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COVID-19 and the financial well-being and personal finances of South African households

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Orientation: COVID-19 pandemic inflicted economic damage on an unprecedented scale worldwide, and was expected to have a direct influence on the personal finances of households and individuals.

Research purpose: The main objective of the study was to establish the association between COVID-19 and the accompanying lockdown, and household and personal finances in South Africa.

Motivation for the study: More information is needed about the actual influence of a sudden economic crisis on household finances, especially financial well-being.

Research approach/design and method: This cross-sectional study was exploratory in nature and followed a quantitative non-experimental design within a positivist paradigm. A total of 431 persons participated in the research, which aimed to establish the association between lockdown and income, expenditure, investments, bank balances and savings and outstanding debt.

Main findings: Decreases in income were not completely offset by an equal decrease in expenditure. Certain demographic groups were affected more, especially vulnerable groups. They used more of their savings to cover shortfalls and reported a larger increase in outstanding debt.

Practical/managerial implications: With regard to personal finance, future efforts during pandemics and other disasters should have a greater focus on vulnerable groups. Support could be in the form of grants supplementing income because not all expenditure is elastic. Assistance is also needed with grocery expenses, as this category of spending saw the greatest increase, placing maximum strain on household finances.

Contribution/value-add: This academic study was conducted to examine the overall association between lockdown during the pandemic and household finances in South Africa.

Keywords: COVID-19; lockdown; personal finance; household finances; household income; household expenditure; household savings; household debt.

Introduction

The last Consumer Financial Vulnerability Index (CFVI) report (Momentum/Unisa 2019) before coronavirus disease 2019 (COVID-19) pandemic highlighted the disturbing level of financial vulnerability among South African consumers. This situation is caused by the inability of many people to service debt, coupled with the challenges of poverty, unemployment and inequality. At the beginning of 2020, the damage inflicted by the COVID-19 pandemic upon economies worldwide had already reached an unprecedented scale (Goodell 2020:4), affecting financial markets by eroding a quarter of global wealth within a month (Ali et al. 2020:1). This, along with the estimated contraction of the world economy by 3.0%, and South Africa's economy by 5.8% (International Monetary Fund [IMF] 2020), was expected to have a direct impact on the personal finances and financial well-being of individuals and households. Such expectations were indicated by Keogh-Brown et al. (2010:551) for the 2009 swine flu pandemic. Their results suggested GDP (gross domestic product) losses of approximately 0.5% – 2.0%, with school closure and absenteeism from work likely to triple the effect. A survey on the biggest concerns of South Africans also pointed to the economy as the number one concern of citizens (Afriforte 2020). For most governments, however, recovery from the disease has been the main focus, with the economic effect taking second place (Barua 2020).

The CFVI report of Q2 2020 stated that the index has declined to its lowest level ever (Momentum/Unisa 2020), highlighting the crunch on personal finances. In line with this, Afriforte (2020) found that, for the age group 50–79 years, their second biggest concern was their personal finances, which was also the case for divorced persons and part-time or self-employed persons (Afriforte 2020). Findings by Barrafrem, Västfjäll and Tinghög (2020:27) showed, however, that the economy overall has been affected far worse than personal finances. This seems to concur with the Afriforte (2020) results that revealed that participants saw the economy as a bigger concern than their personal finances – although this may indicate that participants were over confident regarding their finances compared with the finances of others in the country.

These concerns were also reflected in past financial crises. Fallon and Lucas (2002:21) identified various consequences from several financial crises, dating from the 1990s:

- Production decreased.
- Total employment decreased (although less than production), along with churning in employment across sectors.
- Economies experiencing large currency depreciation suffered the largest decrease in real wages.
- Households supplemented their income with increased labour force participation and private transfers.
- Wealthier families were better able to manage consumption; and
- Rural families suffered more financial losses.

Cruces, Gluzmann and Lopez-Calva (2010:20) reported that economic downturn during a financial crisis has a direct, and possible permanent, effect on employment and household income. A study by Chronopoulos, Lukas and Wilson (2020:145) indicated that discretionary spending in Great Britain had declined before government imposed the lockdown and continued to decline throughout the lockdown period. However, there was a strong increase in grocery spending consistent with the panic buying in the 2 weeks after the WHO (World Health Organization) declared the COVID-19 outbreak a global pandemic.

Many governments introduced financial support measures for people affected by the economic fallout of the pandemic but failed to address consumer spending and consumer credit (Davola 2020:2). Concerns were raised for consumers' economic exposure and debt burden during and after the pandemic (Davola 2020:3).

In spite of some efforts by governments, certain questions remain to be answered: 'How will this (pandemic) effect costs of capital; pension planning; insurance; the role of governments protecting financial systems; social trust and concomitant transaction costs; and political stability in societies?' (Goodell 2020:4). This study aimed to answer the question on the association between the COVID-19 lockdown and the financial well-being and personal finances of South African households. Pandemics are not once-off events. From a personal finance perspective, the author argues that to better prepare for future pandemics, a deeper understanding is required of consumers' financial experience in such times. This will assist governments, non-governmental organisations (NGOs) and other stakeholders to take more effective decisions. For these purposes, the research question was approached from a positivist paradigm, and a cross-sectional exploratory study was conducted following a quantitative non-experimental design.

Literature review in the next section sets out the impact of the pandemic on various aspects of household finances. This is followed by sections addressing the research objectives and proposed methodology, respectively. The last three sections of the paper address the findings, discussion and conclusion and recommendations.

Literature review

COVID-19 pandemic has had an unmistakable impact on various aspects of the finances of households, including income, expenditure, investment and retirement savings and bank balances or emergency savings and debt. Each will be discussed below.

Household income

According to StatsSA (2020), the sources of household income nationally in South Africa are salaries (62.2%), grants (46.2%), income from remittances (15.6%), income from businesses (16.3%) and pensions (4.0%). The South African DHET (Department of Higher Education and Training 2017) has set the limit for families that are considered wealthy at R600 000 per year, which disqualifies them from government financial assistance towards higher education. The so-called missing middle-income group falls between R350 000 and R600 000 per year (Garrod & Wildschut 2021:484). Considering these categories in further analysis could provide valuable input towards the financial experience of various income groups.

Brewer and Gardiner (2020:197) found that lower-income families in other parts of the world were less likely to have suffered a (probably forced) reduction in expenditure and loss of jobs because of the pandemic and were much more likely to have taken on new debt or borrowed from friends or family. These findings showed that the crisis has had a more pronounced negative effect on the living standards of lower-income working-age families than those of higher-income families (Brewer & Gardiner 2020:197).

In a similar vein, Almeida et al. (2021:413) noted that the COVID-19 pandemic was likely to affect households' disposable income in the EU (European Union), and that lower-income households would be more severely hurt. Their results, however, showed that, because of government interventions, the impact of lost income was alleviated from an average reduction of 9.3% to a reduction of 4.3% in

disposable income. Coibion, Gorodnichenko and Weber (2020:1) also reported that 50.0% of the participants in their USA (United States of America) study experienced a drop in income of between $5293 and $33482. Evidently, income has been affected by the pandemic and accompanying lockdowns, and various income groups have experienced the effect in different levels of severity.

Expenditure

Fouché and Barnard (2018:96) set out categories of expenditure as tax and salary-related expenses, housing (rent/bond payment, municipal fees/levies, etc.), travelling (car payments, fuel, etc.), groceries (groceries, food, takeaways/eating out), medical (medical aid, payments from pocket), insurance (short term, life and disability, etc.), personal expenses of adults, personal expenses of children (school, pocket money, etc.), entertainment and holiday/vacation, debt, giving and savings. As some of these expenses are fixed over the longer term (for example, rent) and others are variable (for example, travelling), the expectation is that the categories of expenditure would respond differently to the pandemic and reduction in income.

The initial reaction of the US consumers to the pandemic was to increase their retail, credit card and food spending, following by sharply decreasing their overall spending (Baker et al. 2020:1). Coibion et al. (2020:15) found that consumer spending with regard to recreation, travel and entertainment, clothing and footwear, housing including rent and maintenance, transportation and debt payments decreased the most, while utilities, food and education and childcare decreased moderately (Coibion et al. 2020). For Great Britain, Chronopoulos et al. (2020:16) reported a large increase in grocery expenditure and decreases in discretionary spending. In Canada, household spending decreased with an average of 5.5% (Achou et al. 2020:222) although spending on groceries and housing increased. The largest decrease was seen in transport and restaurant spending (Achou et al. 2020:223). Many of these spending changes can be linked to supply restrictions during lockdowns (Coibion et al. 2020:15).

Most importantly, though, Chronopoulos et al. (2020:179) concluded that the extent of the impact of the pandemic differed across demographic variables like age, gender and income level. For example, Achou et al. (2020:222) found that spending reported by females and older respondents increased.

Investments

Ngwakwe (2020:255) analysed the bearing of COVID-19 on selected stock exchange indexes, namely the Shanghai Composite Stock Index (for China), the Euronext 100 (for EU), the Dow Jones Industrial Average and S&P 500 (for the USA). The analysis used the market index data for 50 days before and during COVID-19. The findings revealed a significant effect on two stock indexes. The Shanghai Composite Stock Index showed significant gains, and the Dow Jones Industrial Average showed an adverse effect. Although not significant, the difference in stock values for Euronext 100 and the S&P 500 showed a reduction in value. By 16 March 2020, the Johannesburg Securities Exchange (JSE) closed down 32.6% since the beginning of 2020 (Claasen 2020).

The above-mentioned decreases are expected to result in a decrease in the value of investments and specifically retirement savings. Nearly 20% – 30% of human life happens post-retirement, and, therefore, requires good planning (Janetius 2020:47). Any reduction in retirement savings would impact the savers and, ultimately, the future generations on which they may become dependent.

Savings

The term 'savings' is described as the portion of income not spent and which should help a household become financially secure (Makasudede 2022:759). According to Martin et al. (2020:453), the COVID-19 pandemic has forced households in the San Francisco Bay area (USA) to use their savings, which is likely to result in them becoming more vulnerable to future shocks. A Polish study revealed that savings levels decreased because of a reluctance among consumers to incur debt during the pandemic (Szustak, Gradoń & Szewczyk 2021:166), and Achou et al. (2020:233) indicated that savings were used during the pandemic to smooth consumption. Again, demographic variables were found to play a role in the use of savings. For example, Phillipson et al. (2020:5) indicated that female-owned businesses were less likely to withdraw household savings.

Debt levels

The last main element of personal finance affected by the pandemic is debt. One way in which consumers/households adjusted to lower income during lockdown was to defer payments on debt. Cherry et al. (2021:1) reported that 60 million borrowers in the USA were expected to miss debt payments by the end of 2021. Achou et al. (2020:224) indicated that 5.4% of homeowners missed a mortgage installment and 13.4% elected to defer mortgage payments. With interest still being charged, the total outstanding debt only keeps increasing. However, the results showed that women, older individuals and those with higher income were less likely to miss payments (Achou et al. 2020:226).

Another way to deal with a reduction in income was to take one new debt. Those who were laid off increased credit card debt, but, again, women and older people were less likely to incur new debt (Achou et al. 2020). Phillipson et al. (2020:5) similarly indicated that female-owned businesses in the United Kingdom were less likely to take on new debt during the pandemic. In contrast, Cherry et al. (2021:4) noted that, in the USA, this relief, offered by banks and other creditors to people with debt, was more prevalent among higher-income households because of their higher debt balances.

Research purpose and objectives

Little is known about the association between lockdowns and household finances, especially financial well-being during a sudden financial crisis (Barrafrem et al. 2020:28) like COVID-19. This lack of knowledge applies to the South African context as well. With consumer confidence being lost, the macroeconomic outlook across economies is likely to worsen. Therefore, according to Barua (2020:34), it would be wise to begin designing and implementing aggressive and innovative policy actions.

Cruces et al. (2010:20) investigated the effect of a financial crisis on household income in Argentina and found evidence for the notion that governments must take proactive steps for support during a crisis. Still, the actual financial impact of the support should be considered when expensive policies to mitigate the effect of the pandemic are drafted (Keogh-Brown et al. 2010:543). But achieving this would only be possible when more information on the impact of both the pandemic and lockdowns becomes available.

In light of the above, the main objective of the study was to establish the association between COVID-19 and the accompanying lockdown on the one hand, and household and personal finances in South Africa on the other. This was addressed by establishing the financial association between lockdown and income, categories of expenses, investments and retirement savings and outstanding debt.

Research methodology

Design and sample

The study was cross-sectional and exploratory in nature as past research on the topic is limited. The study followed a quantitative non-experimental design from a positivist paradigm. The target population comprised individuals in South Africa over the age of 18 years. The South African population in 2019 was estimated at 58.5 million (StatsSA 2019).

The sampling frame set for this convenience sample was mainly social media (Facebook) users, seeing that the data was gathered during the pandemic when lockdown regulations applied. A study in Great Britain found that no social media platform is totally representative of the general population and that social media data cannot be generalised to any population other than itself (Blank & Lutz 2017:741). While the use of social media for data collection has potential pitfalls, well-known platforms have millions of users and should provide a sound basis for a sampling frame that would otherwise have been difficult to construct in exploratory research (Mirabeau, Mignerat & Grange 2013). However, this was the most practical solution at the time; that is, during the pandemic with lockdown regulations in place.

According to Statista (2020), the number of South African Facebook users in 2020 was 17.6 million. From the start, the author was aware that complete representativeness would probably not be obtained. Consequently, focused social media advertising was employed. The main purpose was to collect demographic information to compare with the general population and to target underrepresented variables (Shaver et al. 2019), for example, certain age groups. According to SurveyMonkey's sample size calculator, a sample of 385 was appropriate for the study at a 95% confidence level with a 5% margin of error (SurveyMonkey 2020).

Survey instrument

For this study, a new survey instrument was developed consisting of two sections. The first included two questions on the consequences of lockdown on income, expenditure, investments and retirement savings, outstanding debt and bank balances (including savings and emergency funds), with various subcategories, based on the work of Fouché and Barnard (2018). This section used a 5-point Likert scale: 1 – Large increase (> 20%), 2 – Increase (< 20%), 3 – Stayed more on less the same, 4 – Decrease (< 20%), 5 – Large decrease (> 20%).

The second section pertained to demographic data that were needed to describe the sample and compare the variables (including age, gender, relationship status, employment status, household income). The Statistical Consultation Services at the North-West University provided advice regarding the validity of items for statistical purposes and the interpretation of the results. The instrument was administered using QuestionPro, which provided the option of sharing the link on many social media platforms. Data were gathered and social media advertisements were placed in the third quarter of 2020, paid for by the author. The criteria were the South African population, all genders, aged 18 years and older. The QuestionPro results were monitored for the intended number of responses.

To improve the validity of the Internet survey, the study applied measures suggested by the University of Rochester (2016). For instance, QuestionPro has the functionality of tracking computer IP addresses to prevent respondents from completing the survey more than once. Also, minors were screened out. This was done by asking the participants their age and restricting the advertisements on Facebook to persons 18 years and older.

Data analysis

The final number of participants was 431. The captured data were analysed using the statistical package JASP 0.16.3.0. Descriptive statistics are reported on later in the article. The income and expenditure items were reduced by using PCA (principal component analysis). The KMO (Kaiser-Meyer-Olkin) measure indicated that the sample was meritorious (adequate) to allow PCA, with the KMO of 0.85 being larger than 0.80 (Kaiser 1974:35). Bartlett's test of sphericity was also significant ($X^2 = 2453.87$, df = 78.00 and $p < 0.001$); thus, distinct and reliable factors could be extracted (Field 2013). Cronbach's α was calculated for each of the factors, yielding

an α of 0.88 for factor 1 and 0.72 for factor 2. To explore the differences among the clusters, *t*-tests (for two groups) and one-way ANOVA (analysis of variance) tests (for more than two groups) were conducted. Tukey's post hoc tests were performed to determine pairwise differences among groups.

Empirical findings

Profile of final sample

Table 1 presents the summarised demographic statistics of the participants. Regarding the age variable, those aged 50–60 years accounted for over 29.77% of the participants, followed by those aged 40–49 years (21.12%) and 30–39 years (20.36%). For the South African population, people between 50 and 60 years represent 7.78% of the population, those aged 40–49 years, 11.25% and those 30–39 years, 17.52% (StatsSA 2020).

In relation to gender, the female share of the study was larger, at 55.86%. This compares well with the 2020 General Household Survey in South Africa, which indicated 51.00% female representation of the population (StatsSA 2020). Only two participants indicated a gender other than male or female, and were therefore excluded from further analysis. With regard to relationship status, most participants were married (61.60%), followed by single persons (27.68%), which include those divorced, widowed or separated. In the General Household Survey, 28.50% of South Africans indicated that they were legally married (StatsSA 2020).

TABLE 1: Demographic statistics of the final sample (%).

Variable	*n*	Valid %
Age		
18–29 years	44	11.196
30–39 years	80	20.356
40–49 years	83	21.120
50–61 years	117	29.771
62 and older	69	17.557
Missing	38	
Total	431	**100.000**
Gender		
Male	175	43.641
Female	224	55.860
Other (excluded from further analysis)	2	0.499
Missing	30	
Total	431	**100.000**
Relationship status		
Married	247	61.596
Engaged/In Relationship	43	10.724
Single, Divorced, Widowed or Separated	111	27.681
Missing	30	
Total	431	**100.000**
Employment status		
Full-time employment	212	53.000
Part-time employment	23	5.750
Self-employed	92	23.000
Retired	30	7.500
Unemployed, Stay at home mom/dad, Student, Other	43	10.750
Missing	31	
Total	431	**100.000**
Household income		
< R350 000	160	43.956
R350 001–R600 000	90	24.725
> R600 000	114	31.319
Missing	67	
Total	431	**100.000**
Geotype		
Urban	308	77.193
Rural	91	22.807
Missing	32	
Total	431	**100.000**

The majority of participants in the study were full-time employed (53.00%), followed by self-employed (23.00%), while the household income of most participants was less than R350 000 (43.96%). Most participants (77.19%) lived in urban areas. According to O'Neill (2021), 67.85% of South Africans lived in urban areas in 2021.

Despite the limitations of the data collection method, some form of representation of the South African population was obtained, as is evident from the above.

Impact on various aspects of personal finance

Participants were asked to indicate the perceived effect that COVID-19, and the lockdown had on various financial aspects, ranging from 1 – Large increase (> 20%) to 5 – Large decrease (> 20%). The percentage indication was added to give guidance as to the meaning of, for example, 'large'. A Likert scale was used to not complicate and necessitate complex mathematical calculations.

Table 2 presents the association between lockdown and income, expenditure, investments and retirement savings, bank balance and savings, as well as outstanding debt (sorted from the highest decrease to highest increase). Entertainment and holiday expenses showed a large decrease (more than 20%), whereas bank balance and savings, value of investments and retirement savings, salary, other income and regular savings showed a decrease of up to 20%. Personal expenses of adults, giving and personal expenses regarding children stayed the same or decreased up to 20%. Debt repayments, insurance expenses, housing expenses and medical expenses stayed more or less the same. The amount of outstanding debt and grocery expenses increased the most (up to 20%).

Factor analysis was performed on the income and expenditure sub-categories that were affected by COVID-19. Factor analysis is a statistical method used to determine that items in a questionnaire were answered in a similar way and measure the same dimension (factor) (ed. Maree 2019). The results are shown in Table 3.

Two factors could be identified: 1) household expenditure and 2) income and directly related expenditure. Savings and giving (especially religious) are often expressed as a percentage of income. The tax deductibility of retirement savings is expressed as a percentage of taxable income (SARS 2022), and benchmarks on how much individuals need to save are often also expressed as a percentage of

TABLE 2: Association between COVID-19 lockdown and income, expenditure, investments and retirement savings, bank balances/savings, and debt.

How the lock down affected the following	Type	Valid	Missing	Median†	Mean†	SD
Entertainments and holiday expenses	Expense	333	98	5	4.123	1.187
My bank balance/savings/emergency fund	Bank balance/Savings	407	24	4	3.865	1.174
Value of my investments/retirement funds	Investments	356	75	4	3.840	1.018
Travelling expenses (Car payments, fuel, public transport)	Expense	397	34	4	3.796	1.198
Salary	Income	385	46	4	3.790	1.186
Other income (Business, rent, interest etc.)	Income	283	148	4	3.781	1.250
Regular savings (Pension fund, RA etc.)	Expense	340	91	3	3.729	1.060
Personal expenses: adults (Clothing, hobbies, gym, beauty products, hair etc.)	Expense	398	33	3	3.515	1.183
Giving (Religious, donations, gifts)	Expense	345	86	3	3.345	1.128
Personal expenses: children (School fees, extramural activities, pocket money)	Expense	290	141	3	3.252	1.135
Debt payments (Excluding home and car)	Expense	317	114	3	2.991	1.023
Insurance expenses (Life, disability and short-term)	Expense	354	77	3	2.989	0.768
Housing expenses (Mortgage, rent, municipal fees, levies, domestic worker, maintenance and gardening services)	Expense	385	46	3	2.914	1.063
Medical expenses	Expense	380	51	3	2.839	0.949
Amount of my outstanding debt	Debt	339	92	3	2.460	1.072
Groceries expenses	Expense	418	13	2	2.455	1.246

RA, retirement annuity; SD, standard deviation.
†, 1 – Large increase (> 20%); 2 – Increase (< 20%); 3 – Stayed more on less the same; 4 – Decrease (< 20%); 5 – Large decrease (> 20%).

TABLE 3: Factor analysis of income and expenditure items.

Income and expenditure item	Factor 1 (Expenditure)	Factor 2 (Income and directly related expenses)	Uniqueness†	KMO‡ (MSA value)
Overall	-	-	-	0.850
Personal expenses: children (School fees, extramural activities, pocket money)	0.750	-	0.382	0.777
Travelling expenses (Car payments, fuel, public transport)	0.739	-	0.498	0.719
Medical expenses	0.719	-	0.508	0.739
Personal expenses: adults (Clothing, hobbies, gym, beauty products, hair etc.)	0.719	-	0.482	0.906
Housing expenses (Mortgage, rent, municipal fees, levies, domestic worker, maintenance and gardening services)	0.689	-	0.539	0.834
Entertainments and holiday expenses	0.648	-	0.565	0.881
Groceries expenses	0.642	-	0.559	0.835
Insurance expenses (Life, disability and short-term)	0.627	-	0.576	0.864
Debt payments (Excluding home and car)	0.618	-	0.574	0.891
Regular savings (Pension fund, RA etc.)	-	0.800	0.382	0.899
Salary	-	0.768	0.385	0.837
Other income (Business, rent, interest etc.)	-	0.647	0.582	0.905
Giving (Religious, donations, gifts)	-	0.512	0.686	0.809
Cronbach's α	0.879	0.716	-	-
% of variance explained	32.90%	15.40%	-	-
Cumulative variance explained	32.90%	48.30%	-	-

KMO, Kaiser-Meyer-Olkin; MSA, measure of sampling adequacy; RA, retirement annuity.
Applied rotation method is oblimin.
†, Portion of variance not explained.
‡, Factor correlations.

income (Biggs 2019). The concept of 'tithing' (giving money [sometimes literally a 10th of income] to the church) is well known in Christianity (Rakotsoane 2021), while Zakat (payment to solve poverty and help those in need) is practised in Islam (Dawam et al. 2021). This grouping (income, savings and giving) therefore makes sense. Further analysis was performed using these factors, along with the association between lockdown and investments and retirement savings, bank balances and savings, as well as outstanding debt.

Firstly, independent *t*-tests were performed to compare the association between lockdown and gender (male vs female) and geotype (urban vs rural). Table 4 indicates that males and females differed significantly ($p < 0.5$) only with respect to lockdown and their expenditure, where males (mean = 3.29) reported a larger decrease than females (mean = 3.09). A statistically significant difference was also found between rural and urban areas, with people in rural areas (mean = 3.89) reporting a larger decrease in income than people in urban areas (mean = 3.62). According to Cohen (1988), an effect size of 0.2 is small, 0.5 is medium and 0.8 is large. The effect sizes in all instances were small.

ANOVA tests were performed next, with reference to relationship status, employment status, and household income group. The ANOVA with regard to relationship status indicated no significant difference for any of the factors: that is, being married, single or in a relationship. This factor is, therefore, not discussed further.

An ANOVA was performed on the five different factors with regard to employment status. Significant differences were found with regard to expenditure ($p < 0.05$), income

TABLE 4: Independent *t*-test on gender and geotype.

Factor	*t*†/Mann-Whitney	Df	*p*	Cohen's d	*n*	Mean	SD	*n*	Mean	SD
Independent samples *T*-test: Gender						**Male**			**Female**	
Expenses	22007	395	0.020	0.136‡	173	3.292	0.743	224	3.089	0.878
Income and related expenses	1.337	392	0.182	0.136	171	3.749	0.932	223	3.619	0.966
Investments	2.210	339	0.028	0.240	158	3.975	1.015	183	3.732	1.005
Bank balance/savings	0.190	338	0.849	0.019	173	3.895	1.183	223	3.872	1.150
Debt	0.645	323	0.520	0.072	140	2.493	1.042	185	2.416	1.076
Independent samples *T*-test Geo						**Urban**			**Rural**	
Expenses	−0.108	395	0.914	−0.013	306	3.168	0.803	91	3.179	0.930
Income and related expenses	−2.435	392	0.015	−0.293	305	3.616	0.954	89	3.894	0.923
Investments	−1.510	338	0.132	−0.198	300	3.800	1.034	90	4.000	0.930
Bank balance/savings	−1.415	388	0.158	−0.170	305	3.847	1.143	91	4.044	1.226
Debt	1.807	322	0.072	0.245	255	2.506	1.027	69	2.246	1.168

SD, standard deviation.
†, Student's t-test.
†, Levene's test is significant ($p < 0.05$), suggesting a violation of the equal variance assumption. For this reason the results of the Mann-Whitney test is reported.

TABLE 5a: ANOVA on employment status.

ANOVA – Expenditure	Sum of squares†	df	Mean square	*F*	*p*	Mean difference	SE	*T*	p_{tukey}
Cases									
What is your main employment status?	8.075	4	2.019	3.013	0.018	-	-	-	-
Residuals	263.310	393	0.670	-	-	-	-	-	-
Post Hoc comparisons									
Self (mean 3.390)	Unemployed (mean 2.939)	-	-	-	-	0.450	0.152	2.954	0.027*

†, Type III Sum of Squares.
*, $p < 0.05$.
p-value adjusted for comparing a family of 5.

TABLE 5b: ANOVA on employment status.

ANOVA – Income and related expenditure	Sum of squares†	df	Mean square	*F*	*p*	Mean difference	SE	*t*	p_{tukey}
Cases									
What is your main employment status?	56,616	4	14.154	18.347	< 0.001	-	-	-	-
Residuals	300.874	390	0.771	-	-	-	-	-	-
Post Hoc comparisons									
Full-time (mean 3.368)	Part-time (mean 3.964)	-	-	-	-	−0.596	0.193	−3.089	0.018*
	Self (mean 4.278)	-	-	-	-	−0.910	0.110	−8.293	< 0.001***
.	Unemployed (mean 3.844)	-	-	-	-	−0.476	0.153	−3.109	0.017*
Self (mean 4.278)	Retired (mean 3.583)	-	-	-	-	0.695	0.185	3.762	0.002**

†, Type III Sum of squares.
*, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.
p-value adjusted for comparing a family of 5.

and related expenditure ($p < 0.001$), bank balances and savings ($p < 0.001$) and outstanding debt ($p < 0.001$) (see Table 5). Post hoc tests were used to analyse the variances further.

Regarding expenditure, there was a significant difference ($p < 0.05$) between self-employed persons (mean = 3.39) and unemployed (mean = 2.94) persons, where self-employed reported a larger decrease in expenditure. With regard to income and related expenditure, part-time (mean = 3.96), self-employed (mean = 4.28) and unemployed (mean = 3.84) persons reported a significantly larger decrease in income levels and related spending compared with full-time employed (mean = 3.37) persons. Retired persons (mean = 3.58) did, however, show a significant smaller decrease in income and related expenditure in comparison with self-employed (mean = 4.28) persons.

No significant difference was found with regard to the change in the value of investments. With regard to the value of bank balances and savings, full-time employed (mean = 3.65) persons reported a lower decrease than self-employed (mean 4.49) persons, who also reported a larger decrease than retired (mean = 3.69) and unemployed persons (mean = 3.79). For outstanding debt, full-time employed (mean = 2.70) persons reported a smaller increase than part-time employed

TABLE 5c: ANOVA on employment status.

ANOVA – Bank balance/ savings/emergency fund	Sum of squares†	df	Mean square	*F*	*p*	Mean difference	SE	*t*	p_{tukey}
Cases									
What is your main employment status?	46.010	4	11.502	9.082	< 0.001	-	-	-	-
Residuals	488.849	386	1.266	-	-	-	-	-	-
Post Hoc comparisons									
Full-time	Self	-	-	-	-	−0.842	0.142	−5.923	< 0.001***
(mean 3.647)	(mean 4.489)								
Self	Retired	-	-	-	-	0.799	0.240	3.326	0.009**
(mean 4.489)	(mean 3.690)								
	Unemployed	-	-	-	-	0.703	0.210	3.344	0.008**
	(mean 3.786)								

†, Type III Sum of squares.
*, $p < 0.05$; **, $p < 0.01$; *** $p < 0.001$.
p-value adjusted for comparing a family of 5.

TABLE 5d: ANOVA on employment status.

ANOVA – Debt	Sum of squares†	df	Mean square	*F*	*p*	Mean difference	SE	*t*	p_{tukey}
Cases									
What is your main employment status?	40.583	4	10.146	10.162	< 0.001	-	-	-	-
Residuals	319.497	320	0.998	-	-	-	-	-	-
Post Hoc comparisons									
Full-time	Part-time	-	-	-	-	0.815	0.253	3.218	0.012*
(mean 2.698)	(mean 1.882)								
	Self	-	-	-	-	0.548	0.134	4.087	< 0.001***
	(mean 2.150)								
	Unemployed	-	-	-	-	0.924	0.194	4.757	< 0.001***
	(mean 1.774)								
Part-time	Retired	-	-	-	-	−0.984	0.354	−2.781	0.045*
(mean 1.882)	(mean 2.867)								
Retired	Unemployed	-	-	-	-	1.092	0.314	3.476	0.005**
(mean 2.867)	(mean 1.774)								

†, Type III sum of squares.
*, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.
p-value adjusted for comparing a family of 5.

TABLE 6a: ANOVA with regard to income levels.

ANOVA: Expenditure	Sum of squares†	df	Mean square	*F*	*p*	Mean difference	SE	*T*	p_{tukey}
Cases									
In which income category would you classify your household income?	5.7850	2	2.8930	4.5500	0.0110	-	-	-	-
Residuals	228.8720	360	0.6360	-	-	-	-	-	-
Post Hoc comparisons									
< 350 000	> 600 000	-	-	-	-	−0.283	0.0980	−2.8870	0.0110*
(mean 3.119)	(mean 3.404)								

†, Type III sum of squares.
*, $p < 0.05$.
p-value adjusted for comparing a family of 3.

(mean 1.88), self-employed (mean = 2.15) and unemployed persons (mean = 1.77). Retired persons (mean = 2.87) reported a significant smaller increase in outstanding debt compared to part-time (mean = 1.88) employed and unemployed persons (mean = 1.77).

The ANOVA performed on income levels revealed significant differences between the groups with respect to expenditure ($p < 0.05$), income and related expenditure ($p < 0.001$), bank balances and savings ($p < 0.001$) and outstanding debt ($p < 0.001$) (see Table 6). The results were, again, further analysed using post hoc tests.

Table 6 indicates that, with regard to expenditure by the various income groups, there was a significant difference between people earning less than R350 000 (mean = 3.119) and those earning more than R600 000 (mean = 3.40), with the higher-income earners experiencing a larger decrease in expenses. With regard to income, the same two groups reported a significant difference, this time with lower-income earners (mean = 3.93) experiencing a larger decrease in income compared to higher-income earners (mean = 3.46). There was no significant difference between the groups with regard to the value of investments and retirement savings.

TABLE 6b: ANOVA with regard to income levels.

ANOVA: Income and related expenditure	Sum of squares†	df	Mean square	*F*	*p*	Mean difference	SE	*T*	p_{tukey}
Cases									
In which income category would you classify your household income?	15.9720	2	7.9860	9.4210	< 0.001	-	-	-	-
Residuals	303.4490	358	0.8480	-	-	-	-	-	-
Post Hoc comparisons									
< 350 000	> 600 000	-	-	-	-	0.492	0.1130	4.3400	< 0.001***
(mean 3.925)	(mean 3.460)								

†, Type III sum of squares.
***, $p < 0.001$.
p-value adjusted for comparing a family of 3.

TABLE 6c: ANOVA with regard to income levels.

ANOVA: Bank balance/savings/ emergency fund	Sum of squares†	df	Mean square	*F*	*p*	Mean difference	SE	*T*	p_{tukey}
Cases									
In which income category would you classify your household income?	30.3030	2	15.1520	11.9590	< 0.001	-	-	-	-
Residuals	447.2250	353	1.2670	-	-	-	-	-	-
Post Hoc comparisons									
< 350 000	350 001–600 000	-	-	-	-	0.389	0.1500	2.5920	0.0270*
(mean 4.173)	(mean 3.748)								
	> 600 000	-	-	-	-	0.673	0.1390	4.8280	< 0.001***
	(mean 3.500)								

†, Type III sum of squares.
*, $p < 0.05$; ***, $p < 0.001$.
p-value adjusted for comparing a family of 3.

TABLE 6d: ANOVA with regard to income levels.

ANOVA: Debt	Sum of squares†	df	Mean square	*F*	*p*	Mean difference	SE	*T*	p_{tukey}
Cases									
In which income category would you classify your household income?	44.9440	2	22.4720	23.4060	< 0.001	-	-	-	-
Residuals	282.2740	294	0.9600	-	-	-	-	-	-
Post Hoc comparisons									
< 350 000	350 001–600 000	-	-	-	-	−0.543	0.1420	−3.8280	< 0.001***
(mean 2.016)	(mean 2.558)								
	> 600 000	-	-	-	-	−0.899	0.1340	−6.7320	< 0.001***
	(mean 2.915)								
350 001–600 000	> 600 000	-	-	-	-	−0.356	0.1510	−2.3670	0.0490*
(mean 2.558)	(mean 2.915)								
	(mean 2.915								

†, Type III sum of squares.
*, $p < 0.05$; *** $p < 0.001$.
p-value adjusted for comparing a family of 3.

When it comes to bank balance, savings and emergency funds, the groups differed significantly. The lower-income group (earning less than R350 000 per year) (mean = 4.17) reported the largest decrease in savings, while the higher-income group (earning more than R600 000 per year) (mean = 3.50) reported the lowest decrease in savings. The groups also differed significantly with regard to the change in their outstanding debt. For the higher-income group (mean = 2.92), there was a marginal increase in debt. The lower-income group (mean = 2.02) reported the largest increase of up to 20% in outstanding debt.

Discussion

Entertainment and holiday expenses showed a large decrease (of more than 20%), which is in line with the findings of other studies (Achou et al. 2020). Regular savings showed a decrease of up to 20%, whereas personal expenses of adults, giving and personal expenses regarding children stayed the same or decreased up to 20%. Debt repayments, insurance expenses, housing expenses and medical expenses also stayed the same more or less. The largest increase was seen in grocery expenditure (up to 20%), which concurs with findings by Chronopoulos et al. (2020).

Males and females differed with respect to the impact of lockdown on their expenditure, with males reporting a larger decrease than females. This, again, is in line with Achou et al. (2020) who found less flexibility in the spending of females. Self-employed persons reported a larger decrease than unemployed persons, which also points to

the lower flexibility of lower-income persons. This finding was further supported by the comparison between income groups, which revealed that those earning less than R350 000 showed a significantly lower decrease in expenditure compared to those earning more than R600 000. It is clear that more vulnerable people had less movement in cutting expenditure, probably because a larger portion of their expenditure was less discretionary (having a choice to spend it). Mbukanma, Ravinder and Ifeanyichukwu (2020) agree that the majority of middle- and lower-class individuals depend on the sectors that were affected the most by the government shutdown.

It was found that salary and other income showed a decrease of up to 20.0%, which seems larger than in some international studies (Almeida et al. 2021). The CFVI also indicated that the largest decrease occurred in income (Momentum/Unisa 2020), and a study by Dauda et al. (2020) showed that 41.9% of respondents experienced a significant decrease in income. A significant difference was seen between rural and urban areas with regard to income and related expenditure, with people in rural areas experiencing a larger decrease in income, in line with findings by Fallon and Lucas (2002).

With regard to income and related expenditure, part-time, self-employed and unemployed persons reported a larger decrease compared to full-time employed persons. Retired persons, however, showed a smaller decrease compared to self-employed persons. These results could be ascribed to the fact that many employers kept supporting full-time staff financially during lockdown and pensioners kept receiving pensions and/or grants. Lower-income earners also reported a larger decrease in income, which concurs with Brewer and Gardiner (2020). And not only was this group, being the more vulnerable portion of the population, unable to adjust their expenditure in a meaningful way, but they also reported the largest decrease in income.

A decrease of up to 20.0% was seen with regard to the value of investments and retirement savings. This corresponds to the fact that by 16 March 2020, the JSE closed down 32.6% since the beginning of 2020 (Claasen 2020). One would not have expected the investments to reflect the full drawdown, as investments are not necessarily in shares only. It further became clear that people saved up to 20.0% less with regard to regular savings (for retirement), which may have longer-term implications. In this case, no significant difference was found in the size of the decrease between gender, geotype, employment status, relationship status or income group.

Bank balances, savings and emergency funds showed a decrease of up to 20%. This decrease in emergency savings was expected, as mentioned by key informants in the CFVI research (Momentum/Unisa 2020) and by Dauda et al. (2020) in their Nigerian study. For many households who reported decreases in income, having these savings at their disposal could have been a buffer.

Full-time employed persons reported a lower decrease in bank balances than self-employed persons, who, again, reported a larger decrease than retired and unemployed persons. The lower-income group (earning less than R350 000 per year) reported the largest decrease in savings, while the higher-income group (earning more than R600 000 per year) reported the lowest decrease in savings. This finding correlates with the results obtained for expenditure and income. The lower-income group would, thus, have to use more of their savings, as their expenditure is less flexible and their decreases in income are the largest.

The value of outstanding debt increased by up to 20%, which is consistent with the CFVI's statement that consumers were most vulnerable in respect of debt servicing (Momentum/Unisa 2020). As with using their savings, consumers probably saw deferring payment on debt as a tool to cover the shortfall of income. Full-time employed persons reported a smaller increase in outstanding debt compared to part-time employed, self-employed and unemployed persons. Also, retired persons reported a smaller increase in outstanding debt than part-time employed and unemployed persons. For the higher-income group, there was only a marginal increase in debt. The lower-income group reported the largest increase of up to 20% in outstanding debt. Again, it can be seen, as in the study of Phillipson et al. (2020), that lower-income groups also used debt to compensate for the decrease in revenue.

Conclusion and recommendations

The objective of this study was to establish the association between the COVID-19 pandemic and the accompanying lockdown on the one hand and household and personal finances in South Africa on the other. The areas investigated included expenditure, income and related expenditure, investments and retirement savings, bank balances (including savings and emergency funds) and the value of outstanding debt.

The research adds to the body of knowledge on the influence of the COVID-19 pandemic and lockdown on household and personal finances in South Africa. This was accomplished by a cross-sectional exploratory study that followed a quantitative non-experimental design within a positivist paradigm. This paper reported on the financial consequences of lockdown on income, expenditure, investments, bank balances and savings, as well as outstanding debt. *T*-tests and ANOVA tests were performed on the demographic factors of gender, geotype, relationship status, employment status and income level.

In conclusion, it seems that decreases in income were not completely offset by an equal decrease in expenditure (except for regular savings and giving). Vulnerable persons (females, those living in rural areas, part-time employed, self-employed, unemployed and lower-income persons) were affected more. These vulnerable groups used more of their savings to cover shortfalls and reported a larger increase in outstanding debt. Full-time employed persons, those in

higher-income groups and retired people seemed to have greater financial resilience.

Given the economic environment before COVID-19, South African consumers were set for hardship during the lockdown. The actual burden on households was not known in advance, and some researchers are now addressing the deficit in knowledge. The argument can be made that lockdown restrictions could have been dealt with differently if more information was available, and support could have been better targeted. The question remains whether consumers and governments would consider the findings of studies like this one to better prepare themselves for future pandemics.

The findings of this study can be used by consumers to put in place contingency plans for future pandemics, in line with the personal financial survival framework as set out by Mbukanma et al. (2020). Employers might also find this study useful to assist their most vulnerable employees during future pandemics. Lastly, governments and NGOs can draw on the findings to focus support on vulnerable groups as identified. The support could be in the form of grants supplementing income because not all expenditure is elastic. Special attention should also be paid to assisting with grocery spending, as this category increased the most and would therefore place the most strain on household finances.

The data were collected during the pandemic, which meant that collection took place online to comply with lockdown regulations. Obtaining a complete representative sample was thus not possible although this was addressed partly by means of social media advertising focused on underrepresented groups.

Areas of further research may include an investigation of the effectiveness of the mentioned relief packages and the sustainability thereof. Focus can also be placed on establishing more detailed financial statement data to measure the precise monetary effect of pandemics on household finances.

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Competing interests

The author declares that he has no financial or personal relationships that may have inappropriately influenced him in writing this article.

Author's contributions

J.P.F. is the sole author of this article.

Ethical considerations

This research project received ethical clearance by EMS-REC (Research Ethics Committee of the Faculty of Economic and Management Sciences at the North-West University) and the ethics project number NWU-00737-20-A4 was assigned. This acceptance deems the proposed research as being of minimal risk. The first question of the survey asked participant for their explicit consent to participate and approval for the results to be used for academic purposes. This survey was anonymous, and participation was voluntary. Participants could withdraw at any stage. The survey responses were encrypted by SSL (Secure Sockets Layer) encryption and stored in a controlled environment held by QuestionPro. No participant can be identified.

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Data availability

The data that support the findings of this study are available on request from the corresponding author.

Disclaimer

The views expressed in the submitted article are that of the author and not an official position of the institution, or the publisher.

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