



ORIGINAL ARTICLE

Citation: Khan, K. A., Metzker, Z., Streimikis, J., & Amoah, J. (2023). Impact of negative emotions on financial behavior: An assessment through general strain theory. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 18(1), 219–254. doi: 10.24136/eq.2023.007

Contact to corresponding author: Zdenko Metzker, metzker@utb.cz

Article history: Received: 3.11.2022; Accepted: 1.03.2023; Published online: 30.03.2023

Khurram Ajaz Khan

Tomas Bata University in Zlin, Czechia

orcid.org/0000-0001-5728-8955

Zdenko Metzker

Tomas Bata University in Zlin, Czechia

orcid.org/0000-0002-6962-2428

Justas Streimikis

Lithuanian Centre for Social Sciences, Lithuania

University of Economics and Human Science, Poland

orcid.org/0000-0003-2619-3229

John Amoah

Tomas Bata University in Zlin, Czechia

orcid.org/0000-0002-3558-2077

**Impact of negative emotions on financial behavior:
An assessment through general strain theory**

JEL Classification: G53; D91; D14

Keywords: COVID-19; risk attitude; loneliness; depression; economic hardship, general strain theory, GST, PLS-SEM

Abstract

Research background: The research has two objectives and employs a serial mediation approach. First, using the general strain theory, it examines the mediating role of negative feel-

Copyright © Instytut Badań Gospodarczych / Institute of Economic Research (Poland)

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

ings and impact of economic adversity on people's risk tolerance and prudent financial behavior. The second is determining the various categories' variations according to age.

Purpose of the article: The study's main objective is to evaluate financial behaviour of people with lower and medium incomes after the second wave of COVID-19 in India, and to contribute to the body of knowledge on general strain theory.

Methods: The study examined the proposed framework and tested the serial mediation model based on the general strain theory used as a survey method for data collection, targeting lower and middle-income individuals in India's most populated state. The study applied PLS-SEM to test the framed hypotheses. Furthermore, the Kruskal Wallis test was applied to identify the difference in the various groups classified based on age.

Findings & value added: The results reveal that economic hardship significantly influences improved financial behavior. Risk aversion attitude, loneliness, and depression mediate the relationship between economic hardship and financial behavior. Moreover, the study found quite a few significant differences between the different age groups. The present study will add to the existing literature on financial behavior under the scope of general strain theory and probably be among the few that test general strain theory with financial variables impact on lower and middle-income group individuals from a developing nation in post-COVID-19 period.

Introduction

The recent COVID-19 pandemic brought on the serious acute respiratory syndrome called the coronavirus, which drastically affected the human lifestyle. On March 11, the World Health Organization (WHO) labelled the epidemic a public health emergency of international concern (WHO, 2020). The hazardous virus was difficult to stop from appearing and spreading. Maintaining social distance was the only available short-term option. However, societal exclusion had consequences. Due to social constraints and distance, the existence of COVID-19 undoubtedly caused negative feelings and contributed to loneliness and melancholy. How these negative emotions affected risk aversion in people and how it affected people's money behaviour needs to be verified in the post-pandemic recovery phase and in new normal conditions. The financial crises and meltdowns due to the business cycle have always affected human behaviour, specifically financial behaviour, and will happen again sooner or later. The thing which can safeguard would be the individuals' prudent financial behaviour, which is the present study's core idea.

The COVID-19 pandemic outbreak has had a detrimental effect on people's bodily and emotional health. Due to its severe effects, it has evolved into a means of regulating or reliably accounting for people's appropriate financial systems in both developed and emerging countries. COVID-19

has impacted people's emotions worldwide, and the unexpected pandemic has changed people's plans and habits. Therefore, Ali *et al.* (2021) believe that the COVID-19 epidemic has brought about many changes. Due to the post-COVID-19 havoc, a paradigm has changed how people wish to improve their financial situation. Additionally, Wang *et al.* (2021) reported that the post-COVID-19 pandemic has become crucial due to the substantial restrictions on interpersonal physical interaction, which affects people's internal emotions. Furthermore, physical access to financial services, like banking, was restricted. Most individuals depend on banking for financial services and guidance, greatly impacting how people handle their money and behave (Belas *et al.*, 2012; Belas *et al.*, 2014). It limited the guidance and other assistance that banks and other financial institutions could offer people.

As a result, according to Pedrosa *et al.* (2020), the post-COVID-19 second phase significantly changed people's financial behaviour. Hate, dread, contempt, irritation, anxiety, rage, envy, and sorrow are negative emotions people have experienced during and post-COVID-19 pandemics. These emotions became even more severe during the second phase of the COVID-19 pandemic, in which some nations like India faced the worst phase: when this severely affected people's risk profile, risk appetite and behaviour. So on the one hand, there is human behaviour; on the other side, negative emotions arise due to the pandemic. Thus seeing it through the general strain theory, it might be possible that the strain – specifically the financial difficulty brought on by the COVID-19 pandemic – has influenced people's behaviour in various ways.

The recent pandemic impacted people's feelings and had a major social and psychological effect (Evans *et al.*, 2021; Saladino *et al.*, 2020; Pedrosa *et al.*, 2020). Feelings impact money decision-making (Di Crosta *et al.*, 2021; Duxbury *et al.*, 2020). Emotions, money behaviour, and decision-making are all related (Ackert *et al.*, 2003). It leads to a link between pandemic stress-related feelings and people's money decisions. Additionally, individuals were more likely to change their consumption patterns and adopt coping strategies that were primarily problem-focused in reaction to COVID-19 financial stress (Adamus & Grežo, 2021). Ultimately, COVID-19 has detrimentally affected world financial security (Stubbs *et al.*, 2021; Kalogiannidis *et al.*, 2020). However, the existing literature has very few studies that have examined the impact of people's pecuniary feelings during the COVID-19 pandemic, which opens the door for empirical research using

the quantitative method. Therefore, the current study attempted to fill this knowledge vacuum by examining how people's financial behaviours change due to widespread worry and unfavourable emotions. This research centres on the question of how people's feelings were impacted negatively by the COVID-19 pandemic in developing nations.

The current research aims to understand how people dealt with negative emotions, which impacted their risk-taking and financial behavior, and how they might have grown due to economic difficulty. The current research aims to determine how financial hardship, which occurred after COVID-19, during the second phase in India, impacted loneliness, depression, risk-averse attitude, and financial behaviour among lower and middle-income people. The authors were motivated to carry out the current research because India was one of the countries most severely affected by the second phase of the COVID-19 pandemic and because most of its population comes from lower- and middle-income groups. Additionally, the research compares the differences between age-based groups to determine how the COVID-19 second wave affected various age groups. The study also offers a conceptual structure that describes the relations between pointed factors in detail.

Up to date, only few empirical studies have been conducted within the pointed background, mostly in the context of emerging countries. This research adds to the body of knowledge on the effects of COVID-19 on people's emotions and its impacts on financial limitations (Feyisa, 2020; Ali *et al.*, 2020). No prior study used the general strain theory to investigate how the epidemic affected low- and middle-income people's financial behavior in a big developing nation. The innovative aspect of the research is examining how the pandemic's external stress caused negative feelings in people and how those emotions led to more prudent financial behavior. This research used a sample to analyze and evaluate how humans can create coping mechanisms, how even negative emotions can contribute to a positive result. The current research findings demonstrate this occurrence and may be helpful to policymakers and financial service providers.

The structure of this study is as follows: a part of the literature survey includes the theoretical background, methods, analysis findings, and discussion. The article ends with both academic and practical insights, as well as its limitations and recommendations for further study.

Literature review and hypothesis development

The General Strain Theory underpinning the study

According to Robert Agnew's General Strain Theory (GST) (1992), explained stressors and strains that typically increase the probability of negative feelings like rage and irritation. In other words, the GST refers to the idea that some people or individuals respond to the various stresses they encounter by using unhealthy coping strategies like criminal activity. As a result, the wide form of strain theory is known as the general strain theory. According to the theory, such negative feelings typically put the greatest weight on people to take remedial action. Additionally, tensions are interactions where people are not treated how they would like to be treated by others.

As a result, the general strain theory divided the strain into subjective and empirical categories. The objective strains are circumstances disliked by the majority of a particular group. It denotes that the person is going through an intolerable event or circumstance. Similarly, subjective stresses are situations or conditions that people who are experiencing or have experienced detest. To make matters worse, when under psychological stress, the person is going through an unpleasant circumstance or situation.

Looking into the phase of the recent pandemic, it was an incentive for strong psychological stress and unpleasant experiences, leading to negative emotions. The general strain theory, also known as the strain theory, is applied to the current research to find the answers to how the strain caused by the COVID-19 pandemic affected people's emotions, leading to the impact on financial behaviour.

Economic hardship

Both the first and second phase of the COVID-19 pandemic have mainly resulted in fiscal suffering for nations and people worldwide. The second phase of the COVID-19 pandemic had a detrimental effect on people who have amassed the most economic hardship (Witteveen & Velthorst, 2020). Importantly, the second wave's financial distress includes the greatest number of employment losses, salary decreases or cutbacks, and workload declines, all aggravating socioeconomic differences. Safety, protective measures, and societal standards have impacted every aspect of daily liv-

ing and people's confidence throughout COVID-19 (Zain, 2022). People may be forced by the severity of the current financial crisis to make risk-averse financial management and improvement choices.

According to Witteveen (2020), the pandemic has gradually worsened people's risk aversion circumstances, particularly among lower-paid jobs. Lockdowns, harsh restrictions on travel to work, social distance regulations, and school closings made life extremely difficult for people and decreased economic activity. The risk of decreased work hours or permanent job loss was one of the financial difficulties experienced by people in the pandemic's second wave (Bierman *et al.*, 2021). In order to cast more light on the topic of "accumulation of economic hardship and health during the COVID-19 pandemic: social causation or selection?" researchers found that the second phase of the COVID-19 pandemic was associated with a more significant amount of economic hardship than the first one. According to Mann *et al.* (2020), the new coronavirus (SARS-COV-2) has caused economic and significant mental health disruptions in people's lives. Social distancing and isolation suddenly affected people's lives and pushed them to live in loneliness. Financial difficulty is detrimental psychological anguish coupled with negative effects. Individuals might experience financial hardship and loneliness. Thus, the study intends to examine the following hypotheses.

H1a – *Economic hardship has a positive impact on individuals' loneliness during the post-COVID-19 second wave*

H1b – *Economic hardship positively impacts individuals' depression levels during post-COVID-19 second wave.*

Loneliness

Negative feelings have contributed to loneliness among people during the first and second phases of the COVID-19 pandemic (Witteveen, 2020). Working from home was one of the few isolated instances compared to the workplace before the epidemic. The pandemic also brought about lockdown measures, like instructions to remain at home and the closure of non-essential companies. According to Boursier *et al.* (2020), the COVID-19 epidemic has caused loneliness, anguish, and unforeseen circumstances. The introduction of social distance alone altered how people felt, interacted

with others and went about their everyday lives, ultimately impacting their emotions and well-being. Again, the stringent regulations imposed by the different governments to stop the spread of the disease also led to isolation and worry.

Although the development of digital technologies has significantly reduced the stress associated with loneliness, the unfavourable effects of the COVID-19 second phase may influence how people choose to live. Considering this, it has been confirmed by (Banerjee & Rai 2020; Brooks *et al.*, 2020) that COVID-19 contributes to increased loneliness among people. Additionally, research by Banerjee and Rai (2020) and Porcelli (2020) found that in the second wave, seclusion and limitations make people feel worse, increasing the severity of loneliness in both young and elderly populations who have caught the virus.

As a result, according to these studies, the second phase of COVID-19 has significantly impacted people's feelings of loneliness and forced them to deal with unforeseen circumstances (Coibion *et al.*, 2020; Schimmenti *et al.*, 2020). A system of boredom, irritation, and isolation due to the decrease in social interaction and decline in one's normal routine lifestyle, Wilken *et al.* (2017) continued, led to high levels of distress. Loneliness has caused illnesses and discomfort and has altered peoples' attitudes. Additionally, the second phase of COVID-19 has increased a disorder and unease, stressing people out and creating dangerous situations (Coibion *et al.*, 2020; Sani *et al.*, 2020). The discomfort and isolation might increase anxiety and worry and impact risk-averse attitudes. Thus, it can be important to understand how loneliness among people affects their risk-averse attitude. Based on the discussion, the following hypotheses are formulated.

H1c – *Loneliness positively influences the individuals' risk aversion attitude during the post-COVID-19 second wave.*

H2c – *The effect of Loneliness on individuals' financial behavior is mediated by Individuals' risk aversion attitude.*

Depression

Numerous academics and experts have examined the detrimental effects of melancholy during the COVID-19 pandemic and after it. In order to stop the spread of COVID-19, which may result in melancholy states, citi-

zens were instructed to implement partial or total lockdowns around the globe during the epidemic (Khosravizadeh *et al.*, 2022). Depression is a chronic mood disorder that harms and adversely impacts people's emotions, thoughts, and actions, impairing their ability to carry out everyday tasks. Situational depression, biological depression, psychological depression, and existential melancholy are the four different kinds of depression. According to Hawkey and Cacioppo (2010), melancholy primarily damages social interactions by causing dissatisfaction with one's own thoughts and disagreeable emotions.

People have experienced a high degree of melancholy due to the COVID-19 outbreak (Karaşar & Canl, 2020). According to the study's results, women are more likely than males to have experienced depression. Lei *et al.* (2020) found an ongoing rise in melancholy in the second phase of the pandemic. For instance, according to statistics from China, Italy, and Nepal, the frequency of melancholy is 16.5%, 17.3%, and 34.1%, respectively (Wang & Yan, 2020; Rossi *et al.*, 2020; Sigdel *et al.*, 2020). Han *et al.* (2021) demonstrated how depression had impacted people's ability to lead regular lives as individuals, families, and groups since the COVID-19 disease outbreak. Individuals' depressive symptoms, such as dread and anxiety, have made returning to regular life difficult.

Additionally, people became unhappy due to the unprecedented changes brought on by the COVID-19 pandemic, including seclusion, lockdowns, and quarantine by different federal and state authorities.

Inevitably, the second phase maintained the required isolation, home-based employment, imbalance in people's lives, and decreased social and physical interactions, leading to increased depressive mood and resulting in mental distress, boredom, annoyance, and difficulty obtaining social support (Heffernan, 1998; Brooks *et al.*, 2020). Thus, it seems logical to check how depression affects individuals' risk aversion attitude. In light of this, the study proposed the following hypotheses:

H1d – *Depression positively influences the individuals' risk aversion attitude post-COVID-19 in the second wave.*

Financial behavior

Numerous academics and experts have broadly defined financial behaviour. A typical example is how a family or person handles their finan-

cial resources, including budgeting, insurance, and investment. Financial behaviour enables a person to comprehend how human feelings, biases, and cognitive limitations in processing and reacting to information significantly impact financial choices, including investments, payments, risk, and personal debt (Yuesti *et al.*, 2020).

According to Horvath *et al.* (2021), the financial behaviour is intrinsically unpredictable because choices have results that cannot always be predictable. Additionally, Vasileiou (2021) believed that the COVID-19 illness, which had caused a significant amount of economic and social strain or disruption and become a global pandemic, had an obvious impact on people's financial behavior and feelings.

Economic specialists believe that maintaining normalcy in the second wave will be even more difficult than in the first, even though most governments and state officials collaborate closely to guarantee financial stability. Talwar *et al.* (2021) claimed that most people's financial behaviour during the post-COVID-19 pandemic had greatly increased doubt and financial volatility. The post-COVID-19 pandemic has significantly affected economic activity and had a negative impact on many people's money actions. As a result, financial behaviour in the post-COVID-19 period and economic distress might have a direct linkage. According to Yue *et al.* (2020), the second phase of the epidemic has had an impact on financial markets, firm funding, banking, insurance companies, governments, and the general public, in addition to people. Therefore, it seems reasonable to examine the role of depression and how it affects financial behaviour through the risk aversion attitude. As a result, the study proposed the following hypotheses:

H2d – *Individuals' risk aversion attitude mediates the effect of depression on individuals' financial behaviour.*

H2a – *The effect of economic hardship on individuals' financial behaviour is mediated by the serial mediation of loneliness, depression, and risk aversion attitude of individuals during post-COVID-19 second wave.*

Risk aversion attitude

Similarly to the already discussed factors, people's attitudes toward risk have changed as a result of the presence of COVID-19. According to Zhu

and Deng's (2020) argument, since the COVID-19 epidemic, researchers have been paying close attention to how people's views toward risk aversion tend to change. Risk aversion is people's propensity to favour events with low ambiguity over those with high uncertainty (Rabin, 2000; Shahzad *et al.*, 2023). As a result, it becomes clear that COVID-19 and people's perceptions of danger are positively correlated (Zeng *et al.*, 2017).

It is also worth to remember that according to Coibion *et al.* (2020), a person's risk attitude fall between risk aversion and risk seeking. From this perspective, Cerami *et al.* (2021) verified that COVID-19 had exerted more pressure leading to changes in people's risk attitudes, which either caused an increase or decline in risk perception. The second phase of post-COVID-19 negative feelings brought on by the pandemic has an extremely psycho-socio-emotional character. Risk-averse or risk-loving views have resulted from this rise or fall in risk. Since people during the pandemic show risk-averse attitudes due to their bad feelings during the post-COVID-19 pandemic, Chan *et al.* (2020) have proven that risk-averse attitudes play a key or crucial role in forecasting how people feel when the outbreak is in full swing. Individual risk attitudes are seen as one of the most important variables in economic decision-making. Hence, the connection between the individual's risk attitude and financial behaviour post-COVID-19 needs investigation to clarify its linking. The formulated hypotheses are as:

H1e – *Risk aversion attitude positively influences individuals' financial behaviour post-COVID-19 in the second wave.*

H2b – *The effect of economic hardship on Individuals' risk aversion attitude is mediated by loneliness and depression.*

The current study aims to use the general strain theory, which can help to understand how the COVID-19 pandemic upsurges negative emotions due to several pointed restrictions and how those negative emotions help people to develop coping behaviour. In other words, the study concentrates on the question of how people adapt money-buffering mechanisms when social distance is restricted. With this goal in mind, the current research investigates the connections between emotions and money-coping behaviour. Most developing nations have the majority of lower- and middle-income individuals, making up the largest part of the global popula-

tion. Because of this, the current research aims to investigate the hypotheses framed considering the lower and middle-class people in the emerging economy. The research looks at the mediating function of negative feelings in determining how COVID-19 impacts people's money behaviour. Figure 1 depicts the proposed conceptual framework.

Research methods

Targeted population and sample

Loss of earnings struck the whole family income during the COVID-19 epidemic, notably during the lockdown in March 2020. Studies found that the higher middle- and middle-class income categories were the worst hit. The present study used a survey method to collect the data from individuals in India's northern states (covered states Uttar Pradesh, Delhi, and Uttarakhand). Since the aimed population of the study belong to middle-income individuals, the study considers individuals aged 18–60 years. The sample profile can be seen in Table. 1.

The study is conducted in India for several reasons. First, it represents the emerging economies in transition. Second, it represents a bigger chunk of Asia's population, specifically the middle-income group. More so, India was also among the nation whose middle-income population suffered from the pandemic. Hence, the authors believe the current output can help to understand the related emerging economies, their situation and people's financial behaviour. So the present results to some extent might be generalized, which might help understand the financial behaviour of middle-income individuals in other emerging nations. Thus, the information driven from the analysis will be useful for understanding other developing economies.

The study used stratified sampling to target lower- and middle-income individuals. Specifically, the study used stratified disproportionate sampling techniques. Using disproportionate techniques, the authors did not collect the data in the proportion of the population. They identified the centre where only lower- and middle-income individuals visit and then collected the data by choosing individuals randomly. The data collection used the ration card system under the public distribution system in India. The government allocate different colours of ration card based on income

level, for example, orange and red for the below poverty line individuals and white for those who are above the poverty line. Hence, the present study collected the data from the public distribution centres where different income levels of individuals come for food grains collection, and the researchers randomly collected from the individuals there. At the initial data collection stage, the present study tested the reliability and validity of the questionnaire. With a set of 60 initially collected questionnaires, a pilot examination was conducted to ensure the consistency and accuracy of the questionnaire, and it was found satisfactory (see Table 2).

After the acceptable validity and reliability, the authors further distributed a questionnaire to individuals through both offline and online modes. The study set the target of 400 samples (excluding the sample collected in the pilot study) within three months between October 2021 to December 2021. However, the collection took longer; as the authors collected it until January 2022.

Another issue in the collected data is that some questionnaires were filled partially. Therefore, they were removed from the final sample. The sample was left with only 357, as 43 incomplete questionnaires were excluded. The present study continued its analysis since the final sample satisfied the minimum sample size (Bagozzi & Yi, 2012). Moreover, the sample size also satisfies the criteria based on the '10 times rule method' generally accepted rule of thumb as suggested by (Hair *et al.*, 2014). It is based on the idea that the sample size used in an empirical investigation should be more than 10 times the number of inner or outer model links that can possibly point at any latent variable.

Questionnaire and measurement variables

To assess the improved financial behaviour through economic hardships, risk tolerance, loneliness, and depression, a five-section questionnaire was designed. Each section included five-six questions on each variable and a profile section to collect demographic details. The questionnaires were designed in such a way as to control common method variance. Each section consists of objective questions based on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The questionnaire was divided into two sections. The first section covered basic demographic questions, and the following section included self-reported statements divided into

subsections without any heading or sub-heading to avoid any biases from the respondents, which are presented in Table 2.

Data analysis

The present study used Adanco 2.0 version software for the structural equation modelling (SEM) analysis technique. In recent decades, SEM has evolved as one of the most helpful advanced statistical analysis approaches in the social sciences. SEM is a multivariate approach that combines parts of component analysis and regression to allow the researcher to look at relationships between measured variables and latent variables, as well as between latent variables at the same time (Hair *et al.*, 2014). The present study considered this technique for the empirical analysis as it has many advantages, such as the possibility of testing a conceptual framework from a prediction point of view. The complex structural model contains many constructs, indicators, and/or model relationships. Also, when the study uses secondary or archival data, the sample size is constrained by a small population. Then, SEM is recommended to comprehend complex behavioural and psychological ideas and their interconnections (Hair *et al.*, 2019; Schumacker & Lomax, 2010). Several shreds of evidence in the literature highlight how the studies used SEM in behavioural and psychological studies, connecting the linkage between personality, demographic characteristics, and behaviour supports applying SEM in recent studies (Szostek *et al.*, 2020, 2022, 2022), making it justifiable to use PLS-SEM for the present study. As the data for the present study lack normal distribution and a need to investigate the structural direct and indirect relationships, partial least squares structural equation modelling (PLS-SEM) was a convenient and feasible method to apply (Hair *et al.*, 2017).

Research results

Model measurement

First, the construct reliability and validity were checked using Dijkstra-Henseler's rho along with Jöreskog's rho and Cronbach's alpha coefficients, all the values were found to be above 0.8, which are more than the specified thresholds established for each one (Bagozzi & Yi, 1988; Hair *et al.*,

2019). The convergent validity was presented by average variance extracted (AVE), surpassing the minimum threshold of 0.5 (see Table 3). VIF values were below the conservative threshold of signalling collinearity (see Table 2). Hence, all the item loadings, CA, CR and AVE, and other significant thresholds were within the threshold (Henseler *et al.*, 2015, 2016; Hair *et al.*, 2014).

Discriminant Validity is used to determine to construct validity. The Fornell–Larcker criterion is used to determine discriminant validity across all constructs (Fornell & Larcker, 1981), and the HTMT criterion (Henseler *et al.*, 2015) indicates no discriminant validity issues (see Tables 4 and 5).

Moreover, HTMT values were also found below .85. HTMT values should be below 0.9 or, better, below 0.85 (Henseler *et al.*, 2015), which indicated that all constructs were dissimilar from each other. After satisfying the threshold of the above mention criteria, the discriminant validity was also tested and found within the permissible limit. Therefore, there is no assumption violation of PLS-SEM.

The next step of the analysis reveals the structural model. The model explains 22.5% of the variation in risk aversion and 12.7% in financial behaviour; details can be seen in Table 7 and Figure 2. R^2 values describe the variance of endogenous latent variables in the structural model. The higher the R^2 values, the better the construct is elucidated by the structural model's latent variables that point at it via structural model path connections. A high R^2 percentage also shows that the values of the construct are well predicted via the PLS path model (Hair *et al.*, 2017). Here, in spite of formally low R^2 values, the obtained results can still provide value for analysis.

Based on the proposed conceptual framework, loneliness and depression are determined by economic hardship. Loneliness and depression mediate between economic hardship and risk aversion — finally, serial mediation of loneliness, depression, and risk aversion between economic hardship and financial behaviour.

Direct and indirect effects

Empirical results can be seen in the table 6. It was found that economic hardship has a significant positive impact on loneliness and depression. Loneliness and depression have a significant effect on the risk aversion of individuals. However, the effect size in all the abovementioned hypotheses

detected a weak effect little above Cohen's f^2 .02. The effect of risk aversion on financial behaviour was also found to be significantly positive with a moderate effect size of Cohen f^2 .1450. All the indirect path was also found significant and revealed a significant role of mediators. Results found that H2a Economic hardship on Individuals' financial behaviour is mediated by the serial mediation of loneliness, depression, and risk aversion attitude of Individuals.

Similarly, H2b also found evidence that Economic hardship on Individuals' risk aversion attitude is mediated by loneliness and depression. Also, H2c confirms that the effect of Loneliness on Individuals' financial behaviour is mediated by Individuals' risk aversion attitude. Lastly, H2d also supported the thesis that the Individuals' risk aversion attitude mediates the effect of depression on Individuals' financial behaviour.

The study further compared groups (see Table 9). It established significant differences among groups in economic hardship, depression, loneliness, risk aversion attitude, and financial behaviour. Based on the results proving that that all the groups demonstrate significant differences, the study further compared each group's sub-groups to identify the segment with a significant difference in the r economic hardship, depression, loneliness, risk aversion attitude, and improved financial behaviour post-COVID-19. The multiple age group comparison further revealed the difference among the different age groups. First, the group classified under economic hardship found a significant difference between the individuals who fall under the category of 18–30, 31–40, and 41–50, with 51–60. It mostly divides the difference between individuals below 50 and above fifty. It could be related to individuals close to retirement or retired and facing financial insufficiency, or people below 50 may have insufficient income to meet their expenses. It attracts further robust analysis to find each group and segment to identify the exact difference and reasons behind it. Second, under loneliness, two groups, 18–30 and 41–50 and 31–40 and 41–50, were found to have significant differences among them. The considerable differences between them may be seen by dividing them into two groups — those under 40 and those over 40. It is true that people under the age of 40 experience more loneliness than people beyond 40, which merits additional investigation.

Individuals with improved financial behaviour also revealed significant differences based on their age bracket. Individuals below 50 significantly differed from individuals above 51. Similarly, the risk-averse attitude of

individuals also reflects the same result as improved financial behaviour. Individuals below 50 and above 50 have significant differences in their risk-aversion attitude, which can be related to layperson's language due to generational cohort differences. Still, it further requires rigorous investigation to understand the reasons behind it in different sub-groups. Finally, regarding depression, it was also found that there was a significant difference between those below 40 and above 40, which encourages further investigation to detect the level of depression among individuals classified based on age. The overall objective of the multiple age group comparison is to understand the significant difference between various age groups, see Tables 9.

Discussion

The study's main aim was to investigate the impact of negative emotions on individuals' risk-averse attitudes and improved financial behaviour post-COVID-19 second wave through the general strain theory. The study proposed nine hypotheses, particularly four direct and four indirect hypotheses, and one on multiple age group comparison. The first hypothesis (H1a): economic hardship has a positive impact on Individuals' loneliness post-COVID-19 second wave in India, was statistically supported by the findings of the results with a P-value of 0.0043 and Beta (β) of 0.1578. Loneliness is commonly defined as a state of being alone or isolated from one's community or society. The hypothesis (H1) results significantly collaborate with the studies of (Boursier *et al.*, 2020; Banerjee & Rai, 2020; Houghton *et al.*, 2022). In their studies, loneliness was carefully examined due to the COVID-19 pandemic. Loneliness is thought to disturb social integration, increasing isolation and negative emotions in an individual's risk-averse during the second wave of the pandemic. This vicious loop isolates the lonely person even more into their own 'suffocating' space. Again, the second wave of COVID-19 has largely affected people's loneliness, causing people to cope with unplanned situations.

The second hypothesis (H1b) is confirmed that economic hardship results in increasing individuals' depression levels in post-COVID-19 period in India as the P-value and β are equal to 0.0023 and 0.1678, respectively. To add more, the findings of our current study support the works of (Lathabhavan, 2022; Mekala *et al.*, 2022). It means a positive relationship exists between individual depression levels and post-COVID-19 in the sec-

ond wave. In this regard, the world has experienced psychological discomfort due to the second wave of pandemics and unexpected shifts, resulting in decreased well-being and life satisfaction and causing negative emotions in individuals' risk-averse affecting financial behaviour (Duong, 2021). The magnitude of this economic hardship forced individuals' decisions to manage and improve their financial behaviour with a risk-averse attitude.

Relatedly, loneliness has brought disorders and discomfort and changed the mood of people thinking (Duong, 2021). To emphasize hypothesis (H1c): loneliness positively influences the Individuals' Risk aversion attitude is also supported by the study results with (p-value 0.0002 and β 0.2540). It means that a positively significant relationship exists between loneliness and Individuals' Risk aversion attitude in the post-COVID-19 second wave, as affirmed by (Houghton *et al.*, 2022; Kato & Shaw, 2020). The substantial decrease in possibilities to express oneself to others has made it impossible to satisfy the demand for self-approval from status and group appeals. Loneliness has changed the pattern of Individuals' Risk aversion attitude post-COVID-19 in the second wave. The negative emotions caused by the pandemic in the second wave of post-COVID-19 are a highly psycho-socio-emotional profile.

In general, depression mainly causes dissatisfaction with an individual's life and other negative feelings, reducing social relationships. The proposed hypothesis (H1d): Depression positively influences the Individuals' risk aversion attitude post-COVID-19 in the second wave in India is also supported by the results of the current study (p-value 0.0003 and β 0.2504). It means there is a significant and a positive relationship between depression and Individuals' risk aversion attitude post-COVID-19 in the second wave of the pandemic. The study findings collaborate with the research works of Alshammari *et al.* (2022), Mailliez *et al.* (2021) and Ben *et al.* (2021).

Moreover, the last direct hypothesis, which states that (H1e): Risk aversion attitude positively influences Individuals' financial behaviour, is again supported by the results obtained (p-value 0.0000 and β 0.3559). To be more emphatic, a strong positive relationship exists between the two key variables: Risk aversion attitude and Individuals' financial behaviour. Studies conducted by Natarajan and Jayadevan (2022), Chen *et al.* (2021) have also confirmed the current findings. The COVID-19 disease, in the world which had not experienced a pandemic in the last decade, had exerted a high level of economic and social pressure or disruption that invariably affected the financial behaviour of individuals' emotions.

Furthermore, it is also found that although opinions toward depression were generally positive, things may differ for those suffering from serious mental illnesses (Jorm *et al.*, 2000). Another study found that in context-specific ways, people's declared preferences for risk and risk-taking actions are associated with depression, but less risk-taking is reported in general. Still, more risk-taking is reported regarding health (Cobb-clark *et al.*, 2019), which provides another perspective for further research. Not only risk tolerance alone, but also planning horizon has an impact on real financial behaviour (Castro-González *et al.*, 2020). Considering specifically the pandemic effect, it has been found that when a pandemic strikes, different age groups adopt different protective behaviours, which adds to the discussion about whether age disparities in risk-taking are caused by deteriorating capacities or shifting risk attitudes (Wolfe *et al.*, 2021). Hence, many more aspects of risk-taking and financial behaviour require further exploration.

Furthermore, Hypothesis (H2a): the effect of economic hardship on Individuals' financial behaviour is mediated by the serial mediation of loneliness, depression, and risk aversion attitude is significantly supported by the obtained findings (a p-value of 0.0212 and β 0.0292). It has been conclusively established that risk-averse attitudes are a key or important element in determining how people will feel during a second-wave pandemic. This establishment posits a positive correlation between economic hardship on Individuals' financial behaviour and serial mediation of loneliness, depression, and risk aversion attitude. The results affirmed the results of Bhatti *et al.* (2022) and Mensah *et al.* (2022). With regards to Hypothesis (H2b): the effect of economic hardship on Individuals' risk aversion attitude is mediated by loneliness, and depression is strongly supported (p-value 0.0067 and β 0.0821). It confirms similar results in the study area to Mensah *et al.* (2022) and Petrocchi *et al.* (2022). Again, it is firmly revealed that risk-averse attitudes are a central or critical factor in predicting the emotional feeling of individuals within the confinement of the pandemic.

Lastly, hypotheses (H2c): the effect of Loneliness on Individuals' financial behaviour is mediated by Individuals' risk aversion attitude. (H2d): Individuals' risk aversion attitude mediates the effect of depression on Individuals' financial behaviour were all supported (p-value 0.00016 and β 0.0904; p-value 0.0020 and β 0.0891, respectively). In both hypotheses, financial behaviour is found to be an important key that influences both loneliness in individuals and risk aversion attitudes. In support of our

study findings, the results are consistent with the outcome provided by Erzen and Çikrikci (2018) and Ramaeker and Petrie (2019).

The current study aims to understand better how people cope with negative emotions and how those emotions affect their risk-taking profile and financial behaviour. The present study highlights and attracts the reader's attention towards how a pandemic or any other kind of distress can evoke negative feelings and emotions among individuals and how those emotions can influence their risk-taking attitude and financial behaviour. The study aimed to discover how strain and unexpected disasters might help people learn coping mechanisms.

To the extent of the present study's findings and the authors' understanding, this phenomenon is critical and applicable to all individuals around the globe. People with more effective coping behaviour can indirectly help the country and individuals to overcome difficult situations easily. We have witnessed nations worldwide suffer the impact of the recent pandemic, which ultimately increased the financial burden on the state to support the people. Financial knowledge and skills can help them execute prudent financial planning and improve their financial behaviour, which can always help individuals in dynamic financial situations. It can improve their daily planning and financial decisions, which can help them to avoid bitter experiences and negative emotional development when falling into a financial crisis.

Moreover, individuals' better financial planning, possibly to some extent, can reduce the burden on the government. To some extent, the pandemic helped individuals to find ways to sustain and develop better and safe behaviour to survive. Hence, the present study highlighted how the strain could help develop coping financial behaviour among individuals and put forward the output for future learning and research.

Conclusions

The objective of the present study is to investigate the impact of negative emotions, which might have been increased due to economic hardship, and their impact on risk attitude and financial behaviour. The findings show that financial difficulty significantly impacts more prudent financial conduct. The association between economic stress and financial behaviour is mediated by risk aversion, loneliness, and depression. Furthermore, the

study discovered some significant discrepancies between the various age groups. Then, general strain theory has been utilized here to investigate a variety of behavioural effects. The study's findings may be useful to legislators, financial services providers, researchers conducting further research, and finally people. The current study will add to the existing literature on financial behaviour in the context of general strain theory. It is likely one of the few to test GST theory with financial variables in a developing country's COVID-19 second wave impact on lower and middle-income individuals.

However, the current research does have some limitations. First, the study is restricted from formal generalizing its findings because the sample size is insufficient and only reflects a small portion of the population. In order to measure people's impressions of the selected factors, self-evaluating statements were used, which can result in social comparison bias. Third, because the study only included one developing country — India — the conclusions cannot be directly applied to all developing countries as they may have different economies, societies, cultures, and levels of internet exposure. Furthermore, utilizing only a quantitative technique limits the study, because other approaches could provide more concrete findings/results. By conducting more research, these discovered constraints can be removed. To add to the present study and extend the literature, the authors intend to suggest future research with other theories, such as self-efficacy or capability theory, to examine financial behaviour. Cross-sectional and longitudinal data-based outcomes can further add to the outcomes of the present study. Since the present study focused only on one nation, a comparative international analysis can bring out a bigger picture for the researchers to understand the study's investigated phenomenon. Comparing different income level groups' emotions and financial behaviour can also be a valuable contribution.

Practical implications

The findings can be useful for practical implications for the policymakers and financial service providers. First, they help to understand the effect of negative emotions developed due to external strain and its further impact on individuals' financial behaviour. Second, financial service providers can consider this while consulting and counselling their clients and understand the role of emotions on financial behaviour. The outcomes of

the analysis can be considered for framing policies and financial regulations dealing with people and society, specifically in the context of low- and mid-income individuals, where the income is limited and emotions play an important role in framing people's behaviour.

The present findings reveal another face of emotions which do not always cause negative result. According to the findings, there is a positive impact of negative human emotions on financial behaviour. The Authors believe this phenomenon can be universal and can apply to any nation, but further investigations at the higher levels need to be done to validate that claim. The present study outcomes and main finding can also become valid if related to the recent rapid shift towards digital financial inclusion due to lockdown and social distancing. There were restrictions, but they resulted positively in digital financial inclusion.

References

- Ackert, L. F., Church, B. K., & Deaves, R. (2003). Emotion and financial markets. *Economic Review - Federal Reserve Bank of Atlanta*, 88(2), 33–41.
- Adamus, M., & Grežo, M. (2021). Individual differences in behavioural responses to the financial threat posed by the COVID-19 pandemic. *Personality and Individual Differences*, 179. doi: 10.1016/j.paid.2021.110916.
- Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology*, 30, 47–88. doi: 10.1111/j.1745-9125.1992.tb01093.x.
- Alshammari, T. K., Alkhodair, A. M., Alhebshi, H. A., Rogowska, A. M., Albaker, A. B., AL-Damri, N. T., Bin Dayel, A. F., Alonazi, A. S., Alrasheed, N. M., Alshammari, M. A. (2022). Examining anxiety, sleep quality, and physical activity as predictors of depression among university students from Saudi Arabia during the second wave of the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 19, 6262. doi: 10.3390/ijerph19106262.
- Ali, M. H., Suleiman, N., Khalid, N., Tan, K. H., Tseng, M. L., & Kumar, M. (2021). Supply chain resilience reactive strategies for food SMEs in coping with the COVID-19 crisis. *Trends in Food Science & Technology*, 109, 94–102. doi: 10.1016/j.tifs.2021.01.021.
- Ali, S., Farooq, I., Abdelsalam, M., & AlHumaid, J. (2020). Current clinical dental practice guidelines and the financial impact of COVID-19 on dental care providers. *European Journal of Dentistry*, 14(S01), S140–S145. doi: 10.1055/s-0040-1716307.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94. doi: 10.1007/BF02723327.

- Bagozzi, R. P., & Yi, Y. (2012). Specification, evaluation, and interpretation of structural equation models. *Journal of the Academy of Marketing Science*, 40(1), 8–34. doi: 10.1007/s11747-011-0278-x.
- Bhatti, S. H., Hussain, M., Santoro, G., & Culasso, F. (2022). The impact of organizational ostracism on knowledge hiding: Analyzing the sequential mediating role of efficacy needs and psychological distress. *Journal of Knowledge Management*, Advance online publication. doi: 10.1108/JKM-03-2021-0223.
- Banerjee, D., & Rai, M. (2020). Social isolation in COVID-19: The impact of loneliness. *International Journal of Social Psychiatry*, 66(6), 525–527. doi: 10.1177/0020764020922269.
- Belas, J., Cipovova, E., & Demjan, V. (2014). Current trends in area of satisfaction of bank clients in the Czech republic and Slovakia. *Transformations in Business and Economics*, 13(3), 219–234.
- Belas, J., Cipovova, E., Novak, P. & Polach, J. (2012). Impacts of the foundation internal ratings based approach usage on financial performance of commercial bank. *E+M Ekonomie a Management*, 15(3), 142–154.
- Ben Hassen, T., El Bilali, H., Allahyari, M. S., Berjan, S., Karabašević, D., Radosavac, A., Dašić, G., & Đervida, R. (2021). Preparing for the Worst? Household food stockpiling during the second wave of COVID-19 in Serbia. *Sustainability*, 13, 11380. doi: 10.3390/su132011380.
- Bierman, A., Upenieks, L., Glavin, P., & Schieman, S. (2021). Accumulation of economic hardship and health during the COVID-19 pandemic: Social causation or selection? *Social Science & Medicine*, 275, 113774. doi: 10.1016/j.socscimed.2021.113774.
- Blom, N., Kraaykamp, G., & Verbakel, E. (2019). Current and expected economic hardship and satisfaction with family life in Europe. *Journal of Family Issues*, 40(1), 3–32. doi: 10.1177/0192513X18802328.
- Boursier, V., Gioia, F., Musetti, A., & Schimmenti, A. (2020). Facing loneliness and anxiety during the COVID-19 isolation: The role of excessive social media uses in a sample of Italian adults. *Frontiers in Psychiatry*, 11, 1–10. doi: 10.3389/fpsy.2020.586222.
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: A rapid review of the evidence. *Lancet*, 395(10227), 912–920. doi: 10.1016/S0140-6736(20)30460-8.
- Castro-González, S., Fernández-López, S., Rey-Ares, L., & Rodeiro-Pazos, D. (2020). The influence of attitude to money on individuals' financial well-being. *Social Indicators Research*, 148(3), 747–764. doi: 10.1007/s11205-019-02219-4.
- Cerami, C., Galandra, C., Santi, G. C., Dodich, A., Cappa, S. F., Vecchi, T., & Crespi, C. (2021). Risk-aversion for negative health outcomes may promotes individual compliance to containment measures in COVID-19 pandemic. *Frontiers in Psychology*, 12, 2116. doi: 10.3389/fpsyg.2021.666454.

- Chan, H. F., Skali, A., Savage, D. A., Stadelmann, D., & Torgler, B. (2020). Risk attitudes and human mobility during the COVID-19 pandemic. *Scientific Reports*, 10(1), 1–13. doi: 10.1038/s41598-020-76763-2.
- Chen, Y., Dai, Y., Liu, A., Liu, W., & Jia, L. (2021). Can the COVID-19 risk perception affect tourists' responsible behaviour intention: An application of the structural equation model. *Journal of Sustainable Tourism*. Advance online publication. doi: 10.1080/09669582.2021.1977938.
- Cobb-clark, D. A., Dahmann, S. C., & Kettlewell, N. (2019). Depression, risk preferences and risk-taking behavior. *IZA Institute of Labor Economics, Discussion Paper Series*, 12285.
- Di Crosta, A., Ceccato, I., Marchetti, D., la Malva, P., Maiella, R., Cannito, L., Cipi, M., Mammarella, N., Palumbo, R., Verrocchio, M. C., Palumbo, R., & Domenico, A. Di. (2021). Psychological factors and consumer behaviour during the COVID-19 pandemic. *PLoS One*, 16(8): e0256095. doi: 10.1371/journal.pone.0256095.
- Coibion, O., Gorodnichenko, Y., & Weber, M. (2020). The cost of the COVID-19 crisis: Lockdowns, macroeconomic expectations, and consumer spending. *NBER Working Papers*, w27141. doi: 10.3386/w27141.
- Duxbury, D., Gärling, T., Gamble, A., & Klass, V. (2020). How emotions influence behaviour in financial markets: A conceptual analysis and emotion-based account of buy-sell preferences. *European Journal of Finance*, 26(14), 1417–1438. doi: 10.1080/1351847X.2020.1742758.
- Duong, C. D. (2021). The impact of fear and anxiety of COVID-19 on life satisfaction: Psychological distress and sleep disturbance as mediators. *Personality and Individual Differences*, 178, 110869. doi: 10.1016/j.paid.2021.110869.
- Erzen, E., & Çikrikci, Ö. (2018). The effect of loneliness on depression: A meta-analysis. *International Journal of Social Psychiatry*, 64(5), 427–435. doi: 10.1177/0020764018776349.
- Evans, S., Alkan, E., Bhangoo, J. K., Tenenbaum, H., & Ng-Knight, T. (2021). Effects of the COVID-19 lockdown on mental health, well-being, sleep, and alcohol use in a UK student sample. *Psychiatry Research*, 298, 113819. doi: 10.1016/j.psychres.2021.113819.
- Feyisa, H. L. (2020). The world economy at COVID-19 quarantine: A contemporary review. *International Journal of Economics, Finance and Management Sciences*, 8(2), 63–74. doi: 10.11648/j.ijefm.20200802.11.
- Finra Investor Education Foundation (2018). 2018 national financial capability study: State-by-state survey instrument.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39. doi: 10.2307/3151312.
- Han, X., Chen, S., Bi, K., Yang, Z., & Sun, P. (2021). Depression following COVID-19 lockdown in severely, moderately, and mildly impacted areas in China. *Frontiers in Psychiatry*, 12, 154. doi: 10.3389/fpsy.2021.596872.

- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks, CA: Sage Publications, Inc.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd ed.). Los Angeles: Sage.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. doi: 10.1108/EBR-11-2018-0203.
- Hawkley, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine*, 40. doi: 10.1007/s12160-010-9210-8.
- Hefferman, C. J. (1988). Social foundations of thought and action: A social cognitive theory, Albert Bandura Englewood Cliffs, New Jersey: Prentice-Hall, 1986, xiii+617 pp. Hardback. The US \$39.50. *Behaviour Change*, 5(1), 37–38. doi: 10.1017/S0813483900008238.
- Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial Management & Data Systems*, 116(1), 2–20. doi: 10.1108/IMDS-09-2015-0382.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. doi: 10.1007/s11747-014-0403-8.
- Horvath, J., Gavurova, B., Bacik, R., & Fedorko, R. (2021). Identification of uncertainty factors in the consumer behaviour of the new generation of customers at the e-commerce level. *Journal of Tourism and Services*, 12(22), 168–183. doi: 10.29036/jots.v12i22.263.
- Houghton, S., Kyron, M., Hunter, S. C., Lawrence, D., Hattie, J., Carroll, A., & Zadow, C. (2022). Adolescents' longitudinal trajectories of mental health and loneliness: The impact of COVID-19 school closures. *Journal of Adolescence*, 94(2), 191–205. doi: 10.1002/jad.12017.
- Huang, J., Nam, Y., & Lee, E. J. (2015). Financial capability and economic hardship among low-income older Asian immigrants in a supported employment program. *Journal of Family and Economic Issues*, 36(2), 239–250. doi: 10.1007/s10834-014-9398-z.
- Joo, S., & Grable, J. E. (2004). An exploratory framework of the determinants of financial satisfaction. *Journal of Family and Economic Issues*, 25(1), 25–50. doi: 10.1023/B:JEEL.0000016722.37994.9f.
- Jorm, A. F., Medway, J., Christensen, H., Korten, A. E., Jacomb, P. A., & Rodgers, B. (2000). Attitudes towards people with depression: Effects on the public's help-seeking and outcome when experiencing common psychiatric symptoms. *Australian and New Zealand Journal of Psychiatry*, 34(4), 612–618. doi: 10.1046/j.1440-1614.2000.00743.x.

- Kalogiannidis, S., Chatzitheodoridis, F., & Kontsas, S. (2020). An eclectic discussion of the effects of the COVID-19 pandemic on the world economy during the first stage of the spread. *International Journal of Financial Research*, 11(6), 137–153. doi: 10.5430/ijfr.v11n6p137.
- Khosravizadeh, O., Ahadinezhad, B., Maleki, A., Najafpour, Z., & Golmohammadi, R. (2022). Social distance capacity to control the COVID-19 pandemic: A systematic review on time series analysis. *International Journal of Risk & Safety in Medicine*, 33(1), 5–22. doi: 10.3233/JRS-210037.
- Karaşar, B., & Canlı, D. (2020). Psychological resilience and depression during the COVID-19 pandemic in Turkey. *Psychiatria Danubina*, 32(2), 273–279. doi: 10.24869/psyd.2020.273.
- Kato, A., & Shaw, R. (2020). Yoga and stress management during and post COVID-19 urban lifestyle in Japan. *Asian Journal of Complementary and Alternative Medicine*, 8(3), 48–54.
- Lathabhavan, R. (2022). Fear of COVID-19, psychological distress, well-being, and life satisfaction: A comparative study on first and second waves of COVID-19 among college students in India. *Current Psychology*, Advance online publication. doi: 10.1007/s12144-022-03207-7.
- Lei L, Huang X, Zhang S, Yang J, Yang L, & Xu M (2020). Comparison of prevalence and associated factors of anxiety and depression among people affected by versus people unaffected by quarantine during the COVID-19 epidemic in South-western China. *Medical Science Monitor*, 26, e924609-1-e924609-12. doi: 10.12659/MSM.924609.
- Natarajan, T., & Jayadevan, G. R. (2022). COVID-19 pandemic and the consumption behaviour of branded functional beverages in India: A conceptual framework. *Nutrition & Food Science*, 52(3), 423–444. doi: 10.1108/NFS-06-2021-0177.
- Mann, F. D., Krueger, R. F., & Vohs, K. D. (2020). Personal economic anxiety in response to COVID-19. *Personality and Individual Differences*, 167, 110233. doi: 10.1016/j.paid.2020.110233.
- Mekala, J. S., Goruntla, N., Nayaka, B., Velpula, K., Biswas, R., Veerabhadrapa, K. V., & Pradeepkumar, B. (2022). Depression, anxiety, and stress among the general public of India during post-COVID-19 second wave: A web-based cross-sectional survey. *Indian Journal of Medical Specialities*, 13(2), 87. doi: 10.4103/injms.injms_103_21.
- Mensah, C., Azila-Gbettor, E. M., Amissah, E. F., & Addison, E. (2022). COVID-19, financial anxiety and the psychological well-being of hotel workers. *International Journal of Hospitality & Tourism Administration*, 24(1), 142–165. doi: 10.1080/15256480.2022.2055692.
- Mailliez, M., Griffiths, M. D., & Carre, A. (2021). Validation of the French version of the fear of COVID-19 scale and its associations with depression, anxiety, and differential emotions. *International Journal of Mental Health and Addiction*, 20(4), 2057–2071. doi: 10.1007/s11469-021-00499-x.

- OECD (2011). *Measuring financial literacy: Questionnaire and guidance notes for conducting an internationally comparable survey of financial literacy*. OECD. Retrieved from <https://www.oecd.org/finance/financial-education/49319977>.
- Pedrosa, A. L., Bitencourt, L., Fróes, A. C. F., Cazumbá, M. L. B., Campos, R. G. B., de Brito, S. B. C. S., & Simões e Silva, A. C. (2020). Emotional, behavioural, and psychological impact of the COVID-19 pandemic. *Frontiers in Psychology*, 11, 1–18. doi: 10.3389/fpsyg.2020.566212.
- Petrocchi, S., Iannello, P., Ongaro, G., Antonietti, A., & Pravettoni, G. (2022). The interplay between risk and protective factors during the initial height of the COVID-19 crisis in Italy: The role of risk aversion and intolerance of ambiguity on distress. *Current Psychology*, 41(1), 437–448. doi: 10.1007/s12144-021-01601-1.
- Potrich, A. C. G., Vieira, K. M., & Mendes-Da-Silva, W. (2016). Development of a financial literacy model for university students. *Management Research Review*, 39(3), 356–376. doi: 10.1108/MRR-06-2014-0143.
- Porcelli, P. (2020). Fear, anxiety, and health-related consequences after the COVID-19 epidemic. *Clinical Neuropsychiatry: Journal of Treatment Evaluation*, 17(2), 103–111. doi: 10.36131/CN20200215.
- Rabin, M. (2000). Risk aversion and expected-utility theory: A calibration theorem. *Econometrica*, 68(5), 1281–1292. doi: 10.1111/1468-0262.00158Ranta.
- Ranta, M., Punamäki, R. L., Chow, A., & Salmela-Aro, K. (2019). The economic stress model in emerging adulthood: The role of social relationships and financial capability. *Emerging Adulthood*, 8(6), 496–508. doi: 10.1177/2167696819893574.
- Ramaeker, J., & Petrie, T. A. (2019). "Man up!": Exploring intersections of sports participation, masculinity, psychological distress, and help-seeking attitudes and intentions. *Psychology of Men & Masculinities*, 20(4), 515. doi: 10.1037/men0000198.
- Russell, D. (1996). UCLA loneliness scale version 3 (instructions). *Journal of Personality Assessment*, 66(42), 3–4. doi: 10.1207/s15327752jpa6601.
- Rossi, R., Socci, V., Talevi, D., Mensi, S., Niolu, C., Pacitti, F., Di Marco, A., Rossi, A., Siracusano, A., & Di Lorenzo, G. (2020). COVID-19 pandemic and lockdown measures impact on mental health among the general population in Italy. *Frontiers in Psychiatry*, 11, 790. doi: 10.3389/fpsyg.2020.00790.
- Saladino, V., Algeri, D., & Auriemma, V. (2020). The psychological and social impact of COVID-19: New perspectives of well-being. *Frontiers in Psychology*, 11, 577684. doi: 10.3389/fpsyg.2020.577684.
- Salokangas R. K., Poutanen, O., & Stengård, E. (1995). Screening for depression in primary care. Development and validation of the depression scale, a screening instrument for depression. *Acta Psychiatr Scand*, 92(1), 10–6. doi: 10.1111/j.1600-0447.1995.tb09536.x.
- Sani, G., Janiri, D., Di Nicola, M., Janiri, L., Ferretti, S., & Chieffo, D. (2020). Mental health during and after the COVID-19 emergency in Italy. *Psychiatry and Clinical Neurosciences*, 74(6), 372–372. doi: 10.1111/pcn.13004.

- Schimmenti, A., Starcevic, V., Giardina, A., Khazaal, Y., & Billieux, J. (2020). Multi-dimensional assessment of COVID-19-related fears (MAC-RF): A theory-based instrument for the assessment of clinically relevant fears during pandemics. *Frontiers in Psychiatry*, 11, 748. doi: 10.3389/fpsy.2020.00748.
- Schumacker, R. E., & Lomax, R. G. (2010). *A beginner's guide to Structural Equation Modeling*. New York & London: Routledge.
- Shahzad, U., Mohammed, K. S., Tiwari, S., Nakonieczny, J., & Nesterowicz, R. (2023). Connectedness between geopolitical risk, financial instability indices, and precious metals markets: Novel findings from Russia Ukraine conflict perspective. *Resources Policy*, 80, 103190. doi: 10.1016/j.resourpol.2022.103190.
- Sigdel, A., Bista, A., Bhattarai, N., Pun, B. C., Giri, G., Marqusee, H., & Thapa, S. (2020). Depression, anxiety and depression-anxiety comorbidity amid COVID-19 Pandemic: An online survey conducted during lockdown in Nepal. *MedRxiv*, 2020.04.30.20086926. doi: 10.1101/2020.04.30.20086926.
- Stubbs, T., Kring, W., Laskaridis, C., Kentikelenis, A., & Gallagher, K. (2021). Whatever it takes? The global financial safety net, COVID-19, and developing countries. *World Development*, 137, 105171. doi: 10.1016/j.worlddev.2020.105171.
- Szostek, D., & Balcerzak, A. P., Rogalska, E., N., & MacGregor Pelikánová, R. (2022). Personality traits and counterproductive work behaviours: The moderating role of demographic characteristics. *Economics and Sociology*, 15(4), 231–263. doi: 10.14254/2071-789X.2022/15-4/12.
- Szostek, D., Balcerzak, A. P., & Rogalska, E. (2022). The impact of personality traits on subjective categories of counterproductive work behaviours in Central European environment. *Transformations in Business & Economics*, 21, 2(56), 163–180.
- Szostek, D., Balcerzak, A. P., Rogalska, E. (2020). The relationship between personality, organizational and interpersonal counterproductive work challenges in industry 4.0. *Acta Montanistica Slovaca*, 25(4), 577–592. doi: 10.46544/AMS.v25 i4.11.
- Talwar, M., Talwar, S., Kaur, P., Tripathy, N., & Dhir, A. (2021). Has financial attitude impacted the trading activity of retail investors during the COVID-19 pandemic? *Journal of Retailing and Consumer Services*, 58, 102341. doi: 10.1016/j.jretconser.2020.102341.
- Vasileiou, E. (2021). Behavioural finance and market efficiency in the time of the COVID-19 pandemic: Does fear drive the market? *International Review of Applied Economics*, 35(2), 224–241. doi: 10.1080/02692171.2020.1864301.
- Wang, R., DeGruttola, V., Lei, Q., Mayer, K. H., Redline, S., Hazra, A., Mora, S., Willett, W. C., Ganmaa, D. & Manson, J. E. (2021). The vitamin D for COVID-19 (VIVID) trial: A pragmatic cluster-randomized design. *Contemporary Clinical Trials*, 100, 106176. doi: 10.1016/j.cct.2020.106176.
- Wang, Y., & Yan, M. (2020). Past experiences, personality traits, and risk aversion: Evidence from individual risk attitudes during the COVID-19 pandemic. *Frontiers of Economics in China*, 15(4), 575–625. doi: 10.3868/s060-011-020-0024-4.

- WHO (2020). COVID 19 public health emergency of international concern (PHEIC) global research and innovation forum: towards a research roadmap. Retrieved from [https://www.who.int/publications/m/item/covid-19-public-health-emergency-of-international-concern-\(pheic\)-global-research-and-innovation-forum](https://www.who.int/publications/m/item/covid-19-public-health-emergency-of-international-concern-(pheic)-global-research-and-innovation-forum).
- Witteveen, D. (2020). Sociodemographic inequality in exposure to COVID-19-induced economic hardship in the United Kingdom. *Research in Social Stratification and Mobility*, 69, 100551. doi: 10.1016/j.rssm.2020.100551.
- Witteveen, D., & Velthorst, E. (2020). Economic hardship and mental health complaints during COVID-19. *Proceedings of the National Academy of Sciences*, 117(44), 27277–27284. doi: 10.1073/pnas.2009609117.
- Wilken, J. A., Pordell, P., Goode, B., Jarteh, R., Miller, Z., Saygar, B. G., & Maximore, L., Borbor, W. M., Carmue, M., Walker, G. W., & Yeiah, A. (2017). Knowledge, attitudes, and practices among members of households actively monitored or quarantined to prevent transmission of Ebola Virus Disease—Margibi County, Liberia: February–March 2015. *Prehospital and Disaster Medicine*, 32(6), 673–678. doi: 10.1017/S1049023X17006720.
- Wolfe, K., Sirota, M., & Clarke, A. D. F. (2021). Age differences in COVID-19 risk-taking, and the relationship with risk attitude and numerical ability. *Royal Society Open Science*, 8(9), 19. doi: 10.1098/rsos.201445.
- Yuesti, A., Rustiarini, N. W., & Suryandari, N. N. A. (2020). Financial literacy in the covid-19 pandemic: Pressure conditions in indonesia. *Entrepreneurship and Sustainability Issues*, 8(1), 884–898. doi: 10.9770/jesi.2020.8.1(59).
- Zain, N. A. M., Hanafiah, M. H., Hamizan, N. A., & Asyraf, M. A. (2022). COVID-19 safety and preventive measures and social norms: How it shaped airlines passengers' trustworthiness. *Journal of Tourism and Services*, 24(13), 90–107. doi: 10.29 036/jots.v13i24.299.
- Zhu, H., & Deng, F. (2020). How to influence rural tourism intention by risk knowledge during COVID-19 containment in China: The mediating role of risk perception and attitude. *International Journal of Environmental Research and Public Health*, 17(10), 3514. doi: 10.3390/ijerph17103514.
- Zeng, Z., Wang, X., Wang, Z., Guo, R., & Feng, R. (2017). Empirical research of the relationship between related knowledge, attitude, and behaviour of hypertension patients based on the structural equation model. *Journal of Central South University. Medical Sciences*, 42(2), 195–201. doi: 10.11817/j.issn.1672-7347.2017.02.013.

Acknowledgments

This paper is supported by IGA/FaME/2023/014: "CSR as an important factor in obtaining bank loans and external financial resources for small and medium-sized enterprises." Support was also received by the project IGA-K-TRINITY/2022-23/011-

Support of Pedagogical Work with Talented Students of the Financial Laboratory
Course: Valuation and DeFI”.



Ministry of Education and Science
Republic of Poland

The journal is co-financed in the years 2022–2024 by the Ministry of Education and Science of the Republic of Poland in the framework of the ministerial programme “Development of Scientific Journals” (RCN) on the basis of contract no. RCN/SN/0129/2021/1 concluded on 29 September 2022 and being in force until 28 September 2024.

1

2

3

4

6

7

—

Annex

Tables and Figures

— (Ricardo, 1929);

—

Annex

Tables and Figures

ings and impact of economic adversity on people's risk tolerance and prudent financial behavior. The second is determining the various categories' variations according to age.

Purpose of the article: The study's main objective is to evaluate financial behaviour of people with lower and medium incomes after the second wave of COVID-19 in India, and to contribute to the body of knowledge on general strain theory.

Methods: The study examined the proposed framework and tested the serial mediation model based on the general strain theory used as a survey method for data collection, targeting lower and middle-income individuals in India's most populated state. The study applied PLS-SEM to test the framed hypotheses. Furthermore, the Kruskal Wallis test was applied to identify the difference in the various groups classified based on age.

Findings & value added: The results reveal that economic hardship significantly influences improved financial behavior. Risk aversion attitude, loneliness, and depression mediate the relationship between economic hardship and financial behavior. Moreover, the study found quite a few significant differences between the different age groups. The present study will add to the existing literature on financial behavior under the scope of general strain theory and probably be among the few that test general strain theory with financial variables impact on lower and middle-income group individuals from a developing nation in post-COVID-19 period.

Introduction

The recent COVID-19 pandemic brought on the serious acute respiratory syndrome called the coronavirus, which drastically affected the human lifestyle. On March 11, the World Health Organization (WHO) labelled the epidemic a public health emergency of international concern (WHO, 2020). The hazardous virus was difficult to stop from appearing and spreading. Maintaining social distance was the only available short-term option. However, societal exclusion had consequences. Due to social constraints and distance, the existence of COVID-19 undoubtedly caused negative feelings and contributed to loneliness and melancholy. How these negative emotions affected risk aversion in people and how it affected people's money behaviour needs to be verified in the post-pandemic recovery phase and in new normal conditions. The financial crises and meltdowns due to the business cycle have always affected human behaviour, specifically financial behaviour, and will happen again sooner or later. The thing which can safeguard would be the individuals' prudent financial behaviour, which is the present study's core idea.

The COVID-19 pandemic outbreak has had a detrimental effect on people's bodily and emotional health. Due to its severe effects, it has evolved into a means of regulating or reliably accounting for people's appropriate financial systems in both developed and emerging countries. COVID-19

has impacted people's emotions worldwide, and the unexpected pandemic has changed people's plans and habits. Therefore, Ali *et al.* (2021) believe that the COVID-19 epidemic has brought about many changes. Due to the post-COVID-19 havoc, a paradigm has changed how people wish to improve their financial situation. Additionally, Wang *et al.* (2021) reported that the post-COVID-19 pandemic has become crucial due to the substantial restrictions on interpersonal physical interaction, which affects people's internal emotions. Furthermore, physical access to financial services, like banking, was restricted. Most individuals depend on banking for financial services and guidance, greatly impacting how people handle their money and behave (Belas *et al.*, 2012; Belas *et al.*, 2014). It limited the guidance and other assistance that banks and other financial institutions could offer people.

As a result, according to Pedrosa *et al.* (2020), the post-COVID-19 second phase significantly changed people's financial behaviour. Hate, dread, contempt, irritation, anxiety, rage, envy, and sorrow are negative emotions people have experienced during and post-COVID-19 pandemics. These emotions became even more severe during the second phase of the COVID-19 pandemic, in which some nations like India faced the worst phase: when this severely affected people's risk profile, risk appetite and behaviour. So on the one hand, there is human behaviour; on the other side, negative emotions arise due to the pandemic. Thus seeing it through the general strain theory, it might be possible that the strain – specifically the financial difficulty brought on by the COVID-19 pandemic – has influenced people's behaviour in various ways.

The recent pandemic impacted people's feelings and had a major social and psychological effect (Evans *et al.*, 2021; Saladino *et al.*, 2020; Pedrosa *et al.*, 2020). Feelings impact money decision-making (Di Crosta *et al.*, 2021; Duxbury *et al.*, 2020). Emotions, money behaviour, and decision-making are all related (Ackert *et al.*, 2003). It leads to a link between pandemic stress-related feelings and people's money decisions. Additionally, individuals were more likely to change their consumption patterns and adopt coping strategies that were primarily problem-focused in reaction to COVID-19 financial stress (Adamus & Grežo, 2021). Ultimately, COVID-19 has detrimentally affected world financial security (Stubbs *et al.*, 2021; Kalogiannidis *et al.*, 2020). However, the existing literature has very few studies that have examined the impact of people's pecuniary feelings during the COVID-19 pandemic, which opens the door for empirical research using

the quantitative method. Therefore, the current study attempted to fill this knowledge vacuum by examining how people's financial behaviours change due to widespread worry and unfavourable emotions. This research centres on the question of how people's feelings were impacted negatively by the COVID-19 pandemic in developing nations.

The current research aims to understand how people dealt with negative emotions, which impacted their risk-taking and financial behavior, and how they might have grown due to economic difficulty. The current research aims to determine how financial hardship, which occurred after COVID-19, during the second phase in India, impacted loneliness, depression, risk-averse attitude, and financial behaviour among lower and middle-income people. The authors were motivated to carry out the current research because India was one of the countries most severely affected by the second phase of the COVID-19 pandemic and because most of its population comes from lower- and middle-income groups. Additionally, the research compares the differences between age-based groups to determine how the COVID-19 second wave affected various age groups. The study also offers a conceptual structure that describes the relations between pointed factors in detail.

Up to date, only few empirical studies have been conducted within the pointed background, mostly in the context of emerging countries. This research adds to the body of knowledge on the effects of COVID-19 on people's emotions and its impacts on financial limitations (Feyisa, 2020; Ali *et al.*, 2020). No prior study used the general strain theory to investigate how the epidemic affected low- and middle-income people's financial behavior in a big developing nation. The innovative aspect of the research is examining how the pandemic's external stress caused negative feelings in people and how those emotions led to more prudent financial behavior. This research used a sample to analyze and evaluate how humans can create coping mechanisms, how even negative emotions can contribute to a positive result. The current research findings demonstrate this occurrence and may be helpful to policymakers and financial service providers.

The structure of this study is as follows: a part of the literature survey includes the theoretical background, methods, analysis findings, and discussion. The article ends with both academic and practical insights, as well as its limitations and recommendations for further study.

Literature review and hypothesis development

The General Strain Theory underpinning the study

According to Robert Agnew's General Strain Theory (GST) (1992), explained stressors and strains that typically increase the probability of negative feelings like rage and irritation. In other words, the GST refers to the idea that some people or individuals respond to the various stresses they encounter by using unhealthy coping strategies like criminal activity. As a result, the wide form of strain theory is known as the general strain theory. According to the theory, such negative feelings typically put the greatest weight on people to take remedial action. Additionally, tensions are interactions where people are not treated how they would like to be treated by others.

As a result, the general strain theory divided the strain into subjective and empirical categories. The objective strains are circumstances disliked by the majority of a particular group. It denotes that the person is going through an intolerable event or circumstance. Similarly, subjective stresses are situations or conditions that people who are experiencing or have experienced detest. To make matters worse, when under psychological stress, the person is going through an unpleasant circumstance or situation.

Looking into the phase of the recent pandemic, it was an incentive for strong psychological stress and unpleasant experiences, leading to negative emotions. The general strain theory, also known as the strain theory, is applied to the current research to find the answers to how the strain caused by the COVID-19 pandemic affected people's emotions, leading to the impact on financial behaviour.

Economic hardship

Both the first and second phase of the COVID-19 pandemic have mainly resulted in fiscal suffering for nations and people worldwide. The second phase of the COVID-19 pandemic had a detrimental effect on people who have amassed the most economic hardship (Witteveen & Velthorst, 2020). Importantly, the second wave's financial distress includes the greatest number of employment losses, salary decreases or cutbacks, and workload declines, all aggravating socioeconomic differences. Safety, protective measures, and societal standards have impacted every aspect of daily liv-

ing and people's confidence throughout COVID-19 (Zain, 2022). People may be forced by the severity of the current financial crisis to make risk-averse financial management and improvement choices.

According to Witteveen (2020), the pandemic has gradually worsened people's risk aversion circumstances, particularly among lower-paid jobs. Lockdowns, harsh restrictions on travel to work, social distance regulations, and school closings made life extremely difficult for people and decreased economic activity. The risk of decreased work hours or permanent job loss was one of the financial difficulties experienced by people in the pandemic's second wave (Bierman *et al.*, 2021). In order to cast more light on the topic of "accumulation of economic hardship and health during the COVID-19 pandemic: social causation or selection?" researchers found that the second phase of the COVID-19 pandemic was associated with a more significant amount of economic hardship than the first one. According to Mann *et al.* (2020), the new coronavirus (SARS-COV-2) has caused economic and significant mental health disruptions in people's lives. Social distancing and isolation suddenly affected people's lives and pushed them to live in loneliness. Financial difficulty is detrimental psychological anguish coupled with negative effects. Individuals might experience financial hardship and loneliness. Thus, the study intends to examine the following hypotheses.

H1a – *Economic hardship has a positive impact on individuals' loneliness during the post-COVID-19 second wave*

H1b – *Economic hardship positively impacts individuals' depression levels during post-COVID-19 second wave.*

Loneliness

Negative feelings have contributed to loneliness among people during the first and second phases of the COVID-19 pandemic (Witteveen, 2020). Working from home was one of the few isolated instances compared to the workplace before the epidemic. The pandemic also brought about lockdown measures, like instructions to remain at home and the closure of non-essential companies. According to Boursier *et al.* (2020), the COVID-19 epidemic has caused loneliness, anguish, and unforeseen circumstances. The introduction of social distance alone altered how people felt, interacted

with others and went about their everyday lives, ultimately impacting their emotions and well-being. Again, the stringent regulations imposed by the different governments to stop the spread of the disease also led to isolation and worry.

Although the development of digital technologies has significantly reduced the stress associated with loneliness, the unfavourable effects of the COVID-19 second phase may influence how people choose to live. Considering this, it has been confirmed by (Banerjee & Rai 2020; Brooks *et al.*, 2020) that COVID-19 contributes to increased loneliness among people. Additionally, research by Banerjee and Rai (2020) and Porcelli (2020) found that in the second wave, seclusion and limitations make people feel worse, increasing the severity of loneliness in both young and elderly populations who have caught the virus.

As a result, according to these studies, the second phase of COVID-19 has significantly impacted people's feelings of loneliness and forced them to deal with unforeseen circumstances (Coibion *et al.*, 2020; Schimmenti *et al.*, 2020). A system of boredom, irritation, and isolation due to the decrease in social interaction and decline in one's normal routine lifestyle, Wilken *et al.* (2017) continued, led to high levels of distress. Loneliness has caused illnesses and discomfort and has altered peoples' attitudes. Additionally, the second phase of COVID-19 has increased a disorder and unease, stressing people out and creating dangerous situations (Coibion *et al.*, 2020; Sani *et al.*, 2020). The discomfort and isolation might increase anxiety and worry and impact risk-averse attitudes. Thus, it can be important to understand how loneliness among people affects their risk-averse attitude. Based on the discussion, the following hypotheses are formulated.

H1c – *Loneliness positively influences the individuals' risk aversion attitude during the post-COVID-19 second wave.*

H2c – *The effect of Loneliness on individuals' financial behavior is mediated by Individuals' risk aversion attitude.*

Depression

Numerous academics and experts have examined the detrimental effects of melancholy during the COVID-19 pandemic and after it. In order to stop the spread of COVID-19, which may result in melancholy states, citi-

zens were instructed to implement partial or total lockdowns around the globe during the epidemic (Khosravizadeh *et al.*, 2022). Depression is a chronic mood disorder that harms and adversely impacts people's emotions, thoughts, and actions, impairing their ability to carry out everyday tasks. Situational depression, biological depression, psychological depression, and existential melancholy are the four different kinds of depression. According to Hawkey and Cacioppo (2010), melancholy primarily damages social interactions by causing dissatisfaction with one's own thoughts and disagreeable emotions.

People have experienced a high degree of melancholy due to the COVID-19 outbreak (Karaşar & Canl, 2020). According to the study's results, women are more likely than males to have experienced depression. Lei *et al.* (2020) found an ongoing rise in melancholy in the second phase of the pandemic. For instance, according to statistics from China, Italy, and Nepal, the frequency of melancholy is 16.5%, 17.3%, and 34.1%, respectively (Wang & Yan, 2020; Rossi *et al.*, 2020; Sigdel *et al.*, 2020). Han *et al.* (2021) demonstrated how depression had impacted people's ability to lead regular lives as individuals, families, and groups since the COVID-19 disease outbreak. Individuals' depressive symptoms, such as dread and anxiety, have made returning to regular life difficult.

Additionally, people became unhappy due to the unprecedented changes brought on by the COVID-19 pandemic, including seclusion, lockdowns, and quarantine by different federal and state authorities.

Inevitably, the second phase maintained the required isolation, home-based employment, imbalance in people's lives, and decreased social and physical interactions, leading to increased depressive mood and resulting in mental distress, boredom, annoyance, and difficulty obtaining social support (Heffernan, 1998; Brooks *et al.*, 2020). Thus, it seems logical to check how depression affects individuals' risk aversion attitude. In light of this, the study proposed the following hypotheses:

H1d – *Depression positively influences the individuals' risk aversion attitude post-COVID-19 in the second wave.*

Financial behavior

Numerous academics and experts have broadly defined financial behaviour. A typical example is how a family or person handles their finan-

cial resources, including budgeting, insurance, and investment. Financial behaviour enables a person to comprehend how human feelings, biases, and cognitive limitations in processing and reacting to information significantly impact financial choices, including investments, payments, risk, and personal debt (Yuesti *et al.*, 2020).

According to Horvath *et al.* (2021), the financial behaviour is intrinsically unpredictable because choices have results that cannot always be predictable. Additionally, Vasileiou (2021) believed that the COVID-19 illness, which had caused a significant amount of economic and social strain or disruption and become a global pandemic, had an obvious impact on people's financial behavior and feelings.

Economic specialists believe that maintaining normalcy in the second wave will be even more difficult than in the first, even though most governments and state officials collaborate closely to guarantee financial stability. Talwar *et al.* (2021) claimed that most people's financial behaviour during the post-COVID-19 pandemic had greatly increased doubt and financial volatility. The post-COVID-19 pandemic has significantly affected economic activity and had a negative impact on many people's money actions. As a result, financial behaviour in the post-COVID-19 period and economic distress might have a direct linkage. According to Yue *et al.* (2020), the second phase of the epidemic has had an impact on financial markets, firm funding, banking, insurance companies, governments, and the general public, in addition to people. Therefore, it seems reasonable to examine the role of depression and how it affects financial behaviour through the risk aversion attitude. As a result, the study proposed the following hypotheses:

H2d – *Individuals' risk aversion attitude mediates the effect of depression on individuals' financial behaviour.*

H2a – *The effect of economic hardship on individuals' financial behaviour is mediated by the serial mediation of loneliness, depression, and risk aversion attitude of individuals during post-COVID-19 second wave.*

Risk aversion attitude

Similarly to the already discussed factors, people's attitudes toward risk have changed as a result of the presence of COVID-19. According to Zhu

and Deng's (2020) argument, since the COVID-19 epidemic, researchers have been paying close attention to how people's views toward risk aversion tend to change. Risk aversion is people's propensity to favour events with low ambiguity over those with high uncertainty (Rabin, 2000; Shahzad *et al.*, 2023). As a result, it becomes clear that COVID-19 and people's perceptions of danger are positively correlated (Zeng *et al.*, 2017).

It is also worth to remember that according to Coibion *et al.* (2020), a person's risk attitude fall between risk aversion and risk seeking. From this perspective, Cerami *et al.* (2021) verified that COVID-19 had exerted more pressure leading to changes in people's risk attitudes, which either caused an increase or decline in risk perception. The second phase of post-COVID-19 negative feelings brought on by the pandemic has an extremely psycho-socio-emotional character. Risk-averse or risk-loving views have resulted from this rise or fall in risk. Since people during the pandemic show risk-averse attitudes due to their bad feelings during the post-COVID-19 pandemic, Chan *et al.* (2020) have proven that risk-averse attitudes play a key or crucial role in forecasting how people feel when the outbreak is in full swing. Individual risk attitudes are seen as one of the most important variables in economic decision-making. Hence, the connection between the individual's risk attitude and financial behaviour post-COVID-19 needs investigation to clarify its linking. The formulated hypotheses are as:

H1e – *Risk aversion attitude positively influences individuals' financial behaviour post-COVID-19 in the second wave.*

H2b – *The effect of economic hardship on Individuals' risk aversion attitude is mediated by loneliness and depression.*

The current study aims to use the general strain theory, which can help to understand how the COVID-19 pandemic upsurges negative emotions due to several pointed restrictions and how those negative emotions help people to develop coping behaviour. In other words, the study concentrates on the question of how people adapt money-buffering mechanisms when social distance is restricted. With this goal in mind, the current research investigates the connections between emotions and money-coping behaviour. Most developing nations have the majority of lower- and middle-income individuals, making up the largest part of the global popula-

tion. Because of this, the current research aims to investigate the hypotheses framed considering the lower and middle-class people in the emerging economy. The research looks at the mediating function of negative feelings in determining how COVID-19 impacts people's money behaviour. Figure 1 depicts the proposed conceptual framework.

Research methods

Targeted population and sample

Loss of earnings struck the whole family income during the COVID-19 epidemic, notably during the lockdown in March 2020. Studies found that the higher middle- and middle-class income categories were the worst hit. The present study used a survey method to collect the data from individuals in India's northern states (covered states Uttar Pradesh, Delhi, and Uttarakhand). Since the aimed population of the study belong to middle-income individuals, the study considers individuals aged 18–60 years. The sample profile can be seen in Table. 1.

The study is conducted in India for several reasons. First, it represents the emerging economies in transition. Second, it represents a bigger chunk of Asia's population, specifically the middle-income group. More so, India was also among the nation whose middle-income population suffered from the pandemic. Hence, the authors believe the current output can help to understand the related emerging economies, their situation and people's financial behaviour. So the present results to some extent might be generalized, which might help understand the financial behaviour of middle-income individuals in other emerging nations. Thus, the information driven from the analysis will be useful for understanding other developing economies.

The study used stratified sampling to target lower- and middle-income individuals. Specifically, the study used stratified disproportionate sampling techniques. Using disproportionate techniques, the authors did not collect the data in the proportion of the population. They identified the centre where only lower- and middle-income individuals visit and then collected the data by choosing individuals randomly. The data collection used the ration card system under the public distribution system in India. The government allocate different colours of ration card based on income

level, for example, orange and red for the below poverty line individuals and white for those who are above the poverty line. Hence, the present study collected the data from the public distribution centres where different income levels of individuals come for food grains collection, and the researchers randomly collected from the individuals there. At the initial data collection stage, the present study tested the reliability and validity of the questionnaire. With a set of 60 initially collected questionnaires, a pilot examination was conducted to ensure the consistency and accuracy of the questionnaire, and it was found satisfactory (see Table 2).

After the acceptable validity and reliability, the authors further distributed a questionnaire to individuals through both offline and online modes. The study set the target of 400 samples (excluding the sample collected in the pilot study) within three months between October 2021 to December 2021. However, the collection took longer; as the authors collected it until January 2022.

Another issue in the collected data is that some questionnaires were filled partially. Therefore, they were removed from the final sample. The sample was left with only 357, as 43 incomplete questionnaires were excluded. The present study continued its analysis since the final sample satisfied the minimum sample size (Bagozzi & Yi, 2012). Moreover, the sample size also satisfies the criteria based on the '10 times rule method' generally accepted rule of thumb as suggested by (Hair *et al.*, 2014). It is based on the idea that the sample size used in an empirical investigation should be more than 10 times the number of inner or outer model links that can possibly point at any latent variable.

Questionnaire and measurement variables

To assess the improved financial behaviour through economic hardships, risk tolerance, loneliness, and depression, a five-section questionnaire was designed. Each section included five-six questions on each variable and a profile section to collect demographic details. The questionnaires were designed in such a way as to control common method variance. Each section consists of objective questions based on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The questionnaire was divided into two sections. The first section covered basic demographic questions, and the following section included self-reported statements divided into

subsections without any heading or sub-heading to avoid any biases from the respondents, which are presented in Table 2.

Data analysis

The present study used Adanco 2.0 version software for the structural equation modelling (SEM) analysis technique. In recent decades, SEM has evolved as one of the most helpful advanced statistical analysis approaches in the social sciences. SEM is a multivariate approach that combines parts of component analysis and regression to allow the researcher to look at relationships between measured variables and latent variables, as well as between latent variables at the same time (Hair *et al.*, 2014). The present study considered this technique for the empirical analysis as it has many advantages, such as the possibility of testing a conceptual framework from a prediction point of view. The complex structural model contains many constructs, indicators, and/or model relationships. Also, when the study uses secondary or archival data, the sample size is constrained by a small population. Then, SEM is recommended to comprehend complex behavioural and psychological ideas and their interconnections (Hair *et al.*, 2019; Schumacker & Lomax, 2010). Several shreds of evidence in the literature highlight how the studies used SEM in behavioural and psychological studies, connecting the linkage between personality, demographic characteristics, and behaviour supports applying SEM in recent studies (Szostek *et al.*, 2020, 2022, 2022), making it justifiable to use PLS-SEM for the present study. As the data for the present study lack normal distribution and a need to investigate the structural direct and indirect relationships, partial least squares structural equation modelling (PLS-SEM) was a convenient and feasible method to apply (Hair *et al.*, 2017).

Research results

Model measurement

First, the construct reliability and validity were checked using Dijkstra-Henseler's rho along with Jöreskog's rho and Cronbach's alpha coefficients, all the values were found to be above 0.8, which are more than the specified thresholds established for each one (Bagozzi & Yi, 1988; Hair *et al.*,

2019). The convergent validity was presented by average variance extracted (AVE), surpassing the minimum threshold of 0.5 (see Table 3). VIF values were below the conservative threshold of signalling collinearity (see Table 2). Hence, all the item loadings, CA, CR and AVE, and other significant thresholds were within the threshold (Henseler *et al.*, 2015, 2016; Hair *et al.*, 2014).

Discriminant Validity is used to determine to construct validity. The Fornell–Larcker criterion is used to determine discriminant validity across all constructs (Fornell & Larcker, 1981), and the HTMT criterion (Henseler *et al.*, 2015) indicates no discriminant validity issues (see Tables 4 and 5).

Moreover, HTMT values were also found below .85. HTMT values should be below 0.9 or, better, below 0.85 (Henseler *et al.*, 2015), which indicated that all constructs were dissimilar from each other. After satisfying the threshold of the above mention criteria, the discriminant validity was also tested and found within the permissible limit. Therefore, there is no assumption violation of PLS-SEM.

The next step of the analysis reveals the structural model. The model explains 22.5% of the variation in risk aversion and 12.7% in financial behaviour; details can be seen in Table 7 and Figure 2. R^2 values describe the variance of endogenous latent variables in the structural model. The higher the R^2 values, the better the construct is elucidated by the structural model's latent variables that point at it via structural model path connections. A high R^2 percentage also shows that the values of the construct are well predicted via the PLS path model (Hair *et al.*, 2017). Here, in spite of formally low R^2 values, the obtained results can still provide value for analysis.

Based on the proposed conceptual framework, loneliness and depression are determined by economic hardship. Loneliness and depression mediate between economic hardship and risk aversion — finally, serial mediation of loneliness, depression, and risk aversion between economic hardship and financial behaviour.

Direct and indirect effects

Empirical results can be seen in the table 6. It was found that economic hardship has a significant positive impact on loneliness and depression. Loneliness and depression have a significant effect on the risk aversion of individuals. However, the effect size in all the abovementioned hypotheses

detected a weak effect little above Cohen's f^2 .02. The effect of risk aversion on financial behaviour was also found to be significantly positive with a moderate effect size of Cohen f^2 .1450. All the indirect path was also found significant and revealed a significant role of mediators. Results found that H2a Economic hardship on Individuals' financial behaviour is mediated by the serial mediation of loneliness, depression, and risk aversion attitude of Individuals.

Similarly, H2b also found evidence that Economic hardship on Individuals' risk aversion attitude is mediated by loneliness and depression. Also, H2c confirms that the effect of Loneliness on Individuals' financial behaviour is mediated by Individuals' risk aversion attitude. Lastly, H2d also supported the thesis that the Individuals' risk aversion attitude mediates the effect of depression on Individuals' financial behaviour.

The study further compared groups (see Table 9). It established significant differences among groups in economic hardship, depression, loneliness, risk aversion attitude, and financial behaviour. Based on the results proving that that all the groups demonstrate significant differences, the study further compared each group's sub-groups to identify the segment with a significant difference in the r economic hardship, depression, loneliness, risk aversion attitude, and improved financial behaviour post-COVID-19. The multiple age group comparison further revealed the difference among the different age groups. First, the group classified under economic hardship found a significant difference between the individuals who fall under the category of 18–30, 31–40, and 41–50, with 51–60. It mostly divides the difference between individuals below 50 and above fifty. It could be related to individuals close to retirement or retired and facing financial insufficiency, or people below 50 may have insufficient income to meet their expenses. It attracts further robust analysis to find each group and segment to identify the exact difference and reasons behind it. Second, under loneliness, two groups, 18–30 and 41–50 and 31–40 and 41–50, were found to have significant differences among them. The considerable differences between them may be seen by dividing them into two groups — those under 40 and those over 40. It is true that people under the age of 40 experience more loneliness than people beyond 40, which merits additional investigation.

Individuals with improved financial behaviour also revealed significant differences based on their age bracket. Individuals below 50 significantly differed from individuals above 51. Similarly, the risk-averse attitude of

individuals also reflects the same result as improved financial behaviour. Individuals below 50 and above 50 have significant differences in their risk-aversion attitude, which can be related to layperson's language due to generational cohort differences. Still, it further requires rigorous investigation to understand the reasons behind it in different sub-groups. Finally, regarding depression, it was also found that there was a significant difference between those below 40 and above 40, which encourages further investigation to detect the level of depression among individuals classified based on age. The overall objective of the multiple age group comparison is to understand the significant difference between various age groups, see Tables 9.

Discussion

The study's main aim was to investigate the impact of negative emotions on individuals' risk-averse attitudes and improved financial behaviour post-COVID-19 second wave through the general strain theory. The study proposed nine hypotheses, particularly four direct and four indirect hypotheses, and one on multiple age group comparison. The first hypothesis (H1a): economic hardship has a positive impact on Individuals' loneliness post-COVID-19 second wave in India, was statistically supported by the findings of the results with a P-value of 0.0043 and Beta (β) of 0.1578. Loneliness is commonly defined as a state of being alone or isolated from one's community or society. The hypothesis (H1) results significantly collaborate with the studies of (Boursier *et al.*, 2020; Banerjee & Rai, 2020; Houghton *et al.*, 2022). In their studies, loneliness was carefully examined due to the COVID-19 pandemic. Loneliness is thought to disturb social integration, increasing isolation and negative emotions in an individual's risk-averse during the second wave of the pandemic. This vicious loop isolates the lonely person even more into their own 'suffocating' space. Again, the second wave of COVID-19 has largely affected people's loneliness, causing people to cope with unplanned situations.

The second hypothesis (H1b) is confirmed that economic hardship results in increasing individuals' depression levels in post-COVID-19 period in India as the P-value and β are equal to 0.0023 and 0.1678, respectively. To add more, the findings of our current study support the works of (Lathabhavan, 2022; Mekala *et al.*, 2022). It means a positive relationship exists between individual depression levels and post-COVID-19 in the sec-

ond wave. In this regard, the world has experienced psychological discomfort due to the second wave of pandemics and unexpected shifts, resulting in decreased well-being and life satisfaction and causing negative emotions in individuals' risk-averse affecting financial behaviour (Duong, 2021). The magnitude of this economic hardship forced individuals' decisions to manage and improve their financial behaviour with a risk-averse attitude.

Relatedly, loneliness has brought disorders and discomfort and changed the mood of people thinking (Duong, 2021). To emphasize hypothesis (H1c): loneliness positively influences the Individuals' Risk aversion attitude is also supported by the study results with (p-value 0.0002 and β 0.2540). It means that a positively significant relationship exists between loneliness and Individuals' Risk aversion attitude in the post-COVID-19 second wave, as affirmed by (Houghton *et al.*, 2022; Kato & Shaw, 2020). The substantial decrease in possibilities to express oneself to others has made it impossible to satisfy the demand for self-approval from status and group appeals. Loneliness has changed the pattern of Individuals' Risk aversion attitude post-COVID-19 in the second wave. The negative emotions caused by the pandemic in the second wave of post-COVID-19 are a highly psycho-socio-emotional profile.

In general, depression mainly causes dissatisfaction with an individual's life and other negative feelings, reducing social relationships. The proposed hypothesis (H1d): Depression positively influences the Individuals' risk aversion attitude post-COVID-19 in the second wave in India is also supported by the results of the current study (p-value 0.0003 and β 0.2504). It means there is a significant and a positive relationship between depression and Individuals' risk aversion attitude post-COVID-19 in the second wave of the pandemic. The study findings collaborate with the research works of Alshammari *et al.* (2022), Mailliez *et al.* (2021) and Ben *et al.* (2021).

Moreover, the last direct hypothesis, which states that (H1e): Risk aversion attitude positively influences Individuals' financial behaviour, is again supported by the results obtained (p-value 0.0000 and β 0.3559). To be more emphatic, a strong positive relationship exists between the two key variables: Risk aversion attitude and Individuals' financial behaviour. Studies conducted by Natarajan and Jayadevan (2022), Chen *et al.* (2021) have also confirmed the current findings. The COVID-19 disease, in the world which had not experienced a pandemic in the last decade, had exerted a high level of economic and social pressure or disruption that invariably affected the financial behaviour of individuals' emotions.

Furthermore, it is also found that although opinions toward depression were generally positive, things may differ for those suffering from serious mental illnesses (Jorm *et al.*, 2000). Another study found that in context-specific ways, people's declared preferences for risk and risk-taking actions are associated with depression, but less risk-taking is reported in general. Still, more risk-taking is reported regarding health (Cobb-clark *et al.*, 2019), which provides another perspective for further research. Not only risk tolerance alone, but also planning horizon has an impact on real financial behaviour (Castro-González *et al.*, 2020). Considering specifically the pandemic effect, it has been found that when a pandemic strikes, different age groups adopt different protective behaviours, which adds to the discussion about whether age disparities in risk-taking are caused by deteriorating capacities or shifting risk attitudes (Wolfe *et al.*, 2021). Hence, many more aspects of risk-taking and financial behaviour require further exploration.

Furthermore, Hypothesis (H2a): the effect of economic hardship on Individuals' financial behaviour is mediated by the serial mediation of loneliness, depression, and risk aversion attitude is significantly supported by the obtained findings (a p-value of 0.0212 and β 0.0292). It has been conclusively established that risk-averse attitudes are a key or important element in determining how people will feel during a second-wave pandemic. This establishment posits a positive correlation between economic hardship on Individuals' financial behaviour and serial mediation of loneliness, depression, and risk aversion attitude. The results affirmed the results of Bhatti *et al.* (2022) and Mensah *et al.* (2022). With regards to Hypothesis (H2b): the effect of economic hardship on Individuals' risk aversion attitude is mediated by loneliness, and depression is strongly supported (p-value 0.0067 and β 0.0821). It confirms similar results in the study area to Mensah *et al.* (2022) and Petrocchi *et al.* (2022). Again, it is firmly revealed that risk-averse attitudes are a central or critical factor in predicting the emotional feeling of individuals within the confinement of the pandemic.

Lastly, hypotheses (H2c): the effect of Loneliness on Individuals' financial behaviour is mediated by Individuals' risk aversion attitude. (H2d): Individuals' risk aversion attitude mediates the effect of depression on Individuals' financial behaviour were all supported (p-value 0.00016 and β 0.0904; p-value 0.0020 and β 0.0891, respectively). In both hypotheses, financial behaviour is found to be an important key that influences both loneliness in individuals and risk aversion attitudes. In support of our

study findings, the results are consistent with the outcome provided by Erzen and Çikrikci (2018) and Ramaeker and Petrie (2019).

The current study aims to understand better how people cope with negative emotions and how those emotions affect their risk-taking profile and financial behaviour. The present study highlights and attracts the reader's attention towards how a pandemic or any other kind of distress can evoke negative feelings and emotions among individuals and how those emotions can influence their risk-taking attitude and financial behaviour. The study aimed to discover how strain and unexpected disasters might help people learn coping mechanisms.

To the extent of the present study's findings and the authors' understanding, this phenomenon is critical and applicable to all individuals around the globe. People with more effective coping behaviour can indirectly help the country and individuals to overcome difficult situations easily. We have witnessed nations worldwide suffer the impact of the recent pandemic, which ultimately increased the financial burden on the state to support the people. Financial knowledge and skills can help them execute prudent financial planning and improve their financial behaviour, which can always help individuals in dynamic financial situations. It can improve their daily planning and financial decisions, which can help them to avoid bitter experiences and negative emotional development when falling into a financial crisis.

Moreover, individuals' better financial planning, possibly to some extent, can reduce the burden on the government. To some extent, the pandemic helped individuals to find ways to sustain and develop better and safe behaviour to survive. Hence, the present study highlighted how the strain could help develop coping financial behaviour among individuals and put forward the output for future learning and research.

Conclusions

The objective of the present study is to investigate the impact of negative emotions, which might have been increased due to economic hardship, and their impact on risk attitude and financial behaviour. The findings show that financial difficulty significantly impacts more prudent financial conduct. The association between economic stress and financial behaviour is mediated by risk aversion, loneliness, and depression. Furthermore, the

study discovered some significant discrepancies between the various age groups. Then, general strain theory has been utilized here to investigate a variety of behavioural effects. The study's findings may be useful to legislators, financial services providers, researchers conducting further research, and finally people. The current study will add to the existing literature on financial behaviour in the context of general strain theory. It is likely one of the few to test GST theory with financial variables in a developing country's COVID-19 second wave impact on lower and middle-income individuals.

However, the current research does have some limitations. First, the study is restricted from formal generalizing its findings because the sample size is insufficient and only reflects a small portion of the population. In order to measure people's impressions of the selected factors, self-evaluating statements were used, which can result in social comparison bias. Third, because the study only included one developing country — India — the conclusions cannot be directly applied to all developing countries as they may have different economies, societies, cultures, and levels of internet exposure. Furthermore, utilizing only a quantitative technique limits the study, because other approaches could provide more concrete findings/results. By conducting more research, these discovered constraints can be removed. To add to the present study and extend the literature, the authors intend to suggest future research with other theories, such as self-efficacy or capability theory, to examine financial behaviour. Cross-sectional and longitudinal data-based outcomes can further add to the outcomes of the present study. Since the present study focused only on one nation, a comparative international analysis can bring out a bigger picture for the researchers to understand the study's investigated phenomenon. Comparing different income level groups' emotions and financial behaviour can also be a valuable contribution.

Practical implications

The findings can be useful for practical implications for the policymakers and financial service providers. First, they help to understand the effect of negative emotions developed due to external strain and its further impact on individuals' financial behaviour. Second, financial service providers can consider this while consulting and counselling their clients and understand the role of emotions on financial behaviour. The outcomes of

the analysis can be considered for framing policies and financial regulations dealing with people and society, specifically in the context of low- and mid-income individuals, where the income is limited and emotions play an important role in framing people's behaviour.

The present findings reveal another face of emotions which do not always cause negative result. According to the findings, there is a positive impact of negative human emotions on financial behaviour. The Authors believe this phenomenon can be universal and can apply to any nation, but further investigations at the higher levels need to be done to validate that claim. The present study outcomes and main finding can also become valid if related to the recent rapid shift towards digital financial inclusion due to lockdown and social distancing. There were restrictions, but they resulted positively in digital financial inclusion.

References

- Ackert, L. F., Church, B. K., & Deaves, R. (2003). Emotion and financial markets. *Economic Review - Federal Reserve Bank of Atlanta*, 88(2), 33–41.
- Adamus, M., & Grežo, M. (2021). Individual differences in behavioural responses to the financial threat posed by the COVID-19 pandemic. *Personality and Individual Differences*, 179. doi: 10.1016/j.paid.2021.110916.
- Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology*, 30, 47–88. doi: 10.1111/j.1745-9125.1992.tb01093.x.
- Alshammari, T. K., Alkhodair, A. M., Alhebshi, H. A., Rogowska, A. M., Albaker, A. B., AL-Damri, N. T., Bin Dayel, A. F., Alonazi, A. S., Alrasheed, N. M., Alshammari, M. A. (2022). Examining anxiety, sleep quality, and physical activity as predictors of depression among university students from Saudi Arabia during the second wave of the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 19, 6262. doi: 10.3390/ijerph19106262.
- Ali, M. H., Suleiman, N., Khalid, N., Tan, K. H., Tseng, M. L., & Kumar, M. (2021). Supply chain resilience reactive strategies for food SMEs in coping with the COVID-19 crisis. *Trends in Food Science & Technology*, 109, 94–102. doi: 10.1016/j.tifs.2021.01.021.
- Ali, S., Farooq, I., Abdelsalam, M., & AlHumaid, J. (2020). Current clinical dental practice guidelines and the financial impact of COVID-19 on dental care providers. *European Journal of Dentistry*, 14(S01), S140–S145. doi: 10.1055/s-0040-1716307.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94. doi: 10.1007/BF02723327.

- Bagozzi, R. P., & Yi, Y. (2012). Specification, evaluation, and interpretation of structural equation models. *Journal of the Academy of Marketing Science*, 40(1), 8–34. doi: 10.1007/s11747-011-0278-x.
- Bhatti, S. H., Hussain, M., Santoro, G., & Culasso, F. (2022). The impact of organizational ostracism on knowledge hiding: Analyzing the sequential mediating role of efficacy needs and psychological distress. *Journal of Knowledge Management*, Advance online publication. doi: 10.1108/JKM-03-2021-0223.
- Banerjee, D., & Rai, M. (2020). Social isolation in COVID-19: The impact of loneliness. *International Journal of Social Psychiatry*, 66(6), 525–527. doi: 10.1177/0020764020922269.
- Belas, J., Cipovova, E., & Demjan, V. (2014). Current trends in area of satisfaction of bank clients in the Czech republic and Slovakia. *Transformations in Business and Economics*, 13(3), 219–234.
- Belas, J., Cipovova, E., Novak, P. & Polach, J. (2012). Impacts of the foundation internal ratings based approach usage on financial performance of commercial bank. *E+M Ekonomie a Management*, 15(3), 142–154.
- Ben Hassen, T., El Bilali, H., Allahyari, M. S., Berjan, S., Karabašević, D., Radosavac, A., Dašić, G., & Đervida, R. (2021). Preparing for the Worst? Household food stockpiling during the second wave of COVID-19 in Serbia. *Sustainability*, 13, 11380. doi: 10.3390/su132011380.
- Bierman, A., Upenieks, L., Glavin, P., & Schieman, S. (2021). Accumulation of economic hardship and health during the COVID-19 pandemic: Social causation or selection? *Social Science & Medicine*, 275, 113774. doi: 10.1016/j.socscimed.2021.113774.
- Blom, N., Kraaykamp, G., & Verbakel, E. (2019). Current and expected economic hardship and satisfaction with family life in Europe. *Journal of Family Issues*, 40(1), 3–32. doi: 10.1177/0192513X18802328.
- Boursier, V., Gioia, F., Musetti, A., & Schimmenti, A. (2020). Facing loneliness and anxiety during the COVID-19 isolation: The role of excessive social media uses in a sample of Italian adults. *Frontiers in Psychiatry*, 11, 1–10. doi: 10.3389/fpsy.2020.586222.
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: A rapid review of the evidence. *Lancet*, 395(10227), 912–920. doi: 10.1016/S0140-6736(20)30460-8.
- Castro-González, S., Fernández-López, S., Rey-Ares, L., & Rodeiro-Pazos, D. (2020). The influence of attitude to money on individuals' financial well-being. *Social Indicators Research*, 148(3), 747–764. doi: 10.1007/s11205-019-02219-4.
- Cerami, C., Galandra, C., Santi, G. C., Dodich, A., Cappa, S. F., Vecchi, T., & Crespi, C. (2021). Risk-aversion for negative health outcomes may promotes individual compliance to containment measures in COVID-19 pandemic. *Frontiers in Psychology*, 12, 2116. doi: 10.3389/fpsyg.2021.666454.

- Chan, H. F., Skali, A., Savage, D. A., Stadelmann, D., & Torgler, B. (2020). Risk attitudes and human mobility during the COVID-19 pandemic. *Scientific Reports*, 10(1), 1–13. doi: 10.1038/s41598-020-76763-2.
- Chen, Y., Dai, Y., Liu, A., Liu, W., & Jia, L. (2021). Can the COVID-19 risk perception affect tourists' responsible behaviour intention: An application of the structural equation model. *Journal of Sustainable Tourism*. Advance online publication. doi: 10.1080/09669582.2021.1977938.
- Cobb-clark, D. A., Dahmann, S. C., & Kettlewell, N. (2019). Depression, risk preferences and risk-taking behavior. *IZA Institute of Labor Economics, Discussion Paper Series*, 12285.
- Di Crosta, A., Ceccato, I., Marchetti, D., la Malva, P., Maiella, R., Cannito, L., Cipi, M., Mammarella, N., Palumbo, R., Verrocchio, M. C., Palumbo, R., & Domenico, A. Di. (2021). Psychological factors and consumer behaviour during the COVID-19 pandemic. *PLoS One*, 16(8): e0256095. doi: 10.1371/journal.pone.0256095.
- Coibion, O., Gorodnichenko, Y., & Weber, M. (2020). The cost of the COVID-19 crisis: Lockdowns, macroeconomic expectations, and consumer spending. *NBER Working Papers*, w27141. doi: 10.3386/w27141.
- Duxbury, D., Gärling, T., Gamble, A., & Klass, V. (2020). How emotions influence behaviour in financial markets: A conceptual analysis and emotion-based account of buy-sell preferences. *European Journal of Finance*, 26(14), 1417–1438. doi: 10.1080/1351847X.2020.1742758.
- Duong, C. D. (2021). The impact of fear and anxiety of COVID-19 on life satisfaction: Psychological distress and sleep disturbance as mediators. *Personality and Individual Differences*, 178, 110869. doi: 10.1016/j.paid.2021.110869.
- Erzen, E., & Çikrikci, Ö. (2018). The effect of loneliness on depression: A meta-analysis. *International Journal of Social Psychiatry*, 64(5), 427–435. doi: 10.1177/0020764018776349.
- Evans, S., Alkan, E., Bhangoo, J. K., Tenenbaum, H., & Ng-Knight, T. (2021). Effects of the COVID-19 lockdown on mental health, well-being, sleep, and alcohol use in a UK student sample. *Psychiatry Research*, 298, 113819. doi: 10.1016/j.psychres.2021.113819.
- Feyisa, H. L. (2020). The world economy at COVID-19 quarantine: A contemporary review. *International Journal of Economics, Finance and Management Sciences*, 8(2), 63–74. doi: 10.11648/j.ijefm.20200802.11.
- Finra Investor Education Foundation (2018). 2018 national financial capability study: State-by-state survey instrument.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39. doi: 10.2307/3151312.
- Han, X., Chen, S., Bi, K., Yang, Z., & Sun, P. (2021). Depression following COVID-19 lockdown in severely, moderately, and mildly impacted areas in China. *Frontiers in Psychiatry*, 12, 154. doi: 10.3389/fpsy.2021.596872.

- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks, CA: Sage Publications, Inc.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd ed.). Los Angeles: Sage.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. doi: 10.1108/EBR-11-2018-0203.
- Hawkley, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine*, 40. doi: 10.1007/s12160-010-9210-8.
- Heffernan, C. J. (1988). Social foundations of thought and action: A social cognitive theory, Albert Bandura Englewood Cliffs, New Jersey: Prentice-Hall, 1986, xiii+617 pp. Hardback. The US \$39.50. *Behaviour Change*, 5(1), 37–38. doi: 10.1017/S0813483900008238.
- Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial Management & Data Systems*, 116(1), 2–20. doi: 10.1108/IMDS-09-2015-0382.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. doi: 10.1007/s11747-014-0403-8.
- Horvath, J., Gavurova, B., Bacik, R., & Fedorko, R. (2021). Identification of uncertainty factors in the consumer behaviour of the new generation of customers at the e-commerce level. *Journal of Tourism and Services*, 12(22), 168–183. doi: 10.29036/jots.v12i22.263.
- Houghton, S., Kyron, M., Hunter, S. C., Lawrence, D., Hattie, J., Carroll, A., & Zadow, C. (2022). Adolescents' longitudinal trajectories of mental health and loneliness: The impact of COVID-19 school closures. *Journal of Adolescence*, 94(2), 191–205. doi: 10.1002/jad.12017.
- Huang, J., Nam, Y., & Lee, E. J. (2015). Financial capability and economic hardship among low-income older Asian immigrants in a supported employment program. *Journal of Family and Economic Issues*, 36(2), 239–250. doi: 10.1007/s10834-014-9398-z.
- Joo, S., & Grable, J. E. (2004). An exploratory framework of the determinants of financial satisfaction. *Journal of Family and Economic Issues*, 25(1), 25–50. doi: 10.1023/B:JEEL.0000016722.37994.9f.
- Jorm, A. F., Medway, J., Christensen, H., Korten, A. E., Jacomb, P. A., & Rodgers, B. (2000). Attitudes towards people with depression: Effects on the public's help-seeking and outcome when experiencing common psychiatric symptoms. *Australian and New Zealand Journal of Psychiatry*, 34(4), 612–618. doi: 10.1046/j.1440-1614.2000.00743.x.

- Kalogiannidis, S., Chatzitheodoridis, F., & Kontsas, S. (2020). An eclectic discussion of the effects of the COVID-19 pandemic on the world economy during the first stage of the spread. *International Journal of Financial Research*, 11(6), 137–153. doi: 10.5430/ijfr.v11n6p137.
- Khosravizadeh, O., Ahadinezhad, B., Maleki, A., Najafpour, Z., & Golmohammadi, R. (2022). Social distance capacity to control the COVID-19 pandemic: A systematic review on time series analysis. *International Journal of Risk & Safety in Medicine*, 33(1), 5–22. doi: 10.3233/JRS-210037.
- Karaşar, B., & Canlı, D. (2020). Psychological resilience and depression during the COVID-19 pandemic in Turkey. *Psychiatria Danubina*, 32(2), 273–279. doi: 10.24869/psyd.2020.273.
- Kato, A., & Shaw, R. (2020). Yoga and stress management during and post COVID-19 urban lifestyle in Japan. *Asian Journal of Complementary and Alternative Medicine*, 8(3), 48–54.
- Lathabhavan, R. (2022). Fear of COVID-19, psychological distress, well-being, and life satisfaction: A comparative study on first and second waves of COVID-19 among college students in India. *Current Psychology*, Advance online publication. doi: 10.1007/s12144-022-03207-7.
- Lei L, Huang X, Zhang S, Yang J, Yang L, & Xu M (2020). Comparison of prevalence and associated factors of anxiety and depression among people affected by versus people unaffected by quarantine during the COVID-19 epidemic in South-western China. *Medical Science Monitor*, 26, e924609-1-e924609-12. doi: 10.12659/MSM.924609.
- Natarajan, T., & Jayadevan, G. R. (2022). COVID-19 pandemic and the consumption behaviour of branded functional beverages in India: A conceptual framework. *Nutrition & Food Science*, 52(3), 423–444. doi: 10.1108/NFS-06-2021-0177.
- Mann, F. D., Krueger, R. F., & Vohs, K. D. (2020). Personal economic anxiety in response to COVID-19. *Personality and Individual Differences*, 167, 110233. doi: 10.1016/j.paid.2020.110233.
- Mekala, J. S., Goruntla, N., Nayaka, B., Velpula, K., Biswas, R., Veerabhadrapa, K. V., & Pradeepkumar, B. (2022). Depression, anxiety, and stress among the general public of India during post-COVID-19 second wave: A web-based cross-sectional survey. *Indian Journal of Medical Specialities*, 13(2), 87. doi: 10.4103/injms.injms_103_21.
- Mensah, C., Azila-Gbettor, E. M., Amissah, E. F., & Addison, E. (2022). COVID-19, financial anxiety and the psychological well-being of hotel workers. *International Journal of Hospitality & Tourism Administration*, 24(1), 142–165. doi: 10.1080/15256480.2022.2055692.
- Mailliez, M., Griffiths, M. D., & Carre, A. (2021). Validation of the French version of the fear of COVID-19 scale and its associations with depression, anxiety, and differential emotions. *International Journal of Mental Health and Addiction*, 20(4), 2057–2071. doi: 10.1007/s11469-021-00499-x.

- OECD (2011). *Measuring financial literacy: Questionnaire and guidance notes for conducting an internationally comparable survey of financial literacy*. OECD. Retrieved from <https://www.oecd.org/finance/financial-education/49319977>.
- Pedrosa, A. L., Bitencourt, L., Fróes, A. C. F., Cazumbá, M. L. B., Campos, R. G. B., de Brito, S. B. C. S., & Simões e Silva, A. C. (2020). Emotional, behavioural, and psychological impact of the COVID-19 pandemic. *Frontiers in Psychology*, 11, 1–18. doi: 10.3389/fpsyg.2020.566212.
- Petrocchi, S., Iannello, P., Ongaro, G., Antonietti, A., & Pravettoni, G. (2022). The interplay between risk and protective factors during the initial height of the COVID-19 crisis in Italy: The role of risk aversion and intolerance of ambiguity on distress. *Current Psychology*, 41(1), 437–448. doi: 10.1007/s12144-021-01601-1.
- Potrich, A. C. G., Vieira, K. M., & Mendes-Da-Silva, W. (2016). Development of a financial literacy model for university students. *Management Research Review*, 39(3), 356–376. doi: 10.1108/MRR-06-2014-0143.
- Porcelli, P. (2020). Fear, anxiety, and health-related consequences after the COVID-19 epidemic. *Clinical Neuropsychiatry: Journal of Treatment Evaluation*, 17(2), 103–111. doi: 10.36131/CN20200215.
- Rabin, M. (2000). Risk aversion and expected-utility theory: A calibration theorem. *Econometrica*, 68(5), 1281–1292. doi: 10.1111/1468-0262.00158Ranta.
- Ranta, M., Punamäki, R. L., Chow, A., & Salmela-Aro, K. (2019). The economic stress model in emerging adulthood: The role of social relationships and financial capability. *Emerging Adulthood*, 8(6), 496–508. doi: 10.1177/2167696819893574.
- Ramaeker, J., & Petrie, T. A. (2019). "Man up!": Exploring intersections of sports participation, masculinity, psychological distress, and help-seeking attitudes and intentions. *Psychology of Men & Masculinities*, 20(4), 515. doi: 10.1037/men0000198.
- Russell, D. (1996). UCLA loneliness scale version 3 (instructions). *Journal of Personality Assessment*, 66(42), 3–4. doi: 10.1207/s15327752jpa6601.
- Rossi, R., Socci, V., Talevi, D., Mensi, S., Niolu, C., Pacitti, F., Di Marco, A., Rossi, A., Siracusano, A., & Di Lorenzo, G. (2020). COVID-19 pandemic and lockdown measures impact on mental health among the general population in Italy. *Frontiers in Psychiatry*, 11, 790. doi: 10.3389/fpsyg.2020.00790.
- Saladino, V., Algeri, D., & Auriemma, V. (2020). The psychological and social impact of COVID-19: New perspectives of well-being. *Frontiers in Psychology*, 11, 577684. doi: 10.3389/fpsyg.2020.577684.
- Salokangas R. K., Poutanen, O., & Stengård, E. (1995). Screening for depression in primary care. Development and validation of the depression scale, a screening instrument for depression. *Acta Psychiatr Scand*, 92(1), 10–6. doi: 10.1111/j.1600-0447.1995.tb09536.x.
- Sani, G., Janiri, D., Di Nicola, M., Janiri, L., Ferretti, S., & Chieffo, D. (2020). Mental health during and after the COVID-19 emergency in Italy. *Psychiatry and Clinical Neurosciences*, 74(6), 372–372. doi: 10.1111/pcn.13004.

- Schimmenti, A., Starcevic, V., Giardina, A., Khazaal, Y., & Billieux, J. (2020). Multi-dimensional assessment of COVID-19-related fears (MAC-RF): A theory-based instrument for the assessment of clinically relevant fears during pandemics. *Frontiers in Psychiatry*, 11, 748. doi: 10.3389/fpsyt.2020.00748.
- Schumacker, R. E., & Lomax, R. G. (2010). *A beginner's guide to Structural Equation Modeling*. New York & London: Routledge.
- Shahzad, U., Mohammed, K. S., Tiwari, S., Nakonieczny, J., & Nesterowicz, R. (2023). Connectedness between geopolitical risk, financial instability indices, and precious metals markets: Novel findings from Russia Ukraine conflict perspective. *Resources Policy*, 80, 103190. doi: 10.1016/j.resourpol.2022.103190.
- Sigdel, A., Bista, A., Bhattarai, N., Pun, B. C., Giri, G., Marqusee, H., & Thapa, S. (2020). Depression, anxiety and depression-anxiety comorbidity amid COVID-19 Pandemic: An online survey conducted during lockdown in Nepal. *MedRxiv*, 2020.04.30.20086926. doi: 10.1101/2020.04.30.20086926.
- Stubbs, T., Kring, W., Laskaridis, C., Kentikelenis, A., & Gallagher, K. (2021). Whatever it takes? The global financial safety net, COVID-19, and developing countries. *World Development*, 137, 105171. doi: 10.1016/j.worlddev.2020.105171.
- Szostek, D., & Balcerzak, A. P., Rogalska, E., N., & MacGregor Pelikánová, R. (2022). Personality traits and counterproductive work behaviours: The moderating role of demographic characteristics. *Economics and Sociology*, 15(4), 231–263. doi: 10.14254/2071-789X.2022/15-4/12.
- Szostek, D., Balcerzak, A. P., & Rogalska, E. (2022). The impact of personality traits on subjective categories of counterproductive work behaviours in Central European environment. *Transformations in Business & Economics*, 21, 2(56), 163–180.
- Szostek, D., Balcerzak, A. P., Rogalska, E. (2020). The relationship between personality, organizational and interpersonal counterproductive work challenges in industry 4.0. *Acta Montanistica Slovaca*, 25(4), 577–592. doi: 10.46544/AMS.v25 i4.11.
- Talwar, M., Talwar, S., Kaur, P., Tripathy, N., & Dhir, A. (2021). Has financial attitude impacted the trading activity of retail investors during the COVID-19 pandemic? *Journal of Retailing and Consumer Services*, 58, 102341. doi: 10.1016/j.jretconser.2020.102341.
- Vasileiou, E. (2021). Behavioural finance and market efficiency in the time of the COVID-19 pandemic: Does fear drive the market? *International Review of Applied Economics*, 35(2), 224–241. doi: 10.1080/02692171.2020.1864301.
- Wang, R., DeGruttola, V., Lei, Q., Mayer, K. H., Redline, S., Hazra, A., Mora, S., Willett, W. C., Ganmaa, D. & Manson, J. E. (2021). The vitamin D for COVID-19 (VIVID) trial: A pragmatic cluster-randomized design. *Contemporary Clinical Trials*, 100, 106176. doi: 10.1016/j.cct.2020.106176.
- Wang, Y., & Yan, M. (2020). Past experiences, personality traits, and risk aversion: Evidence from individual risk attitudes during the COVID-19 pandemic. *Frontiers of Economics in China*, 15(4), 575–625. doi: 10.3868/s060-011-020-0024-4.

- WHO (2020). COVID 19 public health emergency of international concern (PHEIC) global research and innovation forum: towards a research roadmap. Retrieved from [https://www.who.int/publications/m/item/covid-19-public-health-emergency-of-international-concern-\(pheic\)-global-research-and-innovation-forum](https://www.who.int/publications/m/item/covid-19-public-health-emergency-of-international-concern-(pheic)-global-research-and-innovation-forum).
- Witteveen, D. (2020). Sociodemographic inequality in exposure to COVID-19-induced economic hardship in the United Kingdom. *Research in Social Stratification and Mobility*, 69, 100551. doi: 10.1016/j.rssm.2020.100551.
- Witteveen, D., & Velthorst, E. (2020). Economic hardship and mental health complaints during COVID-19. *Proceedings of the National Academy of Sciences*, 117(44), 27277–27284. doi: 10.1073/pnas.2009609117.
- Wilken, J. A., Pordell, P., Goode, B., Jarteh, R., Miller, Z., Saygar, B. G., & Maximore, L., Borbor, W. M., Carmue, M., Walker, G. W., & Yeiah, A. (2017). Knowledge, attitudes, and practices among members of households actively monitored or quarantined to prevent transmission of Ebola Virus Disease—Margibi County, Liberia: February–March 2015. *Prehospital and Disaster Medicine*, 32(6), 673–678. doi: 10.1017/S1049023X17006720.
- Wolfe, K., Sirota, M., & Clarke, A. D. F. (2021). Age differences in COVID-19 risk-taking, and the relationship with risk attitude and numerical ability. *Royal Society Open Science*, 8(9), 19. doi: 10.1098/rsos.201445.
- Yuesti, A., Rustiarini, N. W., & Suryandari, N. N. A. (2020). Financial literacy in the covid-19 pandemic: Pressure conditions in indonesia. *Entrepreneurship and Sustainability Issues*, 8(1), 884–898. doi: 10.9770/jesi.2020.8.1(59).
- Zain, N. A. M., Hanafiah, M. H., Hamizan, N. A., & Asyraf, M. A. (2022). COVID-19 safety and preventive measures and social norms: How it shaped airlines passengers' trustworthiness. *Journal of Tourism and Services*, 24(13), 90–107. doi: 10.29 036/jots.v13i24.299.
- Zhu, H., & Deng, F. (2020). How to influence rural tourism intention by risk knowledge during COVID-19 containment in China: The mediating role of risk perception and attitude. *International Journal of Environmental Research and Public Health*, 17(10), 3514. doi: 10.3390/ijerph17103514.
- Zeng, Z., Wang, X., Wang, Z., Guo, R., & Feng, R. (2017). Empirical research of the relationship between related knowledge, attitude, and behaviour of hypertension patients based on the structural equation model. *Journal of Central South University. Medical Sciences*, 42(2), 195–201. doi: 10.11817/j.issn.1672-7347.2017.02.013.

Acknowledgments

This paper is supported by IGA/FaME/2023/014: "CSR as an important factor in obtaining bank loans and external financial resources for small and medium-sized enterprises." Support was also received by the project IGA-K-TRINITY/2022-23/011-

Support of Pedagogical Work with Talented Students of the Financial Laboratory
Course: Valuation and DeFI”.



Ministry of Education and Science
Republic of Poland

The journal is co-financed in the years 2022–2024 by the Ministry of Education and Science of the Republic of Poland in the framework of the ministerial programme “Development of Scientific Journals” (RCN) on the basis of contract no. RCN/SN/0129/2021/1 concluded on 29 September 2022 and being in force until 28 September 2024.

Annex

Table 1. Sample profile

		Frequency	Percent
Gender	Male	227	63.6
	Female	130	36.4
	Total	357	100.0
Age	Between 18-30	99	27.7
	Between 31- 40	201	56.3
	Between 41- 50	45	12.6
	Between 51- 60	12	3.4
	Total	357	100.0
Qualification	High School	11	3.1
	Senior Secondary	4	1.1
	Bachelor's degree	54	15.1
	Master and above	288	80.7
	Total	357	100.0
Income level Monthly	Less than 20000	149	41.7
	Between 20000- 40,000	93	26.1
	Between 40000- 60,000	49	13.7
	Above 60,000	66	18.5
	Total	357	100.0
Marital Status	Single	188	52.7
	Married	169	47.3
	Total	357	100.0

Table 2. Measurement scale

Code	Items	Loadings	VIF	Sources
FB1	I follow a weekly or monthly plan for expenses.	0.7503	1.8802	(Atkinson & Messy, 2012;
FB2	I set long-term financial goals and strive to achieve them	0.8259	2.7129	Joo & Grable, 2004; OECD,
FB3	Before I buy something, I carefully consider whether I can afford it or not	0.8266	2.2654	2011; Potrich <i>et al.</i> , 2016)
FB4	I pay my bills on time	0.8536	2.6061	
FB5	I keep a close strict watch on my financial affairs	0.8282	2.4482	
FB6	I have plans to achieve my financial goals	0.8580	3.0069	
RT2	I am more comfortable putting my money in a bank account than in any risky option.	0.7359	1.7093	(Joo & Grable, 2004)
RT3	When I think of the word "risk" the term "loss" comes to my mind immediately.	0.7841	1.9178	
RT4	Making money in stocks and bonds is based on luck	0.7716	1.7116	

Table 2. Continued

Code	Items	Loadings	VIF	Sources
RT5	I lack the knowledge to be a successful investor	0.8320	2.2590	
RT6	Investing is too difficult to understand.	0.8359	2.2788	
LL1	I often feel alone?	0.8885	3.2255	(Ranta <i>et al.</i> , 2019; Russell, 1996)
LL2	I often feel that I am no longer close to anyone?	0.9298	4.3060	
LL3	I often feel that my relationships with others are not meaningful	0.9120	3.3199	
LL4	I often feel that no one knows me well	0.8926	2.9801	
DP1	I feel the problem of insomnia or loss of sleep often	0.7981	2.4294	(Salokangas <i>et al.</i> , 1995)
DP2	I do feel low in energy or slowed down often?	0.8433	2.8625	
DP3	I often feel hopeless about the future?	0.8997	3.7133	
DP4	I often get feelings of being worthless	0.8969	3.7434	
DP5	I often feel that all pleasure and joy have gone from life	0.8730	3.1494	
DP6	I often feel that I cannot overcome problems even with help from family and friends	0.8422	2.6037	
EH2	Do you have enough money to afford the kind of home you prefer	0.7849	2.1494	(Blom <i>et al.</i> , 2019; Finra Investor Education Foundation, 2018; Huang <i>et al.</i> , 2015; Ranta <i>et al.</i> , 2019; Williams <i>et al.</i> , 2015)
EH3	Do you have enough money to afford the kind of furniture/ equipment you prefer	0.8731	3.0607	
EH4	Do you have enough money to afford the kind of food you prefer	0.8089	2.2739	
EH5	Do you have enough money to afford quality medical care	0.8367	2.5724	
EH6	Do you have enough money to afford the kind of leisure/ recreational activities you enjoy	0.8752	2.5206	

Table 3. Construct reliability and Convergent Validity

Construct	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_C)	Cronbach's alpha (α)	The average variance extracted (AVE)
EHS	0.9028	0.9208	0.8927	0.6997
Loneliness	0.9303	0.9482	0.9271	0.8207
Depression	0.9316	0.9443	0.9290	0.7389
Risk aversion	0.8583	0.8941	0.8520	0.6285
Financial Behaviour	0.9115	0.9271	0.9056	0.6798

Source: authors' processing from ADANCO 2.0 version.

Table 4. Fornell-Lacker criterion

Construct	EHS	Loneliness	Depression	Risk aversion	Financial Behaviour
EHS	0.6997				
Loneliness	0.0249	0.8207			
Depression	0.0282	0.5898	0.7389		
Risk aversion	0.1301	0.1992	0.1984	0.6285	
Financial Behaviour	0.1096	0.0205	0.0317	0.1267	0.6798

Source: authors' processing from ADANCO 2.0 version.

Table 5. Discriminant validity

Construct	EHS	Loneliness	Depression	Risk aversion	Financial Behaviour
EHS					
Loneliness	0.1678				
Depression	0.1810	0.8265			
Risk aversion	0.4099	0.4947	0.4936		
Financial Behaviour	0.3693	0.1572	0.1928	0.4080	

Source: authors' processing from ADANCO 2.0 version.

Table 6. Path coefficient

Hypotheses	Direct Effect	Beta (β)	Empirical Outcomes			Hypotheses
			T-value	P-value	f ²	
H1a	EHS -> Loneliness	0.1578	2.6323	0.0043	0.0255	Supported
H1b	EHS -> Depression	0.1678	2.8316	0.0023	0.0290	Supported
H1c	Loneliness -> RA	0.2540	3.4850	0.0002	0.0341	Supported
H1d	Depression -> RA	0.2504	3.4771	0.0003	0.0332	Supported
H1e	Risk aversion -> FB	0.3559	6.0237	0.0000	0.1450	Supported
Indirect Effects						
H2a	EHS -> FB	0.0292	2.0293	0.0212	-	Supported
H2b	EHS -> RA	0.0821	2.4748	0.0067	-	Supported
H2c	Loneliness -> FB	0.0904	2.9421	0.0016	-	Supported
H2d	Depression -> FB	0.0891	2.8873	0.0020	-	Supported

Source: authors' calculation, risk aversion, and FB= financial behaviour.

Table 7. Results and R Squared

Construct	Coefficient of determination (R ²)	Adjusted R ²
Loneliness	0.0249	0.0222
Depression	0.0282	0.0254
Risk aversion	0.2249	0.2205
Financial Behaviour	0.1267	0.1242

Source: Authors' processing from ADANCO 2.0 version.

Table 8. Kruskal Wallis Test

Variables	T-statistics	DF	P	Significant/insignificant
Economic hardship	12.935	3	0.005	Significant
Depression	17.014	3	0.001	Significant
Loneliness	13.750	3	0.003	Significant
Risk aversion attitude	10.951	3	0.012	Significant
Improved Financial behaviour	9.501	3	0.023	Significant

Table 9. Multiple Age Groups Comparison

Variables	Age group	T-static	St. Error	Std. Test Statistic	P	Significant/in significant
Economic Hardship	Between 18-30 and 31-40	-23.406	12.664	-1.848	.065	Insignificant
	Between 18-30 and 41-50	-21.329	18.543	-1.150	.250	Insignificant
	Between 18-30 and 51-60	-109.290	31.527	-3.467	.001	Significant
	Between 31-40 and 51-60	-85.884	30.650	-2.802	.005	Significant
	Between 41-50 and 31-40	2.077	17.010	122	.903	Insignificant
	Between 41-50 and 51-60	-87.961	33.510	-2.625	.009	Significant
Loneliness	Between 18-30 and 31-40	14.297	12.664	1.129	.259	Insignificant
	Between 18-30 and 41-50	67.802	18.544	3.656	.000	Significant
	Between 18-30 and 51-60	19.674	31.527	.624	.533	Insignificant
	Between 31-40 and 51-60	5.377	30.650	.175	.861	Insignificant
	Between 41-50 and 31-40	53.505	17.010	3.146	.002	Significant
	Between 41-50 and 51-60	-48.128	33.510	-1.436	.151	Insignificant

Table 9. Continued

Variables	Age group	T-static	St. Error	Std. Test Statistic	P	Significant/in significant
Improved Financial Behaviour	Between 18-30 and 31-40	-19.519	12.655	-1.542	.123	Insignificant
	Between 18-30 and 41-50	.199	18.531	.011	.991	Insignificant
	Between 18-30 and 51-60	-88.351	31.506	-2.804	.005	Significant
	Between 31-40 and 51-60	-68.832	30.629	-2.247	.025	Significant
	Between 41-50 and 31-40	19.718	16.998	1.160	.246	Insignificant
	Between 41-50 and 51-60	-88.550	33.487	-2.644	.008	Significant
Risk-averse attitude	Between 18-30 and 31-40	-11.819	12.666	-.933	.351	Insignificant
	Between 18-30 and 41-50	4.012	18.546	.216	.829	Insignificant
	Between 18-30 and 51-60	-100.010	31.532	-3.172	.002	Significant
	Between 31-40 and 51-60	-88.192	30.655	-2.877	.004	Significant
	Between 41-50 and 31-40	15.831	17.012	.931	.352	Insignificant
	Between 41-50 and 51-60	-104.022	33.515	-3.104	.002	Significant
Depression	Between 18-30 and 31-40	14.401	12.650	1.138	.255	Insignificant
	Between 18-30 and 41-50	74.865	18.522	4.042	.000	Significant
	Between 18-30 and 51-60	24.062	31.492	.764	.445	Insignificant
	Between 31-40 and 51-60	9.661	30.616	.316	.752	Insignificant
	Between 41-50 and 31-40	60.464	16.990	3.559	.000	Significant
	Between 41-50 and 51-60	-50.803	33.472	-1.518	.129	Insignificant

Figure 1. Proposed conceptual framework

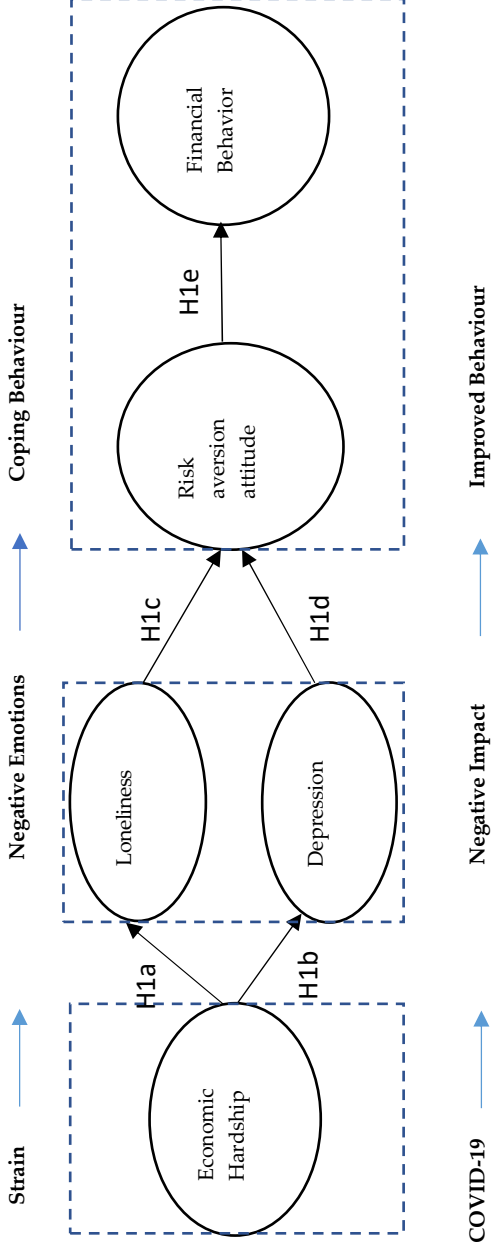


Figure 2. Proposed conceptual analysis

