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Psychological, social and economic impact of COVID 19 on the working population of India: Exploratory factor analysis approach

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Article Info

Keywords:
- Covid-19
- Psycho-social well-being
- Work-life
- Social vulnerability
- Pandemic

Abstract

The purpose of this study is to unravel the effects of COVID-19 on the psychological, social, and economic well-being of the working population of India. To achieve the objectives of the study, an online survey was conducted, focusing on aspects like psycho-social well-being, safety, financial stability, and work from home implications. We have used exploratory factor analysis (EFA), t-test, and analysis of variance technique to find the underlying factors. The findings suggest that the female population of the society is more vulnerable to social-psychological and organizational stress. In terms of financial stability, private employees are more unstable as compared to government employees. Based on the standard of living, people of type 1 cities are more affected by the COVID-19 outbreak compared to the people of type 2 and type 3 cities. Hence, by and large, female employees, employees working in the private sector, and employees residing in type 1 cities are more likely to have the behavioral manifestation of negative psychological states caused by this pandemic. The findings will assist policymakers in understanding and devising appropriate policies considering the psycho-social and work-related economic issues faced by the working population of India during the COVID-19 pandemic.

1. Introduction

The World Health Organization has described pandemics as the spread of a new disease worldwide. Influenza pandemics are commonly those new viruses that spread rapidly and to which humans have low immunity [39]. Over the years, different kinds of virus-related pandemics have occurred. Some of the prominent ones are the HIV/AIDS pandemic, which killed nearly 36 million people between 2005 and 2012, the flu pandemic (1968), which took a death toll of around 1 million, the flu pandemic of (1918), which killed nearly 20–50 million people, and ASIAN flu (1956–58), which killed 2 million people approximately [25,36]. The world is currently facing another deadly pandemic, known as the Novel Coronavirus, which emerged in December 2019 in Wuhan, China. Initially, ‘Novel Coronavirus’ was considered an outbreak in China, but it was identified by the World Health Organization as a pandemic in March 2020 due to its rapid spreading rate globally. According to the World Health Organization situation report (55), the statistics as of May 10th, 2021 indicate that COVID-19 infections have spread to over 213 countries worldwide, with 157,289,118 confirmed cases and 3,277,272 deaths. Most South Asian countries are still in the partial lockdown stage due to its transmitting properties and fears about the spread of the B.1.617.2 strain of COVID-19. Studies have suggested that infectious diseases can only be restricted by encouraging social distancing and quarantine. Thus, lockdown and personal hygiene have emerged as the most effective deterrents against this deadly illness [21].

This lockdown has created severe behavioral, social, and psychological impacts. Owing to the widespread use of social media and global communication, the socio-psychological effects of this virus are thought to be more severe than that of the (SARS) outbreak in 2003 [7]. According to a study published in the Lancet (2017), social isolation and lockdowns have led in emotional and mental health issues such as stress, fear, anxiety, insomnia, and emotional exhaustion. Quality of life is also significantly affected during this pandemic due to the lockdown-induced restrictions in the physical outing [34]. People are also socially impacted by this pandemic due to the inability to visit their peers, colleagues, and distant family members. There are separate studies on the rise in social violence due to the lockdown, which is also a cause of social unrest (S [10]. Besides behavioral and psycho-social consequences, the International Monetary Fund reported that the economic impact of the lockdown is much severe compared to the Great Depression and the Global Financial Crisis. The economic activities are stagnant during the

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https://doi.org/10.1016/j.ijdrr.2021.102617
Received 15 December 2020; Received in revised form 15 August 2021; Accepted 30 September 2021
Available online 1 October 2021
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lockdown period, leading to shrinkage in the global economic growth to –3 % (World Economic Outlook, 2020). Based on the above behavioral manifestations, the current study measure how COVID-19 affects the behavioral, economic, social, and psychological well-being of the working class in India. The specific objectives which gave the direction to the study are as follows:

1. To compare male and female employee perceptions of the psycho-social aspect in a pandemic situation.
2. To investigate and compare the financial and economic instability during the pandemic among the private and public sector employees regarding their pay cut and work-related issues.
3. To examine the difference in the financial stability of working employees residing in type 1, type 2, and type 3 cities.

The rest of the study is organized as follows: Section 2 presents the review of the literature & theoretical framework, Section 3 focuses on the methodology used in the study, Section 4 showcases the analysis and discussion part, and the last section covers the concluding remarks.

2. Review of literature

This study focuses on studying the behavioral, psycho-social, and economic impact of the COVID-19 pandemic. Thus, the review literature is also classified based on the above parameters.

Golechha M [12]. reported that pandemic results in various behavioral and psychological issues like gender-based violence, alcoholism, stress, anxiety, etc. Jesus et al. [15], pointed out that psychologically the marginal sector is most affected by pandemics and disruptions due to job loss, lower incomes, migrations, increased debts, unavailability of essential commodities, and social exclusion of the infected people. Yang et al. [33], concluded that people under financial burden are more susceptible to behavioral issues like suicidal tendencies, alcohol abuse, etc. A similar study conducted by Stuckler et al. [26], pointed out that the rising unemployment in the European Union leads to a rise in suicidal rates by 20 %. Mkwana [19]; in the study related to mental health and disaster, pointed out that uncertainty during lockdown is the main reason behind mental health problems like stress, anxiety, hypertension, etc. An uncertain future and lockdown create panic leading to stress and anxiety. Garg K [11]; in his work related to psychiatric in India, pointed out that a lower amount of equipment and fewer psychiatrists also pose a difficulty in tackling mental health issues post subsidization of this pandemic. Zanderson & Parnas [35] and Nicola et al., [20]; in their study on social identity, concludes that people associate themselves with their social groups and belongingness. Events like the COVID-19 pandemic affect social groups and create social distancing, making individuals prone to mental health disorders. Apart from all this, social distancing norms also create more pressure on the already distressed socially vulnerable groups [17]. In context to health-related quality of life issues, Bivia-Roig et al. [3], investigated the impact of COVID-19 on the psychological wellbeing of Spanish pregnant women. The study concluded that confinement due to prolonged lockdown has severely affected the health of pregnant women. Lockdown has restricted their physical exercises and hampered their delivery preparation sessions. Thus, creating a blow on the health quality of life of pregnant women in Spain. COVID-19 pandemic not only affected the economic and behavioral manifestation of the adult age group but has also created a severe psychological effect on adolescents. Adolescents are affected because of home confinement, as they are not allowed to go to school and play with their friends. To measure the impact of COVID-19 on adolescents, Commodari and La Rosa [3] investigated the relationship between COVID-19 health risk perceptions and emotions among quarantined adolescents in Italy. They concluded that perceived susceptibility negatively predicts positive emotions, whereas fear of getting the infection positively. Thus, based on the above studies, we can conclude that the psycho-social impact of this pandemic is quite severe compared to past pandemics.

The next part of the review literature focuses on the economic disruption of the COVID-19 pandemic. Over the last 120 years, around six pandemics have occurred (1889, 1918, 1957, 1968, 2009, 2020), where a virus is circulated in a non-seasonal pattern and caused economic disruptions. Previous studies conducted by Beutels et al. [2] and Verikios et al. [31] concluded a two-way effect of pandemics on the economic structure. First is the direct impact on the healthcare industry in terms of medical expenses. Second is an indirect consequence of lockdown, resulting in business shutdown, worker absenteeism, labor migrations, job layoff, closure of institutions, and low productivity. A similar study conducted by James and Sargent [14] also concluded that pandemic affects discretionary spending, which affects the economy as a whole.

A study conducted by Fan [9] pointed out that pandemics reduces business investment and consumer confidence due to fear and uncertainty of getting the infection. It also affects the service industry of face-to-face contact representing a psychological fear and risk modifying behavior. Fan [9] and Tracy et al. [29], concluded that psychologically such a pandemic creates a fear of infection in the mind of the individual, which we can infer from the findings of the SARS pandemic where even though the mortality rate was low, fear of disease was high in the mind of people. Thus, people avoid physical contact affecting the business prospects of service-based industries like aviation, travel, and tourism. According to the United Nations (2015), the informal sector accounts for 80 % of the working population in India. One-third work as casual labor, thus social vulnerability will be high in the marginalized group during the lockdown in terms of lack of livelihood, lack of food, basic health amenities, and shelter. Several studies have projected the following global economic consequences of the COVID-19 pandemic: the COVID-19 pandemic expects to cost the global economy between $5.8 and $8.8 trillion, according to the Asian Development Bank; the Bureau of Economic Analysis reported that the US economy shrank by 48 % annually in the first quarter of 2020, while the UK economy slumped by 20.4 % in the second quarter of 2020; and the European Central Bank predicts a 12 % contraction in the Eurozone’s economy in 2021 [6].

We may infer from the above literature review that the global economic consequences of this pandemic will be grave.

2.1. Theoretical framework and hypothesis development

Based on the above review and the current situation, this study relates to two broad frameworks. One focuses on the behavioral aspects of post-COVID-19 after-effects, and the other deals with the uncertainty of lockdown and social distancing consequences. The theories and principles which strengthen the above framework are the Social identity theory, which focuses on the importance of social groups and belongingness [28]. The psychological need theory or self-determination theory which argues the importance of psychological needs and motivations [22]. And finally, the economic uncertainty principle postulates that economic recessions create doubt and fear of jobs and pay cuts.

Self-Identity Theory [28] implies that people internalize group norms and behave accordingly. During the COVID-19 pandemic, the group (family, society, workplace, nation, and so on) norm of maintaining social distance and staying at home is adhered to by the employees. Employees are trying to follow a sense of positive social identity by following instructions such as wearing a mask, avoiding social gatherings, and working from home. Moreover, Ryan and Deci [22] self-determination theory focuses on the psychological need of the employees. According to this theory, employee needs for competency, autonomy, and relatedness are satisfied with optimal motivation for work. In a pandemic, employees sense psychological distancing due to physical distancing from their colleagues and workplace. This pandemic has negatively impacted the flexibility and autonomy of work, especially for female employees, as they have to manage household chores together.
with their work.

Economic uncertainty is a high-risk period for the psychological well-being of employees and their dependents. In India, public sector employees are less affected by economic uncertainty as compared to private sector employees. This pandemic situation has created ambiguity regarding the employment status and aggravated the probability of unemployment, salary cut, economic downturns, and debt increment. This financial breakdown has a detrimental effect on the employee's self-esteem, and it also disrupts their healthy social and emotional functioning. The impact of economic turmoil on employee behavior is measured by increased irritability, depression, stress, strained marriages, domestic violence, divorce rate, and low standard of living. Based on the explanation of the above theories, we have created a theoretical framework to measure the impact of COVID-19 on the working population of India. Fig. 1 represents the theoretical framework.

The following hypotheses are frame and tested based on the past literature and the objectives of this study.

**Hypothesis 1.** Male and female employees will not differ significantly in their perception of psycho-social aspects in the pandemic situation.

**Hypothesis 2.** Private and public sector employees will not differ significantly in their perception of work-related facets and financial instability during a pandemic situation.

**Hypothesis 3.** Employees working in type 1, 2, and 3 cities will not differ significantly in their perception of financial stability during and after the pandemic crisis.

3. Research methodology

The study is a cross-sectional online survey conducted to explore the overall impact of the COVID-19 pandemic on Indian service sector employees.

3.1. Method

To collect the primary data, a google form-based online questionnaire is employed. The survey questionnaire consists of three parts. The first part of the survey includes a brief introduction of the study, instructions for filling up the form, and the consent for voluntary participation in the study. In the second part of the questionnaire, some personal details of the respondents have been inquired, such as their age, gender, level of education, range of income, current location, nature of their organization, etc. The third section includes items related to the respondent's psychological, social, and economic status, together with organizational safety policies during the COVID-19 pandemic. The variables that reflect confidence, stability, and hope regarding the pandemic situation are positive items whereas, variables with the connotation of worry, fear, and imbalance are negative items. The questionnaire is composed of 32 items, of which 14 are positives & 18 are negatives. The answers are analyzed using a five-point rating scale (1 = strongly disagree and 5 = strongly agree).

3.2. Procedure

The questionnaire was forwarded using e-mail addresses and social media platforms like LinkedIn, Facebook, ResearchGate, and WhatsApp. The survey was administered between April 1st to April 30th, 2020, as the government of India has imposed a complete national-wide lockdown during this period. The minimum sample size (n = 328) is determined using G* Power 3.1.9.7 (HHU, Germany) to detect a medium effect size (0.4), with a power of 0.95 and alpha 0.05 [5]. We have followed the snowball sampling technique [18] for data collection. This technique is commonly used in various other studies during the pandemic [1]. Under this method, initially, ten respondents are selected based on geographical area, income group, age, educational background. Each participant is then requested to choose ten more people whom they think are suitable for the study. This process continues until sufficient data is collected. This method is frequently used for collecting data in the present scenario [27]. We forwarded the questionnaire to more than 500 people, but we received only 425 total and 410 eligible, workable responses due to the pandemic-related uncertainties and stress. The low response rate is because participation in the survey was voluntary, and we only sent one invitation with no follow-up message. Another explanation is that the research is limited to people with smartphones, internet access, e-mail addresses, and the ability to communicate in English. As the uncertainty and spike in cases were very high during the period of our study, therefore, to measure the exact psycho-social and economic impact of COVID-19, we performed our analysis on a limited number of responses. Considering the inclusion and exclusion criteria, we have included all the responses and excluded only those responses which had any of the following errors-inappropriate response, inconsistent response, and response straight-lining.

3.3. Ethical approval

The purpose of the survey was explained to potential participants, who were requested to provide consent of voluntary willingness before their participation. The study also ensured that anonymity has adhered, to keep the participants' identity confidential. All procedures performed in this study involving human participants were under the ethics of the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This study was conducted and reported according to the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) guidelines. This study uses an online questionnaire that was administered to the general population of India, hence no specific ethical approval was obtained [27].

3.4. Sample profile

In this survey, we have included participants who are working in the Indian service sector industries (both private and government employees). Industries include but are not limited to the banking industry, IT industry, hospitality, education industry, manufacturing industries, and various government organization. The respondent includes the employees living in 54 most populated cities like Bangalore, Delhi, Mumbai, Pune, Lucknow, Allahabad, Kolkata, Hyderabad, Ahmadabad, Chhindwara, and Shahjahanpur. Cities have been grouped tier-wise for precise analysis. Tier 1 cities are those cities that are densely populated and have a higher standard of living. Tier 2 includes cities that are developing at a relatively faster pace in industrial and allied sectors, and tier 3 cities are those cities that have a low cost of living and high population density. Table 1 shows the demographic detail of the respondents along with the population sample size.

![Fig. 1. Theoretical framework. Note: Author's created.](image-url)
4.1. Preliminary analysis

The obtained data are subjected to exploratory factor analysis (EFA) as there was no standardized tool to measure psycho-social, economic, and work-related issues caused due to the COVID-19 pandemic. Principal component analysis (PCA) and Oblique rotation (Direct Oblimin) are used, as the extraction and factor rotation method, as the items were not independent. As the communality value of 6 items was less than 0.5, we have removed them from further analysis. For psycho-social measures, while financial stability, work from home performance, and organizational safety measures. Physical and social vulnerability have been grouped under Psycho-social variables, while financial stability, work from home performance, and organizational policies are grouped under job-related variables. The scale consisting of psycho-social variables and job-related variables has 9 and 16 items. In addition, we have also estimated the reliability scores and Cronbach alpha values. The Cronbach alpha value for psycho-social variables was 0.721 and 0.747 for psycho-social variables. Parametric tests are also employed to check the suitability of obtained data. The value of skewness and kurtosis of the data was within the range of -1 to 1. Levene’s test for homogeneity of variance was also applied and found to be following the assumptions of independent t-test together with one-way ANOVA. An Independent t-test was employed to compare the scores between male and female respondents obtained on the items of physical vulnerability. There was no significant difference was found in the scores of males (M = 2.39; S.D. = 0.8) and females (M = 2.31; S.D. = 0.84) conditions; t (408) = 0.54; p = 0.54) a significant difference between males and females with medium effect size, meaning the result is moderately significant. The findings collaborate with existing literature that shows that disease epidemics affect women and men differently [13,36]. We are aware that there are gender inequalities, but this pandemic has worsened the situation and has resulted in differential treatment and care. Due to COVID-19 induced lockdown, all the schools and colleges are closed, because of which females are spending more time with their children. This issue has taken a toll not only on their livelihoods but also on their increased domestic care. As there is no significant study on this issue, we can speculate that the escalated family tensions, financial uncertainties, and other forms of problems have left the plight of women more intensified. Furthermore, an independent t-test was employed to see the differences in the mean scores obtained on all three job-related components by the respondents working in public and private organizations.

4.2. Data analysis and discussion

Table 3 shows the items that are supposed to measure job uncertainty, financial instability, work from home experience, and the role of management in devising safety measures regarding the pandemic crisis. On the whole, we have extracted the following five dimensions using EFA physical vulnerability, social vulnerability, financial stability, work from home performance, and organizational safety measures. Physical and social vulnerability have been grouped under Psycho-social variables, while financial stability, work from home performance, and organizational policies are group under job-related variables. The scale consisting of psycho-social variables and job-related variables has 9 and 16 items. In addition, we have also estimated the reliability scores and Cronbach alpha values. The Cronbach alpha value for psycho-social variables was 0.721 and 0.747 for psycho-social variables. Parametric tests are also employed to check the suitability of obtained data. The value of skewness and kurtosis of the data was within the range of -1 to 1. Levene’s test for homogeneity of variance was also applied and found to be following the assumptions of independent t-test together with one-way ANOVA. An Independent t-test was employed to compare the scores between male and female respondents obtained on the items of physical vulnerability. There was no significant difference was found in the scores of males (M = 2.39; S.D. = 0.8) and females (M = 2.31; S. D. = 0.84) conditions; t (408) = 0.54; p = 0.54) a significant difference between males and females with medium effect size, meaning the result is moderately significant. The findings collaborate with existing literature that shows that disease epidemics affect women and men differently [13,36]. We are aware that there are gender inequalities, but this pandemic has worsened the situation and has resulted in differential treatment and care. Due to COVID-19 induced lockdown, all the schools and colleges are closed, because of which females are spending more time with their children. This issue has taken a toll not only on their livelihoods but also on their increased domestic care. As there is no significant study on this issue, we can speculate that the escalated family tensions, financial uncertainties, and other forms of problems have left the plight of women more intensified. Furthermore, an independent t-test was employed to see the differences in the mean scores obtained on all three job-related components by the respondents working in public and private organizations.

Table 5 depicts that during the pandemic, the participants working in the private sector are more dubious of financial stability than those working in the public sector. The analysis show (t = 2.35, df = 398, p = 0.01, effect size d = 0.42) a significant difference between males and females with medium effect size, meaning the result is moderately significant. The findings collaborate with existing literature that shows that disease epidemics affect women and men differently [13,36]. We are aware that there are gender inequalities, but this pandemic has worsened the situation and has resulted in differential treatment and care. Due to COVID-19 induced lockdown, all the schools and colleges are closed, because of which females are spending more time with their children. This issue has taken a toll not only on their livelihoods but also on their increased domestic care. As there is no significant study on this issue, we can speculate that the escalated family tensions, financial uncertainties, and other forms of problems have left the plight of women more intensified. Furthermore, an independent t-test was employed to see the differences in the mean scores obtained on all three job-related components by the respondents working in public and private organizations.
Public sector employees are more financially stable as compared to private-sector employees [4]. They are entitled to all the benefits and allowances, along with the basic salary, till the age of retirement. However, private sector organization runs on the profit-making model, and thus the sector is performance and productivity-driven. During the first wave of COVID-19 spread, the government of India imposed five complete lockdowns starting from March 21st, 2020. Due to these stringent initial lockdowns, the demand and the supply side of goods and services have suffered significantly, leading to an economic recession. In addition, the global economy has also come to a halt due to the outbreak of the COVID-19 pandemic. This lockdown has resulted in mass unemployment in various industries globally. Based on the past experiences of the 2008 financial crisis, the private sector employees are more fearful and unstable considering their financial and economic aspects. The Indian economy was already under an economic slowdown before the pandemic, and this pandemic has further aggravated the economic problems.

Table 3 illustrates a significant difference between the scores of tier 1, 2, and 3 city employees (both the public sector and the private sector). The table shows a comparison of communalities and factor loadings for work-related economic measures. The communalities range from 0.53 to 0.77, indicating a strong relationship between the variables. The factor loadings for each variable suggest a significant contribution to the components.

Table 3 (continued)

| Variables                                                             | Component 1 | Component 2 | Component 3 |
|----------------------------------------------------------------------|-------------|-------------|-------------|
| I feel uncertain about the future of my job.                         | 0.75        | 0.86        |             |
| I think my salary, bonus and other benefits will be reduced in the near future. | 0.53        | 0.74        |             |
| My organization has assured the Employees regarding the regularity of salary. | 0.61        | 0.48        |             |
| I feel that my organization will help its employees to attain financial stability. | 0.62        | 0.57        |             |
| I’m doubtful about my future in this job.                            | 0.77        | 0.88        |             |
| Work from home provides flexibility to some extent.                  | 0.66        | 0.79        |             |
| Work from home helps in maintaining a balance between work and household chores. | 0.78        | 0.88        |             |
| Work from home has decreased my productivity at work.                | 0.67        | 0.76        |             |
| I find it difficult to concentrate on work while working from home.  | 0.69        | 0.81        |             |
| Now I’m able to manage work and home easily.                         | 0.54        | 0.48        |             |
| I think I will be able to continue working here.                    | 0.64        |             | 0.71        |
| Safety is given high priority by the management.                     | 0.73        |             | 0.85        |
| When COVID-19 broke out the company immediately established a pandemic prevention committee. | 0.56        |             | 0.75        |
| Management of my organization                                        | 0.65        |             | 0.61        |

The differences in the scores of male and female respondents on the Social vulnerability component, using independent t-test, are shown in Table 4. The results indicate a significant difference between the genders, with female respondents showing higher scores than male respondents. The Level of significance is marked as p = 0.01, rejecting the null hypothesis.

Table 4

| Groups based on | Mean | S.D. | t    | df  | H01 Decision | Level of significance |
|-----------------|------|------|------|-----|--------------|-----------------------|
| Gender          |      |      |      |     |              |                       |
| Female          | 2.41 | 0.60 | 2.53 | 408 | H01 rejected | p = 0.01              |
| Male            | 2.26 | 0.58 | 0.58 |     |              |                       |

Authors calculation using SPSS.

and rejecting the hypothesis based on the level of significance.

Public sector employees are more financially stable as compared to private-sector employees [4]. They are entitled to all the benefits and allowances, along with the basic salary, till the age of retirement. However, private sector organization runs on the profit-making model, and thus the sector is performance and productivity-driven. During the first wave of COVID-19 spread, the government of India imposed five complete lockdowns starting from March 21st, 2020. Due to these stringent initial lockdowns, the demand and the supply side of goods and services have suffered significantly, leading to an economic recession. In addition, the global economy has also come to a halt due to the outbreak of the COVID-19 pandemic. This lockdown has resulted in mass unemployment in various industries globally. Based on the past experiences of the 2008 financial crisis, the private sector employees are more fearful and unstable considering their financial and economic aspects. The Indian economy was already under an economic slowdown before the pandemic, and this pandemic has further aggravated the economic problems.

There was also a significant difference between private-sector employees and public sector employees on their work from home and performance components. Because private-sector employees are more financially unstable, and it is evident from the above discussion. Such people are putting efforts to maintain harmony between job and household work apart from giving some extra time toward their job efficiency. The results support the previous findings of [8], who studied the gap between public and private sector employees in terms of financial instability. In terms of organizational safety measures, there is no significant difference between the mean scores of public and private sector employees because of the strict implementation of the general safety guidelines issued by the Ministry of Home Affairs to fight novel coronavirus (Ministry of Labour and Employment, 2020).

Table 6 illustrates a significant difference between the scores of tier 1, 2, and 3 city employees (both the public sector and the private sector).
home situation and increase family workload. The study also indicated women are likely to develop behavioral symptoms due to work from the care industry. This indicates that women are working round the clock to mitigate the severe impact of the novel coronavirus. Women working in various other sectors are also having trouble harmonizing household chores with their office work as the majority of the offices and schools are still partially closed in some countries. In addition, the cases of domestic violence against women during the pandemic have worsened the scenario. Therefore, these findings also substantiate that working women are likely to develop behavioral symptoms due to work from the home situation and increase family workload. The study also indicated that the repercussion of this pandemic is quite severe among working individuals. Job and pay insecurity are high among the people of the private sector.

According to the Centre for Monitoring Indian Economy, in April 2021, the unemployment rate in India rose to 8% as the second wave ravages the Indian economy. The national unemployment rate in April 2021 climbed to 7.97%, and with 7.35 million job losses in the private sector, the number of employees, both salaried and non-salaried, fell from 398.1 million in March to 390.8 million in April 2021. Thus, it substantiates the finding of our study that private employees are more prone to salary and job insecurity than government employees. Job insecurity negatively affects the behavior of individuals, often resulting in suicidal tendencies, alcoholism, and physical abuse. Furthermore, the study highlights that people living in tier 1 cities were financially more unstable during the lockdown than people living in tier 2 and 3 cities. During the lockdown, all sorts of economic activities are closed, the sources of income were less or negligible. Therefore, maintaining a minimum standard of living is quite difficult in metropolitan cities during the pandemic period. These excessive debts and limited sources of income are impacting the mental conditions of individuals, leading them to depression and anxiety.

Thus, based on the above arguments, we can conclude that the government has to take drastic measures, keeping in mind the overall behavioral, psycho-social, financial, and economic impact of the COVID-19 pandemic. The government has to devise a plan for mitigating the behavioral issues and the psychological stress of the female working class with the help of non-profit organizations and other government agencies. A proactive investment toward counselors, psychiatrists, and psychologists is required to meet the post-COVID-19 psycho-social-related issues. The government should also encourage online yoga and meditation programs to improve the mental health of individuals together with programs for kid’s engagement. Lastly, a comprehensive policy is required to meet the financial instability of private-sector employees. During the present scenario, the business income is less than rent payments due to partial disruption in business activities in India. Such a situation will create a burden for the people of tier 1 cities, especially for the people working in the private sector. Therefore, the government can also frame subsidized or concessional policies for meeting the rent burden of shops, factories, malls, warehouses, and other related buildings. In addition, in this strenuous pandemic situation, some behavioral changes are also needed, such as dietary changes, hygiene practices, mindfulness exercises, etc. Van Bavel et al. [30] reported that social networks intensify the spread of behaviors that can be both harmful and beneficial during a pandemic. Thus, by targeting individuals with good social connectivity, the impact of any behavior change can be increased. So that others can imitate and adapt beneficial behavioral changes required to tackle the pandemic crisis effectively.

Finally, the study encompasses the following strengths. As already highlighted, this is the first study in India that focuses on the psychological, social, and economic impact of the COVID-19 pandemic, which as per the author’s knowledge, is not discussed in previous studies. Another strength is that this study focuses on the working class of India. The working class has to deal with both the psychological and economic consequences of the pandemic. Hence, this study adds significantly to the extant literature dealing with the behavioral impact of the COVID-19

| Component                        | Groups based on | Mean | S.D. | t     | df  | $^1 \times \text{df}$ decision | Level of significance |
|----------------------------------|----------------|------|------|-------|-----|-------------------------------|----------------------|
| Financial stability              | Public         | 3.46 | 0.73 | 5.08  | 398 | $^1 \times \text{rejected}$   | $p < 0.00$           |
|                                 | Private        | 3.03 | 0.78 |       |     | $^1 \times \text{rejected}$   | $p = 0.03$           |
| Work from home and performance   | Public         | 3.45 | 0.72 | $-2.35$ | 398 | $^1 \times \text{rejected}$   | $p = 0.03$           |
|                                 | Private        | 3.61 | 0.55 |       |     |                               |                      |
| Organizational safety measures   | Public         | 3.35 | 0.64 | 0.31  | 398 | $^1 \times \text{rejected}$   | $p < 0.75$           |
|                                 | Private        | 3.33 | 0.72 |       |     |                               |                      |

Authors calculation using SPSS.

5. Conclusion and policy inference

Although the COVID-19 pandemic is a global pandemic, its impact is local in context to behavioral symptoms of psychological and financial distress. First and foremost, the EFA assisted us in highlighting the underlying factors, namely physical vulnerability, social vulnerability, financial stability, work from home performance, and organizational safety measures. These factors reflected the behavioral outcomes among individuals. Job and pay insecurity are high in such cities. In addition to that, findings further substantiate the work of [24]. The number of COVID-19 cases is still high in tier 1 cities, due to which most of the places of type 1 cities are in the red zone. The red zones depict those areas, which had limited relief during the partial lockdown, and thus economic slowdown and financial instability are high in such cities. In addition to that, findings suggest that there is no significant difference between tier 2 and tier 3 because the living condition is more or less the same in both cities.

### Table 5

| Components                        | Groups based on | Mean | S.D. | t     | df  | $^1 \times \text{df}$ decision | Level of significance |
|-----------------------------------|----------------|------|------|-------|-----|-------------------------------|----------------------|
| Financial stability               | Public         | 3.46 | 0.73 | 5.08  | 398 | $^1 \times \text{rejected}$   | $p < 0.00$           |
| Work from home and performance    | Public         | 3.45 | 0.72 | $-2.35$ | 398 | $^1 \times \text{rejected}$   | $p = 0.03$           |
| Organizational safety measures    | Public         | 3.35 | 0.64 | 0.31  | 398 | $^1 \times \text{rejected}$   | $p < 0.75$           |

Authors calculation using SPSS.

### Table 6

Comparing mean scores on financial stability component obtained by respondents working in tier 1, tier 2, and tier 3 cities using one-way ANOVA.

| Component                        | Groups based on | Mean | S.D. | t     | df  | $^1 \times \text{df}$ decision | Level of significance |
|----------------------------------|----------------|------|------|-------|-----|-------------------------------|----------------------|
| Financial stability              | Public         | 3.46 | 0.73 | 5.08  | 398 | $^1 \times \text{rejected}$   | $p < 0.00$           |
| Work from home and performance   | Public         | 3.45 | 0.72 | $-2.35$ | 398 | $^1 \times \text{rejected}$   | $p = 0.03$           |
| Organizational safety measures   | Public         | 3.35 | 0.64 | 0.31  | 398 | $^1 \times \text{rejected}$   | $p < 0.75$           |

Authors calculation using SPSS.

Although the data suggests low practical significance due to small effect size ($F = 6.226, p < 0.001$, effect size $f = 0.23$). To reconfirm and further substantiate the significance of the obtained value, the Post-hoc test (Tukey HSD) was used, which specified that scores obtained on the financial stability component of employees residing in tier 1 cities differ significantly from type 2 and 3 cities. However, there is no significant difference between the scores of tier 2 city employees and tier 3 city employees. The people of tier 2 and 3 cities are more financially stable compared to tier-one cities. Because in tier 1 cities, the cost of living is very high together with the cost of buying or renting a house [16]. The tier 2 cities have a good infrastructure, connectivity, job opportunities, and a cleaner environment. Due to the low cost of living people are attracted towards these cities, so that they can spend and save at the same time, and eventually improves their lifestyles. The findings further substantiate the work of [24]. The number of COVID-19 cases is still high in tier 1 cities, due to which most of the places of type 1 cities are in the red zone. The red zones depict those areas, which had limited relief during the partial lockdown, and thus economic slowdown and financial instability are high in such cities. In addition to that, findings suggest that there is no significant difference between tier 2 and tier 3 because the living condition is more or less the same in both cities.

Thus, based on the above arguments, we can conclude that the government has to take drastic measures, keeping in mind the overall behavioral, psycho-social, financial, and economic impact of the COVID-19 pandemic. The government has to devise a plan for mitigating the behavioral issues and the psychological stress of the female working class with the help of non-profit organizations and other government agencies. A proactive investment toward counselors, psychiatrists, and psychologists is required to meet the post-COVID-19 psycho-social-related issues. The government should also encourage online yoga and meditation programs to improve the mental health of individuals together with programs for kid’s engagement. Lastly, a comprehensive policy is required to meet the financial instability of private-sector employees. During the present scenario, the business income is less than rent payments due to partial disruption in business activities in India. Such a situation will create a burden for the people of tier 1 cities, especially for the people working in the private sector. Therefore, the government can also frame subsidized or concessional policies for meeting the rent burden of shops, factories, malls, warehouses, and other related buildings. In addition, in this strenuous pandemic situation, some behavioral changes are also needed, such as dietary changes, hygiene practices, mindfulness exercises, etc. Van Bavel et al. [30] reported that social networks intensify the spread of behaviors that can be both harmful and beneficial during a pandemic. Thus, by targeting individuals with good social connectivity, the impact of any behavior change can be increased. So that others can imitate and adapt beneficial behavioral changes required to tackle the pandemic crisis effectively.

Finally, the study encompasses the following strengths. As already highlighted, this is the first study in India that focuses on the psychological, social, and economic impact of the COVID-19 pandemic, which as per the author’s knowledge, is not discussed in previous studies. Another strength is that this study focuses on the working class of India. The working class has to deal with both the psychological and economic consequences of the pandemic. Hence, this study adds significantly to the extant literature dealing with the behavioral impact of the COVID-19 pandemic.
pandemic on the working population. However, the study also has a few limitations; First, the accuracy of the responses cannot be ascertained with surety, as the study is based on an online survey. There are also high chances of personal biases in the respondent responses. Second, the study includes only the working class of India. Thus, ignoring the self-employed and the unemployed segment of the society. Third, the research is limited to people with smartphones, internet access, e-mail addresses, and the ability to communicate in English. Finally, we have not included all the Indian states which limit internet access, e-mail addresses, and the ability to communicate in english. Finally, we have not included all the Indian states which limit internet access, e-mail addresses, and the ability to communicate in English.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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