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HOUSEHOLD VULNERABILITY AND
RESILIENCE TO SHOCKS IN EGYPT

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Working Paper No. 1362

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Abstract

A growing body of literature points to the role of exposure to shocks in reducing economic resilience. While all households are negatively affected by various shocks, poor households are more likely to be exposed to different risks. This paper uses the 2018 round of the Egypt Labor Market Panel Survey (ELMPS) to examine the nature of shocks experienced by different socio-economic groups of households and the ex-post coping mechanisms that were adopted. The results show that almost a quarter of the Egyptian households experienced food insecurity either solely or in combination with shocks. Economic shocks were the most common distress followed by health shocks during the year preceding the ELMPS interview. Household used consumption rationing or depended on their social capital as a coping mechanism in response to a shock or food insecurity. Households whose heads had less than intermediate education, or worked in the informal private sector or agriculture, or were self-employed were more likely to have experienced a shock. Also, households residing in rural areas, particularly in Upper Egypt, or with large family size were more vulnerable to shocks during the study period.

Keywords: shocks, food security, coping strategies, vulnerability, Egypt

JEL Classifications: D10, O10, O12

1. Introduction

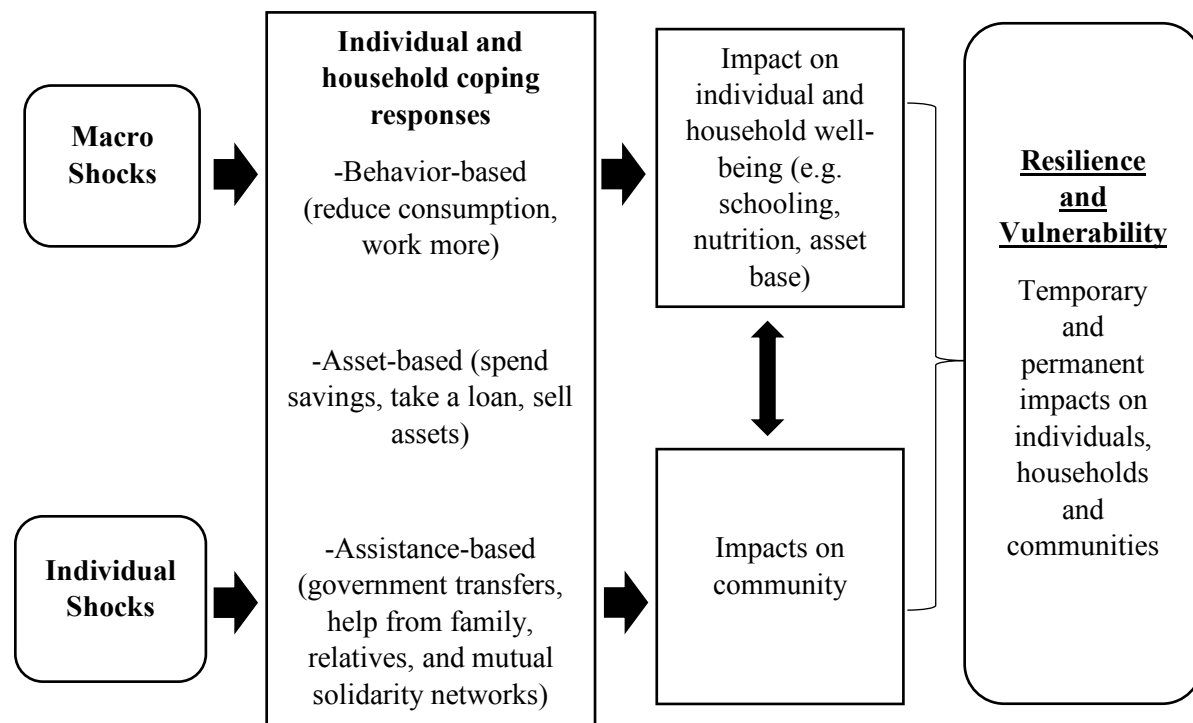
Rural and urban households face different risks that could lead to adverse shocks. Accordingly, managing risks and reducing vulnerability to shocks enhances the well-being of households and encourages investment in human capital (Holzmann and Jorgensen, 1999; Heitzmann, Canagarajah and Siegel, 2002). Poverty and vulnerability to shocks are interlinked given the limited opportunities of poor households to use assets or diversify income. Public safety nets may be useful for protecting against shocks or mitigating their effects, but their impact could be limited (Dercon, 2002; Skoufias, 2003). Consequently, exploring the nature of shocks, identifying the characteristics of households who are more vulnerable to shocks and their different coping strategies are vital to ultimately reducing vulnerability. Understanding these issues can inform the design of interventions that prevent households from falling into poverty or using stressful strategies that may harm their human capital.

This paper describes the different shocks experienced by Egyptian households and the coping mechanisms that they adopted to respond to shocks using the 2018 round of Egypt Labor Market Panel Survey (ELMPS). Studying household exposure to shocks in Egypt extends the empirical literature on developing countries. The existing literature on shocks and coping in such countries focuses mostly on theoretical discussions (Knight *et al.*, 2015). Following the January revolution in 2011, the political turmoil in Egypt adversely affected the economy. In 2014, the government started economic reform measures, including removal of subsidies and currency devaluation, which led to a very high level of inflation (International Monetary Fund, 2014, 2015). These economic challenges are expected to affect the vulnerability of Egyptian households to shocks, which further motivates research on the case of Egypt. We discuss the theoretical framework for understanding shocks in section 2 and describe the data and research methods in Section 3. Section 4 presents the results of the study and section 5 concludes.

2. Background and theoretical framework

Figure 1 shows a conceptual framework that links shocks and vulnerability. Exposure to macro (covariate) or micro (idiosyncratic) shocks pushes households to employ diverse coping measures that could be classified into behavior-based, asset-based, or assistance-based measures. The coping measures undertaken will affect the community and the well-being of households through different channels including schooling, nutrition and asset depletion. Consequently, household resilience and vulnerability are affected by shocks (Heltberg *et al.*, 2012).

Figure 1. Shocks and vulnerability: a conceptual framework



Source: compiled by authors based on Heltberg *et al.*, 2012

Mitigating risks to decrease the probability of shocks or reducing the impact of shocks after occurrence require an in-depth understanding of different types of shocks (Table 1). Shocks are idiosyncratic, micro-shocks when they affect specific individuals or households while covariant shocks include meso-shocks that affect communities or villages and macro shocks that affect the whole nation. Another dimension of classification is the nature of the shock (e.g. natural, economic, political and social) (Holzmann and Jorgensen, 1999; World Bank, 2001; Heitzmann, Canagarajah and Siegel, 2002).

Empirical evidence from developing countries shows that households are exposed to both idiosyncratic and covariant shocks. Although idiosyncratic shocks explain a large percentage of income variation in some contexts, in other contexts, idiosyncratic shocks have little effect on real consumption expenditure. These contrasts highlight the importance of understanding context-specific shocks and coping (Dercon, 2002; Ajefu, 2017).

Table 1. Main sources of shocks

Type of shock	Micro (Idiosyncratic)		Macro (Covariant)
	Affecting individual or household	Affecting groups of households or communities (meso)	Affecting regions or nations (macro)
Environmental		Rainfall	Earthquake/Flood Drought/High winds
Health	Illness/Injury	Epidemic	
	Disability/Old age	Pollution/Deforestation	
	Death		
Social	Crime	Terrorism	Civil War
	Domestic Violence	Gang activity	Social upheaval
Economic	Job loss	Unemployment	Changes in food prices
		Resettlement	Hyperinflation
		Harvest failure	Financial crisis
			Technology shock
			Transition costs of economic reforms
Political		Riots	Coup d'état

Source: compiled by authors based on World Bank (2001); Heitzmann, Canagarajah and Siegel (2002)

The mechanisms for managing risks can be broadly classified into three categories: 1) risk reduction; 2) risk mitigation (ex-ante) to reduce the probability of shocks and 3) coping measures (ex-post) to relieve the impact of shocks after occurrence (World Bank, 2001). These measures can be taken at individual, household, group, or national levels as indicated in Table 2 (Holzmann and Jorgensen, 1999). Formal credit and insurance mechanisms as well as social safety nets play a crucial role in managing risks (Dercon, 2002; Okamoto, 2011).

Nevertheless, financial market failures and weak social protection drive informal risk-sharing between households who rely on family, friends, and neighbors in times of trouble. There is a large body of literature discussing the role of social capital in coping with shocks. Mutual assistance between households could take multiple forms like providing gifts or loans, labor pooling, child fostering, exchanging information on job opportunities or starting a business (Dercon, 2002; Fafchamps and Lund, 2003; Fafchamps and Gubert, 2007; Fafchamps, 2011). On the other hand, some studies found that households do not heavily rely on gifts and transfers, which highlights the need for formal protection systems (Okamoto, 2011; Yilma *et al.*, 2014).

Table 2. Risk management mechanisms

Objective	Informal mechanisms		Formal mechanisms	
	Individual and household	Group based	Market based	Publicly provided
Reducing/preventing risk	-Preventive health measures -Migration	-Collective action for infrastructure		-Sound macroeconomic practices for infrastructure, policy -Environmental policy -Education and training policy -Public health policy -Infrastructure (dams, roads) -Active labor market policies
Mitigating risk (compensating against expected loss)	-Crop diversification -Income source diversification -Investment in physical and human capital	-Rotating savings and credit associations	-Savings accounts in financial institutions -Microfinance	-Liberalized trade -Protection of property
Diversification				
Insurance	-Marriage and extended family -Buffer stocks	-Investment in social capital networks, association, rituals, gift giving	-Old age annuities -Accident, disability and insurance	-Pension systems -Insurance for unemployment, illness, disability
Coping with shocks	-Sale of assets -Loans from money-lenders -Child labor -Reduced food consumption -Seasonal or temporary migration	Transfers from networks of mutual support	-Sale of financial assets -Loans from financial institutions	-Social assistance -Subsidies -Social funds -Cash transfers

Source: compiled by authors based on Holzmann and Jorgensen (1999); World Bank (2001); Heitzmann, Canagarajah and Siegel (2002)

A number of studies found that household characteristics strongly affect the availability and choice of coping mechanisms (Lokshin and Yemtsov, 2004; Okamoto, 2011; Santos *et al.*, 2011). Moreover, the frequency of shocks affects coping ability and the capacity of households to absorb subsequent shocks. Households are able to cope with low-frequency shocks, even if their long-term effect are severe, while consumption smoothing is more difficult among households who face high-frequency shocks (Dercon, 2002).

The literature on shocks has also established an interlinkage with food insecurity that could be associated with vulnerability to external shocks, especially economic and environmental shocks. Previous studies have mostly differentiated between two dimensions of food insecurity: duration and severity. The duration dimension indicates whether food insecurity is a long-term persistent food deficit (chronic) or a temporary decline in food access (transitory). Moreover, the severity dimension reflects the intensity and the magnitude of food insecurity (mild, moderate, severe) (Staatz, D'Agostino and Sundberg, 1990; Altman, Hart and Jacobs, 2009; Akramov and Shreedhar, 2012).

3. Data and Methods

This study used data from the Egyptian Labor Market Panel Survey (ELMPS) 2018 (OAMDI, 2018). The survey included 15,746 households (61,231 individuals). The ELMPS 2018 collected information on a variety of individual and household characteristics, including housing information, transfers, health, education, employment, job characteristics, marriage, and fertility. Moreover, for the first time, the survey included a module to explore exposure to shocks during the year preceding the survey (Krafft, Assaad and Rahman, 2019). The shocks module started by asking questions regarding food insecurity and its severity with a recall period of four weeks. The three domains of food insecurity that were covered by 7 questions are: 1) perception of food insecurity (anxiety and uncertainty about household food supply); 2) experiencing insufficient quality (variety and preferences of the type of food) and; 3) experiencing insufficient food intake (smaller or fewer meals). Each question was followed by frequency-of-occurrence questions to assess how often the condition took place during the preceding month. This frequency of occurrence is used to develop food insecurity access scale score (Coates, Swindale and Bilinsky, 2007). The second part of the module addressed exposure to shocks during the past year. Different shocks include health-related events (illness, death, accident), environmental events (flood, drought...etc.), economic events (loss of employment, reduced income), social shocks (crime, conflict or theft). In addition, the survey enquired about various formal and informal coping mechanisms. Descriptive analysis is used to analyze the data in this paper (see Appendix I for the description of key variables used in the analysis).

4. Results

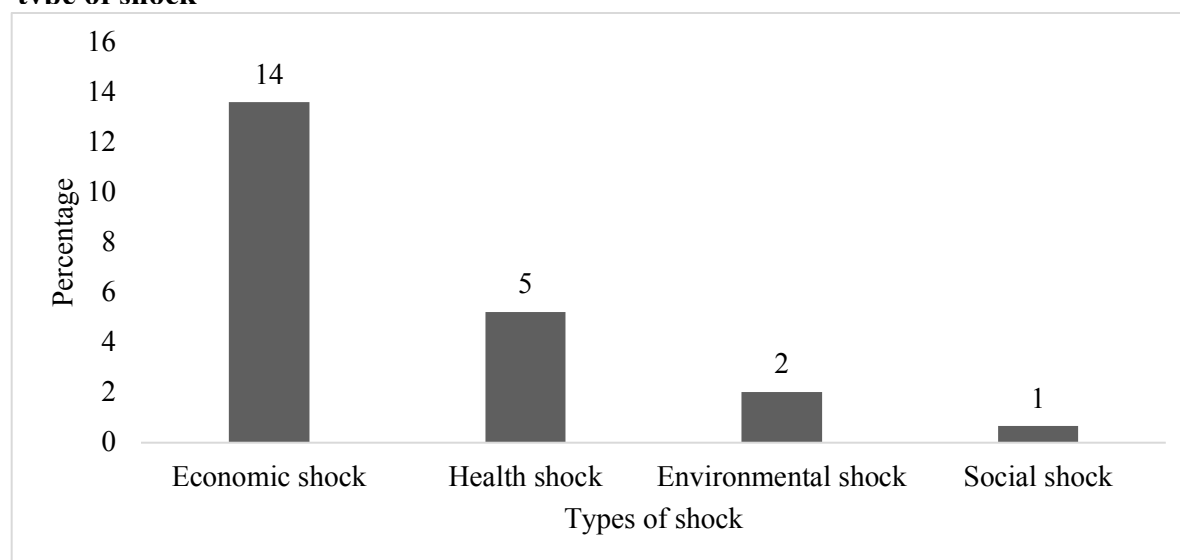
This section investigates the incidence of food insecurity and shocks that Egyptian households faced during the year prior to the 2018 ELMPS interview. Based on the ELMPS 2018 data, 16 percent of the Egyptian households were exposed to at least one type of shock during the year preceding the ELMPS interview and 25 percent experienced food insecurity during the month preceding the survey interview. About 15 percent of households experienced food insecurity solely, while about 10 percent experienced both food insecurity and at least one type of shock simultaneously.

In the following, we separately analyze exposure to shocks and exposure to food insecurity given their distinct nature. As discussed above, food insecurity may often be of a chronic nature rather than transitory, which is generally not the case for an environmental, health, economic, or social shock. Our analysis is limited by the questions included in the ELMPS; and hence we cannot determine from the data whether a reported food insecurity episode is chronic or transitory. Moreover, we can identify association between food insecurity and shocks, but we cannot identify their sequence or causal relationship. Accordingly, we chose not to combine them together. The following section starts by examining the occurrence of shocks, the characteristics of the households who were exposed to shocks, and their coping strategies. Afterwards, we explore food insecurity and coping mechanisms.

4.1 Shocks

Shocks are grouped in this paper into four categories: environmental, economic, social, and health (see Appendix I). As Figure 2 shows, an economic shock was the most frequently reported type of shock by the Egyptian households during the year preceding the survey. About 14 percent of the households were exposed to an economic shock, 5 percent to a health shock, 2 percent to an environmental shock, and 1 percent to a social shock. Table 3 shows the specific types of shocks experienced by the households, grouped under these 4 categories of shocks. Reduced income (12 percent) followed by loss of employment (7 percent) were the most prevalent types of economic shocks among the Egyptian households. Health shocks varied slightly between human disease (3 percent), accident (2 percent) and death (2 percent).

Figure 2. Percentage of households who were exposed to shocks during the past year by type of shock



Source: Authors' calculation based on ELMPS 2018

Note: Multiple shocks are possible (N=15,746)

Table 3. Percentage of households who were exposed to shocks during the past year by specific shocks

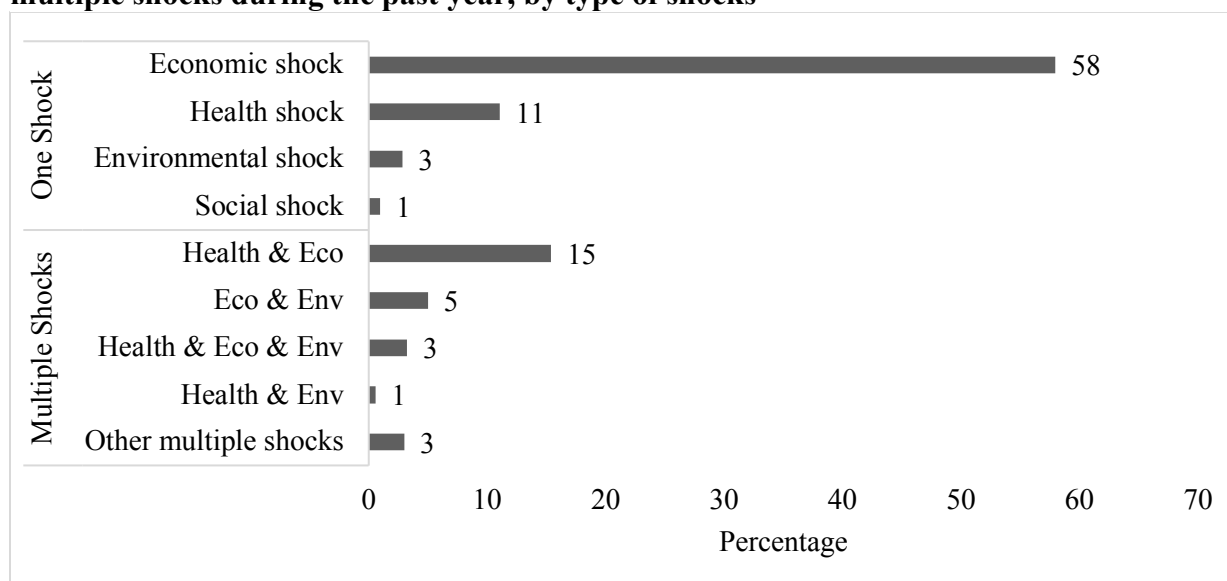
<i>Type of Shocks</i>	
<i>Economic shock</i>	
<i>Reduced income</i>	12
<i>Loss of employment</i>	7
<i>Increased prices of agriculture input</i>	2
<i>Health shock</i>	
<i>Human disease</i>	3
<i>Accident</i>	2
<i>Death</i>	2
<i>Environmental shock</i>	2
<i>Social shock</i>	1

Source: Authors' calculation based on ELMPS 2018

Note: Multiple shocks are possible (N=15,746)

Among the group of households who were exposed to a shock, 73 percent experienced only one type of shock (58 percent experienced only an economic shock, 11 percent experienced only a health shock, 3 percent experienced only an environmental shock and 1 percent experienced only a social shock), while 22 percent were exposed to two types of shocks simultaneously, and 5 percent were exposed to 3 or more (Figure 3 and Figure 4). More specifically, Figure 3 shows that almost 15 percent of the households experienced both health and economic shocks, 5 percent experienced economic and environmental shocks, and 3 percent experienced these three types of shocks together.

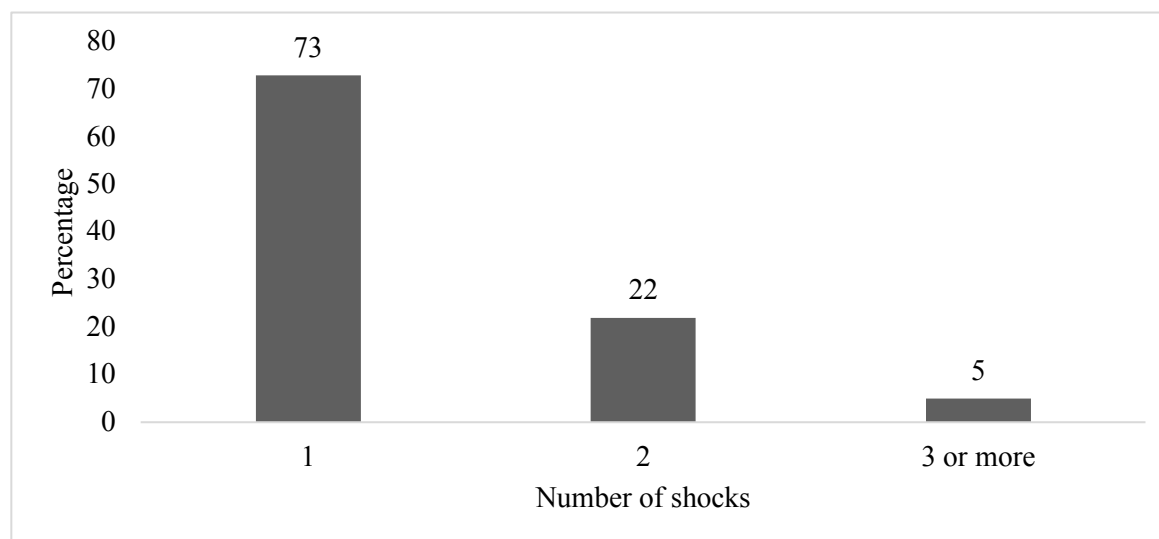
Figure 3. Percentage of households who were exposed to shocks experiencing single or multiple shocks during the past year, by type of shocks



Source: Authors' calculation based on ELMPS 2018

Note: N=2,546

Figure 4. Percentage of households experiencing shocks who experienced one, two, or three or more shocks experienced during the past year



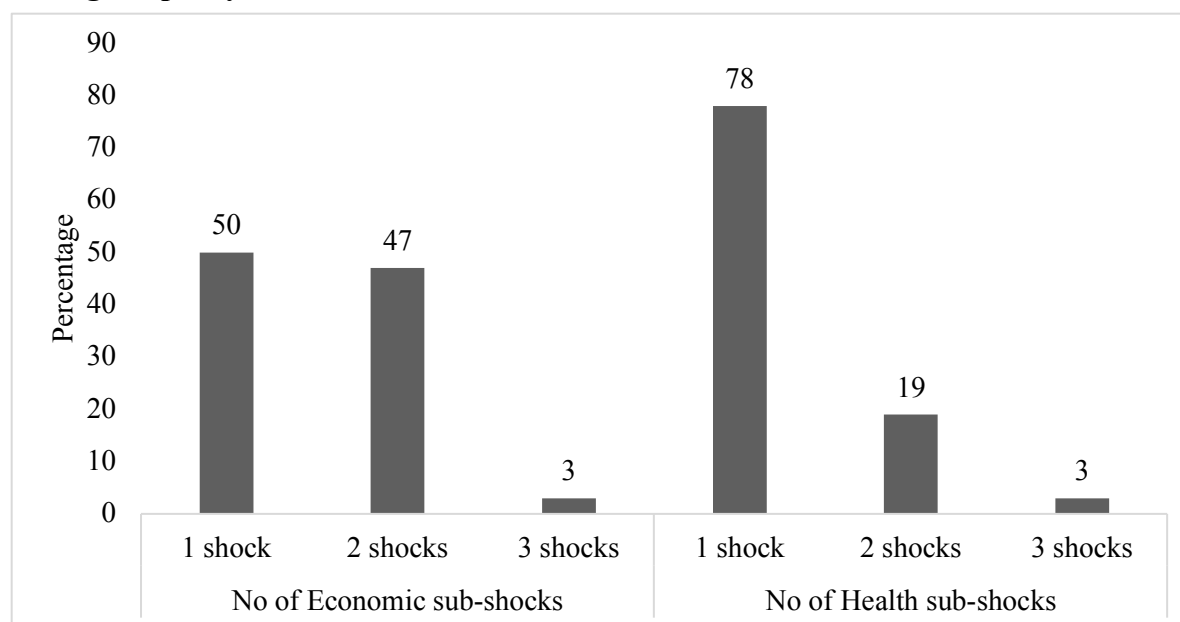
Source: Authors' calculation based on ELMPS 2018

Note: N=2,546

Furthermore, some households had been simultaneously experienced several different shocks within the same type of shock. For instance, Figure 5 shows that around 50 percent of the households that had an economic shock experienced at least two different economic shocks. By

the same token, about 21 percent of those who experienced health shocks were exposed to two or more different health shocks.

Figure 5. Percentage of households experiencing one, two, or three economic or health shocks during the past year



Source: Authors' calculation based on ELMPS 2018

Notes: N=2,145 for economic shocks and N=832 for health shocks

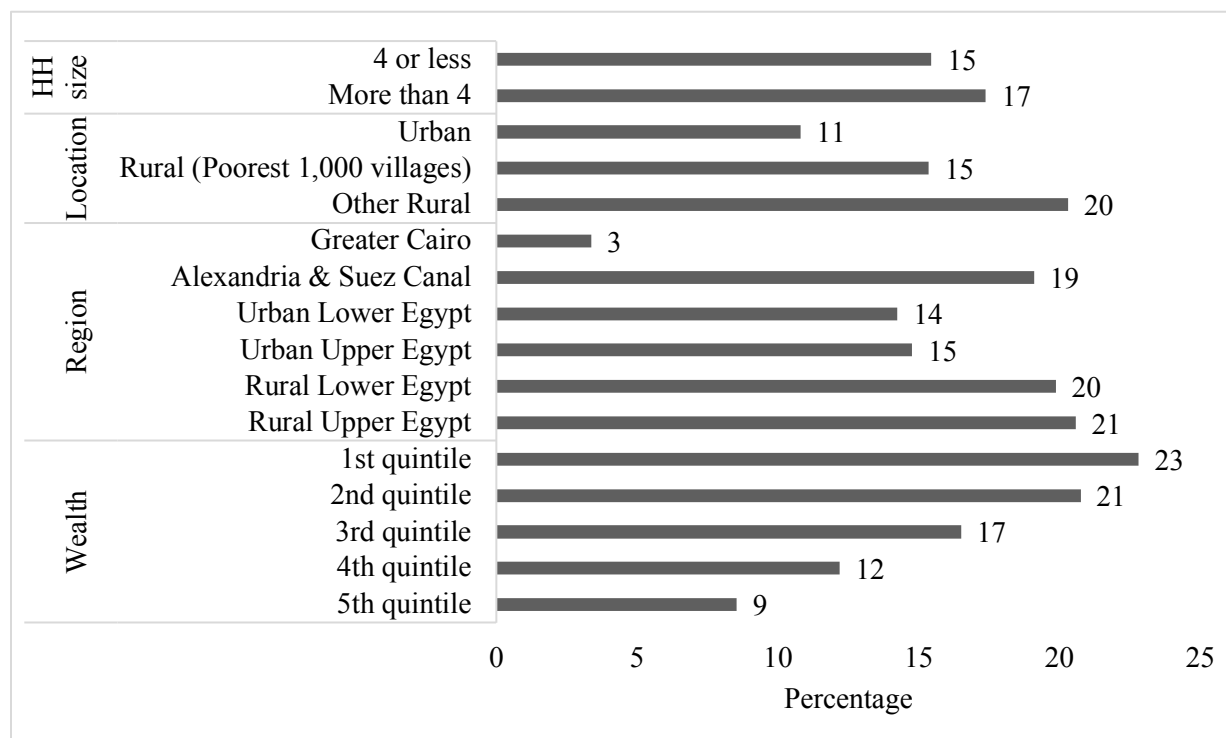
4.1.1 Which household gets more exposed to shocks?

We turn in this section to investigating which households were more vulnerable to shocks during the study year, in terms of place of residence, living standard, the characteristics of the head of the household and household members, as well as potential coverage by social protection schemes².

Figure 6 shows that exposure to shock was highest in rural Upper Egypt (21 percent) and rural Lower Egypt (20 percent), followed by the Alexandria and Suez Canal region (19 percent). Surprisingly, and contrary to the pattern of food insecurity discussed below in this section, rural households residing in the poorest 1000 villages reported lower rates of exposure to shocks (15 percent) than rural households residing in the remaining villages (20 percent).

² A detailed analysis of the coverage of social protection schemes in Egypt is discussed by Selwaness and Ehab (2019).

Figure 6. Percentage of households who experienced shocks during the past year by household characteristics



Source: Authors' calculation based on ELMPS 2018

Note: N=15,746

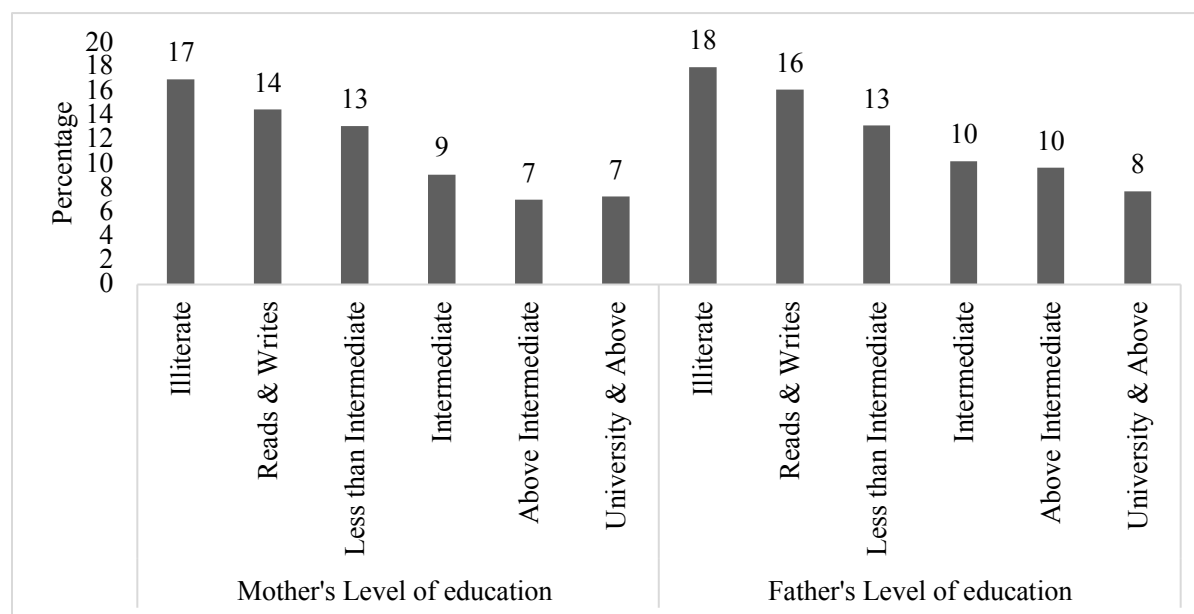
Exposure to shock varied slightly by household size. About 17 percent of households with large families (more than four members) were exposed to shocks as compared to 15 percent among households consisting of four or less members (Figure 6). Households belonging to the poorest wealth quintile (23 percent) were more than twice as likely to get exposed to a shock during the preceding year as compared to those falling in the fourth (12 percent) and fifth (9 percent) wealth quintiles. Nevertheless, one should be careful about the potential endogeneity of household wealth status and exposure to shocks, because it is not only that poor households were more likely to get exposed to a shock, but also exposure to shock may have caused a household to become poorer.³

Accordingly, in Figure 7, we investigate other measures of household living standards. Previous research has shown that there are strong intergenerational transfers of education levels and social welfare in Egypt. For instance, young people of highly educated parents are more likely to have access to better education, good quality jobs and in turn higher wealth status than those of low educated parents (Assaad and Krafft, 2014, 2015b, Krafft 2015). Hence, Figure 7 shows the

³ This also holds true for household's access to social protection schemes.

household exposure to shocks by the household head's parents' educational attainment as a proxy for natal household poverty status. As expected, exposure to shocks substantially decreased with both parents' education levels.

Figure 7. Percentage of households who experienced shocks during the past year by parental education of head of household

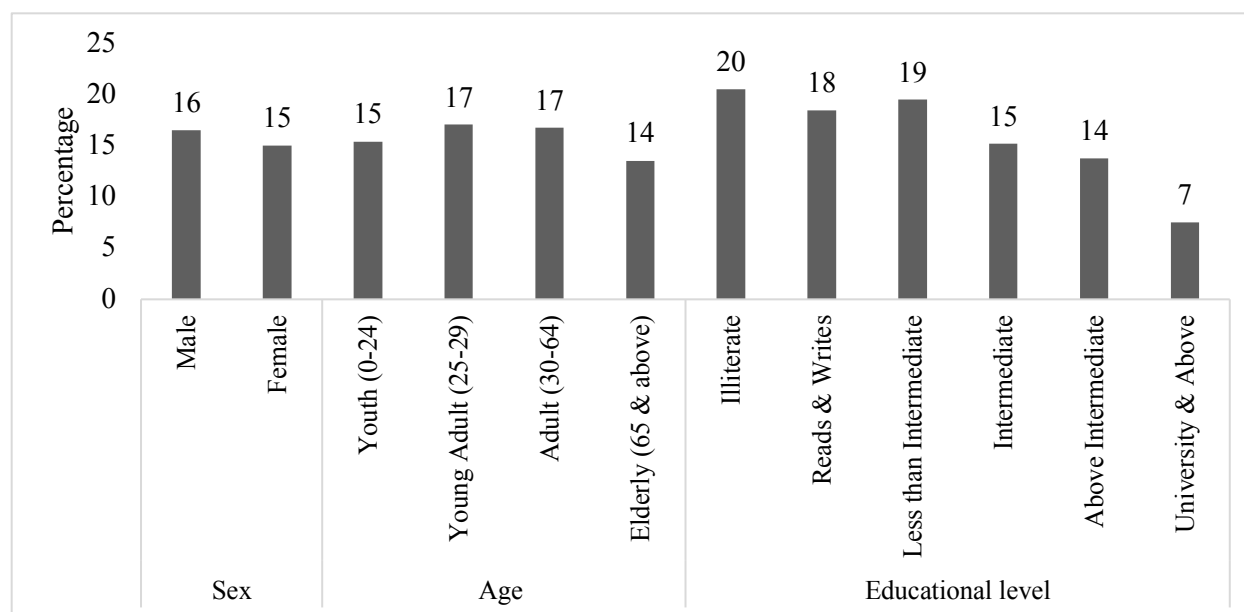


Source: Authors' calculation based on ELMPS 2018-

Note: N=1,5611 for mother's education and 15,625 for father's education

Similarly, household's exposure to shocks was lower if its own household head was more educated (Figure 8). Exposure to shocks was highest among households headed by illiterate individuals (20 percent) or those who could read and write with no formal schooling completed (18 percent). Also, households of heads with less than an intermediate education (19 percent) were more than twice as likely to be exposed to a shock as compared to households of university or above educated heads (7 percent). Moreover, exposure to shocks was slightly higher among households of young adult and adult heads. Surprisingly, household vulnerability to shocks varied only slightly by the sex of the household head, where male heads appear to be 1 percentage point more likely to be exposed to shocks than their female counterparts.

Figure 8. Percentage of households who experienced shocks during the past year by characteristics of the household head

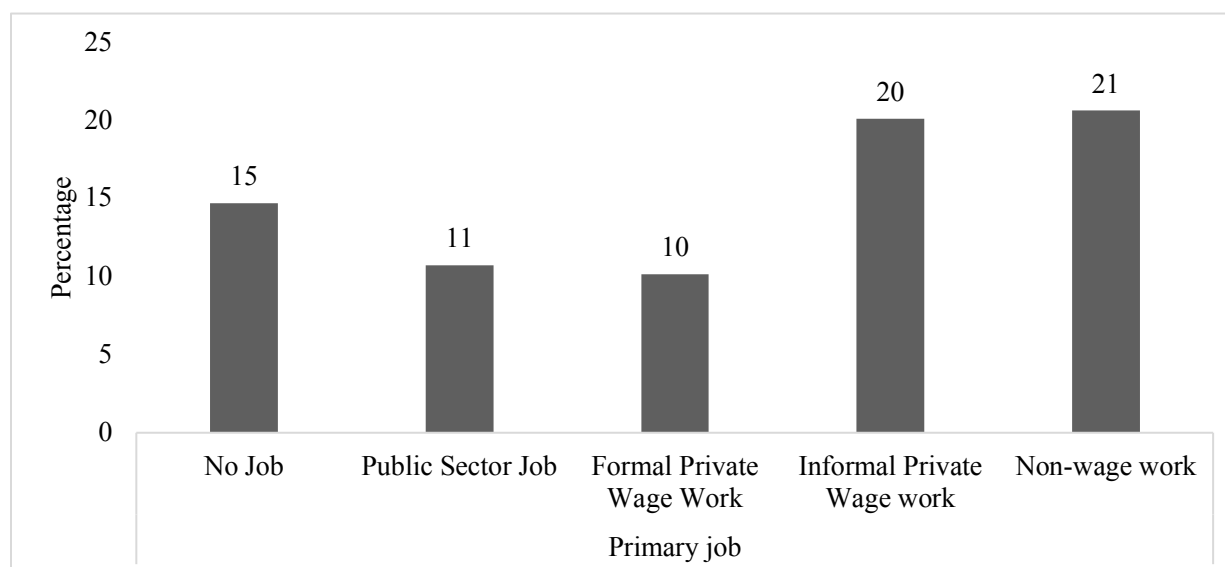


Source: Authors' calculation based on ELMPS 2018

Notes: N=15,746

Furthermore, employment status of the household head, in terms of formality and sector, seems to play a vital role in the household's vulnerability to shocks. Figure 9 shows that exposure to shocks was highest among household heads working in non-wage work (21 percent), followed by that of heads working in the informal private sector (20 percent). Exposure to shocks was almost double among households with heads working in the informal private sector (20 percent) as compared to that of households with heads working in the formal private or public sectors (10-11 percent). Another indicator of job quality is working inside or outside an establishment. Figure 10 shows that 23 percent of the households with heads working outside an establishment were exposed to a shock as compared to only 12 percent among those of heads working inside an establishment.

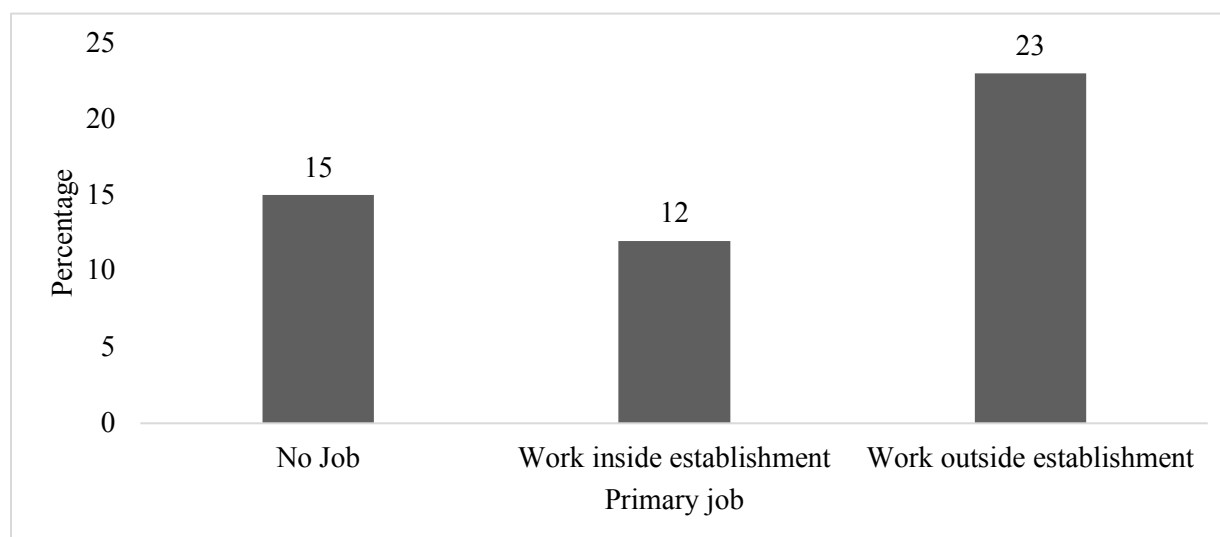
Figure 9. Percentage of households who experienced shocks during the past year by sector of employment of the head of household



Source: Authors' calculation based on ELMPS 2018

Notes: Primary job (3 months) (N=15,746)

Figure 10. Percentage of households who experienced shocks during the past year by employment of the head of household

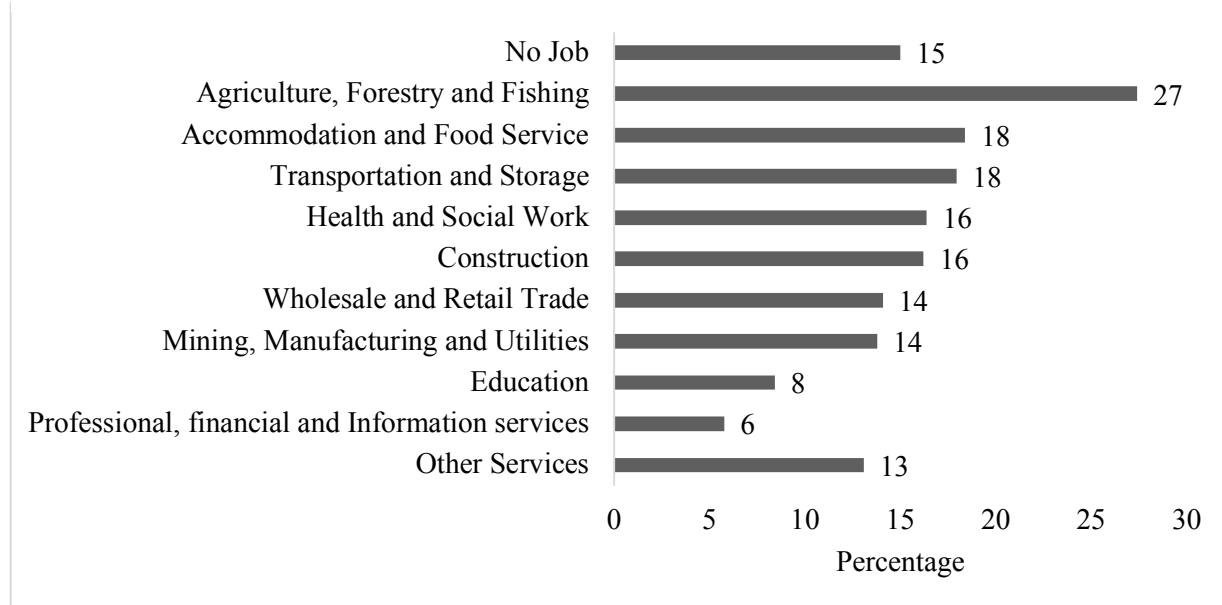


Source: Authors' calculation based on ELMPS 2018

Notes: Primary job (3 months) (N=15,746)

Likewise, exposure to shocks varied by economic activity of heads of household. We followed Assaad, AlSharawy and Salemi (2019) in categorizing the economic activities included in ELMPS 2018. The results show that vulnerability to shocks was substantially higher among households with heads working in the agriculture sector, and lowest among households of heads working in the professional, financial and information services, and education sectors (Figure 11).

Figure 11. Percentage of households who experienced shocks during the past year by economic activity of the head of household

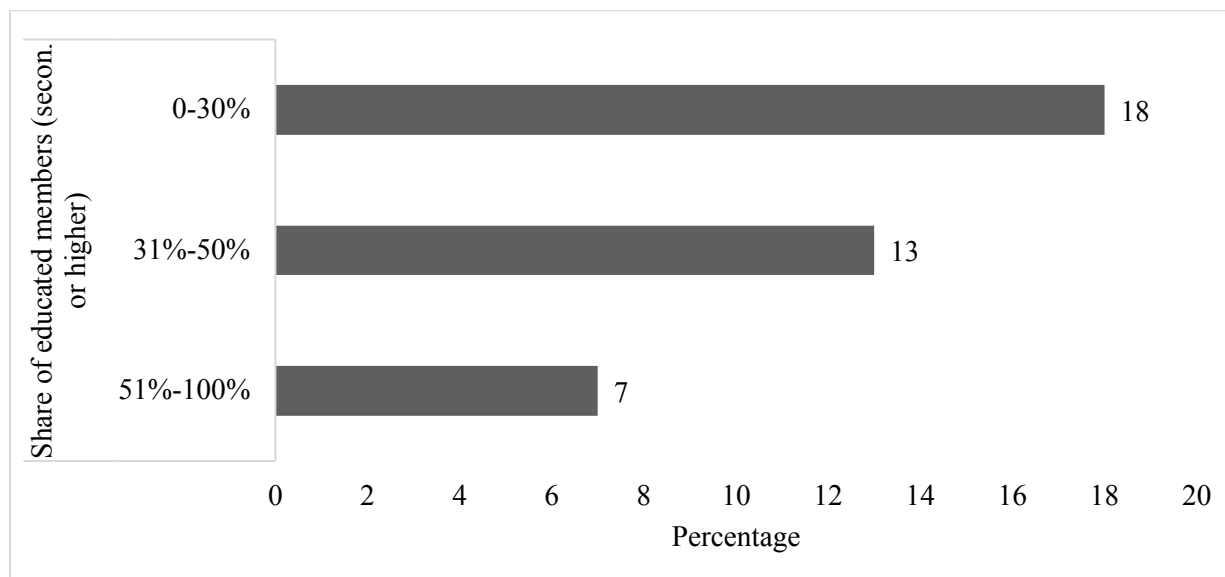


Source: Authors' calculation based on ELMPS 2018

Note: Primary job (3 months) (N=15,746)

Household members' characteristics also affect the household's vulnerability to shocks. Exposure to shocks decreases as the number of educated members of the household increases (Figure 12). It is also important to note here how if at least one member of the household is working in the public sector or in the formal private sector, the rate of exposure to shocks is decreased by almost 7 percentage points (Figure 13).

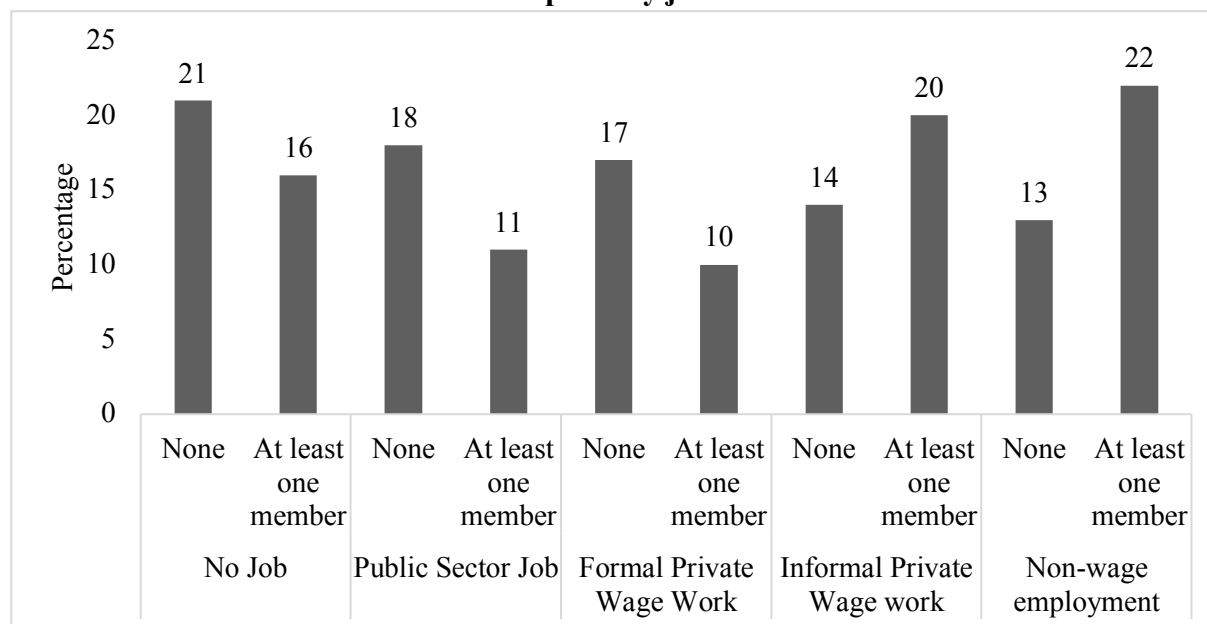
Figure 12. Percentage of households who experienced shocks during the past year by education of household members aged 18 and above



Source: Authors' calculation based on ELMPS 2018

Notes: (N=15,667)

Figure 13. Percentage of households who experienced shocks during the past year by characteristics of household members' primary jobs

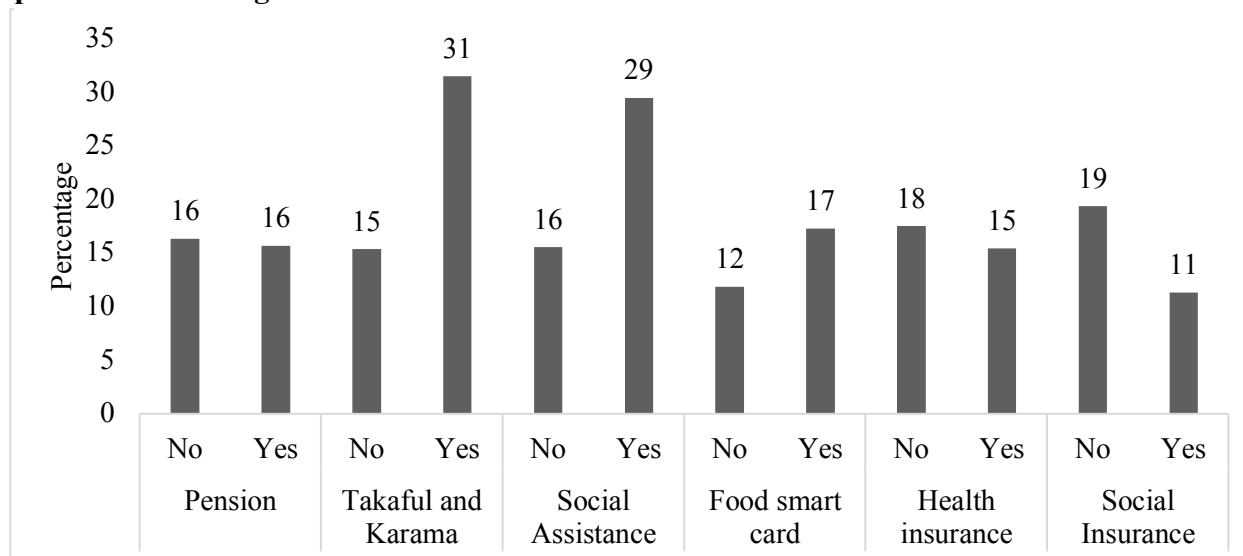


Source: Authors' calculation based on ELMPS 2018

Notes: (N=15,667). Households could be in more than one category if multiple members worked.

Figure 14 may provide evidence that social protection schemes have been well-targeted towards more vulnerable households; however, despite receiving such schemes their likelihood of exposure to shocks was still relatively higher than households who did not receive or were not eligible for such benefits (see World Bank (2015) for the details of Takaful and Karama program). For instance, 31 percent of households which received Takaful or Karama conditional and unconditional cash transfers were exposed to shocks in the preceding year, compared to 15 percent among those households who do not get such transfers. Similar results are observed for the social assistance and food smart cards. In contrast, households who had regular health insurance (15 percent vs 18 percent among non-receivers) and social insurance (11 percent vs 19 percent among non-receivers) benefits were less likely to get exposed to a shock during the study period.

Figure 14. Percentage of households who experienced shocks during the past year by social protection coverage



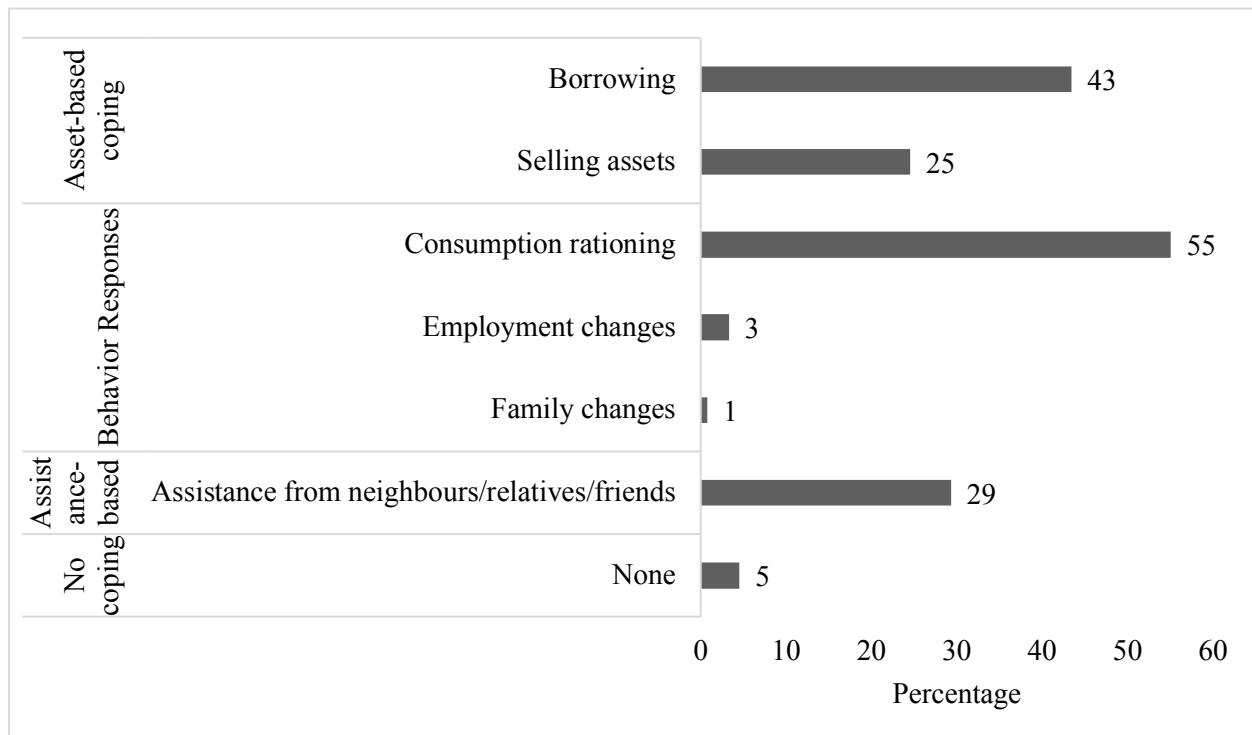
Source: Authors' calculation based on ELMPS 2018

Notes: At least one member has access. N=15,694 for health insurance and 12,371 for social insurance

4.1.2 Households' coping mechanisms

This section explores how households respond to shocks and how their response varies by household characteristics. Figure 15 plots the households' most frequently used coping mechanisms and their combinations in response to a shock. Consumption rationing (55 percent) following by borrowing (43 percent) were the two most frequently reported coping mechanisms. Also, social capital was an important safety net for Egyptian households, as almost a third (29 percent) of households reported seeking assistance from relatives and friends in response to a shock.

Figure 15. Percentage of households using different coping mechanisms, households with shocks during the past year



Source: Authors' calculation based on ELMPS 2018

Notes: Multiple strategies are possible (N=2,723)

Furthermore, the majority of the households who reported borrowing as a coping strategy purchased goods on credit or used their social capital as the source of credit. About 28 percent of the households borrowed money from their relatives or friends, compared to only 5 percent who borrowed from a bank or a money lender (Table 4). Consumption rationing as a coping strategy primarily consisted of reducing spending on health (36 percent), eating less food (35 percent) and reducing spending on education (22 percent) (Table 4). All these strategies are likely to have adverse effects on the household's human capital, and hence render the household even more vulnerable to shocks.

Table 4. Percentage of households using specific coping mechanisms, households who experienced shocks during the past year

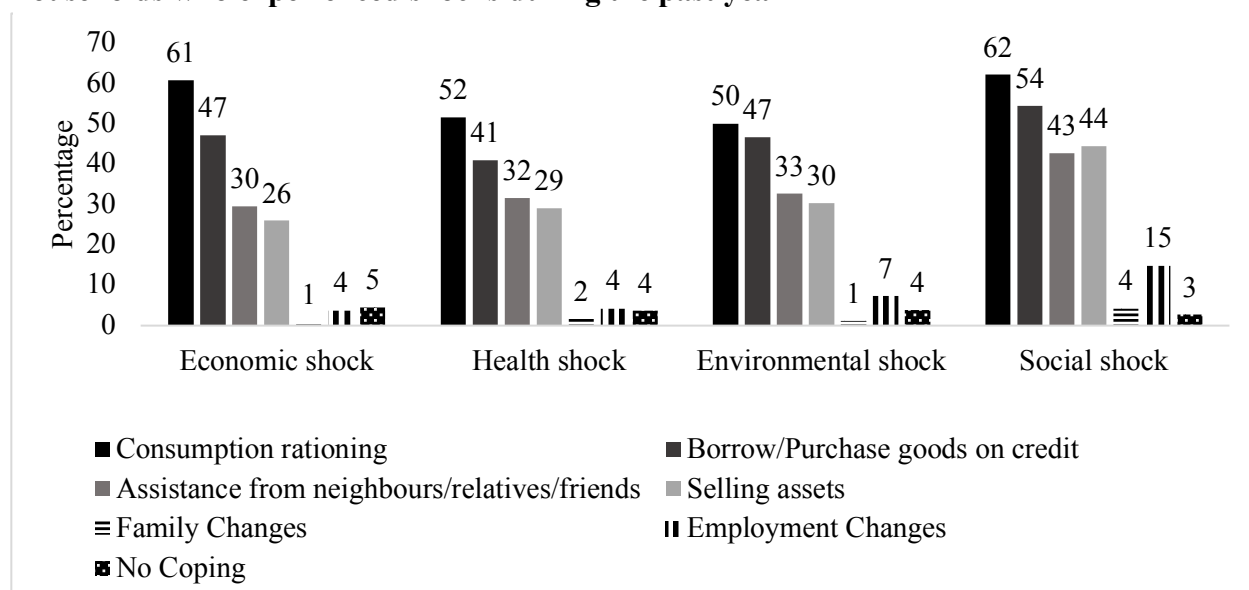
Detailed types of coping strategies	
Borrowing	
Purchase goods on credit	29
From friends/relatives (cash/in-kind)	28
From moneylenders/bank	5
Consumption rationing	
Reduced spending on health	36
Eating less food	35
Reduced spending on education	22

Source: Authors' calculation based on ELMPS 2018

Notes: multiple strategies are possible (N=2,723)

Figure 16 plots the most frequently reported coping strategy by type of shock experienced by the household. The pattern of coping strategies did not vary much across the four types of shocks. Consumption rationing followed by borrowing/ purchasing on credit were the two most commonly used strategies regardless of the type of shock. Also, over a third of the households reported using assistance from their social network when exposed to any of the four types of shocks.

Figure 16. Percentage of households using different coping mechanisms by type of shock, households who experienced shocks during the past year



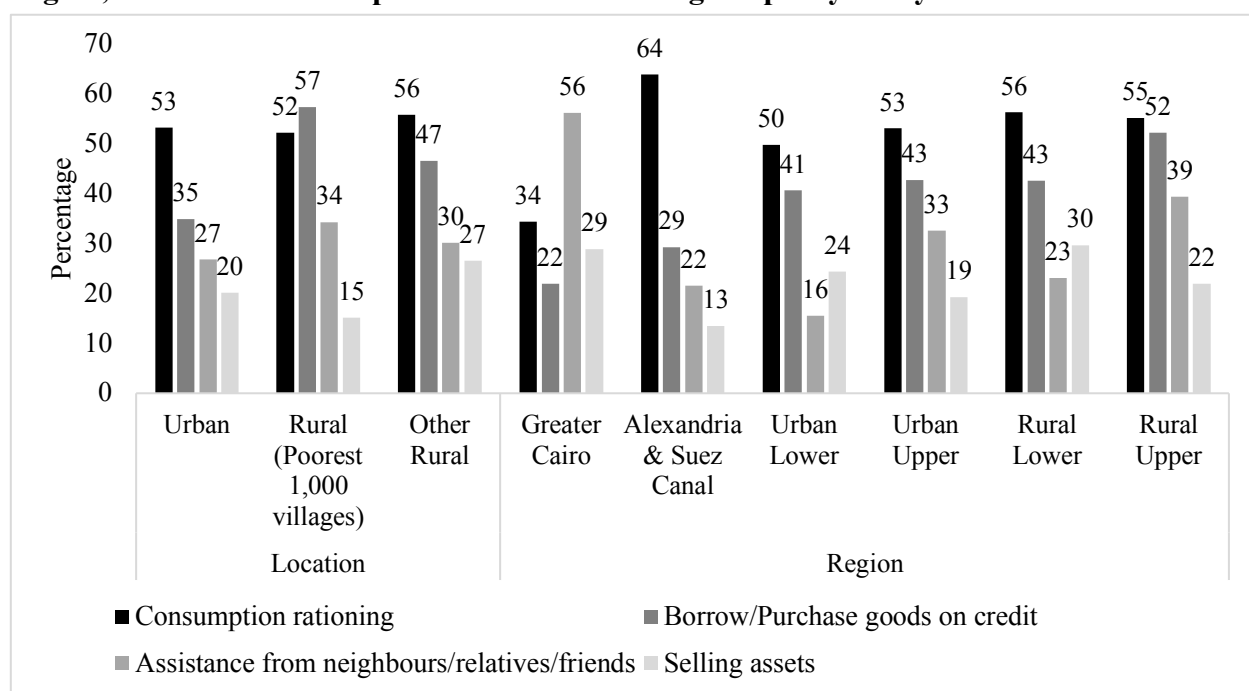
Source: Authors' calculation based on ELMPS 2018

Notes: Multiple shocks and strategies are possible. N=2,145 for economic shock; 823 for health shock; 106 for environmental shock and 200 for social shock

Figure 17 shows the pattern of coping strategies by household's place of residence. Over half of the households residing in the poorest 1,000 villages used borrowing (57 percent) as a coping mechanism when exposed to a shock, as compared to 47 percent among those residing in other rural villages and 35 percent among urban households. Consumption rationing was more commonly used as a coping strategy in other rural areas (56 percent) than in the poorest 1000 villages (52 percent) and in urban areas (53 percent).

As for the region of residence, consumption rationing was most frequently reported by households residing in the Alexandria and Suez Canal region (64 percent), while borrowing was most commonly reported in rural Upper Egypt (52 percent). Contrary to expectations, assistance from neighbors, relatives or friends as a coping strategy was most prevalent in Greater Cairo (56 percent) rather than in rural areas where using social capital as a safety net is expected to be stronger. This may be due to the fact that people living in Greater Cairo may have relatively more rich neighbors, friends and relatives, who can afford providing assistance without expecting it back, as compared to those residing in rural areas.

Figure 17. Percentage of households using different coping mechanisms by location and region, households who experienced shocks during the past year by household location



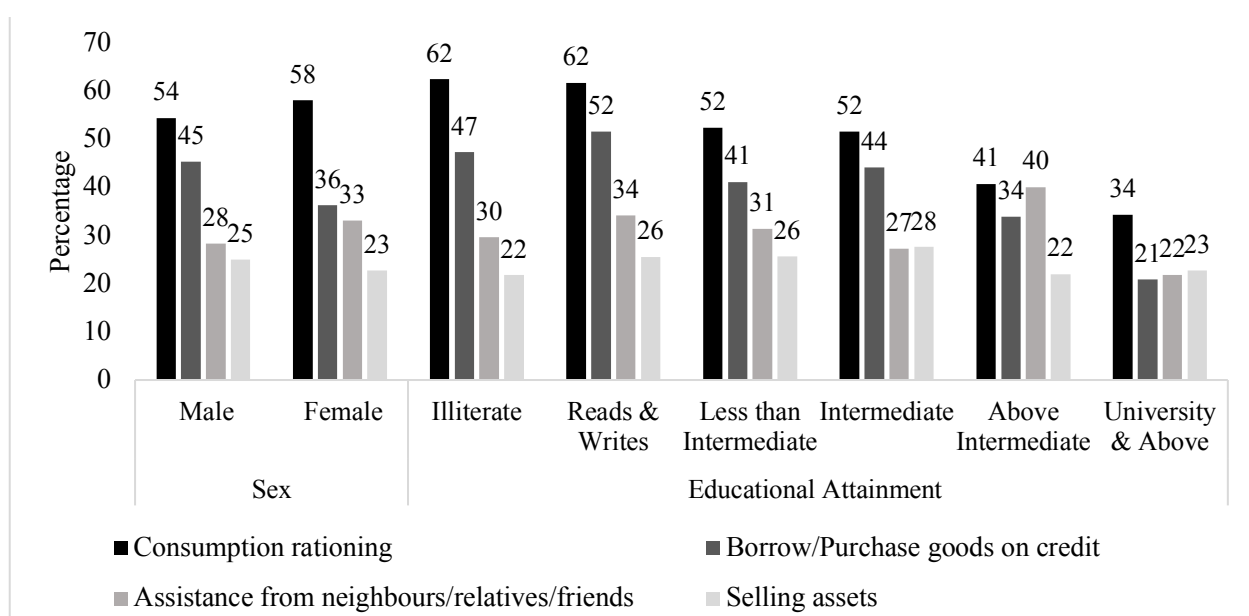
Source: Authors' calculation based on ELMPS 2018

Note: multiple strategies are possible (N=2,723). Selected strategies are dropped due to small sample size

Moreover, as the education level of the household head increased, the household tended to use the different types of coping strategies more evenly (Figure 18). Borrowing and purchasing on credit were more prevalent as coping strategies among male headed households (45 percent) than female

headed households (36 percent). In contrast, assistance from neighbors, relatives, and friends were more frequently reported by female headed households (33 percent) than by male headed households (28 percent). This confirms the existing evidence regarding the hardship position of women in Egypt in getting access to formal credit as compared to their male peers (see Roushdy

Figure 18. Percentage of households using different coping mechanisms by characteristics of household head, households with shocks during the past year



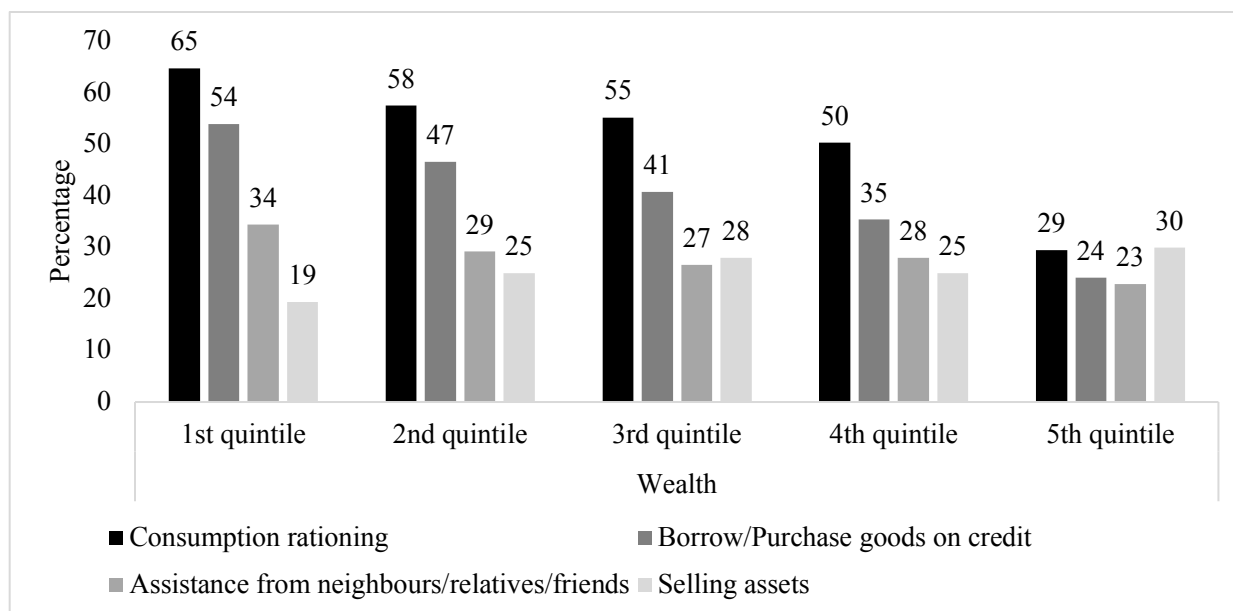
and Selwaness (2015) and World Bank (2018)).

Source: Authors' calculation based on ELMPS 2018

Notes: Multiple strategies are possible (N=2,723). Selected strategies are dropped due to small sample size

A similar pattern of coping strategies is observed among rich households as compared to their poorer counterparts (Figure 19). The pattern does not also vary much by household head job formality and sector of activity (Figure 20). Consumption rationing, followed by borrowing and assistance, also remain the most commonly used strategy regardless of type of social assistance received (Figure 21).

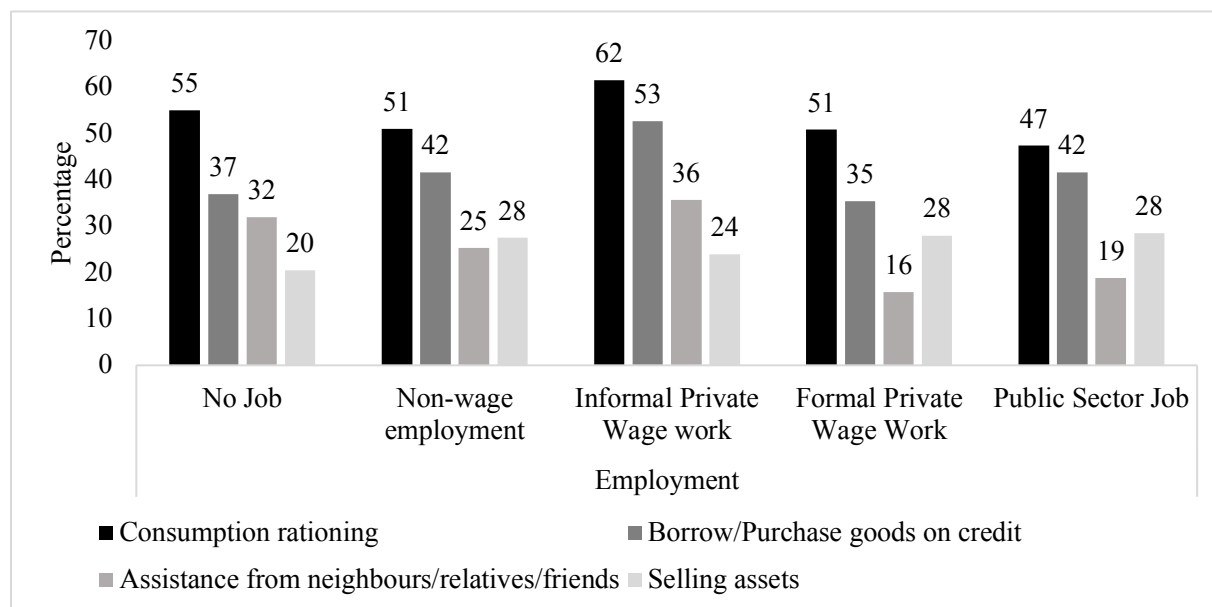
Figure 19. Percentage of households using different coping mechanisms by wealth quintile, households with shocks during the past year



Source: Authors' calculation based on ELMPS 2018

Notes: multiple strategies are possible (N=2,723). Selected strategies are dropped due to small sample size

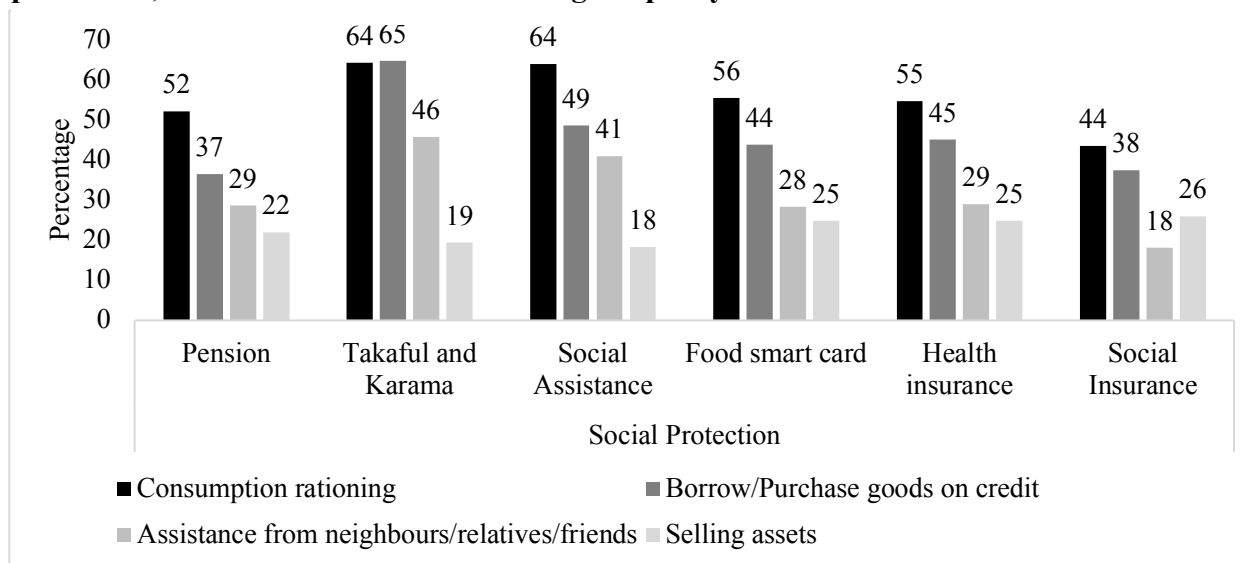
Figure 20. Percentage of households using different coping mechanisms by sector of employment (primary job) of head of household, households with shocks during the past year



Source: Authors' calculation based on ELMPS 2018

Notes: Multiple strategies are possible (N=2,723). Selected strategies are dropped due to small sample size

Figure 21. Percentage of households using different coping strategies by type of social protection, households with shocks during the past year



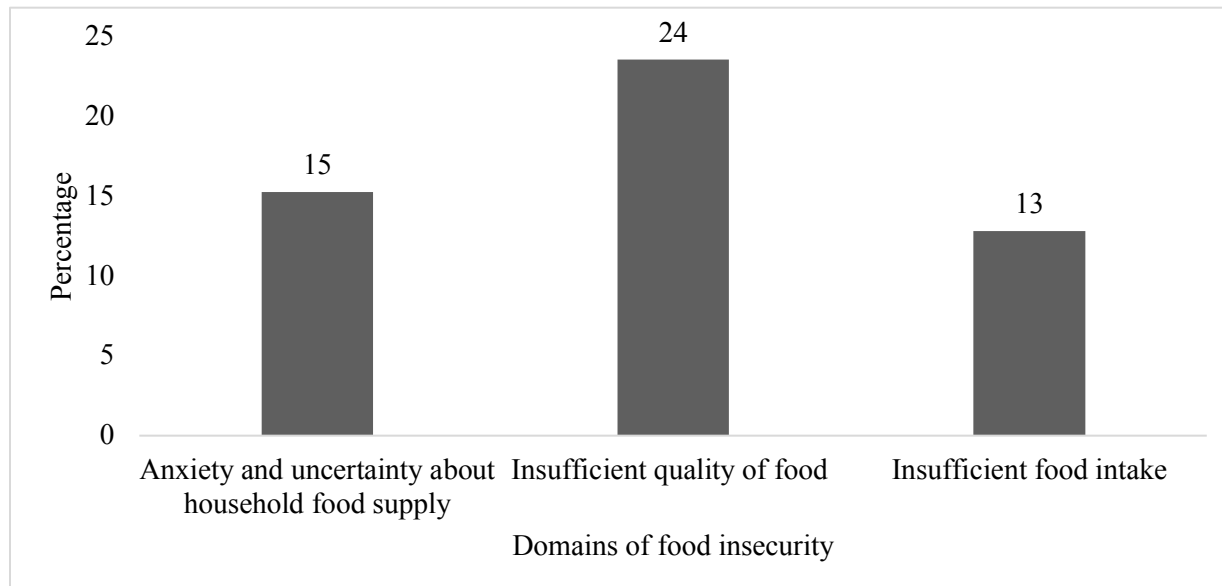
Source: Authors' calculation based on ELMPS 2018

Notes: Multiple strategies are possible. N=682 for pension; 264 for Takaful and Karma; 209 for social assistance; 2,309 for food ration cards; 1,648 for health insurance; 535 for social insurance. Selected strategies are dropped due to small sample size

4.2 Food insecurity

In this section, we turn to investigate food insecurity and the characteristics of households who experienced food insecurity. As stated earlier, around 25 percent experienced some form of food insecurity during the month preceding the survey interview. Figure 22 shows the percentage of households who experienced food insecurity during the month that preceded the survey interview by food insecurity domain (Appendix I). About 15 percent of the Egyptian households experienced anxiety or uncertainty about food supply, 24 percent had insufficient quality of food, and 13 percent had insufficient food intake.

Figure 22. Percentage of households who experienced food insecurity in the past month by domain

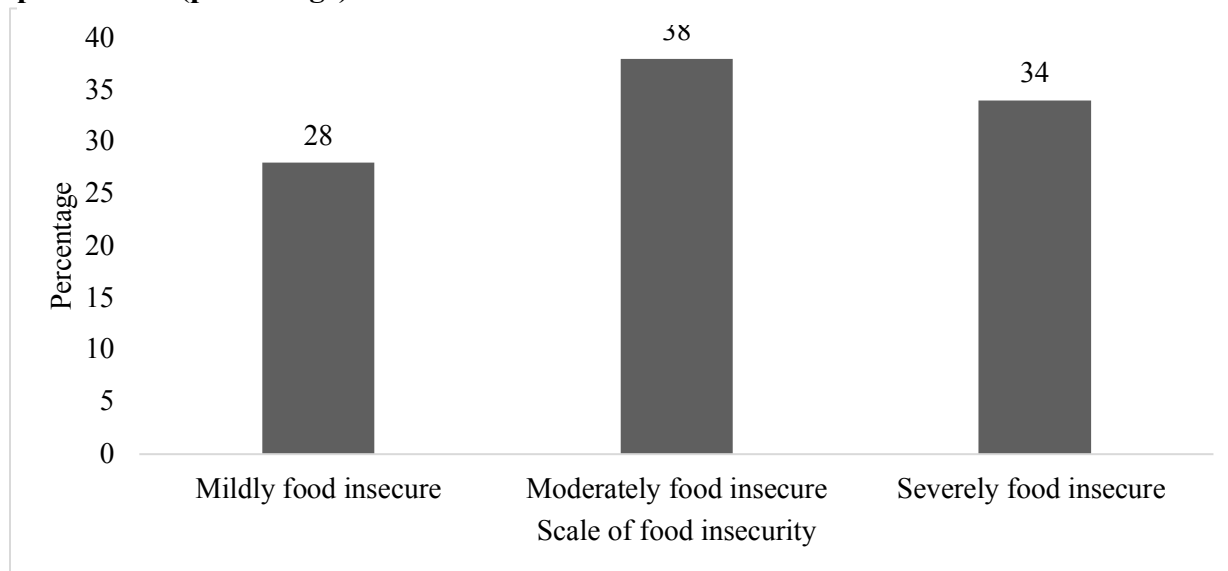


Source: Authors' calculation based on ELMPS 2018

Notes: multiple domains are possible (N=15,746)

Moreover, the households' perception of the severity of food insecurity varied substantially across households. Figure 23 indicates that among households which reported food insecurity, 28 percent reported a mild level of food insecurity, 38 percent reported a moderate level while 34 percent reported a severe food insecurity (Appendix I). Around 48 percent of the households that were exposed to severe food insecurity in the last month were exposed to an economic shock the last year, compared to 34 percent among households that experienced a moderate degree, 23 percent among those that experienced a mild degree of food insecurity, and 6 percent among households that were food secure (Figure 24).

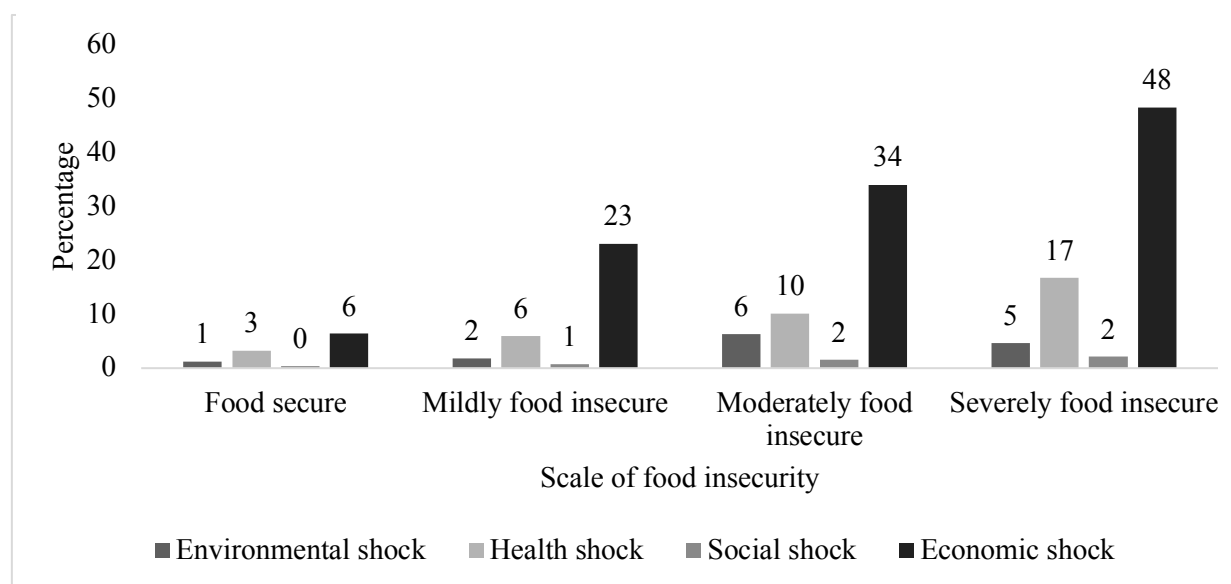
Figure 23. Degree of food insecurity, households who experienced food insecurity in the past month (percentage)



Source: Authors' calculation based on ELMPS 2018

Note: N=3,840

Figure 24. Percentage of households who experienced shocks by degree of food insecurity



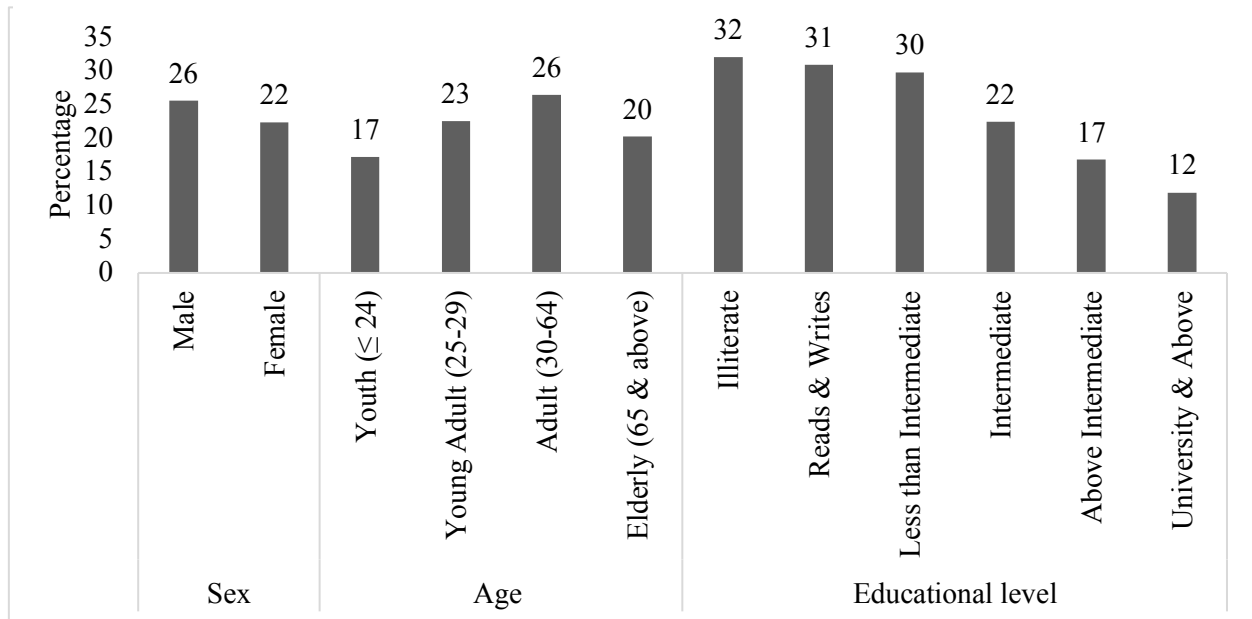
Source: Authors' calculation based on ELMPS 2018

Notes: (N=15,584)

4.2.1 Which households were food insecure?

Figure 25 shows food insecurity by household head characteristics. Male headed households were more to be food insecure (26 percent), as compared to female headed households (22 percent). Food insecurity was highest among households with adult and young adult heads. Food insecurity substantially decreased with the household head's educational attainment as well as his/her parents' education level (Figure 25 and Figure 26).

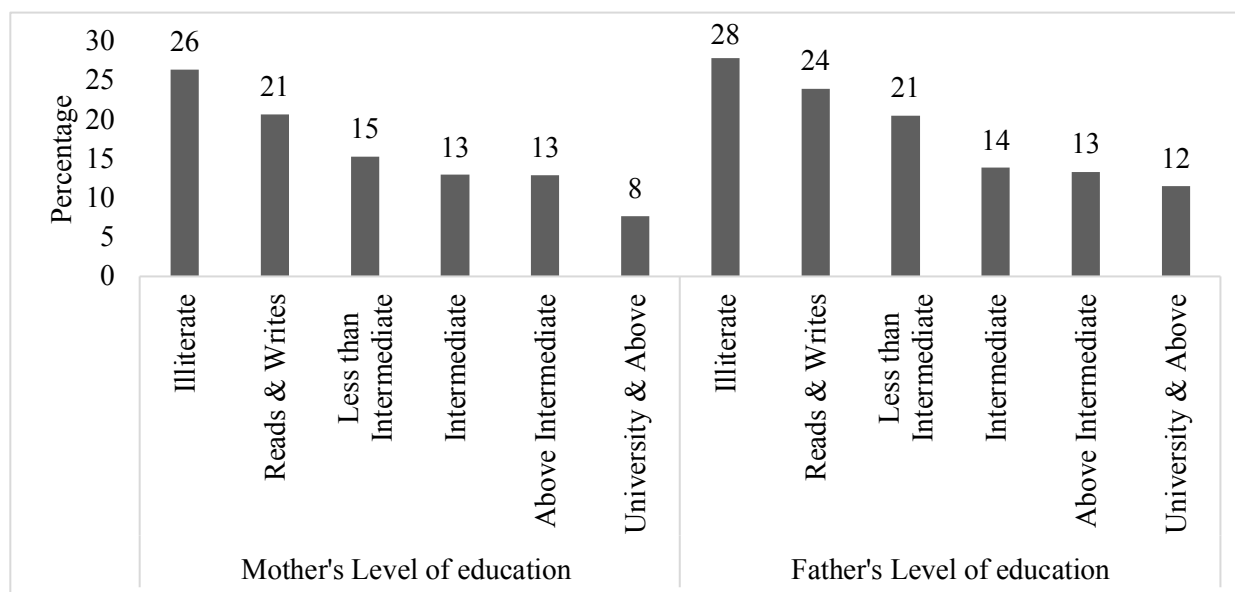
Figure 25. Percentage of households who experienced food insecurity by characteristics of head of household



Source: Authors' calculation based on ELMPS 2018

Note: N=15,746

Figure 26. Percentage of households who experienced food insecurity by parental education of head of household

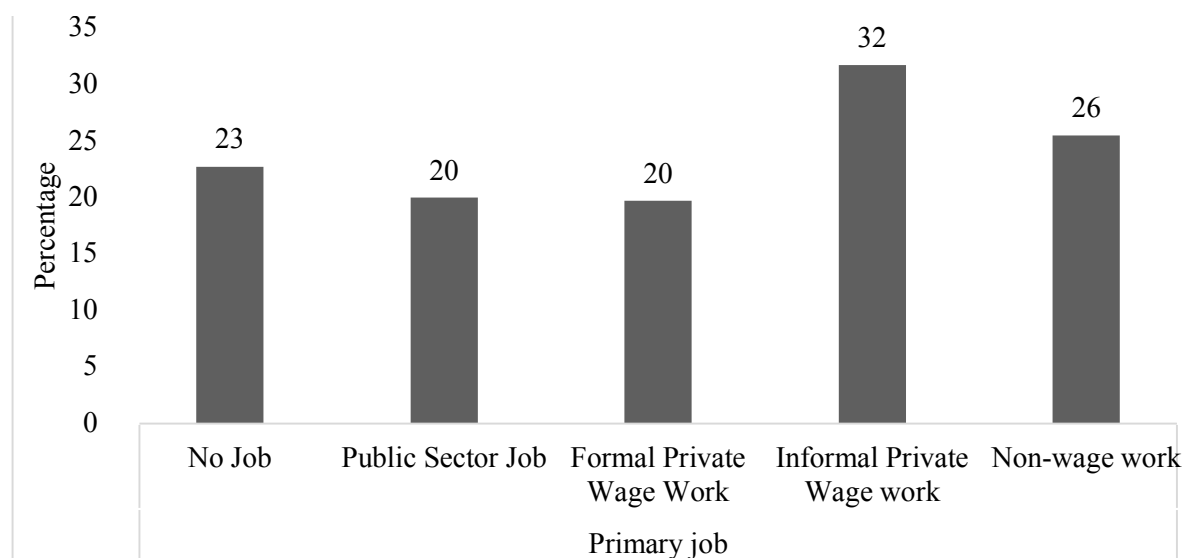


Source: Authors' calculation based on ELMPS 2018

Notes: N=15,611 for mother's education and N=15,625 for father's education

Household head job security and place of work were closely related to the household's vulnerability to food insecurity. More than a third of the households whose heads had an informal private sector job (and a quarter with a non-wage job) suffered from food insecurity, as opposed to 20 percent if the head was working in the public or the formal private sectors (Figure 27). About 32 percent of the households with heads working inside an establishment were food insecure compared to 21 percent if the head was working inside an establishment (Figure 28).

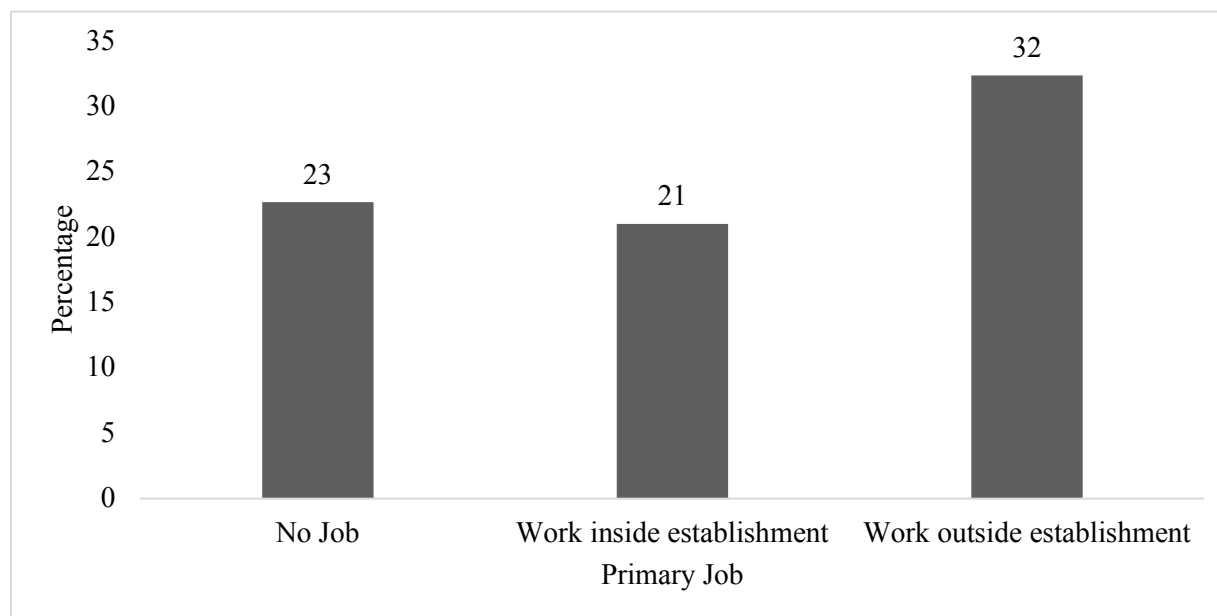
Figure 27. Percentage of households who experienced food insecurity by sector of employment of head of household



Source: Authors' calculation based on ELMPS

2018 Notes: Primary job (3 months) (N=15,746)

Figure 28. Percentage of households who experienced food insecurity by employment of head of household

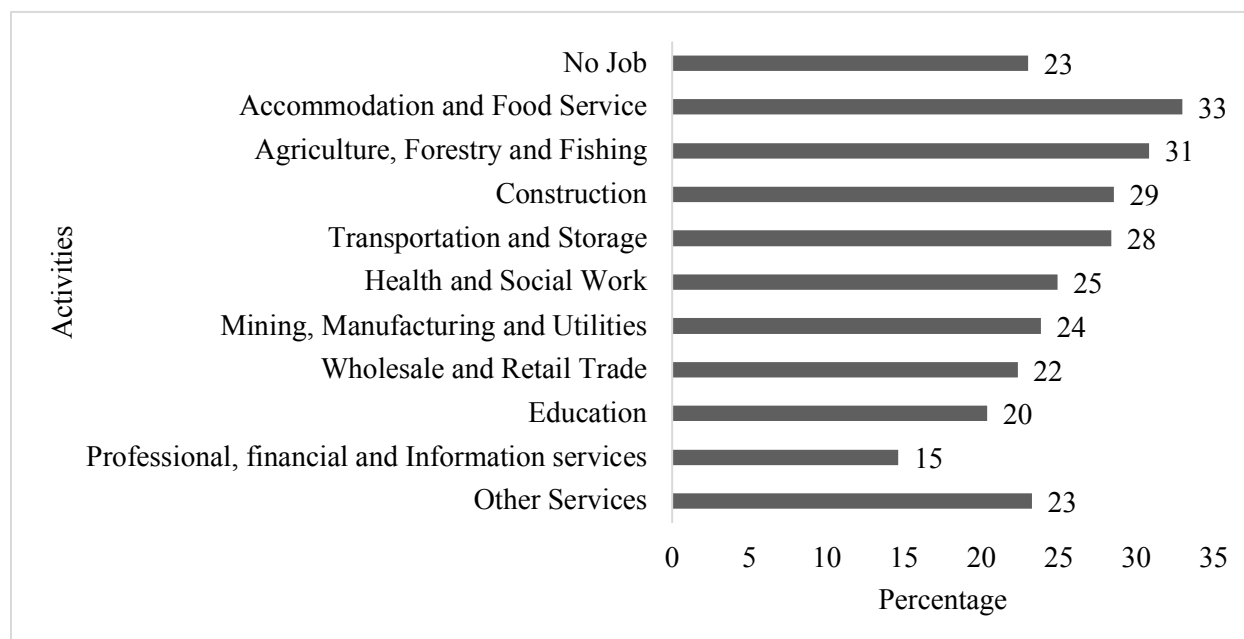


Source: Authors' calculation based on ELMPS 2018

Notes: Primary job (3 months) (N=15,746)

Household were more vulnerable to food insecurity if the head was working in the accommodation and food service sector (33 percent) or in the agriculture sector (31 percent) (Figure 29). Also, the exposure to food insecurity was lower as more members of the household hold a secondary or higher education degree (Figure 30) or enjoyed the stability of a public or a formal private job (Figure 31).

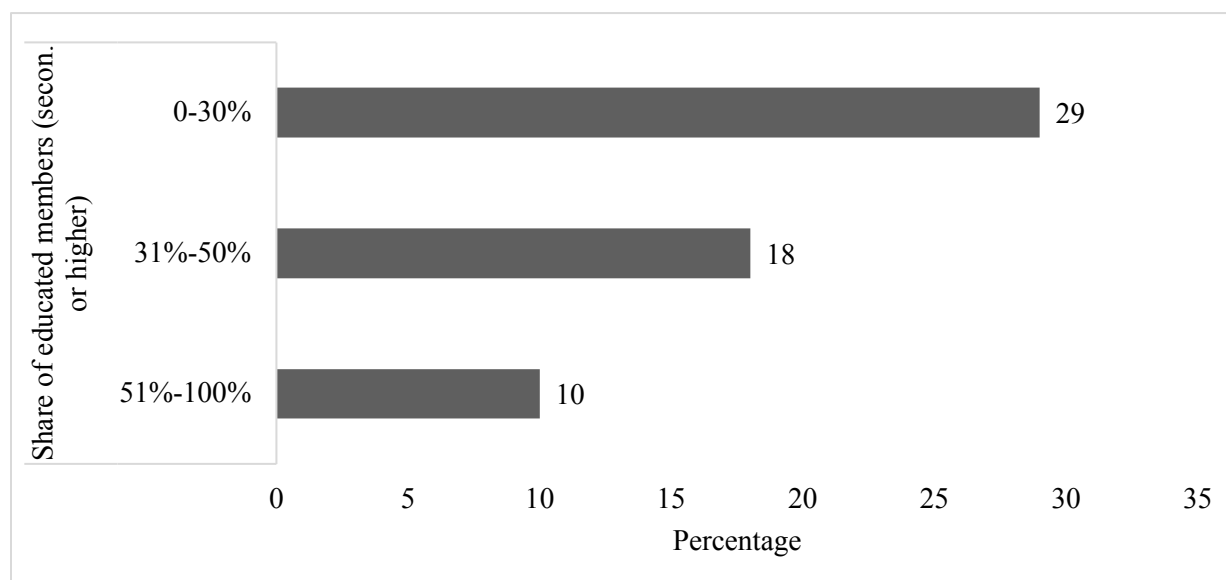
Figure 29. Percentage of households who experienced food insecurity by economic activity of head of household



Source: Authors' calculation based on ELMPS 2018

Notes: Primary job (3 months) (N=15,746)

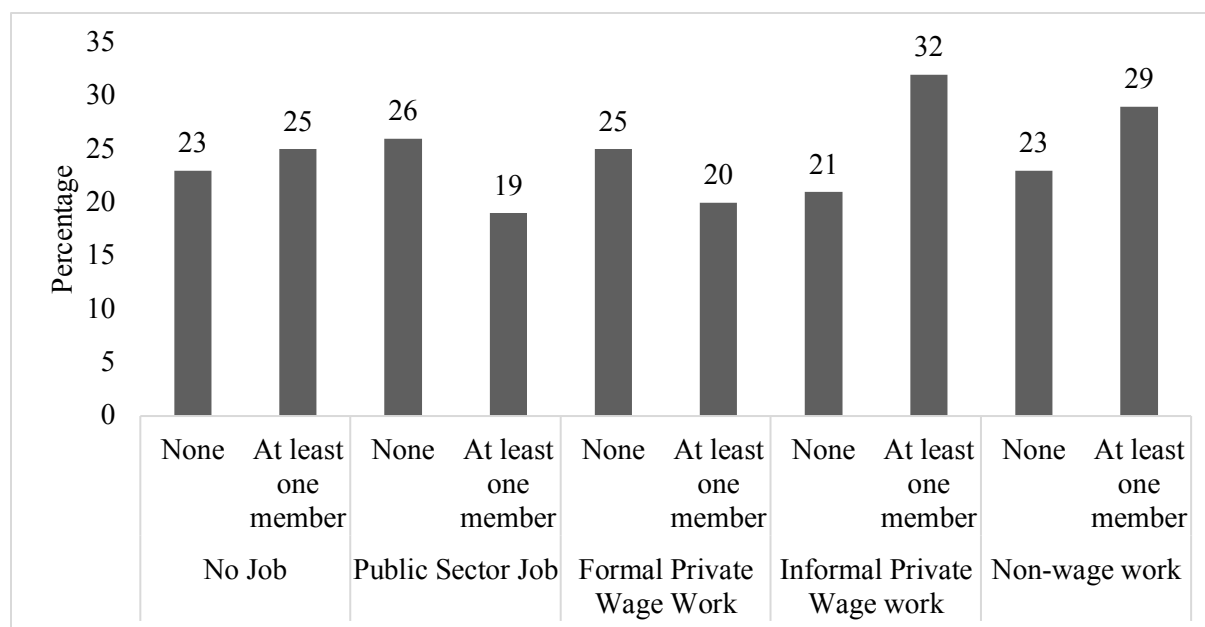
Figure 30. Percentage of households who experienced food insecurity by education of household members aged 18 and above



Source: Authors' calculation based on ELMPS 2018

Note: N=15,667

Figure 31. Percentage of households who experienced food insecurity by characteristics of household members' primary jobs

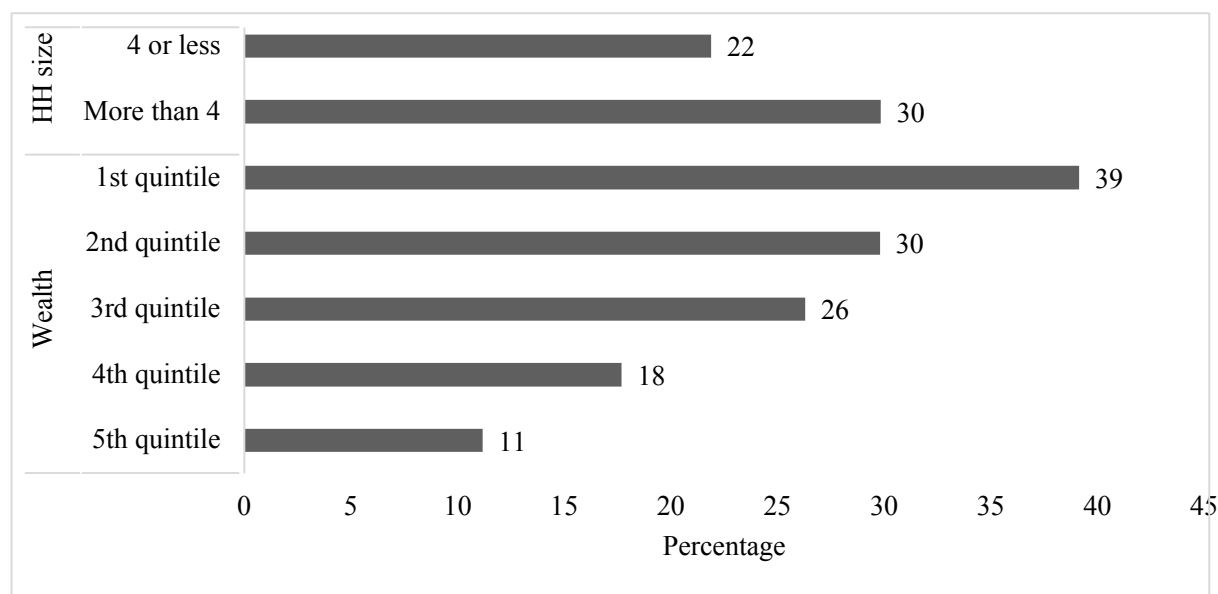


Source: Authors' calculation based on ELMPS 2018

Notes: reference 3 months (N=15,746). Households could be in more than one category if multiple members worked.

Similar to exposure to shocks, experiencing food insecurity substantially decreased with household wealth status. About 39 percent of the poorest quintile of households were food insecure as compared to only 11 percent among the richest quintile of households. Large households of more than 4 members percent were more food insecure (30 percent) than smaller households (22 percent) (Figure 32).

Figure 32. Percentage of households who experienced food insecurity by characteristics of the household

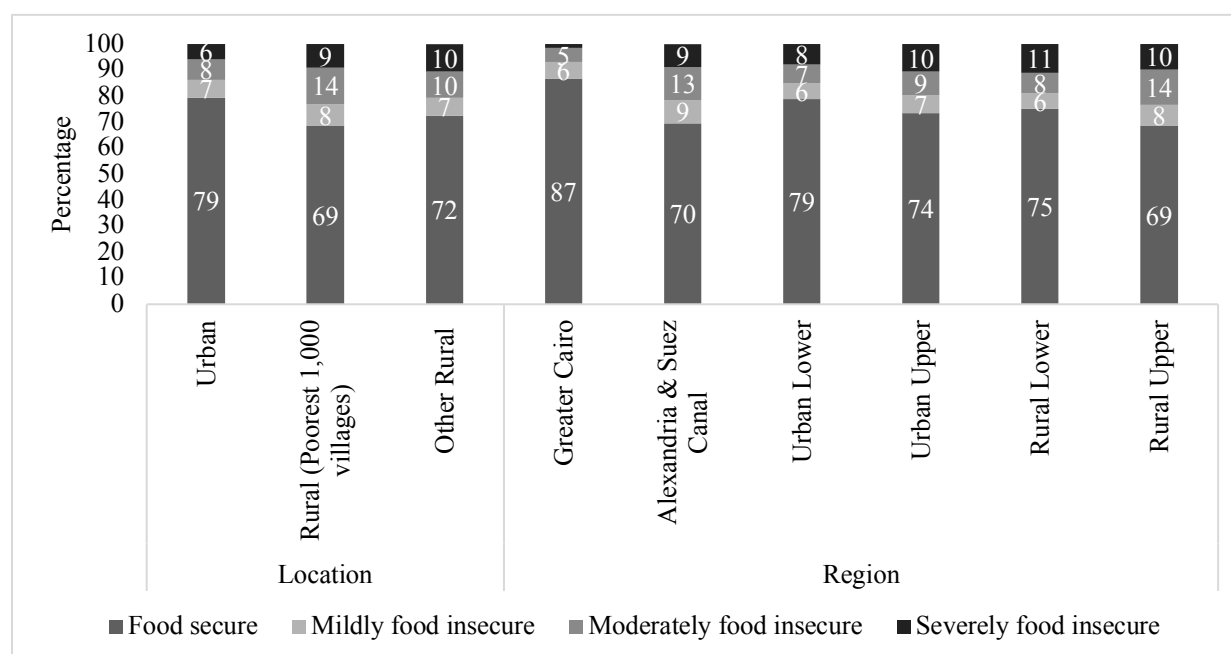


Source: Authors' calculation based on ELMPS 2018

Notes: N=15,746

Additionally, Figure 33 indicates that food insecurity was highest in the 1,000 poorest villages (31 percent), followed by other rural areas (28 percent), as compared to 21 percent among urban households. Nevertheless, the severity of the exposure only slightly varied among both groups of rural areas. The two regions that had the highest rates of food insecurity were rural Upper Egypt (32 percent) and Alexandria and Suez Canal (31 percent). Around 10-11 percent of the households residing in urban and rural Upper Egypt, and in rural Lower Egypt were exposed to severe food insecurity, compared to less than 2 percent among Greater Cairo households (Figure 33).

Figure 33. Percentage of households who experienced different degrees of food insecurity, by location and region



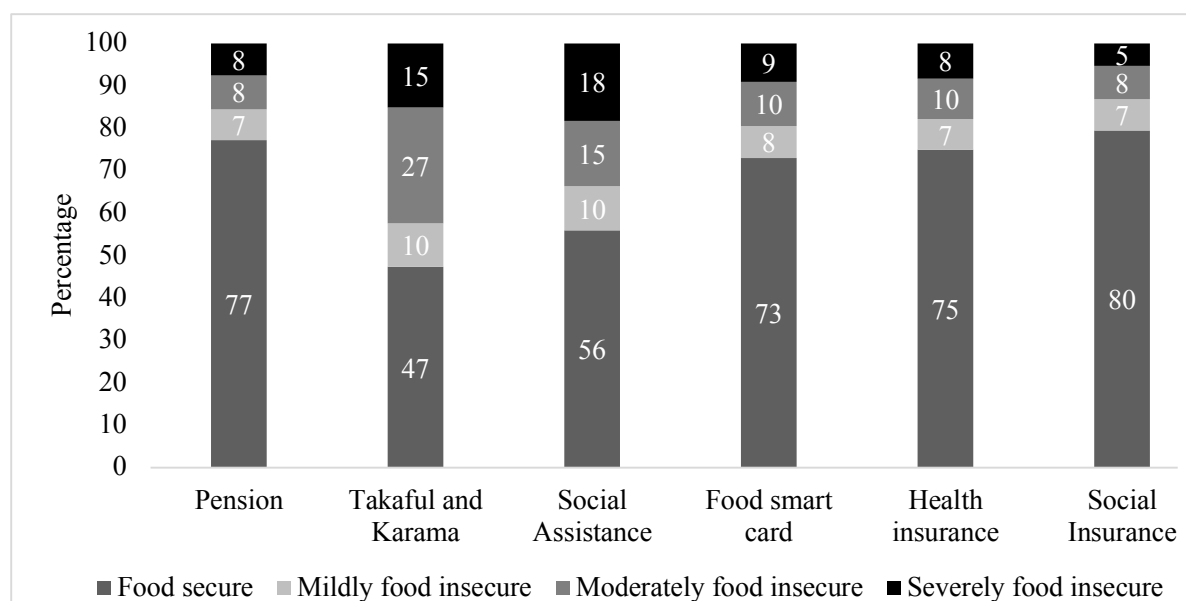
Source: Authors' calculation based on ELMPS 2018

Notes: (N= 15,746)

Similar results are also observed here for the relationship between social protection schemes and food insecurity as with exposure to shocks (Figure 34). The highest rate of food insecurity was observed among Takaful and Karama beneficiaries (53 percent) and those receiving social assistance (45 percent), while lowest rates were observed among households which had access to social insurance (21 percent), pension (23 percent) or health insurance benefits (25 percent).

It is also worth mentioning that over a quarter of the households who received food smart cards suffered from food insecurity over the last three months. Furthermore, the degree of the food insecurity was highest among households receiving social assistants or Takaful and Karama conditional cash transfers. Less than 9 percent of the households receiving pensions or insurance benefits reported severe food insecurity, compared to 18 percent of the households receiving social assistance and 15 percent of the Takaful and Karama beneficiaries (Figure 34).

Figure 34. Percentage of households who experienced different degrees of food insecurity by social protection coverage



Source: Authors' calculation based on ELMPS 2018

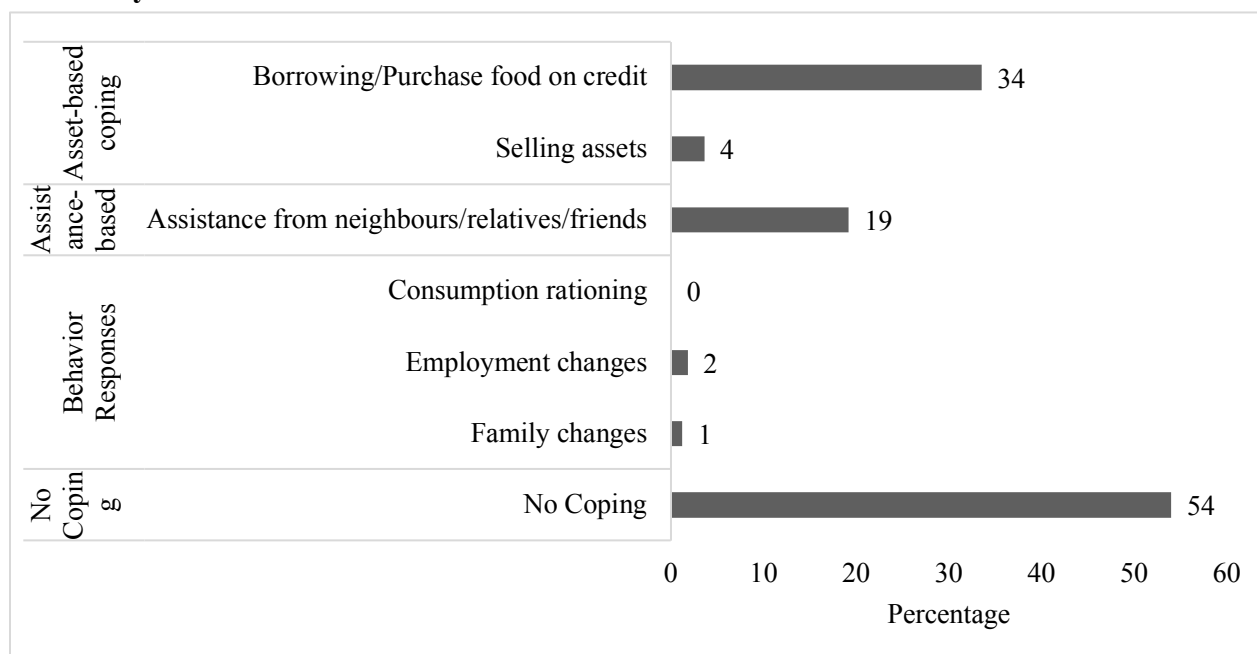
Notes: Coverage for at least one member. N=4,031 for pension; 777 for Takaful and Karama; 658 for social assistance; 12,385 for food ration cards; 9,924 for health insurance; 4,410 for social insurance

4.2.2 Households' strategies to cope with food insecurity

Contrary to exposure to shocks, where only 5 percent of the households reported doing nothing to cope with the shock (Figure 15), over 54 percent of the households did not adopt any coping mechanism when experiencing food insecurity. This provides evidence that food insecurity is probably mostly chronic rather than a sudden episode or a temporary shock. On the other hand, 34 percent of the households who experienced food insecurity⁴ borrowed or purchased food on credit, 19 percent received assistance from neighbors, relatives, and friends to cope with the food insecurity. Other coping strategies were very minimally reported by households (Figure 35).

⁴ The analysis of this section focuses on households who experienced food insecurity alone without other types of shocks to ensure that the adapted coping strategies were used to cope with food insecurity exclusively.

Figure 35. Percentage of households using different coping strategies, households with food insecurity



Source: Authors' calculation based on ELMPS 2018

Notes: Multiple coping strategies are possible (N=2,608)

5. Conclusion

This paper aims to provide a better understanding of the vulnerability of Egyptian households to food insecurity and shocks and their coping strategies. The results show that almost a quarter of the Egyptian households were exposed to food insecurity either solely or in combination with shocks. Economic shocks were the most common distress (14 percent), mostly in the form of reduced income or loss of employment, followed by health shocks (5 percent).

Households residing in rural areas, particularly in Upper Egypt, or large in size were more vulnerable to shocks and food insecurity during the study period. Food insecurity, but not shocks, was slightly more prevalent among the 1,000 poorest villages of Egypt as compared to their other rural counterparts. Yet, overall, poor households were almost four times as likely to have experienced food insecurity and more than twice as likely to have experienced shocks as compared to their rich household peers. The characteristics of both the head and all members of the household were closely related to its vulnerability and resilience. Households with heads who have less than intermediate education, work in the informal private sector, were self-employed, or outside an establishment or in the agriculture sector were more likely to have experienced food insecurity and shocks.

Similarly, the higher the share of household members with secondary education or above and having at least one member of the household with a formal job (whether in the public or private

sector) substantially decreased the household's vulnerability. Male headed households appeared to be slightly more vulnerable, particularly to food insecurity, than female headed households. This could be a question of gender differences in household resource allocation. A large group of research argues that household resources controlled by women are often associated with better child welfare in terms of educational and nutritional outcomes (See Namoro and Roushdy (2010); Roushdy (2004) and Quisumbing and Maluccio (2000)). It may also be due to the existence of social protection schemes that particularly target female headed households, or the effect of the gender and culture norms where people generally feel that single mothers or women breadwinners need more support than men.

Household coping mechanisms were primarily consumption rationing and borrowing or receiving assistance from neighbors, relatives, and friends. Over 50 percent of the households who experienced shocks used consumption rationing in the form of reduced spending on health, food or education. All of these have the potential to harm the human capital of the households and its vulnerability to shocks and severe food insecurity. On the other hand, over a third of the households depended on informal borrowing and assistance, which provides evidence to how social capital plays a vital role in households' resilience to turbulent events, more than formal sources of loans and use of assets. The results also highlight some gender difference in coping mechanisms, where male household heads were more likely to use borrowing while female household heads were more likely to receive assistance. This is consistent with our potential explanation regarding receiving assistance and culture norms. It may also confirm previous evidence on the weaker position of women in Egypt in accessing not only formal credit but also informal borrowing.

The results of this paper call for several interlinked policy measures to increase the resilience of Egyptian households to shocks and prevent them from using stressful strategies that may harm their human capital and render them more vulnerable to shocks. First, it is important to note how, despite the fact that formal credit and insurance mechanisms play a crucial role in managing risks worldwide, (Dercon, 2002; Okamoto, 2011), this does not seem to be the case in Egypt. Poor Egyptian household experience did not access formal loans, which left them with only the option of informal borrowing, which may be costly. It is crucial to develop policies that aim to increase the access of households, owning few assets, to low-cost loans. Special attention should be given here to female headed households who generally experience low access to formal credit in Egypt. This measure would not only provide such unprivileged household with a more effective way to cope with shocks, but also has the potential to decrease their vulnerability to future shocks and chronic food insecurity.

Second, it is also vital to provide poor households with formal social safety nets that are flexible enough to help poor households that are already covered by a social protection schemes through

adjusting their cash transfers as needed and new households which may suddenly fall under the poverty line during shocks. Third, expanding the types of cash transfer programs that deliberately target women, like the Takaful program, is vital given the evidence on how household vulnerability and child welfare is related to the gender of who controls the resources of the household.

Fourth, the coping strategies adapted by Egyptian households in response to shocks, which were mostly in the form of consumption rationing, were not effective enough in protecting them but rather have clear irreversible consequences on the nutritional and educational status of future generations. Accordingly, the government's top priority should be towards developing "ex-ante" risk reduction programs beside "ex-post" poverty alleviation and coping programs, in order to prevent deterioration in the nutritional, health, and educational status of children.

Fifth, labor market reforms are urgently needed to help poor household members to find a formal job that provides social insurance coverage and other non-monetary benefits. Special efforts should be directed towards inaugurating a better investment climate combined with a well-functioning private sector, in order to boost the creation of new long-term formal good quality jobs. Such interventions proved successful in preventing the adverse effects of major crisis in several developing countries (see Skoufias (2003)). The results show access to formal, inside an establishment jobs and to social security benefits were associated with considerably lower exposure to shocks and food insecurity in Egypt.

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Appendix I: Description of key variables

Variable	Description
Food insecurity	Experienced anxiety and uncertainty about household food supply, insufficient quality, insufficient food intake during the past 4 weeks
Food insecurity access scale score	Degree of food insecurity
Food secure	Household did not experience any food insecurity condition during the past 4 weeks or experienced worry but rarely
Mildly food insecure	Experienced worries about not having enough food sometimes or often, inability to eat preferred foods, rarely eating less variety of meals than desired, rarely eating undesirable meals
Moderately food insecure	Experienced lack of food quality by eating less variety of meals or undesirable food-sometimes or often, reducing the size of meals or number of meals-rarely or sometimes
Severely food insecure	Experienced reduced meal size or number of meals often, running out of food even as infrequently as rarely
Shocks	
Environmental Shock	Experienced drought, flood, erosion or crop pest or livestock disease during the past 12 months
Economic Shock	Experienced high cost of agricultural input or loss of employment or reduced income during the past 12 months
Health Shock	Experienced human disease, accident, death of working member or death of a household member during the past 12 months
Social Shock	Experienced theft, conflict or violence or a fire during the past 12 months
Coping Strategies	
A. Behavior-based coping strategies	
1. No coping	No coping strategy used
2. Consumption Rationing	Coped by reducing consumption, eating less food, reducing spending on health, reduced spending on education
3. Employment changes	Coped by working, migrating, working for food
4. Family changes	Coped by sending members to beg, sending a family member to live with other relatives
B. Assistance-based coping strategies	Coped by receiving cash or in-kind assistance from neighbors/relatives
C. Asset-based coping strategies	
1. Borrowing	Coped by formal or informal borrowing (cash or in-kind) as well as purchasing food/goods on credit

Variable	Description
2. Use of Assets	Coped by selling assets or spent savings or consumed seed stock/livestock
Household characteristics	
Age group-head of household	Youth (≤ 24 years), young adult (25-29), adult (30-64) and elderly (65 years and above)
Education of household members	Share of household members with secondary or higher education (age 18 and above)
Wealth	Categorical variable that uses household wealth score to assign each household to 5 income quintiles

Source: Authors' compilation