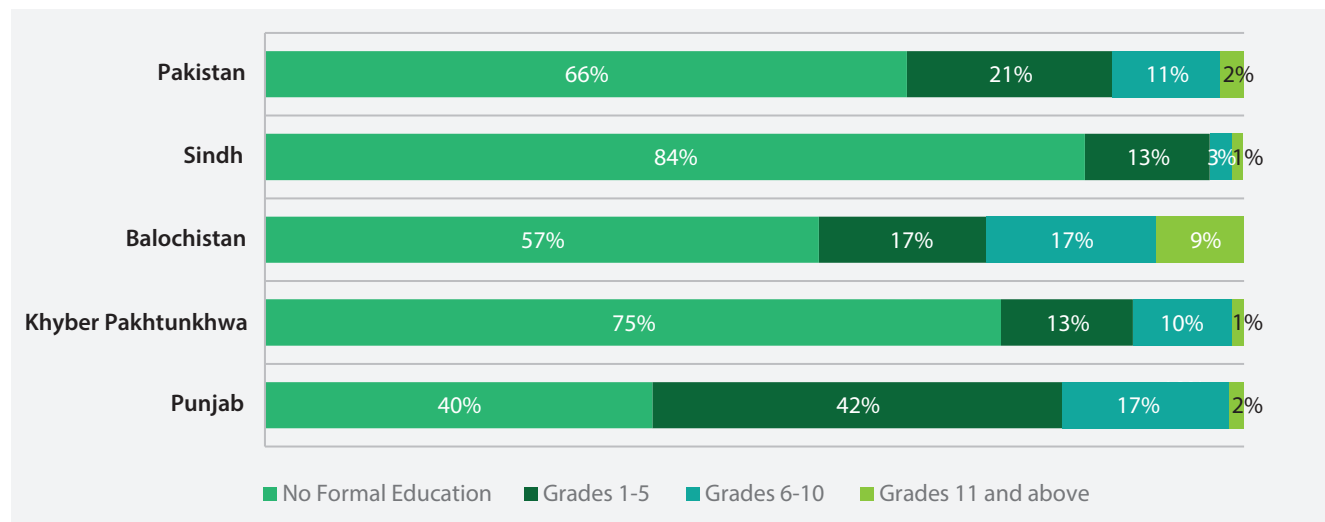
Source: Author's Formulation

Figure 3 presents the average monthly income of households both at national and provincial levels. The average income earned by our surveyed households is PKR 15,010 per month. The highest average monthly income is observed in Punjab (PKR 17,270) and the lowest average monthly income in Sindh (PKR 13,074).

Figure 3: Average Monthly Household Earning (PKR) among Surveyed Households
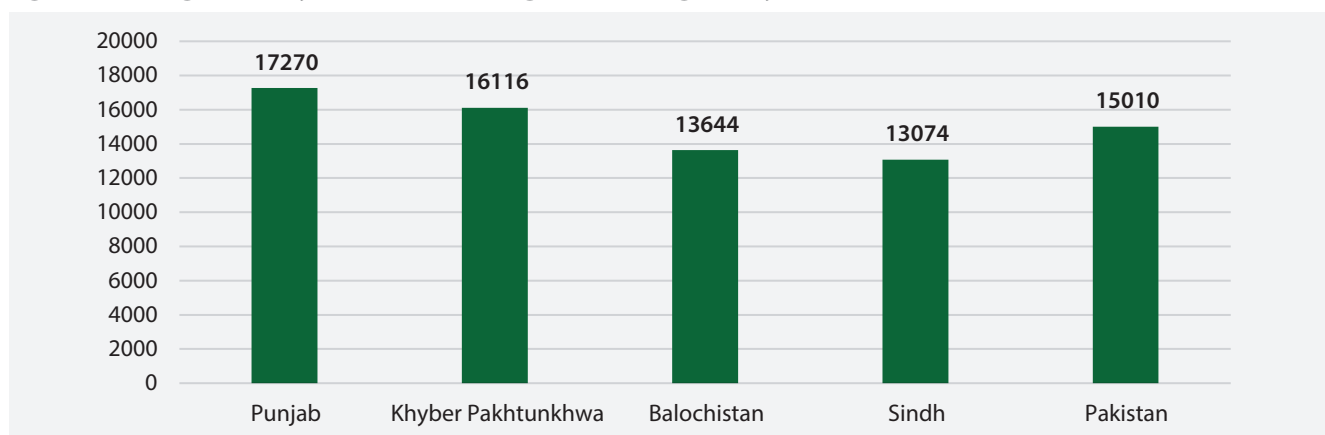
Source: Author's Formulation

Around 50% of HH members aged 10 years or above are engaged in some level of economic activity among surveyed households. This includes both paid and non-paid employments, such as contributing family workers[19]. The employment rates are highest in Punjab (72%) and lowest in Sindh (32%). Table 2 on page 5 presents the type of employment among employed members of these households. It is observed that daily wage workers and contributing family workers are two major employment types. Among employed members, around 37% members are engaged as daily wage workers at the national level among surveyed households. The share of daily wage workers is highest in Sindh (52%), followed by Balochistan (37%), Khyber Pakhtunkhwa (35%), and then Punjab (28%). At the national level, a small portion of this labor force (6.6%) is self-employed (doing their own business). The self-employment share is highest in Sindh, followed by Punjab, Balochistan, and then Khyber Pakhtunkhwa among surveyed households.

[17.] No formal education' means the individual has never enrolled in formal school. Education from madrasa is considered part of 'no formal education'. Information on educational attainment is recorded for all individual aged 5 or above.
[18.] We collected information both at individual (all household members) and household (aggregate at household) levels during field survey. Figure 1 (educational attainment) is based on individual level data, while Figure 2 (average monthly household earning) is based on household level information.
[19.] Contributing Family Worker (Unpaid Family Worker) is a member of the family who works for the family enterprise without being paid. Although they are not paid, their efforts result in an increase in the household income therefore they are considered employed persons (GoP, 2020b).

Table 2: Employment Status and Types of Employment

Employment Status	Punjab	KPK	Balochistan	Sindh	Pakistan
Employed	71.8%	48.8%	58.8%	31.9%	50.0%
Types of Employment					
Agriculture and Livestock	2.2	6.6	2.6	16.1	6.4
Daily Wage Workers	28.0	34.9	37.3	52.3	36.8
Paid Employees	11.9	7.4	12.4	6.9	9.7
Own Business/Work	8.6	2.6	3.9	10.9	6.6
Contributing Family Worker	49.3	48.5	43.8	13.8	40.5

Source: Author's Formulation

3. Microeconomic Analysis: Results

3.1. Impact on Monthly Income

Figure 4 on page 6 presents the impact of macroeconomic shocks on the average monthly income at national and provincial levels across our three different time slots, as mentioned above. The average monthly income was PKR 15,306 among surveyed households at a national level before COVID-19, that is during the January-March 2020 slot[20]. Around 59% decline is noted in monthly income nationally during COVID-19 due also to floods and locust attacks around that timeslot[21]. A similar decrease has been observed across provinces. The maximum fall in monthly income during COVID-19 (lockdown period) has been in KPK, followed by Punjab, Sindh, and then Balochistan. During this lockdown, income of daily wage workers fell by 64% (Table 3)[22]. Figure 4 shows that lockdown and other macroeconomic triggers adversely impact average monthly income of poor and ultra-poor households in Pakistan. Nonetheless, as lockdown restrictions were gradually released, a rise in average monthly income was observed, which was still slightly lower than pre-pandemic income levels (Figure 4).

Table 3: Income Changes (PKR)

| Sector of Employment	Income			Percent Change	
	Before COVID-19	During COVID-19	After COVID-19	Change in income during COVID-19	Change in income after COVID-19
Agriculture and Livestock	16820	7360	16840	-56%	0.0%
Daily Wage Work	19434	7023	18411	-64%	-5%
Paid Employment	19955	11818	21273	-41%	7%
Own Business/Work	18667	6000	16722	-68%	-10%
Livestock Ownership					
No Livestock	13809	5848	13898	-58%	1%
Livestock	15945	6498	15485	-59%	-3%
Type of Social Protection					
NPGP	21046	5722	20115	-73%	-4%
BISP	13412	6451	13746	-52%	2%
Both (NPGP+BISP)	14870	6194	14025	-58%	-6%

Source: Author's Formulation

Note: Percentage change in income during COVID-19 is calculated using income reported before COVID-19 (January-March 2020) and income reported during COVID-19 (April-July 2020). Percentage change in income after COVID-19 is calculated using income reported during COVID-19 (April-July 2020) and after COVID-19 (August-November 2020).

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[20] This income is comparable with the income reported by the HIES (2018-19) for the bottom quintile (poorest) in Pakistan. Each quintile contains 20% of the total population. The bottom quintile contains lowest 20% of the population, and the fifth quintile contains richest 20% of the population.

[21] Percentage change in income during COVID-19 is calculated using income reported before COVID-19 (January-March 2020) and income reported during COVID-19 (April-July 2020). Percentage change in income after COVID-19 is calculated using income reported during COVID-19 (April-July 2020) and after COVID-19 (August-November 2020). PBS has also used similar method to calculate income changes during COVID-19 and after COVID-19 (GoP, 2021).

[22] Especially for daily wage workers who do not own any livestock.

**Figure 4: Impact on Monthly Household Income (PKR)**
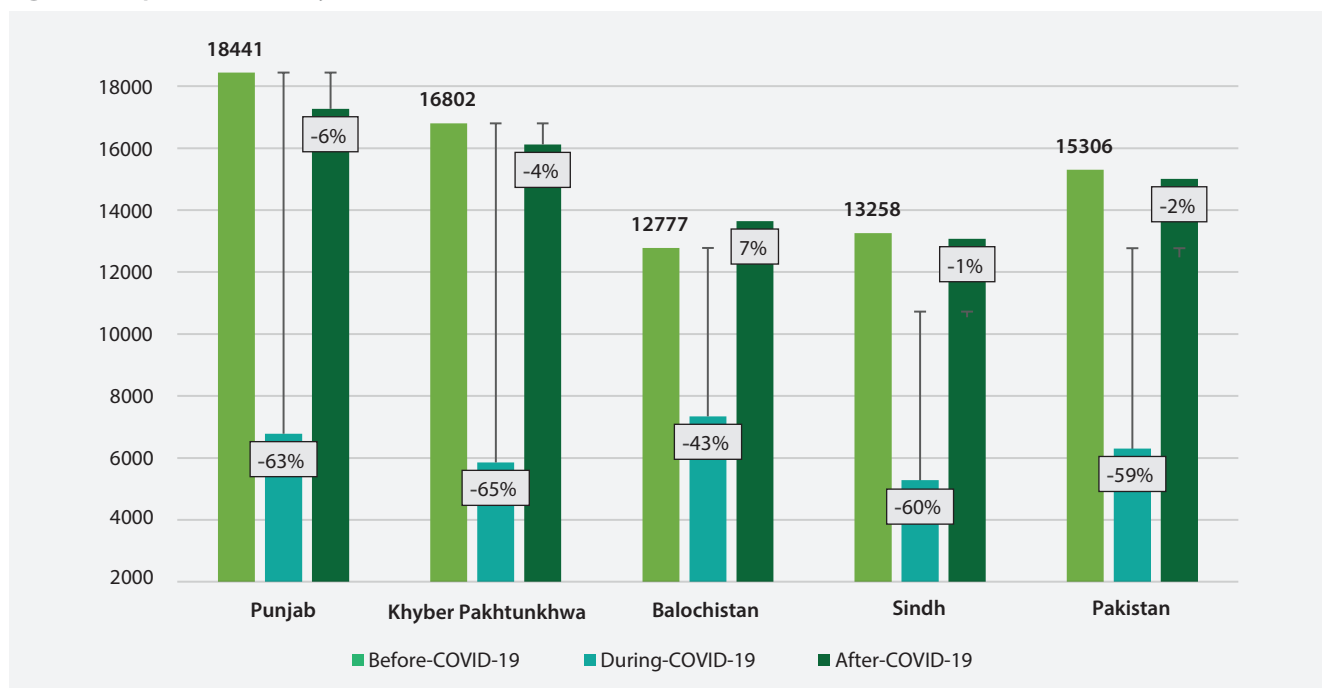
Source: Author's Formulation

3.2. Impact on Household Expenditures

Figure 5 presents average household expenditures at national and provincial levels across our three timeslots. Around 10% decline is noted in overall household expenditures during COVID-19 (lockdown period) nationally. Household expenditures declined during COVID-19, and then increased in the post COVID-19 scenario (that is after the first COVID wave was relatively over in Pakistan) compared to levels during COVID-19 scenario, across all four provinces. The fall in expenditures has been the sharpest in Khyber Pakhtunkhwa, followed by both Balochistan and Sindh, and then Punjab (Figure 5).

Figure 5: Impact on Monthly Household Expenditures (PKR)
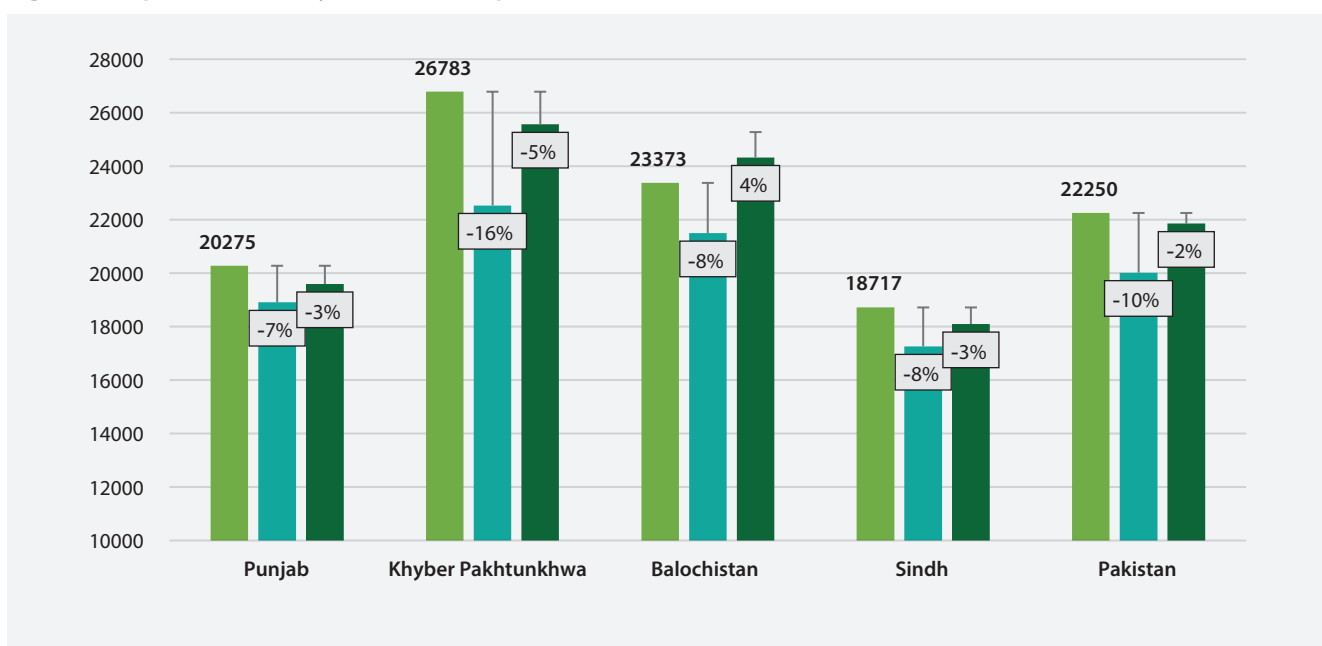
Source: Author's Formulation

Table 4 presents per capita household expenditures (expenditures adjusted by household size) on food, education, and health before, during, and after COVID-19 among surveyed households at national and provincial levels. Table 4 shows that per capita expenditure has declined by around 8% during COVID-19 (compared to pre-COVID levels) among poor and ultra-poor in Pakistan23. Our findings reveal a significant increase in per capita expenditures nationally in the post COVID-19 scenario. The same pattern has been observed across all provinces. Table 4 shows that per capita expenditure on food has declined by 7% during COVID-19. Per capita expenditure on education has declined by 71% during the same period. Per capita health expenditure has declined by 17% among surveyed households during COVID-19. There is a significant recovery in per capita expenditures on food, education, and health after relaxation in lockdown (defined as after COVID) compared to expenditures during COVID (Table 4).

Table 4: Per Capita Expenditure Changes across Different Categories (PKR)

	Punjab	KPK	Balochistan	Sindh	Pakistan
Total					
Before COVID-19	3115	3728	4998	2868	3666
During COVID-19	2898	3119	4412	3071	3369
After COVID-19	3015	3557	5102	2753	3595
Change during COVID-19	-7%	-16%	-12%	7%	-8%
Change after COVID-19	-3%	-5%	2%	-4%	-2%
Food					
Before COVID-19	1816	2486	2977	1700	2238
During COVID-19	1701	2346	2908	1396	2079
After COVID-19	1798	2679	3105	1556	2275
Change during COVID-19	-6%	-6%	-2%	-18%	-7%
Change after COVID-19	-1%	8%	4%	-8%	2%
Education					
Before COVID-19	495	123	355	62	257
During COVID-19	150	10	75	61	74
After COVID-19	515	114	379	65	266
Change during COVID-19	-70%	-92%	-79%	-2%	-71%
Change after COVID-19	4%	-7%	7%	4%	4%
Health					
Before COVID-19	413	508	627	350	473
During COVID-19	441	493	431	204	390
After COVID-19	456	481	608	280	454
Change during COVID-19	7%	-3%	-31%	-42%	-17%
Change after COVID-19	10%	-5%	-3%	-20%	-4%
Others					
Before COVID-19	391	610	1040	756	
During COVID-19	606	270	997	1410	826
After COVID-19	245	284	1009	852	599
Change during COVID-19	55%	-56%	-4%	87%	18%
Change after COVID-19	-37%	-53%	-3%	13%	-14%

Source: Author's Formulation

Note: Percentage change in income during COVID-19 is calculated using income reported before COVID-19 (January-March 2020) and income reported during COVID-19 (April-July 2020). Percentage change in income after COVID-19 is calculated using income reported during COVID-19 (April-July 2020) and after COVID-19 (August-November 2020).

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23. The overall monthly household expenditures decline is 10% (as given in Figure 4) while per capita household expenditure decline is 8% (as given in Table 4) during COVID-19 (April-July 2002) compared to before COVID-19 situation. This reflects that family composition (that is, family size) plays an important role in determining income changes.

4. Socioeconomic Effects of Macroeconomic Shocks

This section presents findings on perceptions of surveyed households about impacts of macroeconomic shocks on their livelihood, employment, and overall wellbeing. Gender perspectives are also discussed here.

4.1. Perceived Impact on Livelihood

Figure 6 presents perceived impacts of recent macroeconomic shocks on livelihood opportunities available to surveyed households. Around 62% households respond with the 'great extent' option, implying that the recent macroeconomic shocks have impacted them to a great extent. 23% households respond with the 'moderate extent' option, and only 13% households respond with 'some extent'. [24]

Figure 6: Perceived Impact of Shocks on Livelihood

Legend: To some extent | To a moderate extent | To a great extent | Not at all
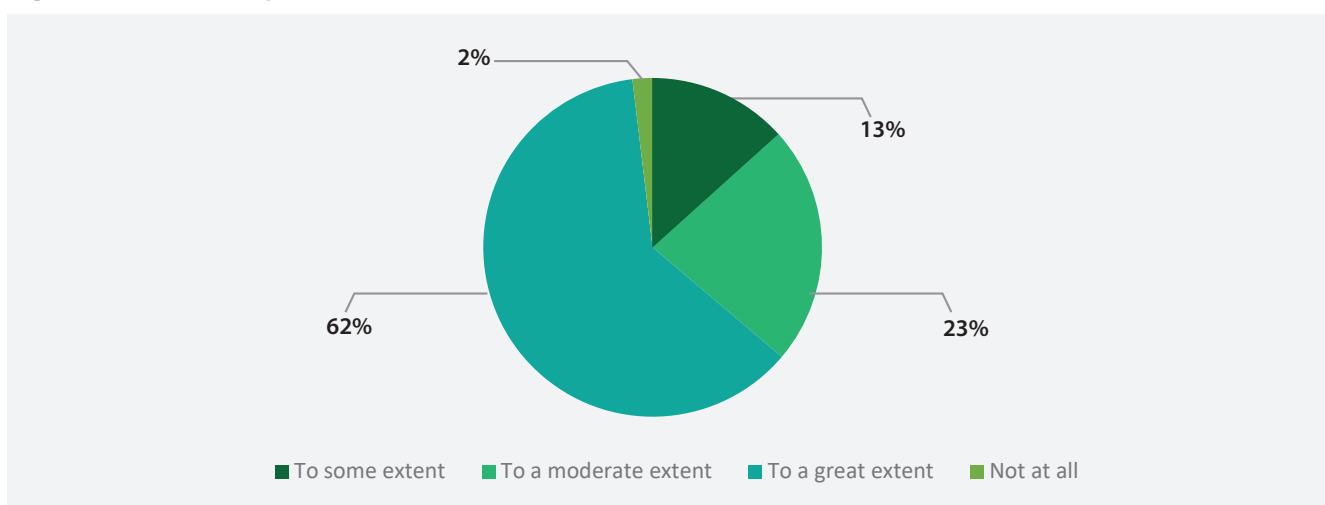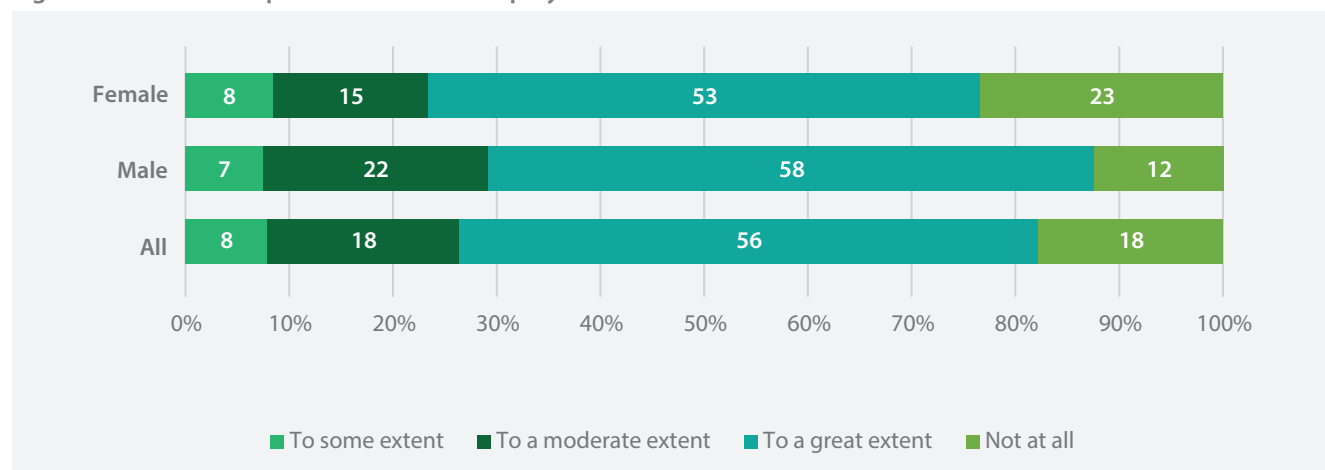
Source: Author's Formulation

4.2. Perceived Impact on Employment and Income

Figure 7 presents the perceived impacts of recent macroeconomic shocks on employment, across our surveyed households and across genders. Around 82% surveyed households shared that macroeconomic shocks impacted their employment, ranging from minor impact (on 8%) to moderate impact (on 18%) and severe impact (on 56%)[25]. According to survey respondents, employment of both women and men is affected by a great extent due to lockdown during COVID-19. Percentages of this perceived impact are comparable for women and men (53% for women; 58% for men).

Figure 7: Perceived Impact of Shocks on Employment

Legend: To some extent | To a moderate extent | To a great extent | Not at all

Source: Author's Formulation

[24.] The intensity of impacts on livelihood due to macroeconomic shocks is measured using Likert Scale. 'To some extent' represents marginal impact on livelihood and 'to a great extent' represents severe impact.
[25.] The intensity of impacts on employment due to macroeconomic shocks is measured using Likert Scale. 'To some extent' represents marginal impact on employment, while 'to a great extent' represents severe impact.

Figure 8 presents the perceived impacts of recent macroeconomic shocks on income across three levels – 'to some extent', 'to a moderate extent', and 'to a great extent'. Figure 7 shows that 62% of the surveyed households reported that their income is affected by a great extent due to shocks and especially during the COVID lockdown. As compared to 61% men however, more women at 62% reported that their income had been adversely impacted by the shocks during COVID-19 (Figure 8).

Figure 8: Perceived Impact of Shocks on Income
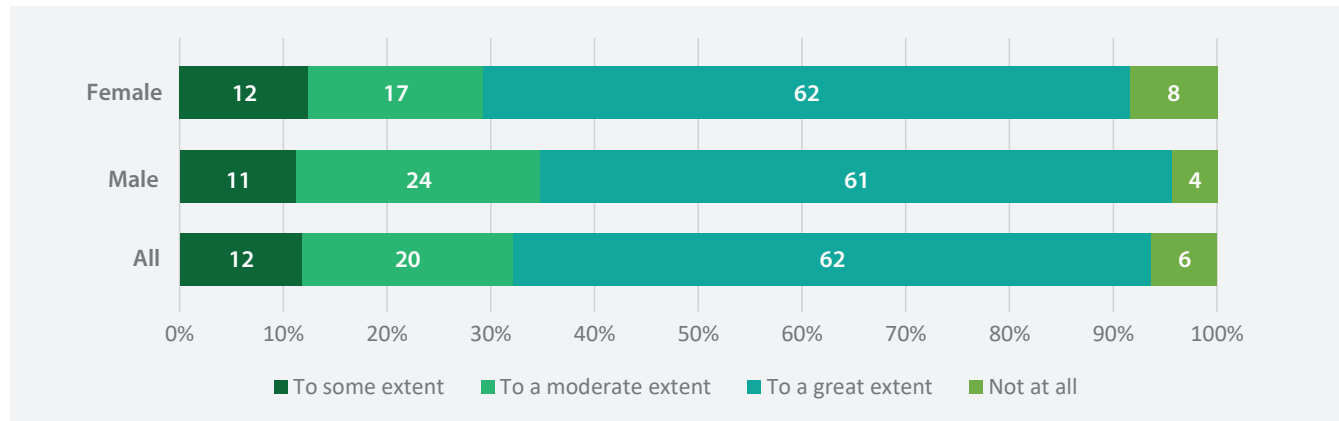
Source: Author's Formulation

4.3. Perceived Impact on Overall Wellbeing

Figure 9 presents perceived impacts of macroeconomic shocks on overall wellbeing of surveyed households. Around 39% households reported that their overall wellbeing had been impacted to a great extent as a result of recent macroeconomic shocks. 30% households reported their overall wellbeing being moderately impacted and 21% reported experiencing impacts to only some extent (Figure 9). Only 10% households reported that their overall wellbeing has not been impacted by recent macroeconomic shocks at all.

Figure 9: Perceived Impact of Shocks on Overall Wellbeing
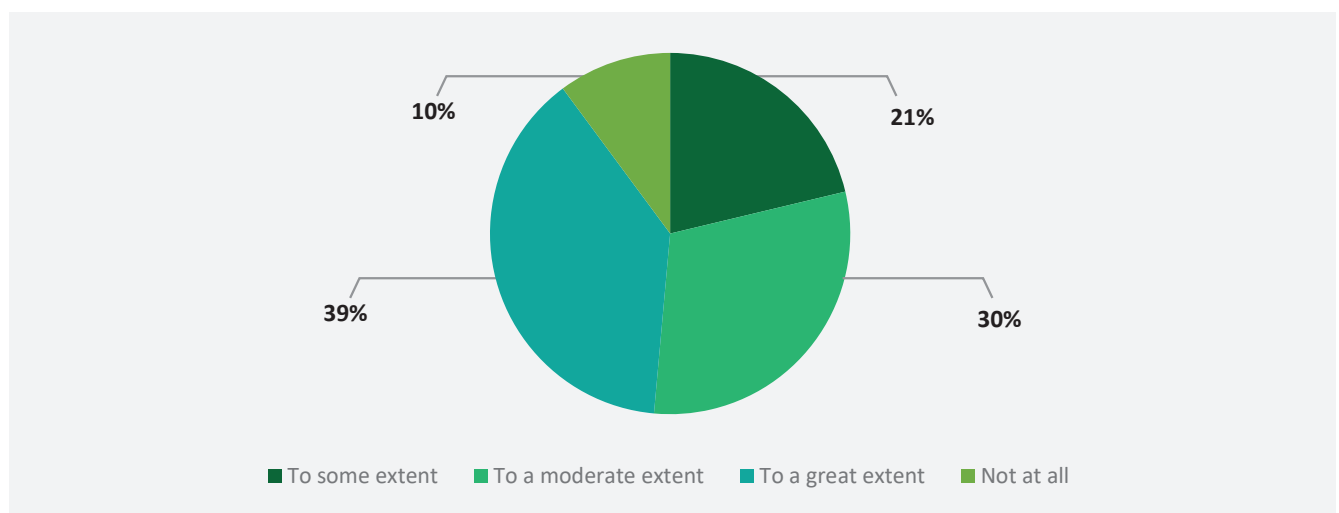
Source: Author's Formulation

5. Adapting to Macroeconomic Shocks

The poor and ultra-poor households we surveyed reported adopting various measures to cope with the recent macroeconomic shocks which resulted in massive income decline for them as reported above. To mitigate such impacts of COVID-19 for example, nearly 76% households reported buying less expensive food and around 24% households also reduced their number of daily meals. Around 18% households reported that they stopped their children from going to school during COVID, and 45% reported shifting their children to less expensive schools. Approximately 70% reported acquiring less expensive healthcare services, compared to pre-COVID baseline, and 9% reported purchasing cheaper medicine. 21% households reported that they have avoided medical treatment during COVID-19 (Table 5). Approximately 10% households reported having sold their assets such as livestock and having used their savings to absorb the macroeconomic shocks.

**Table 5: Coping Strategies during Macroeconomic Shocks**

	% of HHs
Food Expenditures	
Bought less expensive food	75.6
Reduced number of daily meals	24.4
Education Expenditures	
Moved children to less expensive schools	45.4
Stopped children from going to school	18.1
Health Expenditures	
Opted for less expensive health service	70.0
Purchased cheaper medicines	9.0
Avoided treatment	21.0

Source: Author's Formulation

5.1. Macroeconomic Shocks and Future Adaptation Plan

In view of the start of a second wave of COVID-19 (from December 2020 onward) and the possibility of subsequent lockdowns and closure of economic activities, we assessed the likely impacts perceived by households of future shocks to their livelihood. Figure 10 on page 10 shows that around 57% households reported that they perceived severe impact on their livelihoods due to a possible second wave of COVID and other macroeconomic shocks in future, 39% reported moderate effects, and only 4% reported expecting no impact. This explains that our surveyed group (poor and ultra-poor) is highly vulnerable to macroeconomic shocks due to their precarious finances, limited employment opportunities, and limited livelihood diversity.

Figure 10: Perceived Impact on Livelihood as a Result of Disruption from Future Macroeconomic Shocks

■ No impact   ■ Severe Impact   ■ Moderate Impact
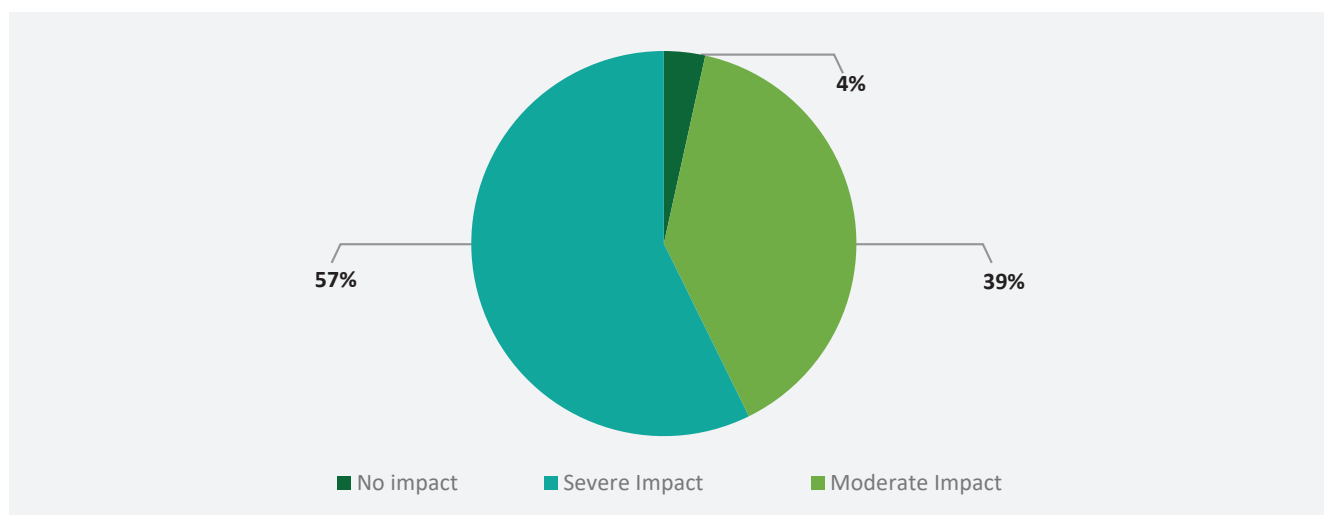
Source: Author's Formulation

Further, we gather information on future coping strategies of households to respond to any such income decline in future. Households mentioned multiple adaptive measures to cope with future macroeconomic shocks. Most prominently, 59% households mentioned that they will continue to look for work to earn livelihood, despite the fear of contracting coronavirus. This implies that our surveyed group (poor and ultra-poor) largely lacks any saving or other financial support to meet future consumption needs. They prefer work over health to support family needs during shocks. Around 64% households said they will mostly rely on government support in the form of social assistance during future shocks, around 60% said they will take loans, and 39% will also reportedly depend on existing savings. Around 28% households reported that they will sell their livestock and assets to cope with any major income decline in future.

**Figure 11: Adaptation Measures to Cope with COVID-19 in Future**
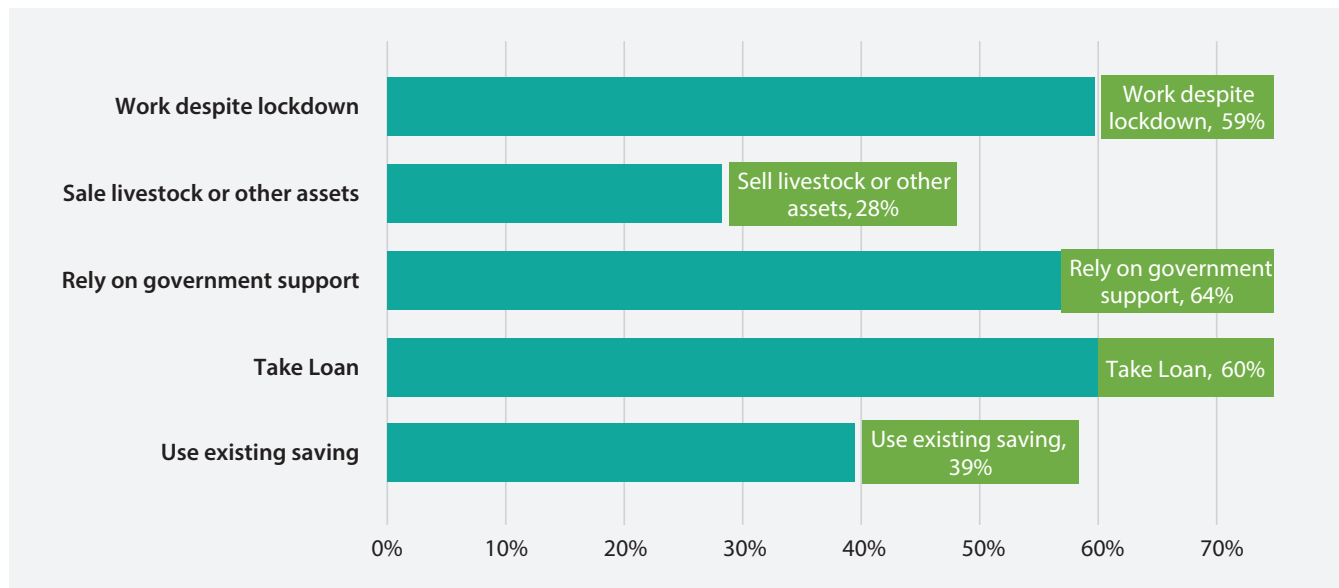
Source: Author's Formulation

6. Government and Non-Governmental Support

Government institutions and non-governmental organizations (NGOs) have shown to play pivotal role in supporting the poor and ultra-poor during various socioeconomic crisis (Iqbal, 2020; Loayza & Pennings, 2020). For example, the Government of Pakistan has expanded the direct cash transfers scheme to support poor and ultra-poor during COVID-19 lockdown, floods, and locust attacks (GoP, 2020a). Besides the government, various financial institutions extended interest-free loans to support a speedy socioeconomic recovery[26]. Our surveyed households have reported receiving financial support from both government and non-government institutions to meet financial needs during COVID-19.

Figure 12 shows that around 81% of respondent households reported being financially supported by Government of Pakistan's Ehsaas Emergency Cash Program – the largest government-led initiative to provide direct cash of PKR 12,000

Figure 12: Sources of Financial Support during Shocks
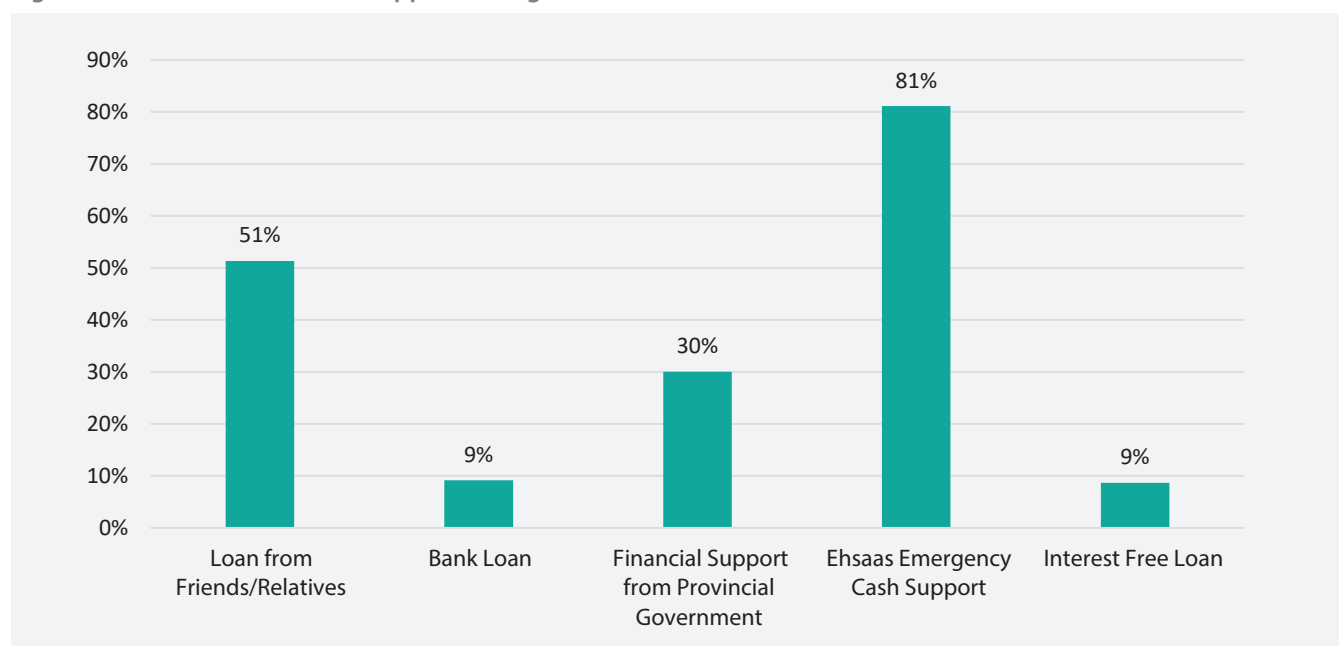
Source: Author's Formulation

[26.] For example, Ehsaas Interest Free Loan (IFL) prorgamme for poverty graduation executed by PPAF.

per family during COVID-19. This initiative was part of the ongoing unconditional cash transfers (UCT) program implemented by the Benazir Income Support Programme (BISP)[27]. Around 60% of respondent households stated satisfaction with the government's financial support to them during COVID-19. Approximately 51% households mentioned that they took loan from friends/relatives, 9% reported taking loan from banks, and 9% reportedly availed the interest free loan facility to fulfill financial needs to absorb the macroeconomic shocks.

To quantify the relative contribution of financial support in mitigating adverse consequences of recent macroeconomic shocks, we conducted a multivariate analysis using the Probit regression model[28]. Our dependent variable is a dummy. Our model takes a value of 1 if a respondent household's livelihood has been affected by a great extent due to recent macroeconomic shocks and 0 otherwise. Table 6 presents our Probit estimation results.

Our estimation results show that households which received emergency cash support (PKR 12,000) are 15% less likely than those which did not receive this cash support, to report that their livelihood was affected to a great extent by macroeconomic shocks. Community support (from friends and relatives) caused a reduction in being affected to a great extent by macroeconomic shocks. Our results show that the probability of being affected to a great extent by macroeconomic shocks was decreased by 13% due to community support. Similarly, financial support through loan has significantly reduced the chances of being affected to a great extent by macroeconomic shocks. Our results show that the probability of being affected to a great extent was decreased by 20% due to financial support through loan. We also find that paid employees are 43% less likely to experience adverse impacts of macroeconomic shocks on their livelihood than are unemployed people[29].

Table 6: Factors Determining Whether COVID-19 Crisis Affected Livelihood by a Great Extent

Independent Variables	Marginal Effect	SE
Emergency Cash Support (Yes= 1, Otherwise= 0)	-0.153**	(0.0743)
Community Support (Yes= 1, Otherwise= 0)	-0.127*	(0.0738)
Formal loans (Yes= 1, Otherwise= 0)	-0.196**	(0.0973)
Gender (Male=1, Otherwise=0)	0.0449	(0.0984)
Log Initial Income (Continuous)	-0.135**	(0.0534)
Household Size (Continuous)	0.00594	(0.0144)
Employed in Agriculture & Livestock (Yes=1, Otherwise=0)	-0.127	(0.146)
Daily Wage Worker (Yes=1, Otherwise=0)	-0.120	(0.104)
Paid Employees (Yes= 1, Otherwise= 2)	-0.434***	(0.125)
Self Employed (Own Bussiness)	-0.00450	(0.170)
Observations	237	

Source: Author's Estimates (based on Probit model)
Standard Errors (SEs) in parentheses: ***p<0.01, **p<0.05, *p<0.1

7. Impact of NPGP on Wellbeing: Multivariate Analysis

In this Study, we also examine the impact of asset support provided by PPAF through NPGP on sustaining microeconomy of poor and ultra-poor households during macroeconomic shocks. Impacts of NPGP on log income and log expenditure after controlling for socioeconomic indicators are presented in Table 7 (Models 1 and 2). We find that being an NPGP beneficiary has a positive and significant impact on income. The estimated coefficient shows that at pre-COVID baseline, household income of NPGP beneficiary is 24% higher compared to that of non-NPGP beneficiary, due to support from PPAF[30]. Further results reveal that NPGP has a positive and significant impact on household expenditures. Our estimates show that NPGP interventions would potentially lead to a nearly 49% increase in monthly consumption expenditures of beneficiary households.

[27.] BISP, the government's largest cash transfers programme, runs national cash transfers since 2008. BISP provides PKR 6,000 per quarter to over 5 million eligible families (ultra-poor) on regular basis. During COVID, government increased the tranche amount from PKR 6,000 to PKR 12,000 for one quarter. Apart from existing BISP beneficiaries, the BISP also extended this financial support of PKR 12,000 to poor families, targeted through National Socioeconomic Registry (NSER) data.

[28.] A Probit model is a way of performing regression analysis over binary outcome variables. Binary outcome variables are dependent variables with two possibilities, for example Yes/No. In this Study, we assign 1 if a respondent's livelihood has been affected by a great extent by macroeconomic shocks, and 0 otherwise.

[29.] Daily wage workers are not included in paid employees. Similar findings have been reported in Kansiime et al., 2021

[30.] Based on baseline income and consumption of NPGP beneficiaries (before COVID-19).

These results convey the importance of a graduation scheme, mainly through asset transfers, to break the vicious cycle of poverty. Literature shows that asset transfer programmes such as NPGP would help to diversify income-generating activities and promote savings among ultra-poor (Banerjee et al., 2015; Phadera, Michelson, Winter-Nelson, & Goldsmith, 2019). Similar programmes have shown to significantly increase resilience among poor against macroeconomic shocks (Phadera et al., 2019).

Apart from asset support, being employed would also have a positive and significant impact on household income and consumption expenditures. Literature supports that employment schemes could be useful in alleviating poverty and promoting overall socioeconomic wellbeing of poor and ultra-poor households (Dasgupta, 2013; Mukherjee & Sinha, 2013).

Table 7: Impact of NPGP Support on Income and Consumption Expenditure: Multivariate Analysis

Variables	(1)	(2)
	Ln(Income)	Ln(Expenditures)
NPGP (dummy; 1 if NPGP beneficiary, 0 otherwise)	0.240	0.489
	(0.089)***	(0.056)***
Employed (1 if employed, 0 otherwise)	0.049	0.088
	(0.074)	(0.044)**
Gender (1 if male, 0 otherwise)	0.000	-0.114
	(0.072)	(0.045)**
Household Size (Continuous)	0.059	-0.120
	(0.014)***	(0.009)***
Observations	321	391
R-squared	0.099	0.399

Note: Standard Errors in parentheses: ***p<0.01, **p<0.05, *p<0.1
Source: Author's Estimates

8. Conclusion

The Study has shown that monthly income has declined by 59% among the surveyed poor and ultra-poor households during COVID-19 (April-July 2020) in Pakistan. Over 64% decline in monthly income has been observed among daily wage workers during the same period. Average monthly expenditure has declined by 10% among surveyed households. Around 62% households reported 'huge shock' to livelihood and 68% women (versus 61% men) reported adverse impacts on income. Around 39% surveyed households reported their overall wellbeing being negatively affected during COVID.

Poor and ultra-poor households reported using various coping strategies to smoothen their consumption expenditures in the aftermath of the pandemic. To mitigate negative consequences of COVID, nearly 76% households bought less expensive food, nearly 45% shifted their children to less expensive schools, nearly 70% acquired less expensive healthcare services, nearly 24% also reduced their number of daily meals, and nearly 10% sold their livestock/assets and used up their savings.

Governmental institutions and NGOs played important roles in supporting the poor during the recent shocks. Around 81% of our respondent households reported being financially supported by the Government's Ehsaas Emergency Cash Program. Around 60% households expressed satisfaction with the government's financial support to them during COVID. Around 51% took loans from friends/relatives and 9% took loans from banks during COVID for consumption smoothening and to absorb macroeconomic shocks.

Our multivariate analysis shows that households which received government's one-time emergency cash support (PKR 12,000) are 15% less likely to report that shocks affected their livelihood to a great extent. Community support (from friends/relatives) is significantly correlated with a 13% reduction in probability of household livelihood being negatively affected by a great extent due to macroeconomic shifts. Loan facility is also significantly correlated with a 20% reduction in probability of household livelihood being negatively affected by a great extent. Paid employees are nearly 43% less likely than unemployed people to experience adverse effects of macroeconomic shifts on their livelihood.

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