

## SOCIOECONOMIC AND PSYCHOSOCIAL FACTORS ASSOCIATED WITH SOLIDARITY AND PROSOCIAL BEHAVIOUR DURING COVID-19

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*The novel virus SARS-CoV-2, the causative agent of the COVID-19 pandemic, has had a profound global impact on health, social wellbeing, and economies, with especially devastating effects on vulnerable populations. A remarkable response to the pandemic was the large-scale enactments of solidarity and prosocial behaviour in different regions of the world. We explore the factors associated with solidarity/prosocial behaviour (regarded as components of the same construct in this study) among South Africans during the second wave of COVID-19. Specifically, this study aimed to determine whether the financial, social, and psychosocial impact of lockdown, living circumstances and resources, fear of contracting COVID-19, trust in information provided by government and institutions, perceptions of procedural justice affecting COVID-19 mitigation implementation, and support for mitigation measures were associated with solidarity/prosocial behaviour during COVID-19. Using a cross-sectional survey, a questionnaire was administered to a randomly selected national sample through Computer-Aided Telephonic Interviews (CATI) and self-completion. Most (67.4%) of the 1686 respondents included in this study were female, with a mean age of 40-45 years ( $\bar{x} = 6.76$ ,  $SD = 3.11$ ). Various psychosocial and economic factors were related to prosocial behaviour. For the full model, the beta weights show that out of the 16 explanatory variables only eight made a significant ( $p < .05$ ) contribution to explaining solidarity/prosocial behaviour, and of these, six were positively associated to solidarity and prosocial behaviour. The results demonstrate that overall, South African citizens exhibited a wide range of prosocial and solidaristic behaviours during the COVID-19 pandemic, regardless of financial status, race, or gender.*

**Keywords:** COVID-19, pandemic, South Africa, responsiveness, solidarity, and prosocial behaviour

### 1. Introduction

The novel virus SARS-CoV-2 (COVID-19 pandemic) has been indiscriminating in its acuteness and consequences on vulnerable populations across the globe. Globally, by 26 January 2022, 356,955,803 confirmed cases and 5,610,291 deaths of COVID-19 have been reported (World Health Organization [WHO], 2022). At the end of September 2021, South Africa was in the process of exiting its third wave, after recording a maximum of 26,400 new daily infections in July 2021. By 26 January 2022 the country had registered a total of

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3,590,399 confirmed infections and 94,491 deaths (Reuters, 2022; WHO, 2022) and have since showed a rapid decline of 24% in new infections (Reuters, February 2022).

The control of COVID-19 was initially predominantly reliant on national lockdowns and, as the pandemic progressed, added measures such as ongoing social distancing measures, the public use of face masks, and quarantining confirmed cases of infection were employed (Centers for Disease Control and Prevention, 2021; Fung & Liu, 2021; Solís Arce et al., 2021; United States Department of Labor, 2021). In South Africa, more restrictive lockdown measures placed a significant burden on individuals, families, and communities. Some of these included the curfews, partial closure of borders and the economy (closure of nightclubs and sales of alcohol), gatherings of limited attendance (no religious services, funerals, and other events). Later, with the rapid development of vaccines, over 10 billion doses of vaccines have been administered globally across 184 countries over the course of 2021 with vaccination rates more than 10 times higher in high-income countries and regions than in lower-income ones (Bloomberg, 2022). In South Africa, despite increasing pandemic fatigue, challenges in the vaccine roll-out strategy, vaccination hesitancy and uneven vaccine uptake among different sectors of the population, a total of 29,626,329 vaccines were administered by January 2022 (Department of Health, 2022) with 25.1% of the South African population fully vaccinated (Reuters, 2022).

Notwithstanding the varied deleterious outcomes arising from COVID-19, worldwide there have been remarkable enactments of solidarity and prosocial behaviour such as ameliorative and protective responses to the pandemic and its related health, social and economic burdens, and the indirect harms accentuated by prevailing structural inequities (Taliep et al., 2021; Tomasini, 2020). Several studies from across the world report that many communities have shown unprecedented levels of generosity and support (Sin et al., 2021; Taliep et al., 2021; van Ryneveld et al., 2022). Engagement in solidarity and prosocial behaviour, such as taking part in relief activities including, assistance with medical care, food distribution, provision of health-related information, volunteering at health-care facilities, provision of emotional support, help with school/work responsibilities and family/home responsibilities (Sin et al., 2020; Taliep et al., 2021). This sense of togetherness that emerges during disasters can facilitate a powerful sense of unity and solidarity and prosocial behaviour (Drury et al., 2009). This study, thus, aimed to explore the factors associated with solidarity and prosocial behaviours among South Africans during the second wave of COVID-19.

## **2. Explaining solidarity and prosocial behaviour**

In the context of COVID-19, this study endeavoured to understand the core motivations that led to citizens engagement in solidarity and prosocial behaviour during the pandemic. The term solidarity is used to refer to the bonds that bind a group together, particularly the bond of identity, or to relationships that involve an emotional bond (Smith & Sorrell, 2014). For purposes of our argumentation and study, we suggest that social solidarity is based on identification with a group, shared values and beliefs, and the acceptance that each member's well-being is integral to the group's well-being (Laitinen & Pessi, 2014; Smith & Sorrell, 2014).

As indicated by Zagefka (2021) individual and group identities are linked to prosociality, are pliable depending on the context and circumstances of a given situation, and new identities can arise from shared adversity with others previously regarded as “out-group” members. Thus, COVID-19 and the concomitant shared suffering could generate new

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collective identities and solidarity with those who share the same fate (Zagefka, 2021). Solidarity, in essence, signifies mutuality or unity in thoughts, emotions, or in actions and activities (Chan, 2021). Solidarity is, thus, central to collective action that transcends social and geographical boundaries. Denoting more than the mere expression of passive forms of support, social solidarity encompasses a dynamic and altruistic disposition to act in the face of adversity or to engage in behaviour to enhance the lives of others (Cho et al., 2021; Douwes et al., 2018; Laitinen & Pessi, 2014; Tomasini, 2021; Vlerick, 2020). Solidarity is manifested in prosocial behaviours across various situations including, but not restricted to, providing support and assistance in times of need and unprecedented crises (Laitinen & Pessi, 2014), and, thus, regarded as components of the same construct in this study. The more strongly individuals identified with their group, the more likely they would be motivated to engage in prosocial behaviour (Zagefka, 2021). Prosocial behaviour itself is defined as voluntary behaviour with the intent of benefitting others (Eisenberg et al., 1999) or “a helpful action that benefits other people without necessarily providing any direct benefits to the person performing the act and may even involve a risk for the person who helps” (Baron et al., 2006, p. 379). Volunteering and charitable giving are two of the most common metrics for measuring prosocial behaviour (Abel & Brown, 2020). Given the aforementioned, in this study we explored the factors associated with solidarity and prosocial behaviour, which is regarded as part of the same construct, and hereinafter referred to as solidarity/prosocial behaviour.

### 3. Conceptual framing

Previous studies indicate that the degree to which individuals engaged in solidarity/prosocial behaviour varies, based on sociodemographics (age, gender, and population group), educational attainment, and income levels (Cho et al., 2021; Espinosa & Kovářik, 2015; Fagbenro et al., 2018; Mesurado et al., 2014; Nettle et al., 2011; Silva & Mace, 2014; 2015). These studies, from across the globe, i.e., USA, Spain, Argentina, Colombia, Nigeria, England, and Ireland, indicate that those who are female, older, have a higher level of education and are more affluent, are more likely to engage in solidarity/prosocial behaviour and that economic deprivation negatively impacts such behaviour. Conversely, other studies in Nigeria and the Czech Republic did not find a significant effect of gender or age on solidarity/prosocial behaviour (Onyencho & Afolabi, 2018; Vaculik et al., 2007) and some studies found that lower socio-economic status was also associated with greater solidarity/prosocial behaviour (Piff et al., 2010; Greitemeyer & Sagioglou, 2018).

Findings from previous research on the association between disasters and solidarity/prosocial behaviour have been contradictory. On the one hand, under conditions of extreme stress and strain, or where there is competition for scarce resources people may turn on each other and display less solidarity/prosocial behaviour (Brañas Garza et al., 2020; Cappelen et al., 2021). Anecdotal evidence demonstrates that during COVID-19 people displayed antisocial and selfish behaviour by breaking conditions of confinement, hoarding food, and demonstrating hostile behaviour toward members of "out-groups" (Brañas Garza et al., 2020). However, Leder et al. (2020) observed that despite a group of volunteers' altruistic and prosocial choices and motivations to cooperate and be fair, they seemed to have conformed to COVID-19 government public health and safety measures (PHSM) out of self-protection. In this regard, Cappelen et al. (2021) argue that those who assume solidarity and prosocial behavioural repertoires are more likely to stay home when ill, follow physical

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distancing guidelines, and purchase facemasks as a measure of self-protection. The point being that even individuals who are otherwise prosocial tended to self-protect during a pandemic.

When a country faces a crisis, such as a pandemic or a natural disaster, perceptions of trust and 'justice' can have major implications for prosocial behaviour (Abel & Brown, 2020; Han et al., 2021). Citizen's level of trust in government and scientists can provide insight into people's prosocial behaviour during COVID-19. Algan et al. (2021) note that the credibility of governments and scientists', and trust in governments and scientists have changed radically during the course of COVID-19 (Algan et al., 2021). Whether people trust government and regard government actions as legitimate and acceptable depends greatly on their perception of procedural justice (van den Bos et al., 2014). One study found that the presence of negative public role models, such as political leaders, increases an individual's sense of responsibility, which leads him or her to engage in prosocial behaviour (Abel & Brown, 2020), whereas another study across 23 countries found that a higher level of trust in the government was associated with greater prosocial behaviour (Han et al., 2021).

It should be noted, however, that reservations have been raised about the appropriateness and effectiveness of the PHSM, especially in low-to-middle income countries (LMIC) marked by densely populated and economically impoverished settlements (Barnett-Howell et al., 2021; Doherty et al., 2020). Unpacking this dilemma and its possible psycho-social impact on communities are important for dealing with future pandemics. These PHSM, combined with socio-structural factors such as inequitable access to quality health care, food insecurity, and insufficient water and sanitation, therefore, further constrained poorer communities from observing lockdown and social distancing measures (Barnett-Howell et al., 2021; Chitsamatanga & Malinga 2021; Mobarak & Barnett-Howell, 2020). Rubini (2020) argued that public health policies designed for affluent countries like the USA can have an adverse impact on lower income countries where, for example, government-imposed social distancing norms are difficult to adhere to. This is due to the inability to endure a reduction in income over a prolonged period and to work from home, as reported, for example, in Mexico, India, Bangladesh, Nigeria, and South Africa where precarious employment abounds (Barnett-Howell et al., 2021; Oliver, 2020; Mobarak & Barnett-Howell, 2020; Paremoer et al., 2021; Rubini, 2020). In the long term, such public health measures can result in deprivation, hunger, malnutrition, other non-COVID-related health complications, and death (Mobarak & Barnett-Howell, 2020).

On the other hand, solidarity/prosocial behaviour seems to emerge when people are bound by a common fate such as COVID-19 (Brañas Garza et al., 2020; Clarke, 2002; Yue & Yang, 2021; Zagefka, 2021). Disasters, including pandemics, natural disasters, such as hurricanes or earthquakes, and the associated shared suffering seems to encourage social bonding, solidarity, and collective prosocial action (Bartolucci & Magni, 2017; Zaki, 2020). Kegler et al. (2010) observed that in times of disasters, such as fires within a community, people's motivation to join community-building efforts increased. During the 2013 Haiyan typhoon in the Philippines, widespread solidarity/prosocial behaviour was reported by survivors who collectively took part in relief efforts despite the possible danger to themselves (Bartolucci & Magni, 2017). Through this process, deeper connections, common understanding, and prosocial relationships may be developed through solidarity/prosocial behaviour (Zaki, 2020).

Thus, the experience of shared adverse circumstances may increase solidarity/prosocial behaviour, whilst the feeling of strain or anxiety linked to such collective adverse experiences

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may also instead decrease solidarity/prosocial behaviour. Cao and colleagues (2020) found that as the lockdown and social distancing measures continued during COVID-19, empathy-mediated prosociality declined over time due to compassion fatigue. It can, therefore, be argued that an individual's emotional state or frame of mind may be centrally involved in prosocial behaviour. For example, one study found that an increase in fear and sadness correlated with a decrease in prosocial behaviour during COVID-19, i.e., the more fearful and sad people are, the less they engage in prosocial behaviour (Ye et al., 2020). Interestingly, the same study also found that an increase in anger led to an increase in prosocial behaviour (Ye et al., 2020). In contrast, another study found that certain emotions (e.g., anger, guilt, gratitude, and shame) was associated with engagement in prosocial behaviour (Ferguson & Masser, 2018). Negative life events have often been identified as the catalyst for prosocial behaviour (Frazier et al., 2013). Lockdown measures and restriction of movement "produced the experience of being deprived of physical connections, and of being trapped or contained within the (invisible) walls of their homes" (Chan, 2021, p.4), which in turn, promoted prosocial behaviours (Ramkissoon, 2020).

Various studies demonstrated the negative mental health impact of COVID-19 (Panchal et al., 2021; Varma et al., 2020). Notably, during COVID-19, about 4 in 10 adults in the United States experienced mental distress (Panchal et al., 2021); in Canada the use of alcohol and sale of cannabis have increased (Vigo et al., 2020); and in South Africa more than half the population were reported to have experienced mental distress (Hunt et al., 2021). In addition, greater perceived risk for contracting COVID-19, greater knowledge of the pandemic (Kim et al., 2020), and household hunger (Hunt et al., 2021) were found to be significant predictors of mental health distress during COVID-19. In the beginning of COVID-19 Lockdown, the South African Minister of police stated that a total of about 87 000 reported cases of gender-based violence occurred during this period alone (Chothia, 2020). In spite of this, da Silva Castanheira et al. (2021) found that increased engagement in prosocial behaviour during COVID-19 was also associated with higher levels of anxiety symptoms.

Yue and Yang (2021) and others (Elcheroth & Drury, 2020; Politi et al., 2021) stress the need to explore the psychological mechanisms promoting and sustaining solidarity/prosocial behaviour in response to the COVID-19 outbreak, and suggests exploring the influence of emotions like fear, anxiety, and distress on prosocial behaviours during COVID-19. There is, however, also limited knowledge on the psychosocial experiences that may contribute to solidarity/prosocial behaviour during the current global pandemic.

Compared to other emergencies like typhoons and earthquakes, pandemic effects are more extensively spread in time and space (Drury et al., 2021), and so responses may differ across space and time as well (see, for example, Mesurado et al., 2014). In addition, most research on solidarity/prosocial behaviour has primarily used aggregate data appropriate for studying long-term adjustment and typically pre-and post-disaster, while less is known on how solidarity/prosocial behaviour (i.e., at a micro level) varies and progress during a disaster, itself (Brañas Garza et al., 2020).

Given the variability of the aforementioned findings on sociodemographic and living circumstances, the influence of time and space, the inconclusive evidence on the role of psychological factors that enhance solidarity/prosocial behaviour, it would be important to explore how these factors influence solidarity/prosocial behaviour during a global disaster, such as COVID-19, itself. In addition, global pandemic responses vary depending on the context (Hills & Eraso, 2021). Studies on trust in government during COVID-19 are also limited by small sample sizes and very few studies looked at prosocial behaviour during this pandemic

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(Han et al., 2021). The primary aim of this study was, therefore, to explore selected factors associated with solidarity/prosocial behaviour among South Africans during COVID-19. Specifically, the objectives of the study were to determine whether 1) sociodemographic and living circumstances (age, gender, population group, education, household size); 2) perceived vulnerability of contracting COVID-19 and perceived support for mitigation measures for curbing the spread of COVID-19; 3) trust in information provided by government and institutions and perceptions of procedural justice; and 4) the financial and psychosocial impact of lockdown were related to solidarity/prosocial behaviour.

Therefore, the following hypotheses are proposed:

H1. Sociodemographic and living circumstances has no effect on solidarity/prosocial behaviour during the COVID-19 pandemic.

H2. Perceived vulnerability of contracting COVID-19 and support for the measures to curb the spread of the disease has no effect on solidarity/prosocial behaviour during the COVID-19 pandemic.

H3. Trust in the information provided by government and scientists and perceptions of procedural justice in the measures taken by government to manage the pandemic has no effect on solidarity/prosocial behaviour during the COVID-19 pandemic.

H4. The financial and psychological impact of COVID-19 has no effect on solidarity/prosocial behaviour during the COVID-19 pandemic.

## 4. Method

### 4.1. *Participants and procedure*

A nationally proportionate stratified random sample of 2118 South African adults, aged 18 years and older, were selected from the telephone directories in all nine provinces of South Africa. Stratification was based on the number of households in each province. To sufficiently cover the towns/villages representing urban and rural areas in the nine South African provinces, the relative sample size at provincial level were adjusted to ensure that no sub-cluster population was below 30 respondents. The response rate for the survey was 81%. The non-response rate was due to consent not being provided and accordingly no data was collected. After the removal of cases with missing values for the study variables, the final sample for this analysis comprised of 1686 respondents.

We conducted a Little's Missing Completely at Random (MCAR) test which indicated that the data was not missing at random. Table 1 provides a summary of the sociodemographic characteristics for respondents who were included in the study and those who were excluded due to missing data. No significant differences were observed between those who were included and those excluded from the study with respect to age, gender, population group, educational level and number of household members. Most (67.4%) of the 1686 respondents included in this study were female, with a mean age of 40-45 years ( $\bar{x} = 6.76$ ,  $SD = 3.11$ ). The majority of respondents were Black<sup>1</sup> (68.0%) (comprising of African, Coloured, and Indian respondents), and the rest were White (32.0%). Due to the small frequencies of respondents of the Coloured and Indian sample, these answers were merged into the Black category and

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<sup>1</sup> The Apartheid regime classified people in South Africa in terms of their race as Coloured, Black, White, and Indian. These terms are used in this paper only for research and redress purposes.

the White category was used as the reference group for this analysis. A large proportion of respondents (59.5%) had some form of secondary qualification ( $\bar{x}$  = 6.45,  $SD$  = 1.84).

**Table 1. Sociodemographic differences between cases included and excluded in the study**

Sociodemographic variables		Cases in the study		$\chi^2/t$	df	p	
		Included	Excluded				
Age	mean (SD)	6.76 (3.11)	6.93 (3.20)	-.984	2048	.325	
Gender							
	Female	n (%)	1136 (67.4)	255 (68.5)	.190	1	.663
	Male	n (%)	550 (32.6)	117 (31.5)			
Population group							
	White	n (%)	540 (32.0)	119 (34.4)	.733	1	.392
	Black	n (%)	1146 (68.0)	227 (65.6)			
Education	mean (SD)	6.45 (1.84)	6.42 (1.79)	.322	2025	.748	
Number of household members	mean (SD)	4.03 (2.83)	4.02 (3.84)	.070	2054	.944	

Ethical clearance for this study was obtained from the University of South Africa (Unisa) College of Human Sciences and the Bureau of Market Research (BMR) Research Ethics Committee in 2020. All research ethics principles were adhered to. The BMR further complied with the Protection of Personal Information Act (POPIA) when conducting the telephone interviews, which included observing the prescribed times for contacting the households to conduct the interviews during the week and weekends. The data collection method involved the Computer-Aided Telephonic Interviews (CATI) with households in urban and rural areas using an interviewer administered approach. The interviews were conducted from December 2020 to March 2021 in the BMR CATI facility by interviewers with extensive experience in the CATI surveys and who were trained and supervised by the BMR.

#### **4.2. Data collection instrument**

The national COVID-19 survey was specifically developed for this study by the Unisa Institute for Social and Health and Sciences based on a review of the literature. The questionnaire contains 73 items that measures 11 domains (sociodemographic; household and living circumstances; perceived vulnerability of contracting COVID-19; support for mitigation measures to curb the spread of COVID-19; responsiveness to pandemic protection measures; trust in government and institutions; perceptions of procedural justice; financial impact of lockdown; psychosocial impact; solidarity/prosocial behaviour; and experiences of safety and peace, including injuries, violence, and structural violence).

The instrument was reviewed internally by a group of six researchers for face validity. Thereafter BMR reviewed the questionnaire for alignment to study objectives, wording, and flow, and reviewed further for duration. Due to the nature of the CATI method of data collection, we were limited by the number of items for each of the domains. The feasibility of the questionnaire was assessed through a pilot study conducted in the CATI covering one province, Gauteng, over a period of 3 days with a total of 20 respondents within the targeted age range from 18 years and above to determine the feasibility of the survey.

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### 4.3. Measurement variables

The outcome variable for the multiple linear regression (MLR) analysis is solidarity/prosocial behaviour. Solidarity and prosocial behaviour was assessed using the sum of 5 items asking respondents if they had shared food with family not living in their household; lent or gave money to family not living in their household; volunteered time to help a family member in need by doing chores for them (e.g. shopping or cleaning); shared food with members in their community or provided ingredients for a community soup kitchen; and volunteered time to distribute essentials (food, sanitisers) to communities in need since the beginning of lockdown, all of which were informed by much of the volunteer activities at the time of COVID-19 (see Avaaz, 2020; Taliep et al., 2021). Responses were scored as 1 if the respondent indicated yes and 0 if the respondent replied no.

Sixteen explanatory variables were included in the study and were grouped into four broad categories in accordance with the study objectives:

The first category of variables comprised of sociodemographic and living circumstances and included age, gender, population education, number of household members. Age was measured in 5-year age groups ranging from *18-19 years* (1) to *65 years and older* (11) to align to routine descriptive statistical conventions (World Health Organization, 2021); gender was coded as *male* (1) and *female* (2); population was coded as 1 if respondents identified as black and 2 if white; education ranged from *no formal education* (1) to *postgraduate degree* (9), and number of household members is the actual number of members residing in the respondent's household.

The second category of variables was related perceptions of vulnerability of contracting COVID-19 and support for the measures to curb the spread of the disease. Perceived vulnerability of contracting COVID-19 was assessed with two items using a 5-point Likert scale ranging from *not at all* to *extremely* exploring how concerned respondents were for themselves or someone in their family contracting COVID-19. Support for mitigation measures to curb the spread of COVID-19 infection was measured using two variables *importance of protective behaviours* assessed with four items, and *importance of restrictions on movement* also assessed with four items. The items were created to specifically reflect the standard behavioural protective measures such as hand hygiene, wearing of face masks, and social distancing as well as the restrictions on movement implemented by government, such as no visiting of family and friends and the closure of schools, sectors of the economy and religious institutions. Both variables were measured on a 5-point Likert scale ranging from *not important at all* to *very important*) and measured participants perceptions on the importance of personal and public protective measures (Cronbach's  $\alpha = .81$ ; Cronbach's  $\alpha = .69$ ).

The third category of variables consisted of perceptions on the COVID-19 information provided by authorities and the procedural fairness of the measures taken by government to manage the pandemic. Trust information provided by government and institutions comprised of two variables, *trust information from government* (measured with one item on a 4-point Likert scale ranging from *not at all* to *completely trust*) asking respondents how much they trust information provided by government on COVID-19, and *trust information from scientists* (measured with one item on the same scale) exploring how much respondents trusted information shared by scientists and researchers. Both of the items were adapted from the Afrobarometer (<https://www.afrobarometer.org/countries/south-africa/>). Views on procedural justice included two variables *Fairness of measures taken by government* (two items) and *fairness in the enforcement of the measures* (three items measuring views on the



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behaviour of police and South African National Defence Force during lockdown) assessed with a 5-point Likert scale ranging from *strongly agree* to *strongly disagree* (Cronbach's  $\alpha = .58$ ). The development of these 5 items was guided by Kuiper and colleagues (2020) assessment of the perceived fairness in creating and enforcing COVID-19 mitigation measures.

The fourth category comprised of variables that measured the individual impact of COVID-19. The financial impact of lockdown was assessed with two variables: the *experience of poverty* and *loss of income*. The experience of poverty was measured using an adapted version of the Afrobarometer (<https://www.afrobarometer.org/countries/south-africa/>). Lived Poverty Index (Bratton, 2006) that measured the frequency of going without basic necessities since the start of lockdown on a 5-point Likert scale ranging from *never* to *always* (Cronbach's  $\alpha = .63$ ). *Loss of income* measured the income lost by a household since lockdown began, compared to before lockdown on a 5-point scale (0%, 25%, 50%, 75%, or 100%). The psychosocial impact - comprised two items. The first, *emotional wellbeing* was assessed using the mean of six items measuring respondents' level of anxiety, sadness, feeling of hopelessness, isolation, and anger, and experience of insomnia in the preceding seven days on a Likert scale ranging from *rarely or none of the time* (less than 1 day) to *mostly or all of the time* (5-7 days) (Cronbach's  $\alpha = .85$ ). Four of these items were adapted from the Emotional State Questionnaire (Aluoja et al., 1999) and one item measuring anger was added based on a review of the literature (see Ye et al., 2020). The second variable, *coping behaviour* comprised of four items measuring how much time respondents spent engaging in a non-work-related pleasant activity; spent quality time with their family, engaged in some form of meditation or prayer; and engaged in some form of physical activity, compared to before lockdown (Cronbach's  $\alpha = .62$ ). These items are based on coping behaviours suggested by the National Institute of Health during the start of COVID-19 (<https://www.nih.gov/health-information/emotional-wellness-toolkit>).

#### **4.4. Preliminary analysis and approach**

A multiple linear regression (MLR) was computed (using 4 models for each hypothesis and one full model; see Table 5) to determine whether sociodemographic and living circumstances, perceived vulnerability of contracting COVID-19, support for mitigation measures to curb the spread of COVID-19, trust information provided by government and institutions, views on procedural justice and the financial and psychosocial impact of COVID-19 lockdown was associated with solidarity and prosocial behaviour. All statistical analyses were computed using IBM SPSS Statistics 27.0 software (IBM Corp., Armonk, NY, USA).

Preliminary analyses were computed to ensure no violation of the assumption of level of measurement, sample size, normality, linearity, homoscedasticity, multi-collinearity, multivariate outliers, and independence of residuals were present. All explanatory variables were either categorical or interval; the sample size (N=1686) is suitable (for multiple linear regression incorporating 16 explanatory variables with 80% power and  $\alpha$  error probability of 5%, it is estimated that a sample of 1000 will detect a  $R^2$  values of 2 percent and above (Hair et al., 2014). The assumptions of linearity and normality were met; residuals were roughly consistent along the regression line; the VIF is below 10 and the tolerance statistic is above .2, therefore, indicating that multicollinearity was not an issue. The independence residuals ranged from -2.204 (minimum) to 2.709 (maximum), which is a good range; the residuals were normally distributed, and all the values fell along a diagonal with no substantial or systematic departures (see Field, 2009). Thus, all our assumptions for MLR were met (Field, 2009).

## 5. Results

Descriptive statistics, illustrated in Table 2, show an overall mean score for solidarity/prosocial behaviour of 2.33 ( $SD = 1.56$ ). Around 83.5% of respondents participated in at least one form of solidaristic and prosocial behaviour. Sharing of food had the highest frequency (59.1%) indicating that the majority of respondents shared food with family that do not live in their household, but at the same time they also shared food with other community members or supported a community soup kitchen (51.2%).

**Table 2. Descriptive statistics: Outcome measure – solidarity and prosocial behaviour**

Item	Descriptive statistic
Since the beginning of the lockdown, have you done any of the following:	
Shared food with family not living in your household	59.1%
Lent or gave money to family not living in your household	55.4%
Volunteered time to help a family member (not living in your household) in need by doing chores for them, e.g., shopping or cleaning	44.2%
Shared food with members in my community or provided ingredients for a community soup kitchen	51.2%
Volunteered time to distribute essentials (food, sanitizers) to communities in need	25.9%
Overall measure	2.33 Mean 1.56 SD 0-5 Scale

Table 3 displays the descriptive statistics for the explanatory variables. The results show that respondents perceived that they were moderately to very vulnerable ( $\bar{x} = 3.72$ ,  $SD = 1.15$ ) of contracting COVID-19. Most respondents (95%) supported behavioural measures ( $\bar{x} = 4.73$ ,  $SD = 0.51$ ) to curb the spread of COVID-19, and more than half ( $\bar{x} = 3.14$ ,  $SD = 0.99$ ) supported government restrictions on movement to curb the spread of the virus. Respondents trusted information provided by scientists ( $\bar{x} = 2.85$ ,  $SD = 0.95$ ) more than they trusted information from government ( $\bar{x} = 2.63$ ,  $SD = 1.02$ ). Most respondents agreed that government lockdown measures were fair and reasonable ( $\bar{x} = 3.74$ ,  $SD = 1.03$ ), but respondents were relatively neutral with regards the fairness of police and SANDFs behaviour and treatment of citizens during lockdown ( $\bar{x} = 2.98$ ,  $SD = 0.96$ ). Regarding the financial impact of the lockdown, some respondents experienced going without food, clean water, and other basic necessities ( $\bar{x} = 1.41$ ,  $SD = 0.51$ ), whilst more than half (52.3%) of respondents ( $\bar{x} = 2.14$ ,  $SD = 1.35$ ) reported that they experienced a loss of income since the beginning of lockdown. Just over half of respondents experienced pandemic related mental health outcomes (i.e., felt anxious, sad, hopeless, isolated, and angry) some of the time ( $\bar{x} = 1.59$ ,  $SD = 0.56$ ) whilst close to two thirds (68%) of respondents ( $\bar{x} = 3.40$ ,  $SD = 0.96$ ) used some form of coping behaviour (e.g., physical activity, meditation, and prayer, etc.) more than they did prior to lockdown. A Pearson correlation coefficient was computed to determine the relationship between solidarity/prosocial behaviour and 16 explanatory variables (see Table 4). None of the correlation coefficients are close to or exceed .90, which indicates that multi-collinearity is not a problem for this data (Field, 2009)

**Table 3. Descriptive statistics: Explanatory variables**

Variable	Mean/n(%)	SD	Scale
<b>Sociodemographic</b>			
Age	6.76	3.11	1-11
18-19 years	33 (2.0%)		
20-24 years	108 (6.4%)		
25-29 years	194 (11.5%)		
30-34 years	199 (11.8%)		
35-39 years	146 (8.7%)		
40-44 years	122 (7.2)		
45-49 years	132 (7.8%)		
50-54 years	151 (9.0%)		
55-59 years	129 (7.7%)		
60-64 years	183 (10.9%)		
65+ years	289 (17,1%)		
Gender			
Female	1136 (67.4%)		
Male	550 (32.6%)		
Population group			
White	540 (32.0%)		
Black	1146 (68.0%)		
Education	6.45	1.84	1-9
Number of household members	4.03	2.83	-
<b>Vulnerability and support for measures to curb COVID-19</b>			
Perceived vulnerability of contracting COVID-19	3.72	1.15	1-5
Support for behavioural measures	4.73	0.51	1-5
Support for restrictions on movement	3.14	0.99	1-5
<b>Trust government and institutions</b>			
Trust information from government on coronavirus	2.63	1.02	1-4
Trust information from scientists	2.85	0.95	1-4
<b>Procedural justice</b>			
Government measures were fair and reasonable	3.74	1.03	1-5
Police and the SANDF behaviour during lockdown	2.98	0.96	1-5
<b>Financial impact of lockdown</b>			
Experience of poverty	1.41	0.51	1-5
Loss of income	2.14	1.35	1-5
<b>Psychosocial impact</b>			
Mental health	1.59	0.56	1-3
Coping behaviour	3.40	0.96	1-5

A hierarchical MLR was computed (see Table 5) to study the association between solidarity/prosocial behaviour and sociodemographic and living circumstances, perceived vulnerability of contracting COVID-19, support for mitigation measures to curb the spread of COVID-19, trust in information provided by government and institutions, views on procedural justice, the financial and psychosocial impact of lockdown. When interpreting the results of MLR analyses, the overall fit of the model and the summary statistic, i.e., the contribution of individual explanatory variables was considered to see if each model improved our ability to explain solidarity and prosocial behaviour or not (see Field, 2009).

**Table 4. Correlation matrix for solidarity/prosocial behaviours and explanatory variables**

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Solidarity/Prosociality	.020	0.17	-.080**	.118**	-.048	-.047	.036	-.050*	-.108**	-.060*	-.049*	-.065**	.064**	.110**	.151**	.097**
2. Age	-	-.015	-.448**	-.021	-.269**	-.012	.109**	.87**	.075**	.166**	.069**	.097**	-.175**	-.107**	-.029	-.034
3. Gender			.017	.102	-.058*	.006	-.077**	-.010	-.044	.025	-.050*	-.049**	-.004	.023	-.143**	-.006
4. Population group			-	-.140	.284**	.177**	.028	.100**	.168**	-.044	.135**	.008	.160**	.032	.033	.056*
5. Education				-	-.069**	-.016	-.043	.029	-.114**	.023	-.087**	-.073**	-.133**	.003	-.007	-.049*
6. Number of Household Members					-	.039	-.118**	-.040	-.019	-.079**	-.014	-.048*	.097**	.092*	.048*	.034
7. Perceived vulnerability for COVID-19						-	.171**	.173**	.089**	.058**	.155**	-.028	-.035	-.047	.133**	.016
8. Support for COVID-19 behavioural measures							-	.336**	.225**	.218**	.352**	.118**	-.079**	-.065**	-.038	.192**
9. Support for restrictions (closing of institutions)								-	.265**	.227**	.315**	.146**	-.060*	-.070**	-.039	.077**
10. Trust information from government on virus									-	.610**	.465**	.262**	-.072**	-.107**	-.162**	.071**
11. Trust information from scientists on virus										-	.374**	.186**	-.152**	-.106*	-.138**	-.028
12. Government measures were fair and reasonable											-	.279**	-.090**	-.121**	-.108**	.121**
13. Police and SANDF behaviour during lockdown												-	-.148**	-.078**	-.092**	.097**
14. Experience of poverty													-	.328**	.293**	-.012
15. Loss of income														-	.217**	.031
16. Mental health effects															-	-.076**

\*p < .05, \*\*p < .01.

**Table 5. Multiple linear regressions on explanatory variables associated with solidarity/prosocial behaviours**

Variables	Model 1			Model 2			Model 3			Full Model		
	B	SE	Beta	B	SE	Beta	B	SE	Beta	B	SE	Beta
(Constant)	2.186	.290	-	1.413	.453	-	1.576	.461	-	.175	.494	-
<b>Sociodemographic</b>												
Age	-.007	.014	-	-.007	.014	-.014	.001	.014	.001	.006	.014	.012
Gender (1=female)	.017	.081	.013	.027	.081	.008	.019	.081	.006	.070	.080	.021
Population group (1=white)	-.212*	.093	.005	-.232*	.095	-.069	-.180	.097	-.054	-.210*	.096	-.063
Education	.090***	.021	-	.094***	.021	.111	.088***	.021	.103	.095***	.021	.112
Number of Household Members	-.014	.014	.064	-.012	.014	-.023	-.014	.014	-.026	-.021	.014	-.038
<b>Vulnerability and support for measures to curb COVID-19</b>												
Perceived vulnerability of contracting COVID-19			-.026	.087**	.034	.065	.084*	.034	.063	.068*	.034	.051
Support for behavioural measures				.171*	.079	.056	.218**	.082	.072	.160*	.082	.053
Support for restrictions of movement				-.120**	.041	-.076	-.086*	.042	-.055	-.085*	.041	-.054
<b>Trust government and institutions</b>												
Trust information from government on virus							-.108*	.051	-.071	-.084	.050	-.055
Trust information from scientists on virus							-.040	.052	-.025	-.018	.051	-.011
<b>Procedural justice</b>												
Government measures were fair and reasonable							.002	.045	.001	.013	.044	.009
Police and SANDF behaviour during lockdown							-.056	.041	-.034	-.051	.041	-.031
<b>Financial impact of lockdown</b>												
Experience of poverty							.094	.081	.094	.094	.081	.031
Loss of income							.079**	.029	.079**	.079**	.029	.069
<b>Psychosocial impact</b>												
Distress							.343***	.072	.343***	.343***	.072	.124
Coping behaviour							.186***	.039	.186***	.186***	.039	.115
F-value	6.363***			6.120***			5.421***		8.470***			
R <sup>2</sup>	.019			.028			.037		.075			

Note: \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

Table 5 displays the multiple linear regression results for the association between the explanatory variables and the engagement in solidarity/prosocial behaviours. Block 1 shows that only two of the sociodemographic variables significantly influence solidarity/prosocial behaviours. Population group (race) was negatively associated with solidarity indicating that white respondents were more likely to engage in prosocial behaviours ( $\beta = -.064, p = .023$ ). Furthermore, education was positively associated with solidarity/prosocial behaviours ( $\beta = .106, p < .001$ ). The  $R^2$  (0.19) indicates that the sociodemographic variables explain 1.9% of the variance in solidarity and prosocial behaviour.

In block 2 the variables related to perceptions of vulnerability of contracting COVID-19 and support for the measures to curb the spread of the disease were added to the regression model, with the  $R^2$  increasing to .028. Population group and education remained significant while perceived vulnerability of contracting COVID-19 ( $\beta = .065, p = .009$ ) and perceived importance of the behavioural measures ( $\beta = .056, p = .031$ ) were positively associated with solidarity/prosocial behaviours. Support for restrictions on movement was however negatively associated with solidarity/prosocial behaviours ( $\beta = -.076, p = .003$ ), indicating that those who least supported the restrictions were more inclined to engage in solidarity/prosocial behaviours.

In the third block when the variables on perceptions of the COVID-19 information provided by authorities and the procedural fairness of the measures taken by government to manage the pandemic were added to the regression, there was a very small increase in the explanatory power of the model ( $R^2 = .037$ ). Of the sociodemographic variables, education was the only variable that remained significant while all of the variables related to perceptions of vulnerability of contracting COVID-19 and support for the measures to curb the spread of the disease retained significance. Of the new variables added to the regression, trust information from government on the virus was the only variable significantly associated with solidarity/prosocial behaviours ( $\beta = -.071, p = .032$ ). The association was negative indicating that the less respondents trusted the information from government on the coronavirus the more likely they engaged in solidarity/prosocial behaviours.

Finally, the variables that measured the individual impact of COVID-19 were added to the model, and the  $R^2$  increased to .075 indicating a change of .038. Thus, the  $R^2$  (.075) indicate that the overall model explains that 7.5% of the variance in solidarity and prosocial behaviour can be attributed to the explanatory variables taken together (Field, 2009). According to Kutner et al. (2005), the R-square, even when small, can be statistically significant when it is different from 0, indicating strong explanatory power of your regression model. Although R-square tends to be higher in certain fields due to the ease of stipulating complete, well-specified models, low R-square values are often observed in the social and behavioural sciences because it is difficult to include all the relevant explanatory variables to explain an outcome variable (Paetzold, 2016). Kutner et al. (2005, p.75) demonstrate that a large coefficient of determination may not always allow for useful predictions to be made or “indicate that the estimated regression line is a good fit”. So, considering the importance of the dependent variable in this study, our model’s, overall, results in a significantly good degree of explaining solidarity and prosocial behaviour.

Thus, of the four categories of variables added in the various blocks, those related to the financial and psychological impact of COVID-19 were greatest in explaining the variance in solidarity/prosocial behaviour. In particular, loss of income ( $\beta = .069, p = .003$ ), psychological distress ( $\beta = .124, p < .001$ ), and engaging in coping behaviours ( $\beta = .115, p < .001$ ) were all

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positively associated with the engagement in solidarity/prosocial behaviour. For the full model, the beta weights show that out of the 16 explanatory variables only eight made a significant ( $p < .05$ ) contribution to explaining solidarity/prosocial behaviour, and of these, six were positively associated to solidarity/prosocial behaviour. These are: educational level ( $\beta = .112, p < .001$ ), perceived vulnerability of contracting COVID-19 ( $\beta = .051, p = .043$ ), perceived support for behavioural measures ( $\beta = .053, p = .050$ ), financial impact: loss of income ( $\beta = .069, p = .007$ ), mental health effects ( $\beta = .124, p < .001$ ), and psychosocial coping ( $\beta = .115, p < .001$ ). Population group ( $\beta = -.063, p = .029$ ) and perceived support for the restrictions ( $\beta = -.054, p = .038$ ) were negatively correlated with solidarity/prosocial behaviour. When looking at the standardised beta coefficients, we can also see that mental health effects has the strongest significant positive association with solidarity/prosocial behaviour. Trust in government and institutions, procedural justice and the actual experience of poverty was not associated with solidarity/prosocial behaviour.

## 6. Discussion

Solidarity/prosocial behaviour is an essential modality of social regulation in the context of COVID-19. COVID-19 can be viewed as the impetus which prompted South African citizens to seek explanations for the pandemic and adopt functional responses, through solidarity and prosocial behaviour. In our study context, sociodemographic factors (gender, educational level), support for behavioural measures to curb the spread of COVID-19, perceived vulnerability of contracting COVID-19, the financial and psychosocial impact of lockdown, and psychological distress and psychosocial coping were related to solidarity and prosocial behaviour.

From the outset of the COVID-19 pandemic, and as evidenced later, it has been clear that the economic, psychosocial, and mental health effects of the pandemic and the various physical distancing, social restrictions, and stay-at-home related policies introduced in response to these, would all be important challenges (Banks et al., 2021; Institute for Poverty, Land, and Agrarian Studies, 2020; Mahmud & Riley, 2021; Struwig et al., 2021). The current study indicates that South Africans were more likely to engage in solidarity/prosocial behaviour if they were “White” and had a higher level of education. Being both “White” and having a higher level of education in South Africa are indicators of economic advantage and represents the existing socio-economic disparities in South Africa, where income stability and access to resources remain stratified by population group (Korndörfer et al., 2015; Van der Berg, 2010). Our study highlighted that the privileged had the resources and the time to become involved in prosocial behaviour or solidaristic initiatives. Because they lacked the resources prior to the pandemic, the working class, ethnically and racially marginalized groups, and lower socio-economic groups are often significantly impacted within their communities (Smith, 2006). Considering that the data were collected eight months into lockdown (Dec 2020 - Mar 2021), with the existing socio-economic disparity gap inevitably widened, it would be more likely that people of affluence would be more able to cope, as they would have had the resources for a nest egg prior to the pandemic. Mendoza et al. (2021) supports this view indicating that the lockdown policy did not adversely affect the White population, higher income communities, and white-collar workers (professionals) throughout the different lockdown levels as much as it did lower-income communities. They found that as lockdown phases eased, these individuals were also able to rebound in activity at a more

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rapid rate. These conclusions are supported by a report by the Gauteng City-Region Observatory (GCRO), which indicates that only 6% of respondents from the highest income groups lost their jobs compared to 30% from the lowest income groups in Gauteng, South Africa (de Kadt et al., 2021). The report shows that compared to Black African, Coloured, and Indian/Asian respondents, White respondents and those from higher income groups were less likely to be negatively affected by COVID-19. Therefore, White, and highly educated individuals had a greater likelihood of returning to work without any difficulties (de Kadt et al., 2021). Affluent individuals and communities also had the advantage of sheltering in at home, avoiding the harmful effects of COVID-19 (economically as well as physically and mentally), and then returning to their normal routines after the lockdown period (Mendoza et al., 2021).

Our findings further indicate that perceived vulnerability of contracting COVID-19 was significantly associated with solidarity and prosocial behaviour - as perceived vulnerability of contracting COVID-19 increased by one unit, so did solidarity and prosocial behaviour increase by one unit. Perceived support for the behavioural measures to curb the spread of COVID-19 was also found to be positively correlated with solidarity/prosocial behaviour. However, although South Africans supported the behavioural measures (e.g., hand sanitising and wearing a face mask) to curb the spread of the pandemic, they were less supportive of the restrictions of movement. Support for the restrictions on movement was negatively associated with solidarity/prosocial behaviour, meaning that those who were less inclined to support the restrictions on movement were more likely to engage in solidarity/prosocial behaviour. Possible explanations for this could be that those who supported the restrictions, observed them and, therefore, did not go out to volunteer. Another possibility is that many did not support the restrictions on movement because of the dire effects this has had on the economy and sustaining livelihoods, they therefore might have been motivated to support others during these restrictions. This finding aligns only partly with the findings from Campos-Mercade et al. (2021) indicating that individuals with a pro-social disposition are more inclined to follow physical distancing guidelines and hygiene measures, learn ways to help others, and donate to fight the COVID-19 pandemic.

Despite the aforesaid, loss of income was found to be significantly associated with solidarity/prosocial behaviour. This study indicates that more than half of respondents (52%) reported a loss of income after lockdown measures were imposed. It can, thus, be surmised that because of their loss of income, many individuals engaged in some form of solidarity/prosocial behaviour. Thus, almost two thirds shared food with family not living in their household, and more than half financially supported family not living in their household; almost half shared food with community members or supported community soup kitchens; a substantial number volunteered time to help family members outside their household; and just over a quarter volunteered time to distribute essentials to others. Such an approach resonates with the emphasis of collective “Ubuntuism” (collective humanity and mutual caring) in South Africa where collective supportive traditions are foregrounded (Ballard, 2019). The results are consistent with findings reported on by Greitemeyer and Sagioglou (2018) and Piff et al. (2010), which demonstrated that individuals from low socioeconomic backgrounds tended to act more prosocially, which Piff et al. (2010) ascribed to feelings of compassion and more commitment to egalitarian values. The results are also analogous with findings reported by Alonso-Ferres et al. (2020) who examined the effects of the Spanish economic crisis on prosocial behaviour. They found that individuals who felt more negatively impacted by the economic crisis reported more prosocial behaviour. People who have



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experienced a loss of income, may be more understanding to the hardships that less fortunate citizens face and are, therefore, more willing to support and assist others. Such solidarity/prosocial behaviour could thus be indicative of what has been described as an intrinsic human need to come together to resolve the difficulties and challenges they have in common (Ingwe et al., 2020).

These findings, however, differ from popular public perception, that most people do not act in solidarity and in prosocial ways during a crisis (BBC News, 2020; da Silveira, 2020; Rayda, 2020; University of Technology Sydney, 2020; Zaki, 2020). The current data were collected almost a year into the pandemic, with many South Africans economically devastated then, particularly those who earned an income in the informal sector<sup>2</sup> and who had lost their jobs (Institute for Poverty, Land, and Agrarian Studies, 2020). Thus, the current result further diverges from those of previous studies that found that, as the lockdown progressed, empathy and prosocial tendencies significantly decreased across the population (Cao et al., 2020).

Beyond the economic impact, COVID-19 and the concomitant lockdown measures had detrimental effects on the mental health of many communities and its members. The vast majority of participants were concerned that someone in their household or themselves would contract COVID-19, and more than half occasionally experienced some form of mental health distress due to the pandemic. Similar findings were reported by Beck et al. (2020) and Wright et al. (2020). According to the GCRO study, 14% of respondents in Gauteng were at higher risk for depression during COVID-19 if they were facing socio-economic distress including unemployment, debt, and food insecurity (de Kadt et al., 2021).

Although psychological distress may suppress helpful behaviour towards others (Brooks et al., 2020), this study has shown that the converse is also true. The results show that mental health outcomes (anxiety, sadness, hopelessness, feelings of isolation, anger, and sleeplessness) had the strongest significant positive association with solidarity/prosocial behaviour. Whilst our findings differ from others who reported that such emotions suppress empathy-driven solidarity/prosocial behaviour (Brooks et al., 2020), similar results were reported by Ferguson and Masser (2018) who found that emotions such as anger, guilt, and shame can induce engagement in solidarity/prosocial behaviour. They further note that this behaviour, in turn, reduce the outcomes of such emotions and enhance well-being. In another study, Haller et al. (2022) also found that higher levels of perceived stress significantly contributed to higher levels of prosocial behaviour. Psychosocial coping was also found to have a strong positive association with solidarity/prosocial behaviour. Our results indicate that even as people were concerned or feared contracting COVID-19, they drew on their cognitive and emotional resources to cope with the pandemic and were also inclined to solidarity/prosocial behaviour, which, by extension, could also be regarded as a form of coping during lockdown.

## 7. Conclusion

Overall, South African citizens exhibited a wide range of prosocial and solidaristic behaviours during the COVID-19 pandemic, regardless of financial status, race, or gender.

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<sup>2</sup> Informal sector refers to self-employed workers, or people who work for self-employed individuals and are generally not on payrolls, do not pay tax and are not monitored by government, such as street vendors or hawkers.

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However, the results foreground the structural divides that still exist within various communities in South Africa, with racial and educational advantage associated with prosocial behaviour and rebounding after lockdown to normal daily routines. Less affluent, Black communities inevitably have more limited access to resources, lower educational levels, lower income, and have suffered from job losses during the pandemic, which makes it more difficult to recover from lockdown measures. Since certain groups suffer more during and after a pandemic, the response process must be considered at a community and systemic level (Quarantelli, 1988).

This study emphasises that it is vital to take into account the influence of emotions like fear, anxiety, and sadness, on solidarity-based prosocial collective actions and supports the argument that various emotions are relevant to the understanding of solidarity/prosocial behaviour. The study further foregrounds the importance of encouraging solidarity/prosocial behaviour during COVID-19 and beyond to reduce the negative mental health outcomes associated with such shared challenges. These modest findings have implications for building social cohesion as well as solidarity/prosocial behaviour, i.e., building community, which may be important to strengthen communities to respond during times of disaster and, therefore, also has implications for community health policy agendas. Thus, it will be important to further explore qualitatively the role of psychosocial and economic factors related to solidarity/prosocial behaviour within the South African context, as qualitatively rich data would allow the unearthing of the multiple layers of solidarity/prosocial behaviour, further deepening the understanding of socioeconomic and psychosocial factors associated with solidarity/prosocial behaviour.

## 8. Limitations

A possible limitation of the study is that no distinction was made between data collected at South Africa's lockdown level 2 and level 3, and no data were collected at other levels. Distinguishing between the different levels might have provided more valuable insights into solidarity and prosocial behaviour during different phases of the lockdown. A possible further limitation of the study relates to the measures used. Even though we reviewed the literature, adapted some items from existing scales, evaluated the survey for face validity, and piloted the survey with a small sample (n=20), some of the scales displayed low to medium reliability, hence, the results should be interpreted accordingly. Another likely limitation was that due to restrictions put in place by the South African Government, a CATI survey was the most viable option to gather data for the study. The results might therefore be limited to only that section of the population from the telephone directories available in all nine provinces of South Africa who has access to a phone (e.g., higher percentage of women, with higher education and financial status than the national population). A further limitation is the small R-square value, which even though small, can nonetheless still be interpreted.

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