Journal of Informatics Education and Research
ISSN: 1526-4726
Vol 4 Issue 2 (2024)

Clustering Analysis of Psychosocial Factors: A Pandemic Perspective

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Abstract
The present study aims to identify various factors that affect the psycho-socio characteristics and to determine the extent to which the sociodemographic and psychosocial behaviour influence the individual, classified based on their behaviour during COVID-19. An online survey based on the Questionnaire was conducted in tier II and tier III cities of Madhya Pradesh. The hierarchical cluster technique based on Ward's method was used to identify the optimum number of clusters and the Mann-Whitney U test was used to compare the groups. Binary logistic regression was used to distinguish the groups' key socio-demographic and psychosocial characteristics. The result of the present study reveals that an increasing sense of coherence and self-esteem was associated with an increase in the likelihood of respondents being classified in the cluster of balanced psychosocial behaviour.

KEYWORDS: COVID-19 pandemic, Psychosocial Behaviour, Cluster Analysis, Logistic Regression, Sense of Coherence, Self-esteem, Perceived stress

INTRODUCTION

The pandemic is witnessed globally with a popularly known COVID-19 virus affecting human behaviour and lives across continents. The virus was identified on January 7'2020 and WHO declared it a pandemic for being a cause of severe illness. Over time the virus has changed its nature of existence and now the multiple variants are the reasons for serious concern [Tan et al. (2020); WHO (2020)].

With an increasing number of Covid cases (mutant variants), the virus has led to millions of deaths, thereby affecting human lives in a nutshell (Rayner, Khan, et al., 2020). World Health Organization (2020) quotes the impact of the virus on people with low-income groups, stating, "The international migrants, especially those involved in low-income jobs, are the most affected and vulnerable to death and infection of COVID-19". A study in New York City compared the statistical significance of demographics and its effect on COVID-19 Virus outreach. The results stated differences in occupation patterns linking people with high-level social outreach and higher social interaction to be more vulnerable to getting infected by the virus. As a remedy, emergency lockdowns with several restrictions were imposed worldwide. Almost all organisations and business entities temporarily halted their operations and some like the pharmaceutical and hospital industry surpassed their operational facility limits.

Before the Covid-19 outbreak, SARS witnessed huge challenges affecting people's lives; 41% of survivors from SARS claimed to suffer from Post-Traumatic Stress Disorder, more than 3.7% population suffered chronic stress and depression while more than 18% of health workers have developed psychological issues (Ko & Yen, et al., 2006, Lu & Shu, et al., 2006, Mak & Chu, et al., 2010). Crises interpose to be a part of modern human life (Koos et al., 2017), sometimes in the form of natural disasters, economic downfall, or global recessions wherein companies make layoff decisions or replace work workforce with Artificial Intelligence or Robotic Process Automation (Ren et al., 2020). The COVID-19 Pandemic proved to be the master of all as it didn't just lead to economic volatility and health insecurity but also led to sociopsychological repercussions never seen before (Carnevale and Hatak, 2020).

The disruption has happened worldwide, and repercussions can be felt in terms of increasing economic and psychosocial stress and fear of survival. The pandemic posed restrictions worldwide including lockdown, home isolation, social distancing, travelling constraints and emergencies which led to creating new ways of working from home. Media has played an active role in keeping the citizens updated about the crises and uncertainties' along with promoting the precautionary measures to be taken against Covid 19. The crises also led many people on the dole, some to death bed and the rest struggling to meet the workplace expectations. Human Behaviour has witnessed extreme turmoil in handling resource constraints, making psychosocial adjustments, managing self and family well-being along undermining the quality of life. Thus, the COVID-19 pandemic emerged as a crisis that severely impacted not only industries, organizations, retailers, and consumers but also human behaviour and lifestyle during and after the crisis (Mehrolia et al., 2021).

Few research survey results linked virus outbreaks and human behaviour and its effect with varying demographic variables like psychological interventions (Duan and Zhu, 2020), an individual's emotions affected by neighbours' behaviour (Borjas, 2020), population parameters (Kraemer et al., 2020), age group (Dowd et al., 2020) and parameters affecting socioeconomic setup (Mogi and Spijker 2020).

H_1: A high Sense of Coherence leads to balanced psychosocial behaviour during the COVID-19 Pandemic

Sense of Coherence (SOC) is an individual's viewpoint and response tendency to stressful situations (Koelen et al., 2016). SOC consists of three elements: comprehensibility, manageability, and meaningfulness. "It's a personal way of thinking, being, and acting, with an inner trust, which leads people to identify, benefit, use and reuse the resources at their disposal (Antonovsky, 1987)." SOC is a predictor of positive energy towards recurring issues and problems and people rated high in SOC convey less chance of experiencing perceived depression (Li et al., 2015). Research on elderly people stated a high correlation between strong SOC, quality life and good perceived health (Eriksson and Lindström, 2006); a positive correlation with tolerance to extraversion and frustration; a negative correlation with developing post-traumatic stress; (Frommberger et al., 1999); positive correlation with coping mechanism and negative correlation with exhaustion (Mitonga-Monga and Mayer, 2020). "SOC in individuals foresee underlying situations which lead to burnout, depression, and job satisfaction" (Masanotti et al., 2020). Antonovsky (1987) clearly stated the presence of stressors in both forms; destructive and constructive ensuring SOC presence worldwide as a coping mechanism for reducing tension and sustaining health.

Culture and SOC are two universal concepts; culture defines limits, but SOC sets the level of shared belief (Antonovsky, 1987). A high level of SOC leads to a low level of distress and a low level of coherence leads to increased psychological stress (Frommberger et al., 1999). Hayes (2013) researched the effect of SOC on Mental health with perceived family support as a mediating variable. Results of the study using demographic variables proved to be significant with the strong impact of SOC on mental health with perceived family support as a strong supporting mediating variable (Mana & Sagy, 2020)

H_2: High Self-esteem leads to balanced psychosocial behaviour during the COVID-19 Pandemic

The pandemic led to a significant harsh effect on mental health affecting human perception, intensifying addictive behaviours, suicidal tendencies and depressive symptoms. (Sani & Janiri et al., 2020). Being an Extrovert and carrying a high sense of emotion helped gain socioemotional support (Volk et al., 2021). Self-esteem is a critical component of emotional health and significantly contributes to subjective well-being. It refers to an individual's perception or evaluation of their value and worth. Self-esteem can be defined as the extent to which individuals appreciate, approve of, or value themselves (Blascovich & Tomaka, 1991).

Rosenberg (1965) defined self-esteem as an individual's attitude toward themselves, which can either be positive or negative. It represents the evaluative aspect of the self-concept and encompasses a broad understanding of oneself, including behavioural, cognitive, emotional, and evaluative dimensions (Blascovich & Tomaka, 1991). Self-esteem has considerable implications for mental health and well-being as it affects individuals' happiness and is highly correlated with high life satisfaction and subjective well-being (Diener & Diener, 1995). A study by Solomon et al., (1991) proved an inverse relationship of self-esteem with depression and anxiety. The sense of self-efficacy represents one of the resources that allow an individual to cope with a challenging situation (Bańka & Orłowski, 2014) and stress at work (Maggiori et al., 2016); it also influences whether an individual thinks optimistically or pessimistically (Bandura, 2001). In the workplace, self-efficacy is especially important as it empowers employees to confidently manage various aspects of their lives, including their professional lives (Bargsted et al., 2019). Self-efficacy plays a vital role in examining the functioning of employees in an organization, assuming a predictive function in connection with various aspects of professional activity and job satisfaction. A negative relationship exists between perceived stress and self-efficacy, and a positive relationship exists between self-esteem and self-efficacy (Rayle et al., 2005).

Looking at the need of time, it is paramount to understand thy beliefs and know the surroundings better (Rożnowski & Kot, 2015). In total, self-esteem and self-efficacy lead to self-evaluation, increasing employee satisfaction levels at the workplace (Judge et al., 2005). People with low self-efficacy are more likely to avoid tasks and expect failure, whereas those with high self-efficacy are more inclined to tackle difficult tasks (Bandura, 1997). Scientific research has shown that highly introverted individuals experience fewer positive emotions (Margolis & Lyubomirsky, 2019). However, for extroverts, the emotional benefits may be negatively impacted by a pandemic situation. An individual's high self-esteem shall help them face harsh feelings like; loneliness, emotional hurt, sleep disorders & anxiety during the COVID-19 Pandemic. Self-esteem protects the individual against the effects of COVID-19, even in a situation where a high level of anxiety is accompanied by a feeling of loneliness (Rossi et al., 2020), somatic problems and emotional discomfort (Schultz, 2002).

H_3: High Perceived Stress leads to balanced psychosocial behaviour during Covid 19 Pandemic

Whether Male or female, the COVID-19 pandemic proved equally fatal for both counterparts, a research investigation of 996 U.K. healthcare workers resulted in high job disruption and stress for women workers amid the pandemic (Lucas et

al., 2020). Probable reasons can be the employment of women for domestic work, occupational risks or a tendency to have higher empathy leading to work disruptions for women (Alon et al., 2020, Bloise & Johnson, 2007; Lennon & Eisenberg, 1983). Some other research stated women and young adults are more liable to suffer psychosocial flaws like distress and loneliness, empathic skills and coping strategies (Lazarus &Folkman, 1984). Card's (2002) research identifies six stress-related factors: "interpersonal relationships, job-related stress, management role disposition, career concerns, workplace environment, and individual traits." Some studies suggest a positive correlation between psychological distress & perceived stress (Meunier et al., 2022) and a negative correlation between behavioural and technostress (Molino et al., 2020). "Perceived stress reduces satisfaction with life" (Lazarus & Folkman, 1984). A study on political leaders during covid 19 suggested that a high level of trust in social workers and institutions leads to strong mental health, contrary to low levels of trust which leads to a conspiring mindset and increased stress. (Fancourt, Steptoe, & Wright, 2020; Mana & Sagy, 2020; Sibley et al., 2020). Perceived stress sometimes led to losing faith and success (Kivimäki & Kalimo, 1996), probable reason can be a declining level of self-efficacy and self-esteem. Oakman et al. (2010) suggest that work from home can sometimes be less stressful coz of family presence but in the case of isolation it may have turnaround effects.

H_4: High sense of work culture leads to balanced psychosocial behaviour during Covid 19 Pandemic

From a crisis perspective, it is challenging for employees to establish a clear boundary between work and personal life (Ramarajan & Reid, 2013). Working from home significantly threatens employee well-being and mental health (Brooks et al., 2020). Chronic workplace stress holds inverse influences on the psychological and emotional health of employees and the employer (Wood & Guimaraes, et.al., 2020). Exhaustion is a mental symptom resulting from prolonged work-related physiological and emotional fatigue. It leads to detachment, and a diminished sense of competence and achievement, and negatively impacts work productivity and motivation (Maslach & Leiter, 2016). When work culture fosters trustworthy and credible relationships, it helps prevent mental illness (Lopez Gomez et al., 2019). This, in turn, enhances employees' commitment, energy, and effectiveness in meeting workplace demands and achieving successful results.

It might be challenging for an employee to cope with workplace demands arising during Covid 19, it may turn stressful if the task becomes inconsistent or work expectations are not met (Schultz, 2002). Although working from home may initially seem appealing, it can become burdensome over time without clear boundaries between home and work responsibilities, adequate transition periods, social connections, and a supportive organizational environment (Cacioppo et al., 2006). Implementing Hofstede's cultural dimensions introduces variation in many workplace aspects. One particularly relevant dimension during the COVID-19 pandemic is the Tight-Loose (TL) culture, which reflects norms for group cohesion and flexibility (Harrington & Gelfand, 2014).

Employees miss their workplace aura while working from home, and they also find a lack of belongingness and inclusion which is evident when people work in groups in organisations (Morganson & Major et al., 2010). COVID-19 posed restrictions like home isolation, and social distancing which then posed a risk of mental health issues thereby affecting employee productivity. Individuals who are single or childless are more prone to such mental well-being issues (Miller, 2020; Smith, 2020). Tech access have helped people overcome negative effects of social isolation (Smith et al., 2018).

H_5: High Career Conscious leads to balanced psychosocial behaviour during the COVID-19 Pandemic against

Millions of workers are facing sudden and unexpected job loss (Ansell & Mullins, 2021), while millions more are adjusting to the "new normal" of working in isolation. Jahoda (1982) quantified the benefits of psychological well-being; Income (manifest) and time structure, social contact, and status(latent) related to employment. Financial deprivation can pose adverse effects on families and unemployment can lead to generating stress, anxiety, and mental disorders (Wanberg, 2012, McKee-Ryan & Maitoza, 2018).

The pandemic situation led to massive unemployment and a sudden shift in work culture. People were forced to adapt to upcoming situations and be future-ready (Rożnowski et al., 2006). Career counselling interventions might help individuals to cope with survival and social stress. It might make an individual more self-determined to handle issues related to psychological well-being (Duffy et al., 2016).

Unemployment raised out of the Pandemic will take time to sustain economic recovery. Hopes high that the market will regain its lost position, but uncertainty prevails. People who became unemployed because of COVID-19 have developed a tendency to search for jobs constantly in their routine (Wanberg, Ali, & Csillag, 2020). Thus, career adaptability that shows interest in exploring new work options has grown in youth and unemployed work groups, as they are willing to adapt and are more career-conscious post-pandemic (McKee-Ryan, & Maitoza, 2012).

H_6: A high need for Workplace Dynamics leads to balanced psychosocial behaviour during the COVID-19 Pandemic

The Pandemic abruptly toppled the new norm of the workplace calling it work from home, work remotely, agile workplace or virtual workspace facilitated by rising connectivity and communication technologies. An exclusive juncture of global crisis and remote workspace developed a scope of rising mental health issues for employees such as anxiety, stress, emotional hurts and fear of being unemployed (Lindebaum, Geddes, & Jordan, 2018). Looking ahead a decade, the trend

towards remote work could potentially result in reduced organizational commitment and an increased likelihood of losing control over employees, ultimately contributing to higher turnover rates (Vandenberghe et al., 2019). Work engagement is directly proportionate to low values of exhaustion and high level of efficiency and inversely proportionate to cynicism (Schaufeli et al., 2002). Thus, Effective work engagement results in intensifying job satisfaction, whereas the sense of coherence acts as a modulating factor (Derbis and Jasin´ski, 2018).

Isolation in the workplace fosters negativity in job attitudes and influences behavior, workplace commitment, and performance negatively as well (Ozcelik & Barsade, 2018). On the contrary, if workplace conditions are favourable, it builds trustworthy relationships among employees and a conducive workplace environment that prevents mental health concerns (Lopez Gomez et al., 2019). Bańka (2002) also highlights that contemporary employees often feel a minimal attachment to their physical workplace, as they can fulfil their duties just as effectively from home, a restaurant, or while travelling by train or plane. Consequently, he does not feel discomfort associated with staying outside of his workplace. Remote workers meeting virtually tends to lack effective communication in comparison to face to face meetings (Martins, Gilson, & Maynard, 2004) and there arises fair chance of conflicts and lack of coordination that leads to performance issues (Mortensen & Hinds, 2001). Thus, organisations must monitor the work quality of remote workers with thorough information processing, aligning team tasks and minimising conflicts. Also, employees working remotely have grown the tendency to search for other jobs, thus organisational support to adjust to the new normal and offering adaptive virtual technologies might help employees cope with work pressure and adjust to workplace dynamics.

COVID-19 pandemic has built in a "strong situation' where, predicting human behaviour and expression of personality, has been a challenging task (Meyer et al., 2010). The pandemic has created economic deficits across the globe along with affecting the mental health of people and quality of work life. HEXACO model stated personality traits predicting psychological outcomes due to the COVID-19 outbreak. Home isolation, quarantine and fear of getting infected tramped the state of anger, dilemma and anxiety in Humans (Brooks et al., 2020) but some traits showed a stable disposition of emotional balance and behavioural control in personality in response to situational crisis during the pandemic (Taylor, 2022).

Industry trends have shifted during the pandemic, resulting in unemployment for some and increased perceived stress for others. After organizations conduct layoffs, remaining employees frequently report decreased organizational commitment and job involvement, coupled with heightened stress levels (Trevor & Nyberg, 2008). According to Rose (2003), employees who work long hours tend to feel stressed, which negatively affects their productivity. This stress sometimes referred to as exhaustion, can lead to emotional fatigue, detachment, and a diminished sense of competence (Kristensen et al., 2005). Coping involves reducing stress levels and managing it effectively. Coping mechanisms involve dual concept; the first being 'problem-focused coping' wherein attempts are made to resolve or reduce the problem, in addition to 'emotion-focused coping' wherein an individual lays significant stress on controlling emotional imbalance arising out of a problem or stressful situation (Lazarus RS, FolkmanS,1984).

Based on the literature, the research gap was identified, and the same following research questions were focused on: What are the important factors that influence human behaviour in terms of psychosocial behaviour during the COVID-19 pandemic? Is there a way to segment the respondents based on the factors that emerged, if yes how to segment the respondents and what are the characteristics of these respondents? To what extent do socio-demographic and psychosocial characteristics influence the segmentation of human behaviour? The proposed conceptual framework is shown in Figure 1.

Studies have proven the ill effects of the pandemic on human behaviour such as increasing cases of depression and apprehension (Wang et al., 2020), fear of losing loved ones (Ahorsu et al 2020), and xenophobia towards people speculated of being infected with the disease (Mamun and Griffiths 2020). Nevertheless, the fear of getting COVID-19 has led to suicidal tendencies in people across the globe. As quoted in the Economic Times (2020), most of the outcomes of the COVID-19 pandemic resulted in negatively affecting human behaviour. The pandemic not only affected employees in organizations but had a significant impact on consumers' mental health as well, as a result, consumers have become more health-conscious and prefer simplicity over materialism (Oral & Thurner, 2019, Kuanr et al., 2020).

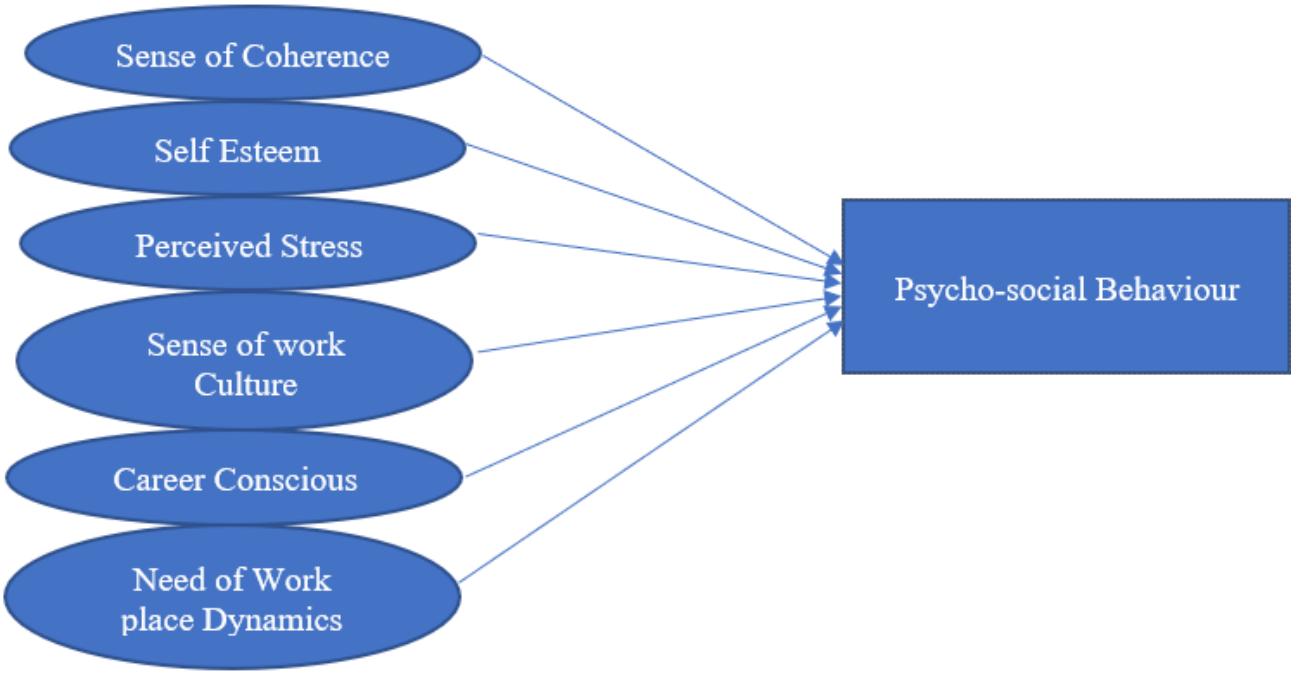

Figure :1 Proposed Conceptual Framework
Source: Author's analysis

The objectives of the study are

- To identify the factors that affect the psycho-socio characteristics during COVID-19 pandemic duration.
- To segment the respondents based on the identified factors affecting human behaviour during the COVID-19 pandemic.
- To identify the extent to which the socio-demographic and psychosocial characteristics influence the classification of respondents and validate the cluster solution using a classification predictive model such as logistic regression analysis.

MATERIAL AND METHODS

The primary objective of the research was to ascertain the perceptions related to psychosocial human behaviour during the COVID-19 pandemic. To identify the perception a review of the existing literature was conducted at the first stage, followed by an online survey of the resident of the centrally located state of India- Madhya Pradesh during 2020-21.

Questionnaire Design

The instrument to measure the response from the respondents was well structured and divided into two main sections. Section one comprised socio-demographic characteristics including gender, marital status, monthly household income, place of residency, and occupation. Section two included 30 items related to psychosocial human behaviour during the COVID-19 pandemic developed based on literature and evaluated on a Likert-scale type from 1 to 5, where 1 means strongly disagree and 5 means strongly agree.

Data Collection

To achieve the research objectives, an online survey using a questionnaire was administered. The method was chosen as it was a suitable data-gathering approach during the lockdown, ensuring the safety and well-being of both respondents and researchers (Mehrolia et al., 2021). All the respondents took part of their own accord, and no personal information was collected in this research. Samples were collected from tier II and III cities of Madhya Pradesh which has an ample amount of representation of the eligible population of India including students at professional institutes, young paying guests, working professionals and business-class people. Therefore, these cities are considered the best setting for the framework of the present study. The study's context and objectives were explained to respondents at the beginning of the questionnaire. The questionnaire was floated amongst different professionals and 313 respondents' reaction has been considered.

Statistical Analysis

The collected sample was analysed with the help of SPSS ver. 25 software package. Initially, the socio-demographic descriptive statistics were performed to describe the structure of the data. To assess the consistency of the entire scale and

the reliability of 30 items the diagnostic measure is the reliability coefficient measured through Cronbach's alpha. The value of reliability coefficient, $\alpha = 0.854$ indicated that the scale exceeded the significance level of 0.7 (Hair et. al, 2019), hence it is reliable to consider the data for further analysis. Factor analysis is a valuable multivariate statistical technique that categorizes variables meaningfully and reduces a large number of clumsy and trivial variables (Yong and Pearce, 2013). Exploratory factor analysis serves various purposes beyond extraction, including data transformation, hypothesis testing, mapping, and scaling (Rummel, 1970).

To understand the grouping of perceptions and to understand specifications in terms of understanding the psychosocial behaviour of humans during the COVID-19 pandemic measured through a self-designed questionnaire containing 30 items to a small number, R-type factor analysis was applied to comprehend the measured insights in a broad sense. Principal component analysis (PCA) with Varimax rotation was used to access the factor structure. Factors with an eigenvalue greater than 1 and loading better than 0.4 were deemed to be significant and incorporated into the analysis (Hair et. al, 2019). The suitability of the data was tested through Bartlett's test of Sphericity and Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy. Additionally, the emerged factors obtained from PCA were used further as input in the cluster analysis. Cluster analysis was conducted with a hierarchical cluster technique based on Ward's method to identify the optimum number of clusters to stop at as well as with the non-hierarchical cluster analysis called the K-mean cluster. The Mann-Whitney U test was used to compare the groups. Binary logistic regression was utilized to distinguish the groups' major socio-demographic and psychosocial characteristics.

RESULTS

The descriptive statistics to understand the demographic distribution pattern are shown in Table 1.

Table 1: Socio-demographic characteristics of the study participants

Variable	Levels	N	%
Gender	Female	158	51%
	Male	154	49%
Marital Status	Married	80	26%
	Single or Unmarried	232	74%
Monthly Income of Family	Upto 20K	155	50%
	20-40 K	77	25%
	40-60 K	40	13%
	Above 60 K	40	13%
Occupation	Others (Service Class and Home Maker)	25	8%
	Business Class	123	39%
	Student	164	53%
Place of Residency	Urban	222	71%
	Rural and Semi-Rural	42	13%
	Semi-Urban	47	15%

Source: Authors' calculation based on sample data collected.

The sample included almost same proportion of males (49%) and females (51%) who were majorly single or unmarried (74%) were a mix of students (53%), business class (39%) and other professionals largely from urban (71%), rural and semi-rural (13%) and semi-urban (15%) place of residence earning monthly income up to 20, 000 (50%) and almost equal proportion of 20-40 K and beyond. Regarding the occupation, major data was collected from students as it was known that the younger generation was more open to surveys in general and online mode in particular (Saleh, 2017). The high response rate from urban residents and the low response rate from rural areas may be attributed to the limited internet access generally available to rural residents (Marinescu, 2018).

Perception of Psychosocial human behaviour during COVID-19 pandemic

Exploratory factor analysis was implemented to construct the structure of factors of the research items and to extract the key factors affecting perceived psychosocial human behaviour during the COVID-19 pandemic. The overall significance of the correlation matrix was checked with the Bartlett test of sphericity indicated by $\chi 2 = 2275.055$; $df = 300$; $p < .001$ was significant. The factorability of the overall set of variables and individual variables using the measure of sampling adequacy (MSA) measured as 0.825, was large. The tests implied that the sample included in the present study has an adequate sample size and a required amount of interdependency among the items exists. This indicated that KMO and Bartlett test were favourable for proceeding with factor analysis further. The interpretation of factor analysis was based

on rotated factor loadings, Eigenvalues, and the Scree test (Yong and Pearce, 2013). To determine the number of factors to be extracted the summary of results of multiple criteria used was detailed in Table 2.

Table 2: Exploratory Factor Analysis Results

Factor	Cronbach α	Mean	SD	Eigen value	% Variance explained	Item	Factor Loading	Mean	SD
1. Sense of Coherence	0.827	4.28	0.15	5.87	13.80	I have started valuing food items which were not that attention-gaining earlier.	0.74	4.21	0.97
						In this situation, I have learnt to do things on my own.	0.72	4.24	0.99
						I could understand my mother's/wife's/sister's role in the family meanwhile observing them more closely.	0.71	4.27	0.98
						I have understood how to live in a crisis concerning eatables.	0.66	4.42	0.77
						I have started doing household work to share responsibilities (which made me responsible too).	0.56	4.34	0.94
						My saving habits have been developed in this situation.	0.55	4.13	1.05
						I have understood the 'Joy of giving' to needy people.	0.52	4.38	0.74
2. Perceived Stress	0.703	4.52	0.19	2.24	10.94	I get hurt when people do not follow Guidelines communicated by Government Officials.	0.74	4.57	0.69
						This lockdown situation made me realized the role of Doctors, Police and other government Heroes.	0.72	4.70	0.58
						When I see videos or news about people who are in trouble and someone is helping them, it gives me pleasure.	0.62	4.40	0.94
						When I see such birds, and animals coming to my locality/ through windows/videos/social media. It makes me happy that these birds or animals feel freedom of space and Nature, as I am not disturbing them.	0.62	4.66	0.64
						I get frequently annoyed by listening to the News and other Media about- People's indifferent Behaviour During Lockdown.	0.58	4.25	0.89
3. Self Esteem	0.715	4.16	0.12	1.81	9.11	I feel good spending time with myself.	0.77	4.20	1.02
						I have realized My actual self and my Personality during Lockdown.	0.59	3.98	1.02
						It's been quite a long before this, to have such quality Time for myself and my family.	0.59	4.24	0.94
						I believe I have become a better person (during Lockdown) who is also socially responsible.	0.58	4.21	0.88

4. Work Culture	0.677	3.58	0.08	1.46	7.94	Work From Home along with Work for Home is an uneven combination during Lockdown.	0.79	3.67	1.09
						Working from Home during Lockdown is more stressful.	0.77	3.52	1.25
						Lockdown stressed me to an extent that has never happened before.	0.69	3.54	1.25
5. Career Conscious	0.574	3.73	0.18	1.44	7.26	The virtual organization made my assignment complete.	0.77	3.54	1.13
						This situation led me to use/learn technology which I liked the most.	0.69	3.76	1.14
						I have decided to do some short-term courses which can make me learn something new for my career or knowledge's sake.	0.59	3.90	1.14
6. Workplace Dynamics	0.565	3.92	0.11	1.12	6.72	In this lockdown period, I missed my organization.	0.79	3.79	1.17
						I missed my colleagues and their companionship during this lockdown.	0.79	4.02	1.1
						In this situation, few people have been thrown out of the job or paid less salary.	0.48	3.93	1.04
Total	0.854				55.77	KMO = 0.825, Bartlett's Test of Sphericity $\chi 2$=2275.055, df = 300, $p < 0.001$			

Source: Author's calculation

The application of principal component analysis and varimax rotation resulted in a six-factor solution, accounting for 55.77% of the variance (Table 2). The reliability using Cronbach's alpha test was conducted for each of the emerged factors, resulting in reliability coefficients from 0.565 to 0.827, suggesting a good internal consistency among the attributes of the first three components (Hair et. al, 2019) and a weak consistency among the attributes of last three components.

The factors were nomenclated as 1. Sense of Coherence, 2. Perceived Stress, 3. Self Esteem, 4. Work Culture, 5. Career Conscious and 6. Workplace Dynamics. The first-factor Sense of Coherence was able to explain 13.8 % of variance which comprised seven items with a mean of 4.28 ± 0.15. This component is indicative that person felt and realised things which he never felt earlier. It was observed through factor loading that a high score was recorded for the items related to valuing things (4.21 ± 0.97), followed by performing activities on their own (4.24 ± 0.99) and the importance of family members (4.27 ± 0.98). The respondents agreed that they had understood life in crisis as concerned with eatables, this was observed in their behaviour (4.42 ± 0.77) followed by the way they understood the importance of sharing responsibilities (4.34 ± 0.77), developed saving habits (4.13 ± 1.05) and understanding the joy of giving to needy (4.38 ± 0.74).

The second factor perceived stress explained 10.94% of variance and comprised of five items with a mean of 4.52 ± 0.19. The factor loadings of the items of this component indicated that a high score was registered for feeling bad about people not following official guidelines (4.57 ± 0.69), followed by the feeling of the importance of the key role played by key stakeholders (4.7 ± 0.58). The next item is feeling good about people helping the needy (4.4 ± 0.94) and feeling good about nature (4.66 ± 0.64) and the last item the annoyed feeling about listening to media was not rated very high (4.25 ± 0.89).

The third component self-esteem explained 9.11% of variance and comprised of four items with a mean of 4.16 ± 0.12. The high loading was registered for the feel-good factor with mean (4.2 ± 1.02) while a comparative low loading was recorded for actual self-realization (3.98 ± 1.02), spending quality time with loved near and dear ones (4.24 ± 0.94) and feeling of being a good person (4.21 ± 0.88). The fourth component work culture explained 7.94% of the variance and comprised three items with a mean of 3.58 ± 0.08. The items of work from and for home not a good idea (3.67 ± 1.09) followed by work from home a stressful matter (3.52 ± 1.25) accounts for a high factor load and the third item feeling stressed (3.54 ± 1.25) accounted for the next factor loading. The fifth component career consciousness accounted for 7.26% of the variance with a mean of 3.73 ± 0.18 comprising three items, and the sixth component workplace dynamics recorded 6.72% of the variance with a mean of 3.92 ± 0.11 comprising three components.

Segmentation of respondents based on their psychosocial behaviour during COVID-19 pandemic

The summated scale was developed based on the three factors with a Cronbach alpha value greater than 0.7, obtained from factor analysis, which was subsequently used in cluster analysis (CA) to establish clusters of respondents. The respondents were thus classified based on homogeneity in the summated scale related to dimensions of social media usage patterns. The summated scale addressed the multicollinearity problem by ensuring the factors were orthogonal to each other, significantly reducing the possibility of collinearity between them (Hair et al., 2019). Further, a two-stage cluster analysis was implemented to classify the respondents based on the factors of psychosocial human behaviour during a pandemic. Unlike other multivariate techniques, the cluster analysis technique does not include the estimation of the variate empirically instead, the variable specified was used for the analysis (Hair et al., 2019).

Before implementing cluster analysis, the data was explored to identify if there exists any outlier as cluster analysis is sensitive to the presence of extraneous variables and outliers. A visual method called a profile diagram, which plots variables along the horizontal axis and their values along the vertical axis, was used to detect outliers (Figure 2). The graph identified a low-hanging line with low responses for almost all factors, pinpointing respondent ID 143 as a likely outlier. This was further confirmed by the empirical and agglomeration schedule, which showed that this ID did not merge with any cluster members until a very advanced stage. Consequently, respondent ID 143 was omitted from the analysis, resulting in a final sample size of 312 respondents.

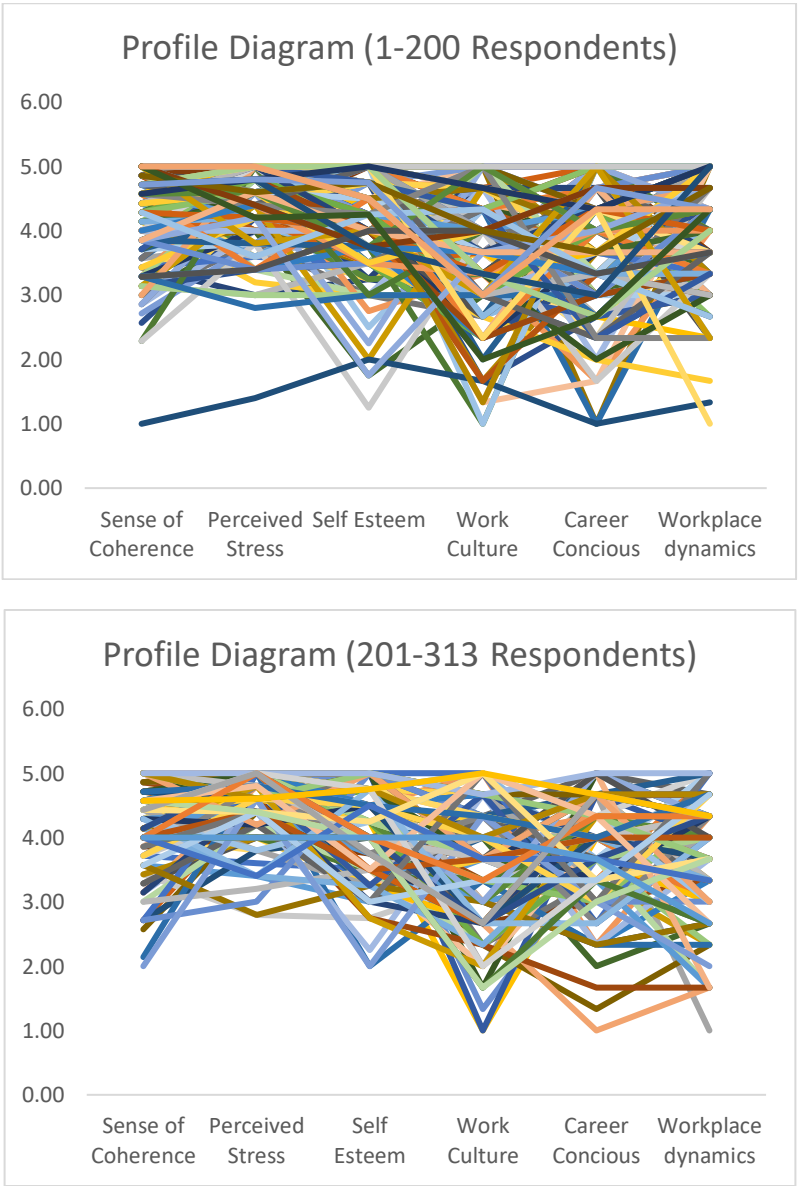

Figure 2: Profile Diagram
Source: Author's calculation

After omitting the outliers, the agglomeration coefficient was specifically used to determine the optimal number of clusters to identify the stopping rule. In the first stage, the number of clusters to stop was identified with the help of a hierarchical clustering procedure using Ward's method, considered one of the widely used agglomeration schedules (Hair et al., 2019). Ward's Method was devised to minimize cluster variance and manages to generate robust, dense, spherical clusters with diverse characteristics (Everitt et al. 2011). To decide the number of clusters to stop at, the most common approach to observing the clustering process was with a high value of stress. Experience also indicated that it was rare to find a statistically significant solution with more than seven clusters (Saunders, 1994). The highest percentage change in heterogeneity was 76.88 % for two clusters (refer to Fig. 3) hence, two cluster solutions were identified.

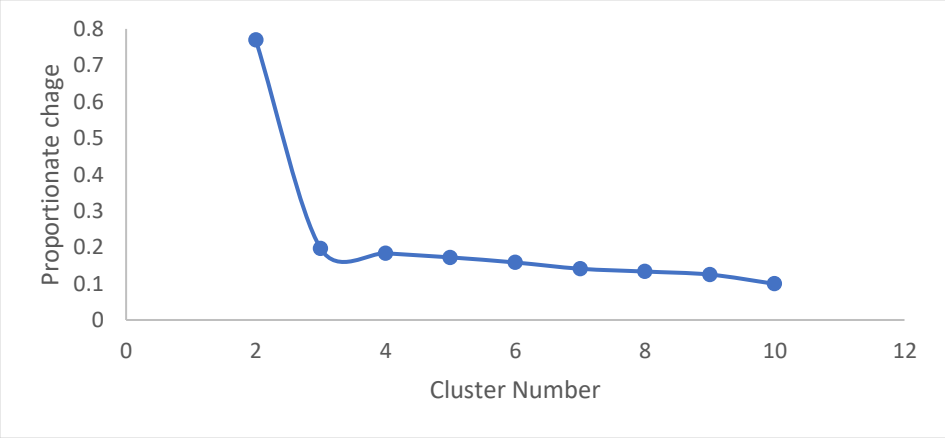

Figure 3: Plot of proportionate change in the heterogeneity of clusters
Source: Author's calculation

The hierarchical clustering process resulted in assigning a distinct cluster number to each case. To validate the uniqueness and significance of these cluster assignments, one-way ANOVA was conducted to delineate differences between clusters relevant to the research question and to characterize the cluster attributes. The primary assessment was adequately favourable as all the clusters contain more than 10% of observations retaining all the clusters favourable to suggest moving on to non-hierarchical clustering. The final connotations of the two clusters would be established in the non-hierarchical analysis as the size of clusters was expected to change and cases were relocated.
Table 3 shows the non-hierarchical two-cluster solution, a fine-tuned version of the hierarchical clustering. Following a similar method of verifying the cluster solution with ANOVA (Bohorquez et al. 2019) and Mann Whitney U test (Muresan et al., 2021), the present study results in significant F-statistic and Mann Whitney U statistics as presented in Table 3. The F-statistic and Mann-Whitney U statistics were both significant at a 1% level of significance for the three factors of psychosocial human behaviour during the pandemic, affirming the robustness of the cluster solution.

Table 3: Profile of two clusters from non-hierarchical cluster analysis

Factors	Mean for		Mean Cluster Var.	Mean centred for		F	Sig.	Mann Whitney U statistic	Sig.
	Cluster 1	Cluster 2		Cluster 1	Cluster 2				
Sense of Coherence	3.67	4.65	4.28	-0.61	0.37	361.2	0.0	21430	0.0
Perceived Stress	4.19	4.71	4.52	-0.33	0.20	100.4	0.0	17843	0.0
Self Esteem	3.53	4.54	4.16	-0.63	0.38	278.9	0.0	20854.5	0.0

Source: Author's calculation

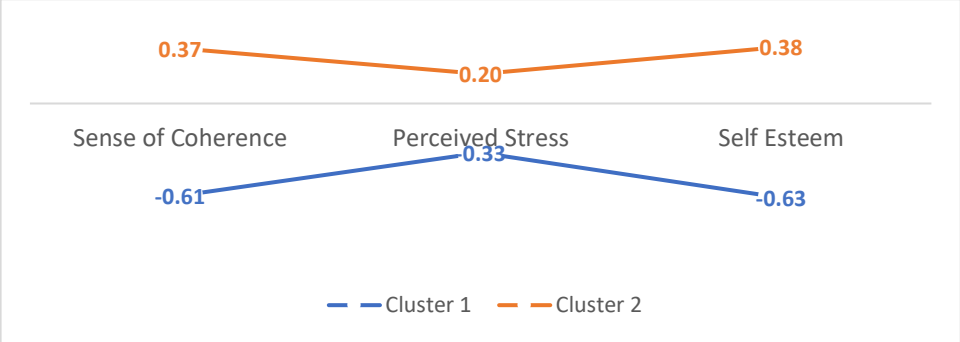

Figure 4: Cluster Profile with centred mean
Source: Author's calculation

The mean-centred values gave a clearer description of the distinction between the three clusters. All three clusters exhibit somewhat distinctive characteristics as discussed further. The two-step cluster analysis using three dimensions from the principal component analysis led to a two-cluster solution. The identified clusters were labelled according to the factors that were considered distinctive for their psychosocial behaviour during the COVID-19 pandemic: **cluster 1**: **disruptive in psychosocial behaviour** and **cluster 2: balance in psychosocial behaviour**. Final cluster means were reported in Table 3 and the multivariate statistics indicated significant differences among the identified clusters ($p < 0.001$). The Mann-Whitney test indicated that the clusters were highly homogeneous for the considered factors ($p < 0.001$) (Table 3 and Fig. 4) as well as it was significant for two other factors Career Conscious, and Workplace Dynamics not considered for clustering (Table 4 and Fig. 5).
Source: Author's calculation

Table 4: Cluster Profile with other variables not included as clustering variables

Factors	Mean for		Mean Cluster Var.	Mean centred for		Mann Whitney U statistic	Sig.
	Cluster 1	Cluster 2		Cluster 1	Cluster 2		
Work Culture	3.5	3.6	3.577	0.0	0.0	12153	0.3
Career Conscious	3.4	3.9	3.733	-0.3	0.2	14987	0
Workplace Dynamics	3.7	4.1	3.915	-0.2	0.1	14761	0

Source: Author's calculation

The cluster stability was checked by re-running the k-mean cluster analysis with a different seed point. Sorting observations on a different variable, say gender, helped in providing a different seed point. The cluster solution was very stable because the solution was produced with none of the observations being misclassified (Hair et al., 2019), refer to Table 5, just the clusters were swapped.

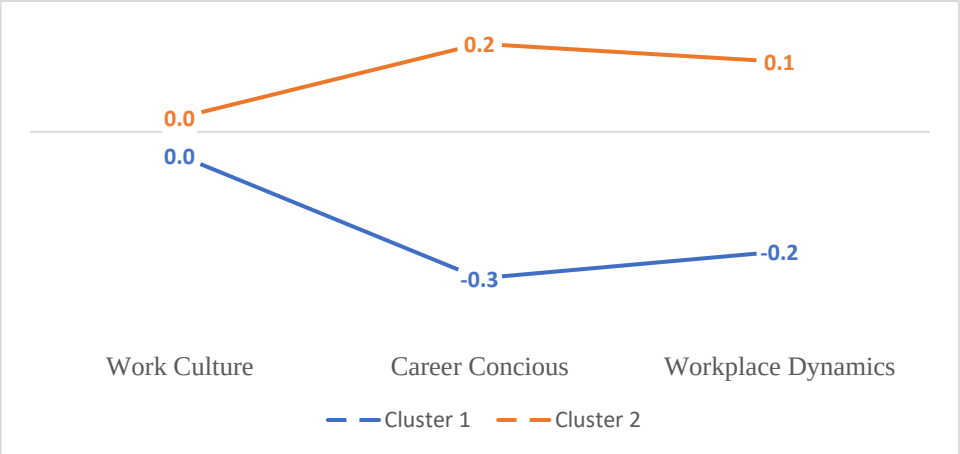

Figure 5: Cluster Profile of factors not included in the clustering
Source: Author's calculation

Table 5: Cross-Classification to Assess Cluster Stability

		Cluster Number from Second K-Means		Total
		1	2	
Cluster Number from First K-Means	1	0	117	117
	2	195	0	195
Total		195	117	312

Source: Author's Analysis

The profile of the clusters was done on some additional variables not involved in the clustering variate or used to assess predictive validity as presented in Table 6. The socio-demographic characteristics were available such as Gender, Marital Status, Monthly income, Occupation and place of residency.

Cluster 1 – Disruptive in psychosocial behaviour: This cluster consisted of 117 cases, accounting for 37.5% of the sample, and was best characterised by low mean scores on Sense of Coherence, Perceived Stress, and Self-Esteem. Additionally, members of this cluster also displayed low mean scores on factors not considered for clustering, such as Work Culture, Career Consciousness, and Workplace Dynamics. The respondents in this group were predominantly male (54%), mostly single or unmarried (74%), and primarily students (53%). The majority had a household monthly income of up to Rs. 20,000 (52%) and resided in urban areas (68%). This suggests that the group was largely composed of male urban students, with a moderate representation of the business class (43%).

Table 6: Cluster Socio-demographic profile

Characteristics	Cluster 1	Cluster 2
	(n = 117, 37.5%)	(n = 195, 62.5%)
Gender		
Female	54 (46%)	104 (53%)
Male	63 (54%)	91 (47%)
	Marital Status	
Married	30 (26%)	50 (26%)
Single / Unmarried	87 (74%)	145 (74%)
Monthly Income		
Up to 20,000	60 (52%)	93 (48%)
20,000-40,000	28 (24%)	49 (25%)
40,000 - 60,000	11 (10%)	29 (15%)
Above 60,000	16 (14%)	24 (12%)
Occupation		
Business Class	49 (43%)	74 (39%)
Students	60 (53%)	104 (54%)
Others	5 (4%)	13 (7%)
Place of Residency		
Urban	80 (68%)	142 (73%)
Rural	10 (9%)	26 (8%)
Semi-Urban	19 (17%)	47 (14%)
Semi-Rural	8 (7%)	16 (4%)

Source: Author's calculation

Cluster 2 – Balance in psychosocial behaviour: This cluster consisted of 195 cases, accounting for 62.5% of the sample, and was characterised by high mean scores on Sense of Coherence, Perceived Stress, and Self-Esteem. Similar to cluster 1, members of this group exhibited characteristics in terms of Work Culture. Additionally, they showed moderately high mean scores in Career Conscious behaviour and high mean scores in Workplace Dynamics. The cluster was predominantly

composed of female respondents (53%), most of whom were single or unmarried (74%), with household incomes up to Rs. 20,000 (48%). These females were primarily students (54%) residing in urban areas (73%).

To validate the results of the cluster solution, binary logistic regression was used to identify the extent to which socio-demographic variables, gender, marital status, household monthly income, occupation, and place of residency along with the three factors of Sense of Coherence, Perceived Stress and Self Esteem affect the chance of belonging to cluster 1 and 2 respondents. The dependent variable was coded considering the value as zero if the respondent was a member of cluster 1 i.e. disruptive behaviour and one of member of cluster 2 i,e, balanced behaviour during a pandemic. The model including the predictors was a substantial improvement in the fit over the intercept-only model (De Noble Galbraith et al., 2007; De La Viña & Ford, 2001; Zewude & Ashine, 2016; Pituch, 2015) as indicated by the significant likelihood ratio chi-square test. It can be inferred from the LR chi-square test that the full model represented a significant improvement in fit relative to the null model, LR $\chi2(2) = 223.697$, p=.000 (refer to Table 7).

Table 7: Validation of cluster solution using Logistic Regression

	Coefficient Estimate	S.E.	Wald	df	Sig.	Odds Ratio	The ratio of probability changes
Sense of Coherence	12.119	3.316	13.360	1	0.000	183378.5	18337754%
Self Esteem	10.285	2.675	14.784	1	0.000	29284.5	2928350%
Constant	-91.944	23.699	15.051	1	0.000	0.000	
Diagnosis							
LR (Chi-square)	223.697			2	0		
Hosmer Lemeshow Test	0.296			8	0.999982		
Model Summary							
Cox & Snell R^2	0.696						
Nagelkerke R^2	0.941						

Source: Author's calculation

There were two indicators in the logistic regression namely Cox and Snell R^2 ($R^2 = 0.696$) and Nagelkerke R^2 ($R^2 = 0.941$), like the coefficient R^2 in linear regression that assesses the contribution of regressing variable to the variability of the target variable (Zewude & Ashine, 2016; Pituch, 2015; De Noble et al., 2007; De La Viña & Ford, 2001;). The eight predictor variables – gender, marital status, occupation, household monthly income, place of residency, Sense of Coherence, Perceived Stress, and Self Esteem could explain 94.1% of the variance in the classification of respondents' psychosocial human behaviour during the COVID-19 pandemic. The overall model fit could be tested using another test Hosmer and Lemeshow (Tabachnick & Fidell, 2019) where a good fit model was based on an insignificant chi-square value. In the present study, the test was insignificant, $\chi2(8) = 0.296$, p = .9999—suggesting that the model was a good fit.

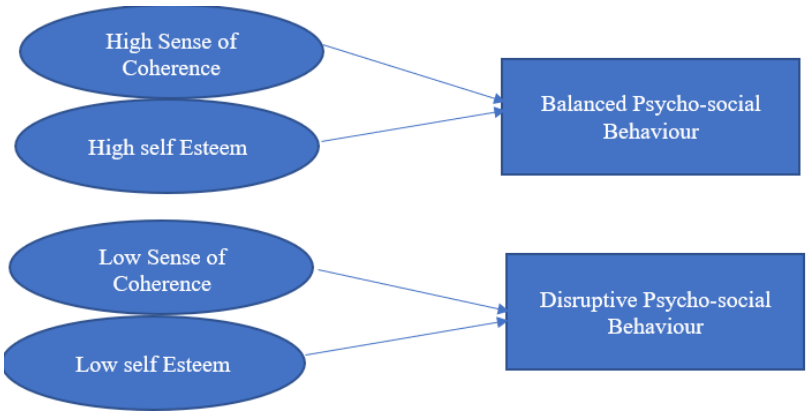

Figure 6: Balanced and Disruptive Psychosocial behaviour framework
Source: Author's analysis

Table 6 provides information on how the independent variables impact the likelihood of categorizing respondents' psychosocial human behaviour during the pandemic. The regression slope for a sense of coherence ($b = 12.199$, $p < 0.01$ and self-esteem ($b = 10.285$, $p < 0.0$) were positive and statistically significant indicating that the probability of a respondent who was balanced in psychosocial behaviour during the pandemic was higher for those who had a higher sense of coherence and self-esteem. The odds ratio for the predictor indicates that the odds of a respondent who was balanced in psychosocial behaviour during the pandemic changed by a factor of 183378.5 with each basic score increment on the sense of coherence, 29284.5 with a basic score increment on self-esteem. An increasing sense of coherence (18337754%) and self-esteem (2928350%) were associated with an increase in the likelihood of respondents being classified in the cluster of balanced psychosocial behaviour. The inference can also be drawn from the framework of balanced and disruptive psychosocial behaviour framework (Fig. 6). However, it may be noted that all the socio-demographic characteristics of gender, marital status, household monthly income, occupation, and place of residency along with perceived stress were insignificant and did not influence on the classification of respondents in two clusters of balanced and disruptive behaviour during a pandemic. Thus, a sense of coherence (H1) and self-esteem (H2) were supported as they were significant. While rest of the hypotheses - perceived stress (H3), sense of work culture (H4), career consciousness (H5) and need for workplace dynamics (H6) were insignificant. Also, it is to be noted that the demographic variables such as gender, marital status, monthly income, occupation, and place of residency were insignificant predictors of the classification of respondents' psychosocial behaviour as balanced or disruptive during a pandemic.

The classification matrix (Table 8) was the cross-tabulation of dependent variables categorized as disruptive and balanced versus predicted outcomes. It measured the prediction accuracy of the selected cases (188, 60% of the sample) and unselected cases (124, 40% of the sample) being classified correctly or misclassified. In the selected cases 110 were correctly predicted to be in the cluster where respondents' behaviour was balanced during the pandemic and 3 were wrongly predicted. Out of the 188 selected cases of respondents who showed disruptive behaviour during the pandemic, 73 cases were correctly predicted, and 2 cases were incorrectly predicted. The 124 unselected cases validated the model, showing that 40 out of 41 disruptive cases were classified correctly, with only one incorrect prediction. Among the 82 cases originally showing balanced behaviour, 77 were correctly classified, and 5 were misclassified. These estimates indicate that 97.3% of the data were correctly classified (Hit ratio = (40 + 77)/124 = 97.3%), signifying excellent predictive ability.

Table 8: Classification Table

		Selected Cases[b]			Unselected Cases[c]		
		Cluster Number of Case		Percentage Correct	Cluster Number of Case		Percentage Correct
		Disruptive	Balanced		Disruptive	Balanced	
Cluster Number of Case	Disruptive	73	2	97.3	41	1	97.6
	Balanced	3	110	97.3	5	77	93.9
Overall Percentage				97.3			95.2
a. The cut value is .500							
b. Selected cases validate EQ 1							
c. Unselected cases validate NE 1							

Source: Author's calculation

DISCUSSION

Findings reveal stages through which individuals collectively showed balanced and disruptive behaviour as they experienced the pandemic; as the pandemic evolved, so did individuals' psychological behaviour responses. Sense of Coherence was a typical variable having a high impact on individuals showing balanced psychological behaviour. Our results are supported by various other findings presented in the literature: Negovan & Bagana's (2011) research on students' self-esteem as a function of personal factors which had a significant difference as a situational factor. Also, Block and Robins' (1993) research on group and individual changes in self-esteem and on age differences in mean levels of self-esteem; the research of Hankin et al. (1997), Thompson and Zuroff (1999) on the relationship between Self-criticism and self-esteem. An increasing sense of coherence and self-esteem were associated with an increase in the likelihood of respondents being classified in the cluster of balanced psychosocial behaviour. An analysis of the data shows that the socio-demographic characteristics like gender, marital status, household monthly income, occupation and place of residency along with perceived stress were insignificant and did not influence the classification of respondents in two clusters of balanced and disruptive behaviour during a pandemic. Results indicate that these variables may exert an effect on depression via perceived stress or a sense of coherence among individual psychological behaviour. van der Waerden

(2014) also reported that perceived stress mediated the relationship between low socioeconomic status and depressive symptoms. All dimensions of sense of coherence were verified to be negatively and significantly associated with depression (Psychological Behaviour). Thus, the greater the sense of coherence, the less the risk of depression, consistent with Beam et al. (2017) and Li et al. (2015).
Neuman (Neuman, and Fawcett, 2002) stated that when stressors act on the body, the flexible line of defence plays a protective buffer role, once the defence line is damaged, the body will produce a stress reaction, and negative stress may lead to emotional problems, such as anxiety and depression. The sense of coherence was like the flexible line of defence; therefore, individuals could show balanced psychological behaviour during the Pandemic. In the face of unchangeable pressure, individuals were likely to have a good buffer and coordination with a higher level of sense of coherence. Antonovsky (1987) hypothetically claimed that a sense of coherence was a rather stable quality of an individual, however, some new researchers (Sagy and Antonovsky, 2000; Vastamäki et al., 2009; Yamazaki et al., 2011; Kähönen et al., 2012) presented interesting results indicating that sense of coherence was more dynamic than formerly believed and empirical evidence revealed that sense of coherence might be improved due to a mode of therapy. Therefore, relevant interventions should be implemented to enhance the sense of coherence and withstand the occurrence and destroy perceived stress during a pandemic.

The predictor variables—socio-demographic factors, Sense of Coherence, and Self-Esteem—explained 94.1% of the variance in classifying respondents' psychosocial behaviour into two major clusters during the COVID-19 pandemic. As anticipated in our first hypothesis, we consistently found strong connections between a Sense of Coherence, Self-Esteem, and individuals' psychological behaviour across all samples. These variables consistently contributed directly to psychological behaviour, even when controlling for age, gender, and perceived financial risk. Additionally, the relationships between Sense of Coherence and Self-Esteem were stronger than those between psychological behaviour and other factors such as perceived stress, sense of work culture, career consciousness, and workplace dynamics. These findings confirm the central role Antonovsky (1979) assigned to the sense of coherence as a core and main coping resource. Moreover, a sense of coherence appears to have a universal meaning, not limited by cultural characteristics.

A high level of sense of coherence in connection with life satisfaction and high quality of life was generally considered a protective factor in psychosocial behaviour and was important in the prediction of physical as well as psychological health. A low level of meaningfulness may be viewed as an indicator of an existential vacuum (Antonovsky, 1979, 1987, 1992). In this sense, cluster one shows balanced psychosocial behaviour with a high level of sense of coherence and self-esteem. The study by Habroe et al. (2006) indicated that the sense of coherence was not necessarily stable throughout adulthood. High positive self-esteem was a protective factor for individual psychosocial behaviour in this study. Empirical evidence for a relationship between self-esteem and psychosocial behaviour was not consistent. Several cross-sectional and longitudinal studies had linked low self-esteem with current and/or future kinds of risk behaviour (Mann et al., 2004; Wild et al., 2004). Negative self-esteem had a significant effect on risky behaviour (smoking, alcohol consumption, being drunk, having experience with drugs) among adolescents (Veselska et al., 2007). The sample represents just a part of the general population that might be characterized by higher socioeconomic status and higher self-esteem. Results of another study (Wild et al., 2004) provide preliminary evidence that specific domains of self-esteem are differentially associated with particular risk behaviours. Their study showed that the likelihood of risky behaviour might increase with low self-esteem in particular domains (family, school) and decrease with low self-esteem in other areas (peers). One probable reason for inconsistencies in these findings was that researchers had used different operational definitions of self-esteem and differed in the extent to which they had controlled for its covariates.

IMPLICATIONS

As many businesses around the world will be restructured or disappear due to the pandemic, workers will be retrained or laid off and the economic, social-psychological, and health costs of these actions are likely to be immense. Explaining and understanding people's reactions to various risk situations and crises is extremely important, both from the aspect of maintaining mental health, and minimizing the negative effects of such threats, e.g. further spread of an infectious disease (Taylor, 2019; WHO, 2021). In this context, the aim of this study was to explain typical adaptive and maladaptive behavioural and emotional responses to COVID-19 pandemic among Indian citizens. Macleod and Davey Smith are quite right in stating that enhancement of social inequality in health is a priority for public health policy in most economically developed countries. However, they believe that "psychosocial solutions do not necessitate fundamental social change", while accepting the causal link between social disadvantage and psychosocial adversity. It seems difficult to understand how psychosocial change would work without a change in social inequality to which it is causally linked. This clarification calls for a push in social epidemiology towards understanding the mechanisms by which social structure influences psychosocial variables. Socialisation agents may be responsible, and the part played by parents, schools, and other agents needs to be explained. Policy should also be directed towards improving the structural aspects of psychosocial variations, in terms of work structure, work-life balance, etc. Psychosocial variables are important both because they affect quality

of life ("misery") and are on the causal pathway to somatic disease. As public expenditure on health includes both of these outcomes, policy implications need to address them both. Briefly, any discussion on psychosocial variables is welcome as it is likely to promote the development of both theory and method aimed at understanding the links between social structure and health.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

This study has some limitations: (1) the participants were limited to the central part of India, although there is a good representation, however, it still does not represent the situation in other regions, therefore a larger and more diverse sample is required for further study; (2) the study only carried out the exploration of the preliminary theory about the effect of sense of coherence and self - esteem but did not put forward more specific interventions for psychosocial behaviour on strengthening the sense of coherence and self - esteem hence, future studies should develop a more thorough and particular intervention index system on strengthening the sense of coherence self- esteem; (3) this study found that sense of coherence and self-esteem only having most effect on psychosocial behaviour for classifying two clusters, concluding that other factors can be acted as important . Therefore, future studies should examine additional factors to provide a wide perspective on the complex relationship between psychosocial behaviour of individual. Interpretive methods were employed, which may limit the generalizability of the findings from a methodological viewpoint. Also, data from only one region and only during various stages of the pandemic in that region were collected and analysed. This may limit generalizability to individual psychosocial behaviour in other regions or nations. As such, other forms of qualitative data collection, as well as various quantitative methods, could be used to confirm and extend the results herein. The main findings of this study offer some practical implications for interventions aimed at reducing pandemic detrimental effects and promoting resilience. According to the "3Cs" (Control, Coherence, and Connectedness) model developed by Reich (2006) to account for resilience resources in emergency situations, it seems relevant to support individuals in perceiving critical events as clear and explicable and in developing a sense of confidence in their coping abilities.
Since our objective of this research was to identify the factors that affect the psychosocial characteristics during COVID-19 pandemic duration and influence the classification of respondents and to validate through cluster analysis, it does not assume a particular theoretical lens. As such, it will be beneficial for future research to apply various theoretical lenses. Moreover, beyond psychosocial behaviour, our research focused largely on human behavioural responses to the pandemic. This occurred because individual focused on behaviours as they described their pandemic experiences but did not reveal other emotional or attitudinal responses. Future research should explore additional individual and collective outcomes of pandemics and other crises from individuals' perspectives. Another potential limitation is the nature of the participants in the study. Although the research was not able to follow the same individual through the pandemic, an array of people types was sampled who were experiencing mostly the same phenomenon and restrictions as they lived in the same region.

CONCLUSION

This study demonstrated that psychosocial factors were highly meaningful with better psychological and mental well-being among young professionals due to Covid-19 pandemic. Study validated that a high level of psychological distress and mental misbalance among young professionals who were working on different field during the coronavirus-triggered health crisis, being these levels lower in primary care workers. A relationship has been identified between the presence of COVID-19 symptoms, higher levels of psychological distress, and lower sense of coherence and self-esteem. On the other hand, our study sample has been classified as two clusters based on psychosocial factors named sense of coherence and self–esteem. Our results demonstrate that a group of respondents characterised by low levels of sense of coherence and self-esteem may be at risk for the development of clinically significant symptom change from pre- to post-outbreak. Future studies should investigate the pandemic's impact on public mental health but also its influence on the psychosocial factors of professionals. Our results may also support the development of resilience training. Furthermore, future research should address a broad range of psychosocial consequences of COVID-19 and their impact on treatment access for mental disorders. Therefore, it is of vital importance to continuously monitor the mental health of the public during this pandemic and its outcome to identify associated protective factors and to carefully screen for IPV and its risk factors such as stress, sleep problems, and anger. The results of this study could help to understand the psychological consequences of the effort that young professionals have made in the face of the unexpected and dramatic coronavirus outbreak. In addition, the outcomes may also help design mental health prevention and care interventions for workers. Therefore, the hypothesis that elevated levels of psychosocial factors positively influence individual well-being during the COVID-19 pandemic was validated. This study also affirmed that factors such as working during periods of social distancing, age, and socio-economic status indirectly influenced psychological well-being through their impact on psychosocial factors.

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