

A STUDY ON THE IMPACT OF COVID-19 ON MUTUAL FUND INVESTOR BEHAVIOUR

Sunitha Rani. Jatoth

Research Scholar

Department of Business

Management

Osmania University

Sunitharani.j@gmail.com

Dr. Y. Jahangir

Associate Professor ,

Department of Business

Management

Osmania University

ABSTRACT

Mutual Fund companies are financial intermediaries providing financial services to small investors through mobilization of funds, when the investors invest in a mutual fund, they are buying shares or units of the mutual fund and become a shareholder of the fund. Mutual funds are one of the best investments ever created because they are very cost efficient and very easy to invest in. The outbreak of the highly infectious COVID-19 significantly disrupted human life. Measures to fight the pandemic included social distancing, self-isolation, shutting down of institutions and establishments, restricting modes of transport, and nation-wide lockdowns. The main aim of the study is to understand how the COVID-19 pandemic has impacted investment and financial decisions of individuals. An online survey was conducted to determine the impact of COVID- 19 on individuals' financial transactions and steps taken by the government to fight the pandemic. The relationship between the COVID-19 pandemic and change in investment decisions of individuals with respect to SIPs was studied.

Keywords: Investment Behaviour, SIPs, Bank Deposits, Household Income, Financial Crisis, COVID 19.

INTRODUCTION

A mutual fund is a professionally-managed form of collective investments that pools money from many investors and invests it in stocks, bonds, short-term money market instruments, and/or other securities. In a mutual fund, the fund manager, who is also known as the portfolio manager, trades the fund's underlying securities, realizing capital gains or losses, and collects the dividend or interest income.

According to Weston J. Fred and Brigham, Eugene F., [1] mutual funds are “Corporations which accept dollars from savers and then use these dollars to buy stocks, long term bonds, and short-term debt instruments issued by business or government units, these corporations’ pool funds and thus reduce risk by diversification”.

According to Kamm, J.O., ‘Economics of Investments’ [2] describes the open end investment company as “an organization formed for the investment of funds obtained from individuals and institutional investors who in exchange for the funds receive shares which can be redeemed at any time at their underlying asset values”.

The outbreak of the highly infectious COVID-19 significantly disrupted human life. Measures to fight the pandemic included social distancing, self-isolation, shutting down of institutions and establishments, restricting modes of transport, and nation-wide lockdowns. While such steps seemed necessary considering the fact that this was a novel disease with no known cure, the impact on economic activity around the globe was significant. The first COVID-19 positive case in India was registered on 30th January 2020 (India Today). Cases have increased regularly and substantially ever since. With effect from 25th March 2020, the Government of India declared a three weeklong country-wide lockdown to restrict the number of cases due to the fast spread of the virus. During this period, all educational institutions, offices, public and tourist places, public utilities, religious places, and non-essential businesses and services (including retail establishments) were shut down. Modes of transport were also restricted. The lockdown was further extended from 15th April 2020 to 3rd May 2020, and then from 4th May 2020 to 17th May 2020. Indeed, the lockdown

continued till 31st May after which services were restored in a phased manner. With the protracted lockdown and restricted economic activity, the economy witnessed an extended period of slowdown; millions of jobs were lost, and businesses severely hit. The impact of the COVID-19 outbreak has been repeatedly compared with the financial crisis of 2008, which has been extensively studied in interrelation and overabundance effect literature (e.g. Kenourgios et al. 2011; Bekiros, 2014; Luchtenberg & Vu, 2015; Yarovaya et al., 2016).

LITERATURE REVIEW

The authors have carried out a literature review to compare the financial crisis of 2008 and the impact of the COVID-19 outbreak on financial markets. The findings from the literature review are presented below:

Lewellen et al. (1977) determined that demographic factors such as age, gender, family income, and other determinants influenced individual investment decision making. Age and income significantly influenced the selection of a mutual fund (Syama Sunder, 1998).

After reviewed different mutual fund investment policies and strategies by various researchers in previous years in and outside India, tracing the contribution of Sharpe, Jensens and Treynor methods as important tools in evaluation of mutual fund performance. A faster growth rate has in Indian Mutual Fund industry has been observed in the previous decade as the Mutual fund performance have crossed the market return since 2012.

Design et al. (2006) examined women investors' attitudes towards investment and concluded that women investors were reluctant to invest in mutual funds due to various reasons, including: inadequate knowledge of the different investment instruments and respective instrument policies; market volatility; uncertainties related to investment and assessment of investment; redressal of grievances; etc. Generally, men tend to be relatively confident and willing to take risk while women display greater aversion to risk (Barber & Odean, 2001), thus, it may be presumed that men are more likely to invest in stocks than women.

In their study, An Analysis of Quarterly Portfolio Holdings using jensens measures and ranked mutual funds based on NAV stated that superior performance among aggressive growth funds and growth funds may exist. In the study it's been found that the portfolio of smallest mutual funds also had a significant performance, but their actual returns could not attract the investors as they have higher transaction costs.

Sudalaimuthu and Senthilkumar (2008) analysed investor preference with respect to the mutual fund sector considering the following variables: scheme type; purchase of mutual fund units; level of uncertainty faced by investors; origin of data on market value of units; investors' perspective towards variables impacting mutual fund investment; investors' level of contentment against different instigating factors; source of knowledge of mutual fund schemes; type of plan held by investors; investors' knowledge of risk category; and problems encountered by mutual fund investors. Investors belonging to middle- and lower-income groups were found to be relatively more risk averse.

In 1966, performed an attempt to explore the chances of prediction in the mutual funds market by the fund managers considering 57 mutual fund schemes in the US and could not find any mechanism in prognosticating the market swings.

Generally, investors seek higher returns at low risk (Kaplan & Garrick, 1981). Singh and Jha (2009) discovered that investors chose mutual funds on the basis of the funds' ability to provide returns, liquidity, and security; investors were not well informed about systematic investment plans (SIPs). Investor preference with respect to mutual funds varied with age and income. Age significantly impacted awareness of mutual funds while gender did not show a

significant influence on awareness of mutual funds. Investors falling within the age group 20-30 displayed the tendency to invest more in mutual funds (Raja Rehan, Saba Naz, Imran Ume, Omais Ahmed, 2018).

Binod Guragai & S. Drew Peabody (2018) concluded that as investors grew older, planning for retirement and savings assumed higher priority; such investors tended to invest more in stocks. There is a considerable influence of investment options such as Bank Deposits, Insurance, PPF, NSC, Post office, Real estate, Gold and Chit funds in investment decision making; especially when individuals are making investments on high/low risk investment options that helps to take better decision making (Senthamilzhselvi. A and Vedantam Seetha Ram, 2018).

RATIONALE OF THE STUDY:

Recent COVID -19 related literature has focussed on macro factors such as changes in stock markets, employment, fall in GDP, etc., but this study examines how the investment behaviour of individuals was impacted during the COVID-19 outbreak due to reduction in business income, loss of job, preserving cash for emergencies, etc. This paper studies the impact of such

factors on the amounts invested by investors in systematic investment plans (SIPs) during lockdown in a tier III city in India; hitherto, such an examination has not been attempted. Comparing the results of this study with those of earlier crises related studies with respect to gender and investment preferences would provide deeper insights into the impact of the COVID 19 pandemic on investor behaviour, and offer new understanding of the different dimensions to a crisis.

RESEARCH METHODOLOGY

The present study used convenience sampling and followed the primary survey method. Respondents (male and female) were a group of investors who fell in the age group 25 to 50. The participants belonged to a Hyderabad - in the state of Telangana. Chiefly, the residents of Hyderabad either own businesses or work in the service sector. A well-structured questionnaire was framed and randomly circulated online among 100 investors. A sample of 100 families represents 83% of the families investing regularly. This sample size was higher than the representative sample size, arrived at by keeping a 95% confidence level and 5% margin of error.

SAMPLE SIZE:

The population of the town pertaining to the service sector and business generally invests in financial instruments like Mutual Funds and shares. The sample size for the present study was 100 based on the convenience sampling technique.

Tools and techniques: To analyse the present study various statistical tools was used like descriptive statistics, t test by using SPSS and Regression analysis with the help of R.

OBJECTIVES OF THE STUDY:

Intention of this study to know the impact of COVID-19 on mutual funds investors behaviour. More specifically the movement of this study has been done to reclaim the objectives.

1. To know the priority of the monthly investment SIP on COVID-19 outbreak.
2. To know the preference of the mutual fund investors based on the age and gender before and after COVID-19.

HYPOTHESES TESTING

In light of the discussion in preceding sections, the following null hypotheses are proposed:

1. Monthly investments in SIPs prior to the COVID-19 outbreak were equal to monthly investments in SIPs during the COVID-19 outbreak.
2. There is no association between gender and amount invested in SIPs before and during

the COVID-19 outbreak.

3. There is no correlation between age of respondents and change in investments in SIPs before and during the COVID-19 outbreak.

DATA ANALYSIS

Table 1: Demographical profile of the sample respondents

Gender of the respondents	No of res respondents	Valid percent	Cumulative valid percent
Male	68	68.00	68
Female	32	32.00	100
Total	100	100	
Age of the respondents			
25-35 years	26	26.00	26
36-45 years	43	43.00	69
Above 45 years	31	31.00	100
Total	100	100	
Education qualification of the respondents			
Under Graduate	6	6.00	
Post Graduate	58	58.00	
Others	36	36.00	
Total	100	100	
Profession of the respondents			
Government Employee	22	22.00	22
Private Employee	46	46.00	68
Professionals	28	28.00	96
Others	4	4.00	100
Total	100	100	
Monthly Income of the respondents			
20,000-30,000	19	19.00	19
30,001-40,000	56	56.00	75
40,001-50,000	16	16.00	91
Above 50,000	9	9.00	100
Total	100	100	
Where do you invest?			
Savings	6	6.00	6
Fixed Deposits	12	12.00	18
Insurance	16	16.00	34
Mutual Funds	42	42.00	76
Equity	22	22.00	98
Real estates	2	2.00	100
Others	0	0	
Total	100	100	

Interpretation: The above table clearly explains about the demographical profile of the sample investors respondents. The present study was done based on the convenient sample technique with a sample of 100 mutual fund investors respondents in Hyderabad. Based on the demographical profile of the sample investors respondents for the present study were 68 are male respondents and 32 are female respondents. The age group of the respondents are categorised into three were, under the age group of 25-30 years 26 respondents with a valid mean of 26.00 percent, 43 respondents are under the age group of 36-45 years forming a mean of 43.00 percent and the remaining 31 respondents above 45 years with a valid mean of 31.00 percent. Respondents belonging to the service industry work in a newsprint manufacturing undertaking which is a public sector undertaking. Majority of the employees are Post Graduates belonging to the private industry with the earning capacity of 30,001-40,000 forming a majority with a valid mean of 56 percent. Due to these factors, age and gender of respondents have been considered to draw conclusions regarding their investment behaviour. A sample of 100 families represents 83% of the families investing regularly. This sample size was higher than the representative sample size, arrived at by keeping a 95% confidence level and 5% margin of error. Respondents either worked in the private employees or professionals are the main occupation; they showed preference for mutual funds and the stock market.

Table 2
Paired Sample Statistics

	Mean	N	Standard Deviation	S.E. Mean
Monthly investment before COVID-19	43900.00	100	4725.591	472.559
Monthly investment before COVID-19	2495.00	100	3520.858	352.086

Table 3
Paired Samples Test

Paired Differences				95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	lower	upper	t	df	Sig. (2-tailed)
Pair 1	Monthly Investment Before COVID19 Monthly Investment After	1895	2207.99	220.80	1456.89	2333.11	8.582	99	0.000

	COVID19							
--	---------	--	--	--	--	--	--	--

Tests related to Hypothesis 1: Amount invested by investors in SIPs prior to and during the COVID-19 outbreak. Respondents were asked to disclose the monthly amounts they invested in SIPs before and during the COVID-19 outbreak. To determine the association between these amounts, a paired sample t-test was used. Results of the test are provided in Tables 2 and 3. The $p = .001$, i.e., the significance value of 2 tailed test is less than .05. A p-value less than .05 (typically ≤ 0.05) is statistically significant; it indicates strong evidence against the null hypothesis as there is a less than 5% probability that the null hypothesis is correct (and that the

results are random). Therefore, we reject null hypothesis 1, and accept the alternative hypothesis. It can be concluded that the monthly amounts invested in SIPs before the COVID-19 outbreak differed from those during the outbreak. The average monthly amount invested in SIPs by all respondents before and during the COVID-19 outbreak is provided in Table 2. The amount of investment shows a downward trend the percentage decline was 43%.

Table 4

Results of statistical test to find association between gender and SIP investment pre and during COVID-19

Group statistics					
Gender		N	Mean	Std Deviation	Std. Error Mean
Monthly investment before COVID-10	Male	68	4477.94	5254.30	637.18
	Female	32	4203.13	3405.07	601.94
Monthly investment after COVID-19	Male	68	2661.76	3965.75	480.92
	Female	32	2140.63	2325.29	411.06

Independent sample test							
		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig		df	Sig. (2 tailed)	Mean Difference
Monthly investment before COVID-10	Equal variance assumed	1.47	0.23	0.27	98.00	0.79	274.82
	Equal variance not assumed			0.31	88.17	0.75	274.82
Monthly investment after COVID-19	Equal variance assumed	1.90	0.17	0.69	98.00	0.49	521.14
	Equal			0.82	93.17	0.41	521.14

	variance not assumed						
--	----------------------------	--	--	--	--	--	--

Test related to Hypothesis 2: Association between gender and investment in SIPs before and

during the COVID-19 outbreak. The 100 respondents (68 male and 32 female) were asked to mention the amounts they invested in SIPs before and during the COVID-19 outbreak. An independent sample t-test was used to determine if there was a difference between SIP investments by males and females before and during the COVID-19 outbreak. The outcomes of the test are provided in Table 4.

Table 4 shows the difference between mean amounts invested by respondents in SIPs before and during COVID 19. Observed decrease in amounts invested by male and female respondents was 41% and 49% respectively. The p – values for investment before and during the COVID-19 outbreak were greater than 0.05, thus, null hypothesis 2 is retained. It may be said that there is no association between the amounts invested in SIPs before and during the COVID-19 outbreak and the gender of the respondent. The study explains the change in mean SIP investments by male and female respondents before and during the outbreak; a decline of 41% and 49% in SIP investments was observed for male and female respondents respectively.

Table 5a
Results of statistical test to find association between age and difference in SIP investment pre and during COVID-19

Model Summary		R	R Square	Adjusted R	Std Error of the Estimate
1		0.192	0.037	0.027	2177.985

Table 5b
ANOVA for association between age of respondents and change in investment amount in SIP pre and during COVID-19

Model		Sum of squares	df	Mean Square	F	Sig.
1	Regression	177.73	1	177.73	3.747	0.056
	Residual	464.87	98	474.36		
	Total	4826	99			
a. Dependent Variable: Change in investment amount						
b. Predictors: (Constant), Age						

Test related to Hypothesis 3: Association between age of respondents and difference in amounts invested before and during the COVID-19 outbreak. The respondents interviewed belonged to the age group 25 to 45. To study the association between the age of the respondents and the difference in the amounts invested by them before and during the COVID-19 outbreak, we conducted regression analysis. The results of the test are provided in

Tables 5a and 5b. The R value represents simple correlation, and its value is 0.192 (the "R" Column). This indicates a low degree of correlation. The R² value (the "R Square" column) indicates the degree of the total variation in the dependent variable (change in amount invested) which can be explained by the independent variable (age). In this case, 3.7% can be explained, which is quite less. The Sig. column in the table indicates the statistical significance of the regression model that was run. Here, p value is greater than 0.05, thus, null hypothesis 3 is accepted. It may be said that there is no association between age of respondents and difference in amounts invested in SIPs before and during the COVID-19 outbreak.

RESEARCH FINDINGS

The first hypothesis test reveals that individual investor behaviour was impacted by the measures taken during the COVID-19 outbreak. The monthly amount invested by respondents in SIPs dropped by 43%. The major reasons behind the decreased investment were decline in household income and retaining cash for emergencies. Other reasons cited by respondents included fall in the stock market (Nifty 50 and Sensex experienced a fall of 38%-40%); mutual funds also yielded negative returns during the pandemic. The second hypothesis assumed an overall decrease in SIP investments during the COVID-19 outbreak. No association was found between gender and reduction in SIP investments. Previous research suggests that women tend to be more risk averse and uncertain about investing in mutual funds. In our study, it is observed that respondents with business as the main occupation were impacted the most by the COVID-19 outbreak; this is the section that accounted for a major decrease in SIP investments. Further, 18 out of 32 female respondents with business as the main occupation reported a significant decrease in their SIP investments. The reason behind the reduction in investments was majorly due to decrease in business income due to lockdown measures implemented by central government. The third hypothesis tested the association between age of respondents and difference in amounts invested in SIPs before and during the COVID-19 outbreak. No correlation between age and difference in invested amounts was found. Previously, age was recognised to influence investment in mutual funds. It was suggested that as investors grew old, they focused more on savings and retirement, and thus invested in mutual funds. The results of our study show no correlation between age and change in the amount of investment in SIP as the important factor for the decrease in the amount of investment in SIPs in income during COVID-19 and investors preserving cash for emergencies. Respondents were also asked to mention their preferences for various investment options before and during the outbreak. Majority of the respondents reported that the COVID-19 pandemic had changed their investment and portfolio management perceptions. Presently, they preferred investing in instruments that offered moderate returns and were less risky, such as bank deposits (savings account and fixed deposits), gold, mutual funds, and postal savings. Studies suggest that bank deposits, PPF, gold, chit funds, NSC, etc. attract investors in search of low-risk investment options, also it displays percentage change in preference for investment options before and during the COVID-19 pandemic. There was a 30% decline in preference for mutual funds during the pandemic. The decline was sharper for the stock market at 53%. On the contrary, it was observed that the respondents were willing to diversify their portfolio towards less risky investment options such as bank deposits, postal savings, and public provident fund. Previous research during financial crisis suggests that investors consider gold as a protection against volatile market returns.

DISCUSSION

The primary purpose of the present research was to study the impact of the COVID-19 outbreak on the perceptions and decisions of individual investors. To this end, a well-structured questionnaire was distributed among investors belonging to Hyderabad. These respondents were regular SIP investors and invested a fixed sum in SIPs every month. After collecting response on questionnaire, it was found that a significant number of respondents had either withdrawn their monthly investments in SIPs or reduced the amount of investment during lockdown. Thus, quantitative data obtained from the questionnaire were further analysed by framing various hypotheses and the results were obtained after applying various statistical tests to these hypotheses. Previously, research has examined the impact of the COVID-19 pandemic on stock prices, Indian economy, oil prices, gold, cryptocurrencies, and geopolitical risk. Various studies have also been conducted on gold price volatility and stock market returns, corporate bond market reaction to COVID-19, and individual investor attitude and opinion about investments during the financial crisis 2008. Research has also been conducted on the impact of COVID-19 on the income of households in India (Chicago Booth, 2020). In extension to the literature available on investor behaviour, the impact of COVID 19, stock market volatility, gold price, this research paper delivers the further outcomes pertaining to small retail investors and the impact of COVID on their investment behaviour. The present study discloses that there has been a decrease in SIP investments during the COVID-19 outbreak due to decreased household income, stock market crash, and investor preferences shifting towards more secure investment options like bank deposits. Further research can be conducted on the measures taken by investors to diversify their portfolio, steps taken by investors to recover losses from the stock market, how the investors of particular areas or regions try to increase their financial literacy after COVID 19.

CONCLUSION

The COVID-19 outbreak has significantly impacted the economy. Given the huge population and problematic circumstances of the economy, especially the financial sector and lockdown and social distancing have proven to be unsettling. Due to measures taken by the government to control the spread of COVID-19 such as lockdown and the stock market crash, individual investor's willingness to invest in mutual funds and the stock market has been impacted negatively. In present times, investors seem to have become more risk averse, and prefer relatively secure investment options offering moderate return with low risk. Investors also need to be educated about Gold ETFs, time to enter and exit the stock market, and mutual fund schemes. It also throws some light on the fact that mutual fund associations and policymakers should conduct campaigns in smaller towns to enhance financial literacy of people.

LIMITATIONS

1. The study is based on random sampling method instead of consensus method.
2. Respondents belonged to a Tier 3 town in Madhya Pradesh, and findings may not be generalized to other regions.

REFERENCES

1. Agnew, JR & Szykman, LR, 2005, 'Asset allocation and information overload: The influence of information display, asset choice, and investor experience', *The Journal of Behavioral Finance*, 6(2), 57-70. DOI: https://doi.org/10.1207/s15427579jpfm0602_2
2. Alber, N, 2020, 'The Effect of Coronavirus Spread on Stock Markets: The Case of the Worst 6 Countries'. DOI: <http://dx.doi.org/10.2139/ssrn.3578080>
3. Barber, BM & Odean, T, 2001, 'Boys will be boys: Gender, overconfidence, and common stock investment', *The quarterly journal of economics*, 116(1), 261-292. DOI:<https://doi.org/10.1162/003355301556400>
4. Baur, DG & McDermott, TK, 2010, 'Is gold a safe haven? International evidence', *Journal of Banking & Finance*, 34(8), 1886-1898. DOI:<https://doi.org/10.1016/j.jbankfin.2009.12.008>

6. Bekiros, SD, 2014, 'Contagion, decoupling and the spillover effects of the US financial crisis: Evidence from the BRIC markets', *International Review of Financial Analysis*, 33, 58-69. DOI: <https://doi.org/10.1016/j.irfa.2013.07.007>
7. Bertrand, M, Krishnan, K & Schofield, H, 2020, May 11, 'How are Indian Households coping under the COVID-19 lockdown? 8 key findings', Chicago Booth. <https://www.chicagobooth.edu/research/rustandy/blog/2020/how-are-indian-householdscoping-under-the-covid19-lockdown>.
8. BI India Bureau, 2020, March 26, 'What is lockdown meaning and what to expect from it', Business Insider. <https://www.businessinsider.in/india/news/what-is-lockdown-andwhat-to-expect-from-the-lockdown/articleshow/74759615.cms>
9. Bucher-Koenen, T & Ziegelmeyer, M, 2011, 'Who lost the most? Financial literacy, cognitive abilities, and the financial crisis'. DOI: <https://doi.org/10.2139/ssrn.1738368>
10. Gurbaxani & Gupte / A Study on Impact of COVID- 19 on Investor Behaviour of individuals 89
11. Chakraborty, I & Maity, P, 2020, 'COVID-19 outbreak: Migration, effects on society, global environment and prevention', *Science of the Total Environment*, 138882. DOI: <https://doi.org/10.1016/j.scitotenv.2020.138882>
12. Chaurasiya, P, Pandey, P, Rajak, U, Dhakar, K, Verma, M, & Verma, T, 2020, 'Epidemic and challenges of coronavirus disease-2019 (COVID-19): India response, Available at SSRN 3569665. DOI: <http://dx.doi.org/10.2139/ssrn.3569665>
13. Chen, AS & Lin, JW, 2014, 'The relation between gold and stocks: an analysis of severe bear markets', *Applied Economics Letters*, 21(3), 158-170. DOI: <https://doi.org/10.1080/13504851.2013.844321>
14. Choudhry, T, Hassan, SS, & Shabi, S, 2015, 'Relationship between gold and stock markets during the global financial crisis: Evidence from nonlinear causality tests', *International Review of Financial Analysis*, 41, 247-256.
15. Couder, V & Raymond, H, 2011, 'Gold and financial assets: are there any safe havens in bear markets', *Economics Bulletin*, 31(2), 1613-1622.
16. 'Covid-19 impact? Equity MF schemes give 25% negative returns to investors, 2020, March 22, *Business Standard*.
17. [https://www.business-standard.com/article/markets/covid-19-impact equity-mf-schemes-give-25-negative-returns-to-investors-120032200247_1.html](https://www.business-standard.com/article/markets/covid-19-impact-equity-mf-schemes-give-25-negative-returns-to-investors-120032200247_1.html)
18. Covid-19.in, 2020. <https://www.mygov.in/covid-19/?cbps=1>.
19. Designan, CG, Kalaiselvi, S & Anusuya, L, 2006, 'Women Investors' Perception Towards Investment-An Empirical Study', *Indian Journal of Marketing*, 36(4).
20. Dev, SM & Sengupta, R, 2020, 'Covid-19: Impact on the Indian economy', Indira Gandhi Institute of Development Research, Mumbai April.
21. Dzielinski, M, 2011, 'When Does Company-Specific News Matter? Determinants of News- Related Stock Returns', working paper, University of Zurich.
22. Emmrich, O & McGroarty, FJ, 2013, 'Should gold be included in institutional investment portfolios?', *Applied Financial Economics*, 23(19), 1553-1565. DOI:
23. <https://doi.org/10.1080/09603107.2013.839858>
24. Estupinan, X, Sharma, M, Gupta, S & Birla, B, 2020, 'Impact of COVID-19 Pandemic on Labor Supply and Gross Value Added in India', Available at SSRN 3628761. DOI: <http://dx.doi.org/10.2139/ssrn.3628761>