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Impact of the COVID-19 control measures on rural households’ access to social capital for mobilizing resources in Eastern Ethiopia

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ABSTRACT

Physical distancing and mobility restriction measures are used as central components of the COVID-19 response globally. In Ethiopia, the measures have been implemented against a complex social structure wherein social support practices (in the form of social capital) and daily social interactions are embedded. However, the mechanism of how such measures interact with various social capital practices and shape household access to various types of resources during the pandemic are less understood. This study examined the way the COVID-19 pandemic and protective measures shaped smallholder farmers’ access to social capital for mobilizing resources during the pandemic. A total of 176 households were randomly selected for the quantitative survey. In addition, 25 key informant interviews were collected. Results show that prolonged physical distancing and mobility restrictions imposed to control the health impact of the pandemic have disrupted normal patterns of social interactions and resource sharing between households. The imposed measures significantly decreased households’ access to food, information, credit/loan, labor, psychological support, and agricultural inputs and extension services. The study strongly suggests that the public health measure imposed for the COVID-19 prevention and control affect the proper functioning of a society’s social capital framework, thereby, reducing poor households’ ability to deal with socioeconomic crises and uncertainties. This implies that ongoing as well as future responses to the pandemic should adapt and integrate crisis management measures with the local risk-sharing mechanisms such as indigenous mutual support frameworks and processes. Harnessing inclusive social protection programs and building strong rural financial infrastructure and agricultural service delivery can help vulnerable

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households cope with shocks, improve the effectiveness of pandemic responses and facilitate post-crisis recovery.

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Introduction

Corona Virus diseases (commonly known as COVID-19) were reported in Wuhan district of China before it was declared as a global public health emergency by the World Health Organization (WHO) in early 2020. The virus has since then spread across the world affecting social, cultural, economic, and political lives. Countries have adopted various methods to prevent and slow down the spread of the pandemic. The prevention measures deployed by the WHO mainly include social/physical distancing and lockdown. In Ethiopia, the Ministry of Health advised the wider public to implement strict physical distancing, partial lockdown (at the early stage), and mobility restrictions (to some degree) and instructed regional and district offices to enforce the measures.

The problem is that Ethiopia and other developing countries adopted COVID-19 protection and control measures such as physical distancing and mobility restrictions without considering the impact of the measures on the proper functioning of social capital on which individuals heavily rely to gain access to basic survival resources and for mobilizing support networks. The main aim of the current study is to examine the impact of COVID-19 response measures on the welfare of the poor (including on their ability to cope with the pandemic), their participation in economic activities and effective use of customary channels of social support.

The customary channels of mutual support are generally known as social capital. Social capital includes trust, shared identity, networks, mutual relationships, and values that harness social cohesion and inform collective action [9,23]. Social capital enables households for coping with shocks such as pandemics, flood, hunger and drought and facilitates post-crisis recovery [1,2]. In Ethiopia, indigenous mutual support practices that respond to social need and resource sharing based on cooperation and mutual trust such as Hirttaa (a share-cropping arrangement); Bussaa-gonofaa (a form of redistribution/restocking to poorer or disadvantaged clan members); Hirphaa (a continuing relationship of reciprocity between household in good and bad times), Mandera/Afoushaa/Iddir (a general name for all types of wide-ranging risk-pooling and risk-sharing arrangement established at community level); Wonfel/Deebbo/Guzza/fereqa (indicate the different types of labor-sharing arrangement); Ikub (a customary system of finance temporarily established to provide members a loan on a rotating basis) are widespread and have been institutionalized in the country for many centuries [3,13,21].

Individuals draw on these types of social capital practices to get access to food, information, labor, shelter, money or credit, employment, and emotional support during times of crisis (Aredo, 2012). Even in the context of the COVID-19 pandemic, social capital was found to have played a significant role in reducing transmission of the virus and in boosting communities’ capacity to deal with the indirect economic, psychological and social impacts of the pandemic. Studies generally suggested that households and communities with high social capital — community connectedness, moral obligations, social trust, and collective action, seem to have responded more effectively to the pandemic than those with low social capital [20]. For instance, a study conducted in Uganda and Kenya suggests that membership in diverse savings and loan mutual support groups was correlated with less likelihood of suffering from income shocks and reduction in food consumption during the COVID-19 pandemic [19]. Similarly, experience from the Ebola virus in Liberia show that social capital and community connectedness in the form of high trust, tight bonds, and a sense of kinship helped address the health shock by facilitating collective action, cooperation, and good communication between community members and health workers (Alonge et al., 2020). All these are evidence that social capital plays a key role in the COVID-19 prevention and facilitating the recovery process. However, it is not clear how the COVID-19 pandemic and policy responses adopted to tackle it interact with the different types of social networks and influence households’ decisions to mobilize useful resources.

Some studies (e.g. [22,30]) have suggested that the association between social capital and the spread of the COVID-19 may be affected by the types of response including policies and measures deployed to prevent the spread of the virus. The positive effect of social capital in response to managing the pandemic and post-COVID-19 recovery may diminish as strict control measures such as physical distancing are imposed [7,22]. In places where a ‘hard lockdown’ and social distancing measures were implemented, patterns of informal mutual supports and other forms of social capital practices were affected as neighbours and relatives are not allowed to visit one another [10]. Estifanos et al. [14] argued that Ethiopia’s social, cultural, and economic conditions place significant limitations to the use of lockdown and other social distancing measures as a public health strategy for containing the spread of COVID-19. It is thus, important to investigate how the various components of social capital operate and might be compromised by measures taken to contain the spread of the pandemic. The impacts of the COVID-19 on social capital and the role of social capital in supporting a society’s ability to respond to the pandemic are subject of rigorous, ongoing research and lessons learned from the COVID-19 can be incorporated into the disaster response cycle [22] to deal with future pandemics. It is hoped that examining the early impact of pandemic prevention
and control measures on household social networks may offer a framework for devising disaster protection and post-crisis recovery programs that take into consideration mechanisms for effective targeting and provision of COVID-19 services while also building and maintaining the value of social capital during a crisis situation. Thus, this study addresses the following research questions: i) how are the different components of social capital affected by policy measures imposed to control the COVID-19 pandemic? and, ii) how do these control measures shape smallholder households’ access to social capital for mobilizing various types of resources?

Conceptualizing social capital in light of the COVID-19 pandemic: a framework

Social capital is an old concept. Its use dates back to the 19th century though it widely entered academic and policy discourse in the 1980s and 1990s. As a concept, social capital is generally used to refer to a system of social, economic, and moral interaction and interdependence through which individuals and groups are glued together. The concept of social capital is traced back to eighteenth and nineteenth-century classic sociology though the first mainstream use of it is largely believed to have been made by Hanifan (1916) who defined it as a complex social system that contains stocks of social networks, trust, and interdependence upon which people draw to overcome their problems and uncertainties. On his part, Putnam [23] defined social capital as a notion composed of several entities – connections among individuals—social networks, organizations, and the norms of reciprocity and trustworthiness that arise from them. Coleman [9] expanded Putnam’s notion of social capital by introducing the notion of ‘social structure’ wherein patterns of social cohesion and mutual support arrangements are embedded. Social capital thus is derived from both aspects of social structure (consisting of relationships and networks) and from social actors’ facilitation actions (including the social norms, attitudes, and beliefs) within the social structure that governs such relationships for a mutually beneficial collective action. The transformative capacity of the social structure into a mutually beneficial gainful action is generally collective action. Thus, norms of reciprocity, social trust, and effective sanction mechanisms are important aspects of social capital. By and large, social capital can be conceptualized as both a resource and investment rooted in the social structure of relationships in which individuals and communities mobilize to fulfill beneficial collective actions. In other words, investment in social relations is the primary means via which social actors unlock and gain access to embedded collective resources to ensure one another’s well-being against the current as well as future adversities.

The mechanisms through which social capital redistributes resources and supports household and community coping and post-disaster recovery are bonding, bridging, and linking types of social capital (see Fig. 1). Bonding social capital is horizontal networking among homogenous agents of equal status [24] and indicates strong kinship ties where social relationships are based on the existence of strong trust and enduring social reciprocity. It is considered a closed and exclusive aspect of social capital [24]. Members of this network share similar characteristics in terms of race, age, sex, education,
economic status, political affiliation, and religious background. Bridging social capital involves connections between and across a broad spectrum of groups and societal cleavages (heterogeneous groups). It generates vaster networks of trust that can be generalized across different groups. As such it enables individuals and communities to benefit from diverse stocks of social networks and vulnerability-minimizing strategies. Linking social capital is a vertical metaphor indicating ties between individuals and groups having different financial and political power. It is an essential mechanism to leverage various types of resources from formal institutions and organizations beyond the local community.

Each form of social capital helps a community deal with the crisis effectively, both during short-term response phase (coping stage) and long-term recovery (adaptation stage). Since each type of social capital provides different resources and opportunities for a household in crisis, a balanced combination of the three types of social capital is always vital for building crisis recovery. To assess the impact of COVID-19 on social capital and draw policy implications, social capital is further divided into four major perspectives [29]: (i) the communitarian view (civic groups, associations, and clubs); (ii) the network view (informal institutions, such as networks of friends, neighbors, and mutual support groups); (iii) the institutional view (linkages with formal institutions or linking social capital); and (iv) the synergy view (public and private partnership). In this study, we rely on the network view of social capital.

A vast array of empirical works generally suggest that higher levels of social bonds and community connectedness would enhance individuals’ and communities ability to prepare for, respond to and recover from a crisis [Aldrich, 2014, [2,5]]. Studies suggest that provided that they are allowed to interact and reinforce one another in a dynamic manner, the different forms and types of social capital would foster collective action and unlock embedded resources. For instance, Hoddinott et al.’s [17] study in rural Ethiopia suggested that informal insurance and social networks enable households to face crises through providing diverse types of resources. On his part, Aldrich [2] found that a greater level of bonding and bridging social capital facilitate disaster victims’ coping and recovery capacity through facilitating greater sharing of facts and information and other relevant resources. Rinner [2013] also found that mutual trust fosters individuals’ disaster preparedness by enabling them to take necessary precautionary measures and share resources. In the context of the COVID-19 pandemic, in particular, recent studies (e.g. [4,20]) show that social capital and community connectedness influence COVID-19 response by harnessing a sense of collective actions and promoting public acceptance of and compliance with control measures. In connection to this, Markidis and Wu [20] argued that social trust and norms of reciprocity positively influenced the COVID-19 response through a galvanizing sense of self-sacrifice and cooperation for the collective good. Social capital can also help mobilize essential resources for pandemic victims through networks at the household and community level [30], thus promoting coping and post-disaster recovery.

In contrast, policy measures put in place to contain the spread of the virus may create social welfare concerns by causing fragmentation of normal social interaction and disrupting patterns of resource sharing. Prolonged and extensive physical distancing measures may limit the vitality and potency of social capital and weaken the functioning of customary channels of social support [22,28]. This suggests the need for individuals, communities, and government institutions to maintain the role of social networks, norms of reciprocity, and collective commitment to effectively tackle with the pandemics [22]. In this study, the core argument on how COVID-19 and policy measures affect a household’s and broader community’s social capital and their access to resources is anchored on two major assumptions (the conceptual framework on the linkages between social capital and COVID-19 is illustrated in Fig. 1 below). First, strict policy measures imposed to control the spread of the virus may inhibit normal economic activities. For instance, such measures may significantly reduce households’ food production and physical availability of food, and undermine their own labor entitlements as they restrict people from engaging in wage works [10]. As social capital works more when there is more to share [16], reduction in economic activities may considerably limit the support that the poor anticipates mobilizing through their social networks. Second, strict policy measures including extended physical distancing may obstruct the effective functioning of social capital during the pandemic. Social capital functions well through close proximity, everyday normal social interactions, and networking. Longstanding social distancing measures may disrupt the normal functioning of social capital practices and limit households’ access to informal channels of resource sharing.

Finally, it is also important to note that social capital is not always benign or indiscriminate. Social ties and community connectedness has its own downsides that may undermine the trajectories of social preparedness and response to disaster recovery. Several studies show (e.g. [5,8,16]) that sometimes social groups may operate on unequal terms in mobilizing resources for tackling the crisis, with barriers that exclude some vulnerable members of the community through restrictions based on gender, religion, and social status. This entails that social capital is an inevitable element in facilitating rapid response and societal recovery from COVID-19 and other pandemics with widespread and complex impacts. It is thus important to examine the way policy measures (government restrictions, physical distancing) interact with and impact the functioning of existing social structures and affect response to the COVID-19 pandemic.

Material and methods

Overview of the study areas and sampling

This study was conducted in Eastern Ethiopia (Kombolcha, Babille, Haramaya and Harar Zuria districts) – Table 1. These districts are characterized by mixed crop-livestock systems. Livestock and vegetable production is the main source of income for households across the four districts.
Table 1
Study locations and sampling.

| Region | Zone        | District   | Kebele    | Number of households | Percent |
|--------|-------------|------------|-----------|----------------------|---------|
| Oromia | East        | Haramaya   | Damota    | 35                   | 19.89   |
|        | Hararghe    | Kombolcha  | KerensaBorte | 52                | 29.55   |
| Harari | HararZuria  | Galmashira |           | 48                   | 27.27   |
|        | HararZuria  | Berkele    |           | 41                   | 23.30   |
| Total  |             |            |           | 176                  | 100.00  |

Source: Own analysis from survey data, 2020.

On top of agricultural production, social networks constitute the most important source of survival for most households in the study locations. Labor reciprocity networks (Gauzaa, Fereqaa), food sharing networks, burial groups, information exchange networks, credit and lending networks and groups (Afoshaa), and Zakat (Voluntary charity in Islam religion) are some of the mutual support arrangements. Mutual supports within the villages are mostly organized along with kin, neighborhood, and tribal lines.

The sample for this study came after a reconnaissance survey. The study sites were purposively selected based on the severity of the COVID-19 pandemic, proximity to the university, and accessibility to the main road. Table 1 below shows the distribution of sampled respondents across the four districts. Quantitative survey respondents were randomly selected. Due to the time and urgency of the problem, sample selection was done through a joint discussion with the concerned officials in the study area and relevant offices. From each district, a representative kebele was selected. Qualitative survey respondents (mainly key informants) were selected purposively considering their knowledge about the community and representativeness in consultation with local development agents.

Types, source and methods of data collection

Both quantitative and qualitative data were collected between April and May 2020 –this is 2 months after the Ethiopian government-imposed protective measures (mainly physical distancing, and partial lockdown) to contain the spread of the COVID-19 infection throughout the country.

Generally, quantitative data was collected using household survey interviews with 176 survey respondents across the four study sites. This was collected using a structured interview schedule. In order to assess how the COVID 19 pandemic (policy measures taken to contain the spread of the virus) shaped household social capital for accessing different types of resources, data was collected on a range of topics including COVID –19 impact on daily lives, household access to social capital (trust, bonding social capital, bridging and linking social capital) and resource sharing activities. In addition, data were collected on the demographic and socio-demographic backgrounds of the respondents. The qualitative data were gathered using key informant interviews (KII) and participant observations using a semi-structured checklist. A total of 25 key informant interviews (including with female-headed households, traders, local elders, traditional leaders, religious leaders and kebele1 leaders) were conducted. Key informants were asked for their opinion about the impact of the COVID-19 pandemic and protection measures and how that has affected various types of households and their access to resources during the pandemic.

This gave us an understanding of how COVID-19 policy measures imposed against the pandemic shaped household access to the various types of social capital resources for resource sharing during the pandemic.

All instruments were pretested in the nearby community before the fieldwork and modifications were applied afterward. Data were collected by skilled enumerators who knew the culture and language of the study participants. All research assistants have received training in advance. Interviews were recorded using digital audio recorders. Data were transcribed verbatim in Afan Oromo (the local language we used for the interview) and then in English. All the respondents mentioned in this study were identified by their pseudonyms.

Methods of data analysis

Data obtained from the household survey were analyzed using simple descriptive statistics. Quantitative data analysis was performed on STATA version 15.0. Data gathered using the Likert Scale were summarized into Mean (Std. Dev.) in order to arrive at average values. Various types of graphs were used to illustrate differences.

Qualitative data obtained from key informant interviews were analyzed using thematic analysis. In general, data was analyzed following five major steps; transcription; cleaning; reviewing; data organization; coding; categorizing into themes; finding patterns of relationship; and interpreting.

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1 The lowest administrative unit in Ethiopia.
Results and discussion

Perception on level of trusting people and organizations in relation to the COVID-19

Understanding the mechanism of how trust influences mutual assistance and efforts to contain the spread of the virus in times of a pandemic is an interesting topic in its own right. Trust lubricates cooperation and cooperation itself breeds trust. The greater the level of trust within a community, the higher will be the level of cooperation for resource sharing and compliance to the pandemic response. The presence of a high level of trust reduces transaction costs between people, and so liberates resources (Fukuyama, 2006; Pretty & Ward, 2001).

The level of respondents’ trust in people and organizations amidst the COVID-19 pandemic was assessed using a three-point Likert Scale (little, somewhat, and a lot). The results are given in Fig. 2. The result shows that respondents have the highest level of trust for their own family members. This means that the respondents perceived their family members as being responsible for protecting the whole family by properly communicating information on COVID-19 as well as observing all the safety and precautionary measures recommended by health and local officials. Second to own family members are religious organizations. These institutions are perceived to be trustworthy in disseminating correct information about COVID-19 to their followers. The respondents’ trust in the role of media comes third – after family members and religious organizations. Since the study was conducted at the early stage of the onset of the pandemic, in the study area, some people had hesitations on the authenticity of information related to the severity and effect of the COVID-19. Therefore, some people took the information from the media lightly, referring to it as a hoax.

Trusting in neighbours has also received a higher score by the respondents. Given the role of neighbours in the daily lives of households in Eastern Ethiopia, the relatively high score accorded to a neighbourhood network is not surprising. Households in the study areas regard their neighbors not only as people living next door but also as trustworthy partners and resources. Neighborhood networks serve as a reliable conduit for the sharing of resources such as information and food during a crisis period. However, the level of respondents’ trust in the role of the local/federal government and other actors was found to be relatively low (Fig. 2).

The relatively high score given to trust in one’s family members and neighbours has a positive implication for an improved COVID-19 response through adherence to COVID-19 precautionary measures by a health organization and greater concern for their family, neighbours and community members. This finding on the role of trust between close family members is in agreement with social capital studies that highlighted the positive role of trust between close family members in facilitating positive emergency response and facilitating recovery through guardianship and resource sharing [15,26,28].

The strong level of trust for religious organizations was expected. People in the study sites have the highest regard for their religious organizations. People follow and implement COVID-19 precautionary measures communicated to them through religious organizations. As such the wide involvement of such institutions may enhance the effectiveness of the COVID-19 response.

The low level of trust for federal and local governments may cause low compliance with control measures and have direct implications with adherence to protective measures that are critical in flattening the curve for COVID-19. At the local
community level, such a lack of trust may seem to be the result of poor implementation of policy measures at the local community level and lack of effective communication. In some of the study sites, we found evidence of how the lack of effective communication about the pandemic and usage of excessive coercive measures led to suspicion, affecting effective COVID-19 response. Respondents indicated that they were unable to go to the clinic for fear of getting arrested and get forcefully quarantined. One of the key informants, Urji, female, aged 45 stated that she would not go to the clinic seeking medical attention unless she falls severely ill for fear of getting infected with the virus from the hospital or possible forceful quarantining. In some cases, such fear and lack of trust forced some people to even hide even more dangerous and deadly illnesses – including highly contagious and chronic illnesses that require immediate medical attention. In relation to this another respondent, Ahmed, male, aged 60 said the following:

Generally speaking, the trend of going to clinics/hospitals to seek general treatment for other diseases has substantially decreased. For instance, right now I have serious pneumonia with coughing symptoms which is similar to the corona symptom (which can be easily confused with the COVID-19). But I refuse to go to the clinic since this can be easily confused with the COVID-19 and I may be admitted for quarantine.

The above case is an example of how lack of clear communication and poor implementation of protective measures between the various actors may cause mistrust and fear among community members, jeopardizing the efficacy of planned efforts to control the virus. This suggests the need to build strong mutual trust between the government, public health workers (health extension agents) and the wider public. Such actions may help enhance public faith in the legitimacy of COVID-19 responses. This finding is also consistent with other studies that highlighted the lack of trust in implementing institutions may hamper the adoption of preventive behaviors [6,20,27] and undermine effective emergency response as it will cause disruption of normal patterns of social interaction and nurture a cycle of further distrust [27].

**Bonding capital**

Bonding social capital indicates horizontal networking between close kin and family members to access immediate assistance aftershocks. In disaster situations, bonding social capital in the form of close family ties and neighbourhood networks are considered very important, since they are commonly considered as first responders of assistance immediately after disasters have happened [2]. We measured the effect of COVID-19 policy measures (physical distancing, partial lockdown and mobility restrictions) in resource sharing between close friends, kin and close neighbours during the COVID-19 pandemic. This was measured using a three-point Likert Scale against 6 key indices. The result is given in Fig. 3. Overall, respondents reported a sizable decrease in resource sharing patterns between close kin and neighbours due to COVID-19 restrictions. Inter-household food exchange, information and psychological support (both general and pandemic-specific), credit, labor exchange, cooking utensils, and seed exchanges were among the resources significantly affected by COVID-19 and extended physical distancing measures.

The finding from the descriptive statistics is in agreement with the qualitative data that also suggest a dramatic decline in household access to resources using bonding capital. For instance, Hassan is a religious leader. He mentioned how a robust physical distancing measure disrupted inter-household resource sharing from close family ties during the pandemic.

He said the following:

The Pandemic and the strict control measures have disrupted our resource sharing tradition and the way we used to reciprocate with close family members and immediate neighbors during the pandemic. We cannot share/receive food, housing utensils, farming implements, and seed even with our close neighbors and kin for fear of getting sick and legal punishment. I am not even able to visit even my own married children who live in the same village since we are not allowed to visit each other. This is affecting my daily survival abilities.
This is an example of how the implementation of strict and extensive physical distancing measures may sometimes limit social interactions for resource access during the pandemic. This finding is also consistent with Devereux et al. [10] who mentioned that hard lockdown and physical distancing measures may affect the functionality of informal support and other forms of social capital as neighbors and relatives may not be allowed even to visit each other. In poor and vulnerable communities where most people rely on informal transfer from close kin and neighbors, the disruption of social capital by such measures may disproportionately affect the elderly without attendants, women, and households with disabilities that are already experiencing food insecurity. For instance, Shukuri Adem, a female, aged 45 has disabilities. She used to rely on support from her close kin, immediate neighbors, and friends for her daily survival before the pandemics. She complains that COVID-19 and the physical distancing measure have considerably limited the support she used to receive from her close family members. Individuals like Shukuri also had to leave their land fallow since access to agricultural labor support is also affected by the pandemic. Since extended physical distancing measures may not seem to be lifted soon, Shukuri constantly worries that she may permanently lose her social network.

All these are evidence that the pandemic and policy measures implemented to contain the spread of the virus may alter everyday social interaction that is key for resource sharing between households. Given the role of bonding social capital in providing a rapid response (short-term response phase) [1,18], the disruption in such types of networks may hamper effective pandemic management. With social distancing taken as a long-term solution, it is imperative to protect more vulnerable households through some form of public transfer program (through cash or food transfer).

**Bridging social capital**

The effect of COVID-19 and corresponding policy measures on the various dimensions of bridging social capital was studied using a three-point Likert Scale against three key indices. The result is presented in Fig. 4. Overall, findings from the descriptive statistics demonstrate that household resource sharing practices using bridging social capital (mainly through their membership in customary saving groups and mutual support groups as well as their distant connections) has dramatically declined after the government’s imposition of strict physical distancing measure. Most of the respondents (94%) indicated that their ability to exchange/share/receive food items from distant acquaintances decreased substantially after strict government measures are introduced. A similar proportion of the study participants also indicated that the physical distancing measure has decreased their ability to get labor support from labor support groups and their distant connections. In addition, the respondents' ability to support/receive credit from saving groups during the pandemic declined.

The government’s response to the pandemic through physical distancing and similar measures has influenced the functionality of bridging ties and household access to resources at least in two major ways. First, the strict physical restrictions against all forms of social gatherings have led to the complete avoidance of important customary gatherings that are important sources of bridging social capital and collective action. Qualitative survey respondents stated that the restrictions enforced by the local authorities and the health bureau against attending important customary events (such as funerals, processions and wedding ceremonies) have led to a loss of potential income/cash and the ability to gain new social capital afterward. Other respondents also reported that they couldn’t access agricultural labor from labor support groups (such as Guzza and Fereqqa) as working in a group violates physical distancing. Second, strict policy measures to reduce the spread of the pandemic are also reported to have slowed down healthy economic activities and hence access to bridging social capital. As social capital works more when there is more to share [16], the dramatic reduction in economic activities has considerably reduced the availability of cash and the willingness to invest in future collective action. For instance, taking a loan from informal saving groups has been one of the most widely employed strategies for coping with crises among individuals and community members in the study areas. However, as most of the livelihood activities were on halt due to travel/mobility restrictions and self-isolation measures, people did not seem to have the money and the confidence to invest in future collective action and to ensure the continuity and functionality of their lending and saving groups. As a result, people were not able to get loans by the virtue of their membership in such groups.

This is evidence that policy measures imposed to contain the spread of COVID may also undermine collective action in mutual support groups that are crucial in effective disaster emergency response in poor and vulnerable communities.
Though compliance with COVID-19 prevention policy measures is critical to containment efforts and to flatten the curve, it should not undermine pre-existing mutual support groups. It is important to note that such informal groups are the space by which the poor build social trust and increase social capital for accessing resources to respond to and recover from current and future shocks [1,2,3,5]. Therefore, future pandemic control measures should aim to strengthen and expand bridging social networks, and policy measures should build on pre-existing mutual support practices.

**Linking social capital**

Some farming households could lose access to food from their own farms if they fall ill from the COVID-19, or if they are unable to access labor and other agricultural inputs (e.g., fertilizer, credit, and seed), or if they lose access to markets to sell their produce as a result of the restrictions on trade and mobility [10]. In such cases, the availability of strong institutional responses and inclusive service delivery may play a paramount role in effective pandemic management as well as facilitating the post-recovery process.

The effect of the COVID-19 pandemic on linking social capital was assessed on a three-point Likert Scale (no change, decreased and increased) against five items. The results are displayed in Fig. 5 below. The study found that 97% of the respondents indicated that their ability to access information support from agricultural extension decreased after the COVID-19 crisis. Similarly, about 93% of the respondents indicated that their access to improved seed and fertilizer decreased as a result of the pandemic. According to expert key informants, the reduction in agriculture-related support (for information and access to seed and fertilizer) is said to be due to lack of coordination in the agriculture bureau, frequent absenteeism of agricultural extension workers and delay in agricultural input delivery (poor coordination in input and output supply chain) because of the COVID-19 restrictions on mobility/travel restrictions. The unsatisfactory performance of the agricultural service sector during this period may have had negative welfare consequences on farming households - on their production level and access to food as well as the ability to respond to the pandemic. Therefore, future actions should be directed towards improving agricultural service delivery by the government and other service providers in times of pandemics and extending their accessibility to vulnerable households.

Conversely, household access to resources using linking social capital has shown significant improvement in other service areas during the COVID-19 pandemic. As depicted in Fig. 5 above, the COVID-19 pandemic has resulted in improved access to emergency food aid (95%), enhanced access to “pandemic specific” support by health extension professionals (85%), and enhanced access to credit services (64%). The increase in the performance of linking social capital for health, credit, and emergency food aid services is in line with the government’s emergency pandemic response measures which prioritize the transfer of pandemic-specific emergency services. Such institutional transfers may fill in gaps in the informal transfer of resources (for food, credit, and information) that are reduced as a result of strict pandemic measures.

In diverse and vulnerable communities, equally important is the role of linking social capital in ensuring that the poor and marginalized communities are adequately targeted [28] regardless of their geographic locations and social and economic status. The study found that rural households, especially those located in traditionally “food secure and non-disaster-prone” areas were not adequately targeted by the emergency food aid program. For instance, of the four study districts, the food aid program mainly operated in one previously disaster-prone area (mainly Babile district). The targeting of a previously disaster-prone area may be feasible in terms of redirecting limited resources by prioritizing vulnerable locations that could have been otherwise more affected by preventive measures. However, as the COVID-19 restriction measure continues, the lack of public transfer in other areas may undermine effective COVID-19 responses. Therefore, it is imperative for the government to expand its coverage across wide geographic locations and target the most vulnerable households.

**Conclusion and implications**

This study examined the way COVID-19 pandemic and protective policy measures shaped household access to the various types of social capital for mobilizing resources during the pandemic. The findings show that the institutional measures
imposed on containing the health impact of the pandemic have disrupted the functionality of local social capital practices, leading to reduced social interaction and resource sharing between households via bonding, bridging, and linking capitals. The imposed measures significantly decreased households’ access to food, information, credit/loan, labor, psychological support, and agricultural inputs as well as their access to agricultural extension services, thereby, reducing poor households’ ability to deal with COVID-19 and similar socioeconomic crises and uncertainties.

In general, the study identified two major mechanisms the COVID-19 control measures interacted with social capital for resource sharing between households. First, the measures imposed to reduce the spread of the pandemic obstructed agricultural activities and the flow of agricultural inputs and services, thereby, decreasing outputs for smallholder farmers. As social capital functions well when there is more to share [16], the dramatic reduction in production levels have affected the availability of resources (such as labor, cash, food, etc.) that are critical to engaging in a mutually beneficial collective action. This finding is in agreement with other literature (e.g., [7,10]) that also highlighted strict policy measures which prevent physical interaction and economic activities reduce the positive effect of social capital. Second, protective measures instituted in response to the COVID-19 pandemic altered regular social interactions and proximity that are vital for the continuity and functionality of customary channels of social support. This, arguably, limits the support the poor anticipates to accrue by mobilizing their social networks - both in person and through their distant connections. This finding is consistent with other works (e.g. [10,22,25,28]) that highlighted the negative impact of the policy measures implicated in the dramatic disruption of social interaction for resource sharing.

The study strongly suggests that public health and social measures imposed for COVID-19 prevention and control affect the proper functioning of a society’s social capital framework, thereby, reducing poor households’ ability to deal with socioeconomic crises and uncertainties. This implies that on-going, as well as future responses to the pandemic, should adapt and integrate crisis management measures with local risk-sharing mechanisms such as indigenous mutual support frameworks and processes. Harnessing inclusive social protection programs and building strong rural financial infrastructure and agricultural service delivery can help vulnerable households cope with shocks, improve the effectiveness of pandemic responses, and facilitate post-crisis recovery. In addition, building mutual-trust between government (policymakers), public health workers, and the wider public may improve crisis recovery and social capital. This offers a framework for understanding how disaster protection and post-crisis recovery programs can be best implemented to effectively ensure the effective targeting and provision of COVID-19 services [28] in diverse and poorly understood communities.

Finally, we argue that policy measures imposed due to the necessity to prevent the spread of the COVID-19 are very important to minimize mortality and possible welfare losses. However, they should give due emphasis on the functionality of the local social capital practices. Social capital is the space by which the poor build social trust, maintain their solidarity, and mobilize resources to respond to and recover from current and future shocks (Aldrich, 2014; [1]; Aredo, 1993; [5]). Interventions that overlook the social capital framework of the poor can destabilize the whole setup that supports the poor [11,12], thereby, reducing poor households’ ability to deal with socioeconomic crises and uncertainties including the COVID-19. This study strongly recommends that different actors and institutions invest in and work to strengthen and expand interpersonal relationships and community social networks. Investing in social networks can help manage shocks and improves community wellbeing [20], social trust, and enhance the efficacy of protective measures (Chuang, 2015; Rønnerstrand, 2013). A failure to do so will exact a toll in terms of human morbidity and mortality and exacerbate the current disaster [22] and jeopardize future ability to cope with disasters. The paradigm in this study advocated for a social capital perspective for crisis/pandemic management strategy [29] – an approach that recognizes the value of social capital in achieving beneficial COVID-19 outcomes. As such efforts to address the ongoing crisis must engage the affected communities and their customary institutions in a constructive dialog.

Authors’ contributions

All researchers actively participated in the research process including the preparation of data collection tools. GSE contributed to the conceptualization, data curation, methodology, investigation, formal analysis, and writing original draft. cocn, . MGW and CSA participated in methodology, formal analysis, investigation and writing of the original draft . JYH, JWH and ASE participated in methodology, reviewing and editing of particpated the draft manuscript. HH and EA participated in data curation and investigation.

Declaration of Competing Interest

The authors declare that they have no competing interests.

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