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Harla journal of Social and Behavioral Studies

The Relationship between COVID-19 and Social Capital among Urban Kebele Communities in Dire Dawa City Administration, Eastern Ethiopia

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Abstract

This study explored the relationship between COVID-19 pandemic and social capital among urban kebele communities in Dire Dawa City Administration. The study employed a quantitative approach with correlational survey research design. A total of 392 respondents selected from nine urban kebeles in Dire Dawa city. This study employed stratified and simple random sampling techniques. To collect the data from each urban kebele's participants, close-ended questionnaire was used. Pearson correlation, T-test, ANOVA and multiple regression used as method of data analysis. The findings of this study indicated that there is negative relationship between COVID-19 and social capital dimensions (BOSC r=-.505, and BSC r=-.428) respectively. There is statistically significant difference between COVID-19 and BOSC (t=11.55, p= .000). There is a statistically significant difference between residential kebeles with BOSC, F (8, 391) = 6.978, p = .000); and BSC, F (8, 391) = 10.989, p = .000). The results of multiple regression indicated that age, residential kebeles, covid-19 and BSC together explained 75.8% of the variance in BOSC score, F (4, 387) = 302.65, p = .000. Researchers, policy makers, scientific communities, and government institutions should examine the roles of social capitals among the local communities.

Keywords: Social capital; Covid-19 pandemic; Dire Dawa; Urban Kebeles

1. Introduction

COVID-19 virus was shake the whole world and affected the ways of live such as social, political and economic lives among world communities. COVID-19 is a disease caused by a novel coronavirus now called severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2; formerly called 2019-nCoV), which was first identified amid an outbreak of respiratory illness cases in Wuhan City, Hubei Province in China, as it was initially reported to the WHO on December 31, 2019 (Cennimo, 2020). On January 30, 2020, the WHO declared the COVID-19 outbreak a global health emergency. On March 11, 2020, the WHO declared COVID-19 a global pandemic, its first such designation since declaring H1N1 influenza a pandemic in 2009. Disease caused by SARS-CoV-2 was recently termed COVID-19 by the WHO, the new acronym derived from "coronavirus disease 2019"; the name was chosen to avoid stigmatizing the virus's origins in terms of populations, and geography (Africa CDC, 2020; Cennimo, 2020).

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DOI:

Received: October 2024; Received in revised form: November 2024; Accepted: December 2024

COVID-19 pandemic killed hundreds of thousands of people, and still it is killing people worldwide since no treatment is there and it affected the peoples' overall socio-economic safety (Africa CDC, 2020). The effects of the COVID-19 outburst are complicated as it affected the lives and overall socio-economic aspects of human being in general, and far-reaching (Cennimo, 2020). Still it is affecting every aspect of peoples' lives worldwide (Africa CDC, 2020). The failure of social capital situations is one of its effects.

Social interaction of human beings is also dependent on social, economic, political, cultural, technological and historical background of the peoples. In collective culture context, social relationships play a pivotal role for people's social and psychological wellbeing and safety. The study conducted by Luo et al. (2022) defined social capital (SC) as it refers to the effective functioning of social groups through networks of relationships. SC involves a variety of links and networks so that people maintain with family, friends, neighbors, colleagues etc. and it also relates to the strength of social norms, such as trust, sense of commitment and reciprocity or shared understanding that can strengthen these ties. SC is not the sum of the institutions which support a society. It is the adhesive that holds them together (Cullen & Whiteford, 2001; ONS, 2001). Moreover, Chen et al. (2009) indicated that social capital consists of a primary means by which individuals in a society integrate with others and the broad social environment.

According to Siisiäinen (2000), the concept of social capital is developed by Pierre Bourdieu in the 1970s and early 1980s, and it is connected with Bourdieu's theoretical ideas on class. He identifies three dimensions of capital each with its own relationship to class: economic, cultural and social capital. Bourdieu's concept of social capital puts the emphasis on conflicts and the power function (social relations that increase the ability of an actor to advance her/his interests). Social positions and the division of economic, cultural and social resources in general are legitimized with the help of symbolic capital (Bourdieu, 1986; Putnam, 1993).

Putnam's concept of social capital also has three components: moral obligations and norms, social values (especially trust) and social networks (especially voluntary associations). Putnam's central thesis is that if a region has a well-functioning economic system and a high level of political integration, these are the result of the region's successful accumulation of social capital (Siisiäinen, 2000). Social capital is more important for stability, effectiveness of governments and the economic development than physical and human capital (Putnam,

1993). Societal quality is highest if a tightly-knit network of reciprocal social relationships exists (Putnam, 2000). The relations between individuals form social networks, norms of reciprocity and trustworthiness (Putnam, 2000). So, these appearances of social life are social capital situations. They allow the members to act together more effectively to reach collective goals (Putnam, 1995).

According to Wu (2020), social capital affects COVID-19 response mainly through facilitating collective actions and promoting public acceptance of and compliance with control measures in the form of trust and norms at the individual level. Social capital can also help mobilize resources in the form of networks at the community level. Arachchi and Managi (2021) found that COVID-19 deaths were associated with social capital both positively and negatively. This study also revealed that community attachment and social trust were associated with more COVID-19 deaths, and family bond and security were associated with fewer deaths. Nonetheless, there are limited studies regarding the relationship between social capital and COVID-19 pandemic. Social capital refers to the effective functioning of social groups through networks of relationships. The lockdown measures due to coronavirus disease 2019 (COVID-19) may change the social capital (Luo et al., 2021). When comparing social capital scores before and during lockdown on an individual basis, most participants showed stable social capital, with the percentage ranging from 48.9% to 85.6% across four dimensions (Luo et al., 2021).

Most researchers suggested the two dimensions of social capital as bonding social capital and bridging social capital. According to Wang et al. (2013) bonding social capital refers to how well a person is embedded within their various networks of different types of people (e.g., family members, friends, former colleagues), and bridging social capital refers to how well a person is embedded within different types of social organizations. Moreover, Villalonga-Olives et al. (2021) indicated that the investment in social networks and social capital is a long-term need that should consider socio-demographic vulnerability.

Putnam's (1995) concept of social capital indicated the components such as moral obligations, social norms, social values, social trust and social networks. In this study, social capital was conceptualized based on Wang et al. (2013) theoretical and measurement model. The social capital issues was identified from the bonding capital that reveal how individuals manage their boundaries relationship and networks with family, friends, coworkers, country

fellow etc. and bridging social capital from different types of social organizations such as cultural, religious, political and economic domains.

The association between exposure to COVID-19 and social capital varies across its different forms. Wu (2020) found that political trust, collective efficacy, and social network are all found to significantly affect the diffusion of the COVID-19 virus. Makridis and Wu (2021) argue that social capital can affect the spread of COVID-19 in two major ways. First, social capital might affect the spread of COVID-19 in the forms of its economic, health, and political benefits in pre-crisis context. Second, social capital might mitigate the spread of COVID-19 in the forms of shared norms and trust as well as networks. Wu (2020) found that cognitive social capital in the form of trust and norms has a stronger impact than structural or network social capital in the form of social activism and political participation suggests that social capital largely affects COVID-19 response through facilitating cooperation and self-sacrifice for the common good and promoting public acceptance of and compliance with control measures. Furthermore, the number of hospital beds and early lockdown policy were negatively associated with COVID-19 deaths (Arachchi & Managi, 2021).

Nugroho (2020) provide a conception of online social capital to recommend solving the pandemic problem. Online social capital will generate productivity in people's lives in adherence to health protocols such as hand washing, wearing face masks, and other protective measures attempts. Furthermore, online social capital is expected to have an impact on smoothing the infection curve and stopping the transmission of the virus (Nugroho, 2020). The study conducted in Ethiopian context (Beharu & Dejene, 2021) revealed that the psychological challenges during COVID-19 reported as stress, tension, depression, mood and sleep problems. The major social challenges during COVID-19 reported as missing social bonds, refraining from family visit, missing church programs, wedding, mourning, and birth day (Beharu & Dejene, 2021).

As many researchers indicated, there are a lot of factors that affect social interaction and socio-economic wealth of human being. The disruption of social capital situations causes multi-facet social problem. It is more than physical relocation from one area to another; it disrupts people's lives economically, physically, culturally and socially. So, it breaks communities' social structure and leaves to serious failure (Melissa *et al*., 2012). The

COVID-19 pandemic is one of these factors which affect the peoples' social capital situations (social, economic, political, cultural, technological, historical well beings, etc.).

It is known that the effects of the COVID-19 outbreak are multifaceted as it affected the holistic socio-economic aspects of human being in general and far-reaching. Still it is affecting every aspect of peoples' lives worldwide (Africa CDC, 2020). Among other forms of social relations, social capital situations stood as a facet seriously suffering from distortions due to the COVID-19 pandemic. Therefore, the purpose of this study is to identify the relationship between COVID-19 pandemic and social capital among urban kebele communities in Dire Dawa city administration.

COVID 19 pandemic affected the peoples' social, economic, political, cultural, technological and historical wellbeing (Africa CDC, 2020). It is known that the effects of the COVID-19 outbreak are multifaceted as it affected the holistic socio-economic aspects of human being in general and far-reaching. Still it is affecting every aspect of peoples' lives worldwide. It killed thousands of people. According to World Health Organization and African Union member states report, 2,316,039 cases and 157,896 deaths were happened, and still it is killing people worldwide (Africa CDC, 2020, Cennimo, 2020). Besides it has caused social problems due to social distancing where families are apart resulting in social problems.

Most previous studies were focus on the socioeconomic impact of COVID-19 in Ethiopia (Angaw, 2021). However, none of these studies has attempted to assess and measure the level of social capital and socio-cultural activities during covid-19 in Ethiopia. Furthermore, the effect of covid-19 on social capital and socio-cultural activities of the communities are not addressed by previous studies. Therefore, the extent and distribution of formal networks (volunteer organizations), informal or social networks, generalized trust, particularized trust, norms of reciprocity in the rural Ethiopia is remaining unknown.

As a result of this, the COVID 19 pandemic tears apart the existing social wealth of communities, social organization and interpersonal ties; in addition, kinship groups, neighbors and people in general became scattered. Informal and formal life networks and reciprocal help, local voluntary associations and self-organized mutual service are disrupted so that this is a net loss of valuable social capital situations that compounds the loss of natural, physical, and human capital (Melissa *et al*. 2012; ONS, 2001).

Dire Dawa is among the biggest cities of Ethiopia which was well known by its unique feature of togetherness and highly interrelatedness of the people for widely practiced social activities; and hospitality of the people has named the city "City of Love" (Daniel, 2007; UN-HABITAT 2008). However, by the virtue of the disease of the COVID 19 pandemic, all the positive features of social capital of the city has the possibility to be disrupted. As well as the socio-economic situations of the city can be deteriorated due to state of emergency and its associated ban of movements and gatherings. For instance, schools and higher education institutions were closed as the result of which public services and social values related to them were almost closed.

Researches which were done in the previous decade on the links between social capital, and economic growth and development showed that social capital matters in, among others, economic development, the effectiveness of political systems, and community development (Cullen & Whiteford, 2001; Lin, 1999). Although COVID-19 disrupted this fact, in general, the existing studies mainly emphasize on displacement and other events as a factor on livelihood compensation, rebuilding, human right effects and policy frameworks of development induced disruption.

Besides, as far as the researchers reviewed, there is no any research done on this area, in Dire Dawa, as this is a new and workable research area. Therefore, the researchers are inspired to conduct a research on this area since they have got an experience what the Dire Dawa City community interprets, feel and realize about their social capital during their informal community assessment. Therefore, the researchers of this study consider that this research will fill the gap in relation to the interpretation, expression and feeling of the community regarding the situations of social assets after the existence of COVID-19 pandemic. Accordingly, this study intends to investigate what the social capital situations look like during the existence of the COVID-19 pandemic and what the solution could be. Consequently, this study attempted to answer the following basic questions:

1. Is there significant relationship between Covid-19 pandemic and social capital dimensions among urban kebele communities in Dire Dawa city?
2. Is there significant difference between the effects of COVID-19 and social capital among urban kebele communities in Dire Dawa city?
3. What look like the social capital situations across the residential kebeles of Dire Dawa City Administration during the occurrences of Covid-19?

4. What are the contributions of COVID-19 and demographic variables to the bonding social capital of the communities?

2. Methods and Materials

This study applied a quantitative approach with correlational survey research designs. The correlational survey design is used to assess the relationship between COVID-19 and social capital among the urban kebele communities of Dire Dawa city administration. According to Creswell and Creswell (2018), correlational design when the researcher is interested in the extent to which two variables (or more) co-vary, that is, where changes in one variable are reflected in changes in the other.

As such, this study was used correlational design to investigate the relationship between COVID-19 pandemic and social capital dimensions such as bonding social capital (BOSC), bridging social capital (BSC) among the communities of Dire Dawa city administration. In this study, demographic variables such as age, gender, marital status, job status, educational status, residential kebeles & COVID-19 were treated as independent/predictor variables and social capital dimensions as bonding capital and bridging capital were treated as the criterion/dependent variables. The purpose of this study is to investigate the effects of COVID-19 on social capital among the communities of Dire Dawa city administration in Eastern Ethiopia. Thus, both cross sectional and correlational survey designs were employed in this study.

The target population of this study was the communities living in urban kebeles in Dire Dawa City Administration. Dire Dawa has a population of 507, 000, as estimated for 2020, (255, 000 Male and 252, 000 female). Among them, 323,000 (163,000 male and 160,000 female) or 62.91% of the population are urban inhabitants. While the rural population of Dire Dawa estimated for 2020 is 184,000 (92,000 male and 92,000 females). The estimated overall population density of the Administration is 289 persons /km2 in 2017. In general, the density is high in the urban areas and in the western and eastern parts of the administration (BoFED, 2016).

According to statistics from CSA (2007) population census, the total population of Dire Dawa City Administration is 342,827. The total number of male and female is 171,930 and 170,897 respectively. The details of population and housing units for urban kebeles in Dire Dawa City Administration (DDCA) indicated in the table below.

Table 1. The Number of Population and Housing Units

Geographical Area	Both Sexes	Male	Female	No. of House Unit
Kebele-01	11,886	5,958	5,928	1,878
Kebele-02	43,444	21,460	21,984	11,829
Kebele-03	19,884	10,077	9,807	5,246
Kebele-04	21,047	10,118	10,928	5,771
Kebele-05	17,938	8,624	9,314	5295
Kebele-06	16,671	8,184	8,487	3,950
Kebele-07	23,002	11,564	11,438	3,706
Kebele-08	29,638	14,370	15,268	5,470
Kebele-09	43,730	22,787	20,943	7,748
Total	227,240	113,142	114,098	50,893

Source: Central Statistical Authority (2007), National Population and Housing Census.

The study sample was taken from nine urban kebeles in Dire Dawa city based on Yamane's (1967) sample size formula and stratified proportional sample size formula was respectively used in this study. Thus, sampling is done based on this formula, and the sample size of the study computed as follows: Yamane (1967) provided a simplified formula to calculate sample sizes based on the following formula sample size will be selected from each public hospital.

$$n = \frac{N}{(1 + Ne^2)}$$

Where

n = sample size

N = the population size

e = the level of precision

The assumption is that at 95% confidence level, p = .5.

The number of housing units of population is 50,893. Thus,

$$n = \frac{50,893}{1 + 50,893*0.05^2} \quad \mathbf{400}$$

The total sample 400 is divided in to the nine kebele strata, it will be proportionally allotted as follows: To have proportional allocation of sample of participants from each kebeles, the sample size for each stratum is computed by:

$$\mathbf{nk = \frac{Nk*n}{N}}$$

Where:

nk = is sample size in each stratum

Nk = is the size of sub-population in stratum k

N = is the total population

n = is the sample size for the populatio

Table 2. The Number of Sampling Frame Taken from each Kebeles and Housing Units

Kebeles	No. of Population	No. of Housing Units	No. of Sample selected
Kebele 01	11886	1,878	15
Kebele 02	43444	11,829	93
Kebele 03	19884	5,246	41
Kebele 04	21047	5,771	45
Kebele 05	17938	5,295	42
Kebele 06	16671	3,950	31
Kebele 07	23002	3,706	29
Kebele 08	29638	5,470	43
Kebele 09	43730	7,748	61
Total	227,240	50,893	400

Source: Central Statistical Authority (2007), National Population and Housing Census

The sampling frame was constructed for each kebele's separately by taking the Housing Units list from the housing and population departments of each kebeles. Then, study participants were selected from respective housing units using strata. Finally, the participants of the study was selected via probability sampling techniques such as stratified and simple random sampling techniques from nine urban kebeles in Dire Dawa City Administration.

To achieve the specific objectives of this study the researchers used close ended questionnaires. Questionnaires were prepared by the researchers depending on relevant literature for data collection. Moreover, various scales adapted from different previous studies which were published previously in reputable journal articles. The questionnaire consists of two major parts and 23 items. The first part deals with the general demographic survey, the second part deals with social capital issues. Regarding the general demographic factors of the participants, the seven components (i.e., age, gender, marital status, education status, job status, types of residential kebeles and the effects of COVID-19) was assessed.

This social capital scale is intended to measure the bonding and bridging social capital dimensions. The scale consists of 16 items (8 items measure BOSC and 8 items measure

BSC). It rated based on five-point scale labeled from *(1) Never, (2) Rarely, (3) Sometimes, (4) Often and (5) Always*. According to Wang, Chen, Gong and Jacques-Tiura (2013), the average coefficient alpha for bonding social capital (BOSC) was .90 and for bridging social capital (BSC) was .92. All items had a 5-point rating scale ("never" to "always" for bonding and bridging social capital, and a total of 16 items. According to Wang et al. (2013) the reliability of the social capital scale (α = .90, and α = .92) for bonding and bridging social capital dimensions, respectively. Therefore, the social capital scales aforementioned above were widely adopted and validated by so many researchers across the world and continue to be popular. Therefore, the English version of the social capital Scales mentioned above was adopted, translated into local language Amharic, and used in this study for pilot test before the main data collection.

For the pilot test, the researchers used a total of 55 participants randomly selected from Dire Dawa university employees before the actual study was conducted. The result of the pilot study indicated that the average coefficient alpha for bonding social capital (BOSC) was .75 and for bridging social capital (BSC) was .72. Finally, items from these standardized tools were used after adopting and validating them in the Dire Dawa city context. The current study has the average coefficient alpha for overall social capital scale (.930), bonding social capital (BOSC) is .857 and for bridging social capital (BSC) is .884. As indicated in this study, better reliability score than the previous pilot study results aforementioned above in this study.

Table 3. Reliability Statistics of the Study

Cronbach's Alpha	Number of Items	Types of Scale
.930	16	Social Capital
.857	8	Bonding Social Capital
.884	8	Bridging Social Capital

Both the descriptive and inferential statistics were used as methods of data analyses. ***Firstly,*** the descriptive analysis for all study variables was computed via percentage, mean and standard deviation. ***Second,*** to find out the relationship between the effects of COVID-19 and social capital dimensions (bonding and bridging social capital), the Pearson correlation coefficient was employed. Third, to find out the COVID-19 effects on bonding and bridging social capitals, independent T-test analysis was employed. ***Fourth,*** to explain the social capital status across the urban kebeles of Dire Dawa, one-way-analysis of variance (ANOVA) was employed. ***Finally,*** to evaluate the predictive roles of demographic

variables (age, residential kebeles), the effects of COVID-19, and bridging social capital on bonding social capital, among the communities of Dire Dawa city administration, Standardized multiple regression analysis was employed.

3. Results

The results of the study variables are presented in both descriptive and inferential statistics and followed with discussion. In this part, the data analysis results are presented. In the first section, the results of the descriptive statistics including means and standard deviations regarding to the demographic variables of the respondents are presented. In the second part, the Person Correlation between the effects of COVID-19 and social capital is presented**.** In the third part, the independent T-test and ANOVA regarding the effects of COVID-19 and social capital is presented**.** Then, the results of T-test, and one way ANOVA which was performed to examine the difference and the effects of COVID-19 on social capital with the rest of independent variables are presented. Finally, the multiple regression results regarding the predictive and criterion variables are presented. In this particular data analysis and presentation, the age, gender, marital status, educational status, job status, residential Kebele and the effects of COVID-19 were treated as independent variables; whereas, the scores on the bonding social capital and bridging social capital scale were treated as dependent variables. The process of analysis conducted through the SPSS software version 23.0.

3.1. Descriptive statistics of the study variables

The sample consisted of 392 urban kebele households, ranging in age from 20 to 73 years. Participants gender composition indicate that two-hundred-three 203 (51.8%) fifty-one percent of the sample were males, and one-hundred eighty-nine 189 (48.2%) forty eight percent of the sample were females. Regarding participants marital status, 239 (61%) were married, and 111 (28.3%) were single. The educational status of participants indicated that 173 (44.1%) were having degree and above, 69 (17.6%) were diploma holders, 68(17.3%) were high school completed and 45(11.5%) were at grade 1-8 levels. The job status of participants indicated that 132(33.7%) were merchant, 103(26.3%) were daily worker, 76(19.4%) were self-employed, 51(13%) were unemployed and 30(7.7%) were civil servants.

Table 4. Descriptive Statistics of the Study Variables

Variables	N	Min.	Max.	Mean	SD
Age	392	20.00	73.00	38.6	10.37
Gender	392	1.00	2.00	1.4	.500
Marital Status	392	1.00	5.00	1.9	.788
Educational Status	392	1.00	6.00	4.6	1.52
Job Status	392	1.00	5.00	3.1	1.12
Residential Kebele	392	1.00	9.00	4.8	2.66
Effect of Covid-19	392	1.00	2.00	1.4	492
BOSC	392	8.00	40.00	24.6	6.67
BSC	392	8.00	40.00	24.8	6.84

Regarding the effects of covid-19 pandemic on participant's life, 232(59.2%) of the respondents were reported that COVID-19 has on effect on their personal life, whereas, 160(40.8%) of the respondents were reported that COVID-19 has significant effect on their personal life. The mean and standard deviation score for the dependent variables for bonding social capital (BOSC) scale was (*M*=24.65, *SD*=6.678), and for bridging social capital (BSC) scale (*M*=24.82, *SD*=6.844) was significantly different from the mean score of other independent variables. The mean score for participant's age was indicate that (*M*=38.62, *SD*=10.371) which indicate the higher among independent variables.

3.2.The effects of COVID-19 Pandemic on Participants' Personal Life

As the following bar graph indicated that the majority of the respondents of this study reported there is no effect of COVID-19 on their personal life. The effects of covid-19 pandemic on participant's life, 232(59.2%) of the respondents were reported that COVID-19 has on effect on their personal life, whereas, 160(40.8%) of the respondents were reported that COVID-19 has significant effect on their personal life.

significant effect on their personal life.

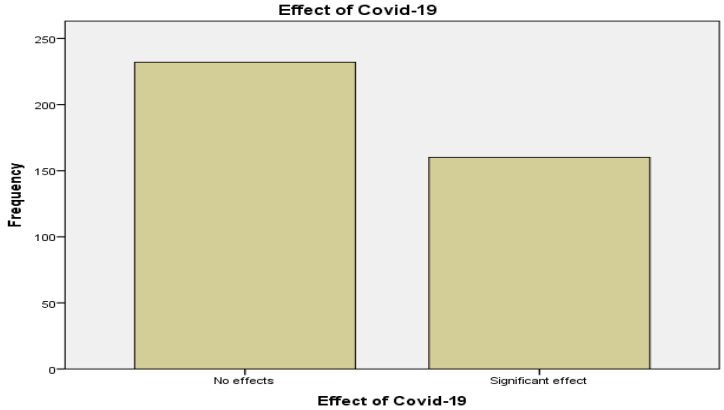

Fig. 1. The Effects of Covid-19 on Personal Life

3.3. Relationships between the Effects of Covid-19 and Social Capital Dimensions

This subsection presents the relationships between the effects of covid-19 and the dimensions of social capital during the occurrence of covid-19 among Dire Dawa communities. The relationship between the effects of covid-19 and the dimensions of social capital was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a strong, negative correlation between the effects of COVID-19 and Bonding Social Capital (BOSC), r = –.505, n = 392, p < .000, with high levels of covid-19 effects associated with lower levels of bonding social capital. The correlation coefficients for the relationships between the effects of covid-19 and Bridging Social Capital (BSC) (r = -.428, n=392, p<000). The correlation coefficients for the relationships between the effects of covid-19 and social capital were statistically significant at p< .000. Finally, there is a positive significant relationships between the Bonding Social Capital (BOSC) and Bridging Social Capital (BSC) (r = .855, n=392, p<000).

Table 5. Relationships between the Effects of Covid-19 Pandemic and Social Capital

Variables	1	2	3
1. Effect of Covid-19	1	-.505**	-.428**
2. Bonding Social Capital		1	.855**
3. Bridging Social Capital			1

***.** *Correlation is significant at the 0.01 level*

3.4. The Effect of COVID-19 Pandemic on Social Capital Dimensions

An independent-samples t-test was conducted to compare the social capital scores for the effects of covid-19 pandemic for presence and absence of the effects. First, Levine's test of equality of error variances was examined. The test did not reveal a significant result (p>.05), which shows that the homogeneity assumption was satisfied. There was significant difference in bonding social capital (BOSC) scores for no effect of covid-19 (M =27.45, SD = 5.58) and there is an effect of covid-19 on the bonding social capital (BOSC) scores (M = 20.60, SD = 6.02; t (390) = 11.55, p = .000, two-tailed).

The magnitude of the differences in the means (mean difference = 6.85, 95% CI: 3=5.68 to 8.01) was very small (eta squared = 0.33). The guidelines proposed by Cohen (1988, as cited in Pallent, 2010) for interpreting this value are indicated as .01=small effect, .06=moderate effect and .14=large effect. For the current study, the effect size of .0.33 is small effect.

Expressed as a percentage (multiply your eta square value by 100), 33 per cent of the variance in bonding social capital is explained by the effects of covid-19. Regarding the bridging social capital the magnitude of the differences in the means (mean difference = 5.95, 95% CI: 3=4.70 to 7.20) was very small (eta squared = 0.18).

Table 6. Mean Difference between the Effect of COVID-19 and Social Capital Dimensions

Social Capital Dimensions	Effect of Covid-19	N	Mean	SD
Bonding Social Capital	No effect	232	27.45	5.589
	Significant effect	160	20.60	6.027
Bridging Social Capital	No effect	232	27.25	6.037
	Significant effect	160	21.30	6.410

As depicted in Table 5, the descriptive statistics of the study shows that the bonding social capital score of there is no effect of covid-19 (*M*= 27.45, *SD* = 5.589) are better than that of the significant effects of covid-19 (*M*=20.60, *SD* =6.027) and the bridging social capital score of the no effect of covid-19 (*M*=27.25, *SD*=6.037) and (*M*=21.30, *SD*=6.410) respectively shows that there is no effect of covid-19 reported in both at the bonding social capital and bridging social capital score. Furthermore, the inferential statistics shows that there is statistically significant difference between the effects of covid-19 and bonding social capital (t= 11.55, p= .000) and there is statistically significant difference between the effects of covid-19 and bridging social capital scores (t = 9.364, p=.000).

Table 7. Independent T-Test on the Effect of COVID-19 and Social Capital Dimensions

	T-Test for Equality of Means						
						95% Confidence Interval of the Difference	
Social Capital Dimensions	T	Df	Sig.	Mean Difference	Std. Error Difference	Lower	Upper
Bonding Social Capital (BOSC)	11.553	390	.000	6.85259	.59317	5.68638	8.01879
Bridging Social Capital (BSC)	9.364	390	.000	5.95862	.63634	4.70754	7.20970

3.5.The Status of Social Capital across Residential kebeles of Dire Dawa

The effects of covid-19 on social capital dimension such as bonding and bridging social capital across the urban residential kebeles of Dire Dawa City Administration was investigated through one way ANOVA.

3.5.1. Results of One-Way-ANOVA on Residential Kebeles and Social Capital Score

Before performing ANOVA, assumptions of the test, which are independence of observation, normality and homogeneity, were checked. For the independence of observation assumption, is assured by the design of the study in which, each participant answered the questionnaires once and independent of any other participant. For the second assumption of ANOVA, skewness and kurtosis values were examined to check the normality of dependent variable. For the normality range for ANOVA, Levine's test of equality of error variances was examined. The test did not reveal a significant result (p>.05), which shows that the homogeneity assumption was satisfied.

In order to determine whether any difference between social capital score and residential kebeles of the participants, one-way ANOVA was held since there is one independent variable with many groups and two dependent variables. Table-5 presented the interaction effect results of variables retrieved from ANOVA. The residential kebeles were categorized into nine groups according to the urban kebele divisions (Group 1: Kebele-1; Group 2: Kebele-2; Group 3: Kebele-3; Group 4: Kebele-4; Group 5: Kebele-5; Group 6: Kebele-6; Group 7: Kebele-7; Group 8: Kebele-8; and Group 9: Kebele-9).

There was a statistically significant difference at the $p < .05$ in the bonding social capital scores for the residential kebeles of study groups: F (8, 391) = 6.978, p = .000. Despite reaching statistical significance, the actual difference in mean scores between the groups was quite small. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group-1 (M = 24.55, SD = 7.994) was significantly different from Group-2 (M = 27.25, SD = 6.475). Group-3 (M = 23.16, SD = 6.521) was significantly different from Group-4 (M = 22.00, SD = 5.640). The homogeneity of variance was conducted by using Levine's test for homogeneity of variances, which tests whether the variance in scores is the same for each of the three groups. Check the significance value (**Sig.**) for Levine's test. In this case, the Sig. value is .151. As this is greater than .05, we have not violated the homogeneity of variance assumption.

Table 8. Results of One Way ANOVA for Residential Kebeles and Social Capitals

Social Capital Dimensions		Sum of Squares	Df	Mean Square	F	Sig.
Bonding Social Capital (BOSC)	Between Groups	2218.526	8	277.316	6.978	.000
	Within Groups	15221.982	383	39.744		
	Total	17440.508	391			
Bridging Social Capital (BSC)	Between Groups	3419.454	8	427.432	10.989	.000
	Within Groups	14896.750	383	38.895		
	Total	18316.204	391			

**shows significant level at 0.05*

The ANOVA output above (Table 7) is the key table because it shows whether the overall *F* ratio for the bonding and bridging social capitals are significant. As the *F* ratio (8.391) is significant (p = .000) at the .05 alpha level, we can report this finding as F (8, 391) = 6.978, p < .05. At this juncture, we can have the ability of assessing the group means is significantly different from the others, since $p < 0$. Thus, we can conclude that the residential kebeles across the bonding social capital (BOSC) score is not equal. But in order to make further conclusion beyond this, we need to conduct a post hoc multiple comparisons test to determine which means exactly are differ from each other. A one-way between-groups analysis of variance was conducted to explore the impact of the residential kebeles on the bonding social capital (BOSC) and bridging social capital (BSC) scores. Regarding, the bridging social capital, we can report this finding as F (8, 391) = 10.989, p < .05.

Although SPSS does not generate it for this analysis, it is possible to determine the effect size for this result. The information you need to calculate eta squared, one of the most common effect size statistics, is provided in the ANOVA table (a calculator would be useful here). The formula is: Eta squared = Sum of squares between groups/ Total sum of squares. In this case, I need to do is to divide the sum of squares for between-groups (2218.526) by the total sum of squares (17440.508). The resulting eta squared value is 0.127, which would be considered a small effect size. Cohen (1988) classifies (.01-.05) as a small effect, (.06-.09) as a medium effect and (>.14) as a large effect (Pallant, 2010, p. 249)**.** The effect size, calculated using eta squared, was .07 which indicated as a medium effect.

3.6. The Situations of Social Capital across Residential kebeles of Dire Dawa

3.6.1. The Effects of Covid-19 on Bonding Social Capital across Residential kebeles

The effects of covid-19 on the bonding social capital across the nine urban kebeles' of Dire Dawa city during the occurrence of covid-19 was different from kebele to kebele. For

instance, there were higher mean of bonding social capital reported in kebele-08 and kebele-02. Whereas lower levels of mean of bonding social capital reported in kebele-07 and kebele-04.

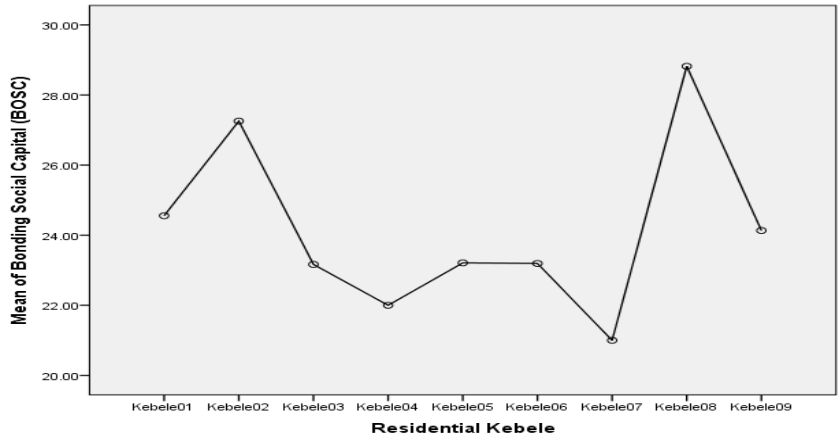

Fig. 2. The Effects of Covid-19 on Bonding Social Capital (BSC) Across Kebeles

3.6.2. The Effects of Covid-19 on Bridging Social Capital Across Residential kebeles

The effects of covid-19 on the bridging social capital across the nine urban kebeles' of Dire Dawa city during the occurrence of covid-19 was different from kebele to kebele. For instance, there were higher mean of the bridging social capital reported in kebele02 and kebele08. Whereas lower levels of mean of social network reported in kebele-07 and kebele-04.

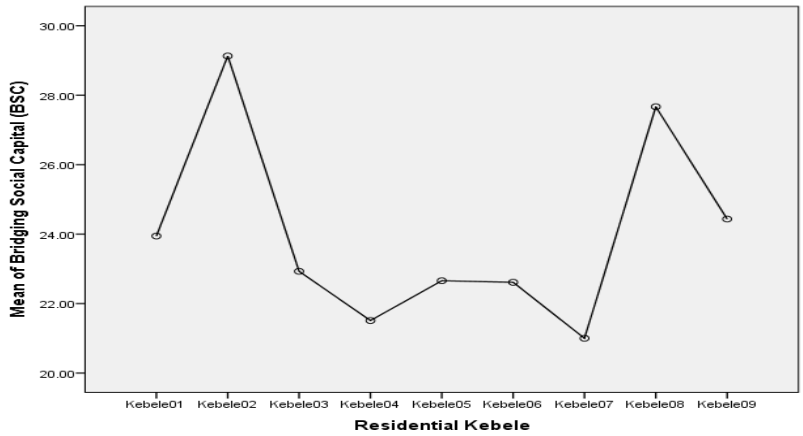

Fig. 3. The Effects of Covid-19 on Bridging Social Capital (BSC) Across Kebeles

3.7. Result of Multiple Regression

According to Pallent (2010), before conducting multiple regression analysis, researchers should check the four key assumptions whether the data satisfy that criteria to run the multiple regression analysis. These are the issues of normality, multicollinearity, linearity and outliers should check before conducting multiple regression analysis. Preliminary analyses

were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity.

In this parts of the study, We were conducted the standard multiple regression analysis in order to check whether the demographic characteristics of participants such as, Age, Residential Kebeles, and COVID-19 contributed to the Bonding Social Capital (BOSC) among the urban communities found in Dire Dawa City Administration. In this part, we presented the finding from the multiple regression analysis to answer the following basic research questions: How well do the two demographic variables (age, residential kebele) and the two predictor variables (the effects of Covid-19, bridging social capital) predict bonding social capital? How much variance in bonding social capital scores can be explained by scores on these groups of variable? Which is the best predictor of bonding social capital: demographic variables, Covid-19 or bridging social capital (BOSC)?

Table 9. Model Summary of Multiple Regressions

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.870[a]	.758	.755	3.30404

a. Predictors: (Constant), Bridging Social Capital (BSC), Residential Kebele, Age, Effect of Covid-19
b. Dependent Variable: Bonding Social Capital (BOSC)

From the above Table 9, the value in the R column is telling us the strength of the relationship between the outcome variable (Bonding Social Capital) and all of the predictor variables (Age, Residential Kebele, Effect of Covid-19, and Bridging Social Capital) combined. In this study R = 0.87, which is a strong relationship. This suggests our model is good predictor of the outcome variable (Bonding Social Capital). The R Square column contains the value we have given emphasis, written as R^2. This value indicates the proportion of variation in the outcome variable (0.758) that can be explained by the model. As such, R^2 = .758. In this case we can say that 75.8% of the variance in the data can be explained by the predictor variables. Table 9 shows the model summary, where by the results suffice that about 75.8% of the variation brought upon is due the explanatory variables (Age, Residential Kebele, Effect of Covid-19, and Bridging Social Capital) and the rest 24.2% is due to some other factors. Furthermore, the significance value related to the BOSC came out to be significant ($p < 0.05$). Similarly, overall 75.8% of the variation upon the explained variable was due to the significant effect upon the relation of the explanatory variable (Age, Kebele, COVID-19 and BSC) on the explained variable (BOSC). Lastly, the model significance came out to be highly significant ($p < 0.05$).

Table 10. ANOVA Result

Model		Sum of Square	Df	Mean Square	F	Sig.
1	Regression	13215.749	4	3303.937	302.650	.000[b]
	Residual	4224.759	387	10.917		
	Total	17440.508	391			

a. Dependent Variable: Bonding Social Capital (BOSC)
b. Predictors: (Constant), Bridging Social Capital (BSC), Residential Kebele, Age, Effect of Covid-19

A multiple regression was carried out to investigate whether Age, Kebele, COVID-19 and BSC roles could significantly predict BOSC. In model-1, the results of the regression indicated that the model explained 75.8% of the variance, and the model was significantly predicted the social capital dimensions of Bonding Social Capital (BOSC), F (4, 387) = 302.65, p = .000. As the table-14 above, indicated that a multiple regression revealed that all independent variables such as Age, Kebele, COVID-19 and BSC could significantly predict BOSC. As shown in table-13 above, 75.8% of the variation in bonding social capital (BOSC), (R^2=.75.8, F (4, 387) = 302.65, p =.000).

Table 11. The Power of the Predictor Variables on Criterion Variable

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	7.597	1.355		5.608	.000
	Age	.012	.017	.018	.713	.476
	Residential Kebele	.111	.064	.044	1.735	.083
	Effect of Covid-19	-2.251	.377	-.166	-5.973	.000
	Bridging Social Capital	.774	.028	.794	27.831	.000

a. Dependent Variable: Bonding Social Capital (BOSC)

The above table 11 shows the unstandardized beta coefficients for the model (the B values). These values tell us about the relationships between the outcome and predictor variables. As most values are positive, so there are positive relationships. That is, as Age, Kebele, and BSC among participant's increases, their Bonding Social Capital (BOSC) scores also get higher and better. However, the effect of covid-19 has a negative relationship with the bonding social capital (BOSC). In addition, these B values give us an idea of the influence of each predictor has on the outcome if the effects of the other variables are held constant.

In this study while comparing the contribution of each independent variable; we can use the beta values. In this case the largest beta coefficient is .794, which is for bridging social capital (BSC). This means that this variable makes the strongest unique contribution to explaining the dependent variable, when the variance explained by all other variables in the

model is controlled for. The Beta value for the effect of covid-19 was slightly lower (–.166), indicating that it made the second unique contribution. On the other hand, regarding the demographic variables (age and kebele), there t-test value is greater than .05, as such we can conclude that these variable are not making a significant unique contribution to the prediction of the dependent variable bonding social capital (BOSC).

4. Discussions

This study was mainly conducted to identify the effects of COVID-19 on the social capital, the relationships/differences between the effects of COVID-19 and social capital and also to check whether the effects of COVID-19 and other demographic variables can predict social capital dimensions as bonding and bridging social capital. Putnam (1995) provides the most widely used definition of social capital as the features of social organizations that include trust, norms, and networks that exist among the members of the community. In similar vein, Luo et al. (2022) defined social capital as it refers to the effective functioning of social groups through networks of relationships.

4.1.The Relationship between COVID-19 and Social Capital Dimensions

The current study indicated that there is a significant but negative relationship between the effects of COVID-19 and social capital score. Scores on the social capital scale such as bonding social capital (BOSC), and bridging social capital (BSC) show that there is negative correlations with the effects of COVID-19 (BOSC r=-.505, and BSC r=-.428) respectively. We can conclude based on this finding when the effects of COVID-19 increases, the social capial of the community decreases and vice versa. In line with this study, Bartscher et al. (2021) found that high social capital exhibit a slower growth in Covid-19 cases in the early phase of the pandemic. The association between social capital and COVID-19 deaths may vary according to the dimension of social capital and time period. The research study showed that a greater norm of reciprocity and government trust was associated with fewer COVID-19 deaths (Murayama, Nakamoto, & Tabuchi, 2021).

Wang et al. (2013) found that both the bonding social capital and bridging social capital scales were highly correlated with each other's (r= .93 for the BOSC and BSC respectively, p=.001). There is a positive significant relationships between the bonding social capital (BOSC) and bridging social capital (BSC) (r = .855, n=392, p<000). Gibbons et al. (2022) found that the bonding social capital have both positive and negative associations with social

distancing. But, the current study assured that both the bonding social capital and bridging social capital has a negative associations with COVID-19 effects.

According to Angaw (2021), Ethiopians have a long history of social cohesion, social life and social economy, social gathering to commemorate different social events, and a unique social harmony commensurate that magnifies the social solidarity to promote the values of people's philosophy. They are known with unique social institutions to share common social values both in happiness and grieve. This study indicated that the various social capital status across the nine urban kebeles of the city. For instance, there were higher mean of bonding social capital reported in kebele-08 and kebele-02. These Kebeles are the center of the higher population movements in Lege Hare and Sabian kebeles. Whereas lower levels of mean of bonding social capital reported in kebele-07 and kebele-04. These two kebeles are small among the others both in geographical areas and number of population. More individuals in the high social capital neighborhoods reported improvement in their health during the pandemic, than those in the low/medium social capital neighborhoods (Zetterberg et al., 2021).

In a similar vein, Fraser et al. (2022) found that communities with stronger social infrastructure including social ties that enable trust, mutual aid, and collective action tend to respond to and recover better from the COVID-19 crises. Luo et al. (2022) in their study, reported that compared to before lockdown, individual social capital and community social capital scores decreased, while family social capital and society social capital scores increased during lockdown. There were 43.9%, 5.7%, 32.1%, and 3.7% of the participants showing decreased scores during lockdown for individual social capital, family social capital, community social capital, and society social capital, respectively, while 7.2%, 24.0%, 15.3%, and 10.7% of participants showed increased scores for individual social capital, family social capital, community social capital, and society social capital respectively (Luo et al., 2022). As this study was conducted after the lockdown in our country context already lifted, probably that is why the study participants' reported less percentage regarding the effects of COVID-19 on their personal life.

According to Angaw (2021), the social organizations in Ethiopia formed in different arrangements such as religious, neighborhoods, youth, cultural, and traditional institutions (Iqub, Edir and Mehaber) as informal social institutions. This might why the participants' reported the lower level of the covid-19 effects on their personal life. According to Oronce

and Tsugawa (2021), social capital is a complex construct, and which have intricate interplays with how individuals respond to the COVID-19 pandemic. On the other hand, the study conducted by Luo et al. (2022) revealed that among the Chinese youths, social capital has increased in family and society dimensions and decreased in individual and community dimensions during the lockdown due to COVID-19. Zetterberg et al. (2021) revealed that before the pandemic, participants in high social capital neighborhoods reported more active neighborhood interaction and support. During the crisis, social interaction and support increased in all neighborhoods, but more in high social capital neighborhoods. Overall, people seemed to help and care for each other more during than before the crisis.

4.2.The Effects of COVID-19 on Social Capital Dimensions

Endris et al. (2022) found that the public health measure imposed for the COVID-19 prevention and control affect the proper functioning of a society's social capital framework. The current study also revealed that there is a significant difference between the effects of COVID-19 and social capital. As indicated in this study, when the effect of COVID-19 increases; social capital of the communities was decreased and vice versa. The effects of covid-19 pandemic on participant's life indicated that 59.2% of the respondents were reported that COVID-19 has on effect on their personal life and the rest 40.8% of the respondents were reported that COVID-19 has significant effect on their personal life.

Angaw (2021) found out that the COVID-19 pandemic impacted the socio-economic activities of Ethiopia. Social capital might mitigate the spread of COVID-19 in the forms of shared norms and trust as well as networks. Makridis and Wu (2021) found that residents in areas with greater social capital, there is greater responsibility out of trust and care for their neighbors and community members.

4.3.The Contribution of COVID-19 to Social Capital Dimensions

Bartscher et al. (2021) show that a onestandard-deviation increase in social capital leads to between 14% and 34% fewer Covid-19 cases per capita accumulated from mid-March until end of June 2020, as well as between 6% and 35% fewer excess deaths per capita. The results of this study also revealed that the age, residential kebele, the effects of covid-19 and BSC together explained 75.8% of the variance in the bonding social capital (BOSC), $F (4, 387) = 302.65$, $p = .000$. Menardo et al. (2022) found that age affected the interrelated indicators of SES (educational level and occupational prestige), which in turn affected the interrelated

dimensions social capitals. Fraser et al. (2022) found that social capital predicted 41–49% of the variation in COVID-19 outbreaks, and up to 90% with controls in specific cases, highlighting its power as diagnostic and predictive tools for combating the spread of COVID-19. In contrast to the above study, the current study was looking the age, kebele and COVID-19 together predicted 75.8% of the variation in social capital dimensions of BOSC of the communities.

Murayama et al. (2021) conducted multiple regression analysis after adjusting for covariates showed that a greater norm of reciprocity and government trust were associated with fewer COVID-19 deaths during the first and second 3-month periods of observation. Their study also revealed that in the third 3-month period, the association between COVID-19 deaths and government trust became non-significant. Trust in neighbors, neighborhood ties, and social participation were not related to COVID-19 deaths during any time period. The disparity of COVID-19 deaths by prefecture in Japan can be explained by cognitive social capital. This study suggests that the association between social capital and COVID-19 deaths may vary according to the dimension of social capital and time period (Murayama et al., 2021).

Kassahun (2005) conducted his study by using a multivariate analysis on 497 households in poor localities of Addis Ababa, and he investigated how social capital dimensions (density of membership, informal network, trust and reciprocity) and human and economic characteristics (education and welfare status) of the households are related to community efficacy. According to Kassahun (2005) community efficacy is highly associated with increased participation in local associations; trust in the community, confidence in local institutions and pattern of reciprocity among inhabitants. Similarly, the current study also reported there is higher levels of social capital and lower levels of covid-19 effects on the participant's personal life.

According to Sapkota (2020), corona virus has increased fear among the people across the world which directly affects all socio-cultural dimension as educational, economic, inequality and domestic violence, cultural, religious, risk perception, and suicide activities of people. On the other hand, Butnaru et al. (2021) revealed that the higher the trust in public institutions (social capital), the lower the SARS-CoV-2 virus infection rate. In the context of COVID-19, the usual ways in which individuals interact and obtain social support have been severely disrupted (Long et al., 2022). Bartscher et al. (2021) found that there is a relationship between Covid-19 infections and social capital across time. They show that a one standard-

deviation increase in social capital leads to between 14% and 34% fewer Covid-19 cases. The Power of the predictor variables on criterion variable was indicated via the standardized beta (B) coefficients indicate that the influence of each predictor has on the outcome if the effects of the other variables are held constant. In this study, the largest beta coefficient is .794, which is for bridging social capital (BSC) and the effect of covid-19 was slightly lower (–.166), indicating that both variables made the leading contribution to the bonding social capital.

5. Conclusion and Recommendation

5.1.Conclusion

The present study has identified the major differences and relationships regarding the effects of COVID-19 and social capital among the communities in Dire Dawa city administration. Based on the findings of the study, there is a significant but negative relationship between the effects of COVID-19 and social capital score. However, there is positive significant relationship between bonding social capital scores and bridging social capital score. There is statistically significant difference between the effects of covid-19 and the bonding social capital (BOSC). There is statistically significant difference between the effects of covid-19 and the bridging social capital (BSC). There is a statistically significant difference between the social capital scores and residential kebeles of the community. The results of multiple regression indicated that the age, residential kebele, the effects of covid-19 and bridging social capital together significantly predicted the bonding social capital (BOSC) of the urban kebele communities of Dire Dawa City Administration.

5.2. Recommendations

Based on the findings of the study the following, points were suggested:

- Researchers, policy makers, scientific communities, and government institutions should focus on how to solve the impacts of COVID-19 on social capitals' of the local communities.
- Researchers and social workers can facilitate social capital in the forms of *'Equb, Eddir and Mehaber'* in our community via conducting a scientific investigation as it plays a key role in the bonding and bridging social capital of the communities.
- Researchers, policy makers and governments can facilitate the interventions programs to help the local community to interact without fear and doubt to overcome the new issues such as COVID-19 challenges.
- Researchers, policymakers, and public health practitioners should effectively address the challenge of COVID-19 on social capital and provide with new insights on how social capital

of the local communities will solve the burdens of the COVID-19 pandemic in their personal, psychological and social lives.

- Local administrators, researchers, social psychologist and sociologist had better introduce scientific strategies for both the challenge of COVID-19 and social capital through research and training support for the local communities during COVID-19 crisis

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