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Individual Differences in Behavioural Responses to the Financial Threat Posed by the COVID-19 Pandemic

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Abstract

Using a representative sample of 400 Slovaks, the study investigated the mediating role of subjective perception of financial threat to the relation between psychological resources and behavioural responses in the adaptation to financial stress posed by the COVID-19. The results showed that greater neuroticism and uncertainty intolerance were positively related to aggravated perception of financial threat. This led to greater willingness to change consumption patterns and use of mostly problem-focused coping strategies. The model remained robust after controlling for chronic financial hardship moderators, including the absence of savings and indebtedness. In contrast, acute financial hardship caused by the deterioration of one's financial situation during the pandemic showed to significantly moderate the relation between one's psychological resources and perceived financial threat.

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Introduction

Apart from immediate medical risks, the COVID-19 pandemic posed a great threat to individuals' psychological wellbeing as well as socioeconomic status and, thus, requires an immediate response (Feng et al., 2020). The spread of the disease has resulted in the introduction of containment measures to stop the virus and protect the most vulnerable groups of citizens. However, the measures themselves may have not only social and psychological negative effects (Dubey et al., 2020) but also disturb financial markets and global economy (Ali, Alam, & Rizvi, 2020). Particularly, nationwide lockdowns, quarantine, physical distancing regulations and travel bans have the potential to restrain economic activities (Bavel et al., 2020). The actual scale of the economic crisis remains unknown and so do the benefits of governmental interventions. As the fears of upcoming recession skyrocketed, the markets

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responded in an unprecedented panic. Specifically, March 2020 has been considered the worst month in the entire history of stock markets, with indices dropping by at least 25 percent (Shanaev, Shuraeva, & Ghimire, 2020). Although soon stock markets started to recover (Zhang, Hu, & Ji, 2020), on the verge of the crisis it has been estimated that just in the first quarter of 2020, GDP shrunk by as high as 7 percent and unemployment rates started to rise, with Slovakia being among the most affected countries (Eurostat). Consequently, the situation may lead to greater uncertainty about one's socioeconomic status and, specifically, raise worries about employment and income stability (Mann, Krueger, & Vohs, 2020).

Even before the pandemic, a significant portion of the population was concerned about their financial situation (de Bruijn & Antonides, 2020). According to the European Payment Consumer Report (Intrum, 2019), Slovakia is just below the EU average, when it comes to financial wellbeing. A third of the citizens claim that after paying their bills they often do not have enough money to survive to the end of the month. A quarter of Slovaks need to borrow money to cover their expenses. Finally, nearly half of Slovaks are concerned about the perspective of their bills going up and say that those worries have detrimental effects on their general wellbeing. Indeed, previous research focusing on consequences of financial worries showed that financial threat and anxiety is related to poor physical and psychological health, depression, suicidal ideation, increased divorce rates as well as greater confusion and, generally, impaired cognitive ability (Blázquez, Budría, & Moro-Egido, 2020; de Bruijn & Antonides, 2020; Fiksenbaum, Marjanovic, & Greenglass, 2017; Mann et al., 2020; Marjanovic, Fiksenbaum, & Greenglass, 2018).

Previous research showed that it is not an individual's actual financial situation *per se*, that determines behavioural responses to financial hardship. Instead, subjectively perceived financial threat forms the way individuals cope with financial hardship, while the threat perception is shaped by specific psychological resources (Greenglass & Mara, 2012). For

instance, Marjanovic et al. (2013; 2015) noted that some people have a more general tendency to worry and ruminate and, consequently, are more likely to experience financial worries. Additionally, those who worry more about money tend to assess their financial situation as less satisfactory, regardless of objective indicators of their socioeconomic status (Gasiorowska, 2014). In other words, due to differences in individual psychological resources, people in a similar economic situation may experience different levels of financial threat. Most importantly, experiencing financial threat shapes behavioural responses to financial hardship, like willingness to adjust consumption strategies or using various adaptive and maladaptive coping strategies. For instance, Marjanovic et al. (2018) found that students who experienced acute financial hardship and were forced to make cutbacks on their expenses experienced greater levels of perceived financial threat. Those who felt more threatened were, in turn, also reporting greater willingness to change their consumption patterns, like saving more, reducing debts and searching for additional income sources.

The purpose of the study is twofold. First, we aim to test for a mediating effect of financial threat on the relationship between psychological resources—represented by neuroticism and uncertainty intolerance—and behavioural responses to the economic turmoil caused by the COVID-19 pandemic. The model builds directly on the previous research by Marjanovic et al. (2013, 2015), conducted in response to the 2007-2009 global economic recession. Second, the study extends this model by exploring whether the mediating effect of financial threat depends on the level of chronic and acute financial hardship. In other words, we aim to identify the moderating effect of specific chronic and acute financial hardship indicators that account for the aggravated feelings of financial threat during sudden economic turmoil.

The rest of the paper is organised as follows. First, we discuss relevant literature about psychological resources, financial threat and their effect on individuals' behaviour. Then, we

outline conceptual framework of the present study and put forward the model. Next, we describe methods and report findings. Discussion and conclusions end the paper.

The Literature Review

The conceptualisation of perceived financial threat

The past experience from the Great Recession of 2008 brought significant insights into the damaging effects the financial instability and insecure employment may have on individual wellbeing. Experiencing financial hardship, over-indebtedness and losing a job had a direct effect on self-reported health, excess mortality rates, suicide ideation, depression, self-esteem and substance abuse (Bambra & Eikemo, 2009; Fiksenbaum, Marjanovic, Greenglass, & Garcia-Santos, 2017). It has also been established that economic downturn elicited emotional response—anxiety and feelings of threat—that affected the relation between objective economic hardship and its devastating impacts on health and wellbeing (de Bruijn & Antonides, 2020; Marjanovic et al., 2013, 2015).

The focal concept in the present study is perceived financial threat. Perceived financial threat is defined as a mixture of fear, anxiety and preoccupation with one's financial situation (Marjanovic et al., 2013). These feelings mostly concern uncertainty about the security and stability of one's personal finances (Fiksenbaum, Marjanovic, & Greenglass, 2017). Specifically, Marjanovic et al. (2018) observed that perception of financial threat is related to subjective evaluation of resources as uncertain and insufficient to maintain income and liabilities balanced. This, in turn, fosters the fear that one is not capable to satisfy basic needs. Although perceived financial threat is distinct from the experience of economic hardship, it may be triggered by actual financial outcomes both on a macro- and micro-economic scale. Preliminary studies indicated that, indeed, as a response to the COVID-19 pandemic, people

experienced aggravated anxiety about their employment, income stability and whether they will be able to make ends meet (Mann et al., 2020; Tull et al., 2020).

Conceptually, perceived financial threat is closely related to economic or money anxiety. Economic anxiety is a broad concept covering various aspects of financial wellbeing such as money management stress and debt stress (de Bruijn & Antonides, 2020). Mann et al. (2020) defined economic anxiety as a psychological distress over possible negative financial outcomes and acknowledged its subjective aspect. More specifically, Gasiorowska (2014) described money anxiety as a feeling of uncertainty, suspiciousness and doubtfulness when it comes to finance management, accompanied by more negative emotions in response to financial hardship and less favourable evaluation of one's actual economic situation. De Brujin et al. (2020) distinguished two main aspects of economic anxiety: worry and rumination depending on the level of perceived control over the events. Financial worries are experienced when the future is perceived as threatening, yet controllable. Rumination is more prevalent in situations when an individual feels no control over events and is related to dealing with actual past losses or causes of one's current financial situation. Worry and rumination elicit also different emotional responses: the latter being related to anger and sadness, while the former to fear.

Predictors of perceived financial threat

Although perceived financial threat is a widespread reaction to the economic turmoil, previous research shows that not all individuals respond to economic stressors in the same way. Generally, two groups of determinants shape the feelings of financial threat. First, perception of financial threat is well predicted by socioeconomic characteristics as well as acute and chronic financial hardship, including losing a job, wage reduction and indebtedness. As poverty causes stress and negative affect, low income people tend to worry more about their finances

(de Bruijn & Antonides, 2020; Haushofer & Fehr, 2014). Mann et al. (2020) observed that earnings below $75,000—roughly twice as much as the US annual income median—have a potential to increase economic anxiety, including worries about job stability and ability to pay liabilities on time. The results are in line with the observation by Kahneman and Deaton (2010) that below the threshold of $75,000, life satisfaction depends on the income and suggest that greater income provide a sufficient buffer protecting against financial distress. Marjanovic et al. (2018) showed that acute—as opposed to chronic—economic hardship makes people prone to excessive financial worries, particularly, if they experienced a negative economic shock in the past 12 months. Apart from actual changes in one's socioeconomic situation, appraisal of the threat may be related to subjectively assessed probability of suffering financial losses in the (near) future and may rise with the media coverage about the economic downturn, gloomy prognosis of the economic development and actual damages caused by the crisis in the local economy (Haroon & Rizvi, 2020; Marjanovic et al., 2013). In the context of the COVID-19 pandemic, Tull et al. (2020) noticed that containment measures, such as stay-at-home orders, may also increase concerns about individual incomes and ability to maintain one's financial status.

Second, apart from actual socioeconomic characteristics, past studies showed that people possess psychological resources that make them immune to the threat perception. As Greenglass and Mara (2012) and Fiksenbaum et al. (2017) outline, perceived financial threat can be worsened not just by socioeconomic characteristics and acute and chronic financial hardships, like job loss or high debt load, but also by specific conceptually related personality traits. Specifically, self-efficacy, self-esteem, sense of control and optimism serve as a protective factor against the taxing experience of economic anxiety and distress (Bartholomae & Fox, 2017; Caplan & Schooler, 2007; Grezo & Sarmany-Schuller, 2015; Marjanovic et al., 2013, 2015). On the other hand, there are certain characteristics that—regardless of actual

socioeconomic situation—are likely to make people more prone to feeling anxious about money. Specifically, Marjanovic et al. (2013) observed that an individual disposition to worry, ruminate and feel anxious positively correlated with financial anxiety, i.e., people who generally worry more, tend to be also preoccupied with their financial situation. The findings were confirmed by Xu et al. (2015) among adolescents and, more recently, by Mann et al. (2020), who found that in the context of the COVID-19 pandemic, neuroticism makes people more prone to financial distress. Gasiorowska (2014) confirmed that money anxiety is related to neuroticism, trait anxiety, but also to ambiguity intolerance making people with such individual characteristics more prone to negative effects of the economic hardship. Finally, Fiksenbaum et al. (2017) confirmed that uncertainty intolerance is related to aggravated experience of financial threat.

Behavioural responses to the perception of financial threat

Coping with financial threat

Financial threat is an important psychological and social phenomenon having far-reaching adverse effects on everyday functioning of individuals and societies. Specifically, experiencing depression, mood disorders, emotional exhaustion, somatic symptoms, and suicidal thoughts caused by financial threat may lead to attenuation of family ties (Bartholomae & Fox, 2017; Fiksenbaum, Marjanovic, Greenglass, et al., 2017; Marjanovic et al., 2015). Apart from direct impact on health and wellbeing, perception of financial threat may have negative consequences on one's cognitive functioning as well. For instance, economic hardship has debilitating effects on cognitive ability and memory, makes people confused and inclined to get involved in motivated forms of cognition (de Bruijn & Antonides, 2020; Fiksenbaum, Marjanovic, Greenglass, et al., 2017; Fritsche & Jugert, 2017; Schwabe, Joëls, Roozendaal, Wolf, & Oitzl, 2012). Severe anxiety accompanied by the lack of the sense of control may lead

to adoption of maladaptive consumption and coping strategies, including self-accusation, resignation, gambling and alcohol and drug abuse. Specifically, Holmgren et al. (2019) observed that young, over indebted Swedes tended to get involved in maladaptive coping behaviours more and such behaviours predicted occurrence of mental illness. As Marjanovic et al. (2015) claim, the maladaptive responses to financial threat are not only psychologically or socially harmful, but also make it more difficult to overcome economic hardship both at individual and social level.

Changes in consumption patterns

Another strand in the literature shows that people experiencing money issues or economic anxiety become more impatient and risk averse, which leads them to significant changes in their financial behaviour. Specifically, they prefer short-term investments with lower but more certain profits, which in turn, leads to short-sighted decisions in the domain of education, health and economic activity (Haushofer & Fehr, 2014). In the context of the COVID-19 pandemic, it has been observed that people start hoarding food and toiletries (Dubey et al., 2020). For example, at the beginning of the pandemic, US consumers increased household spending by 845%, nearly immediately emptying shop shelves of disinfectants, preserved foods and even water (Kirk & Rifkin, 2020). In line with these observations, Garbe, Rau, and Toppe (2020) indicated that stockpiling behaviour under threat may be related to certain personality dimensions such as neuroticism, conscientiousness or lack of solidarity. By contrast, Marjanovic et al. (2018) observed that individuals experiencing acute economic hardship and financial threat were more willing to change their consumption patterns, like cutting expenses, reducing debts, and seeking additional sources of income.

Model and hypotheses

The present study extends previous research by Marjanovic et al. (2013, 2015) by providing a comprehensive perspective on how low psychological resources make people more vulnerable to the financial threat caused by the COVID-19 pandemic. Additionally, the study investigates how the perceived financial threat shapes people's behavioural responses. We were interested, whether feelings of financial threat lead to the changes in consumption patterns and which coping strategies people use when facing financial hardship. Although most previous studies focused on socioeconomic predictors of financial threat perception, de Brujin et al. (2020) observed that, given the similar socioeconomic situation, people's worry about their financial situation differ dramatically. In other words, some people may feel threatened even without experiencing actual economic hardship, while others can feel safe despite their actual bad situation. The main idea of the study is that psychological resources—other than one's actual financial situation—make people particularly prone to financial threat. In line with previous research (Fiksenbaum, Marjanovic, & Greenglass, 2017; Gasiorowska, 2014; Mann et al., 2020), this study is based on the premise that people possess certain dispositions to worry more and, generally, to perceive uncertain events as more threatening. Consequently, this subjective perception of threat shapes people's behavioural responses.

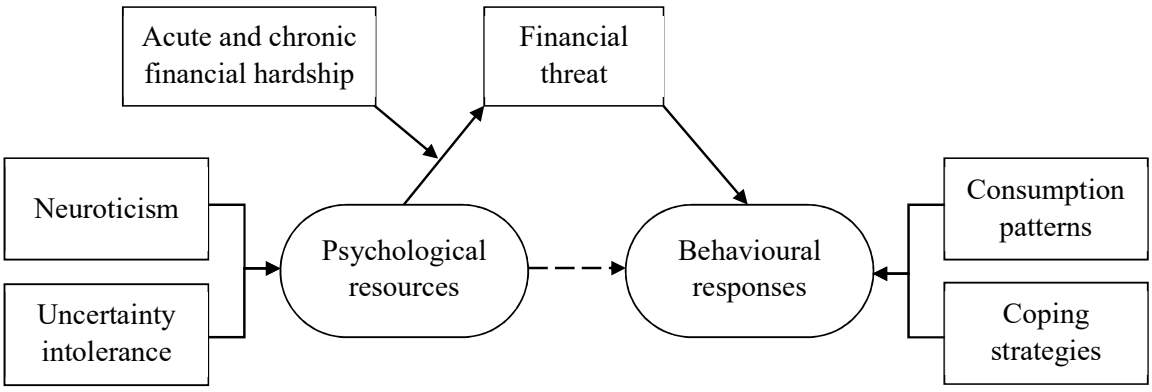
This study tests a model consisting of two latent and one observable construct. First, neuroticism and uncertainty intolerance jointly represent the construct of psychological resources as a predicting variable. The second construct of behavioural responses—consisting of willingness to change consumption patterns and coping strategies—represents the outcome variable in the current investigation. Finally, we observed financial threat to see whether it mediates the relationship between the two latent constructs. Based on findings of Mann et al. (2020) and Fiksenbaum et al. (2017) we hypothesise that individuals high in neuroticism and uncertainty intolerance perceive financial threat posed by the COVID-19 pandemic as more

severe (H1). In line with the study by Marjanovic et al. (2018), we expect that perceived financial threat predicts behavioural changes, namely the greater willingness to change consumption patterns and using both adaptive and maladaptive coping strategies to reduce the financial hardship (H2). Finally, following Marjanovic et al. (2013, 2015), we assume that perceived financial threat mediates the relation between psychological resources and behavioural responses (H3).

Fiksenbaum et al. (2017) claim that feelings of financial threat are shaped by both people's psychological resources as well as their actual socioeconomic situation, like high debt load or job loss. Importantly, Marjanovic et al. (2018) showed that acute—as opposed to chronic—financial hardship makes people worry more about their financial situation, especially when they experienced a negative economic shock in the last year. Since this could be the case for many people during financial turmoil caused by the COVID-19 pandemic, we have decided to extend the mediation model by investigating whether acute financial hardship contributes to the increased perception of financial threat more than chronic financial hardship. The final moderated-mediation model is shown in Figure 1.

Figure 1

The moderated mediation model tested in the present study



Note. The model assumes, that financial threat mediates the relationship between psychological resources and behavioural responses. Additionally, this mediation should be moderated by acute and chronic financial hardship.

Method

Participants and procedure

Based on a priori power analysis, a total of 400 Slovaks (208 women) aged 18–81 participated in the study (M_{age} = 44.52; SD_{age} = 16.07). Participation was voluntary and anonymous. The data were collected by a research agency (chosen in a tender) via an online survey hosted on Qualtrics. The data collection was governed by the ESOMAR code. The rules guarantee that participants are randomly selected in accordance with predetermined criteria from the agency's database and do not participate in a research more than twice (or in specific conditions three times) a month. The samples were balanced in terms of biological sex and age. Participants were not deceived at any point of the study. The agency provided incentives for participants consistent with local market conditions (either cash or vouchers). Furthermore, the agency was responsible for preliminary checks of the data quality (response times and completeness). Participants were informed about their right to remain anonymous and to withdraw from the study at any time. After signing an informed consent form and reading general instructions, participants filled out a demographic questionnaire containing questions about gender, age, education, employment and family status. The research protocol was constructed so that each of the tasks related to measured variables was compulsory. Participants were not allowed to proceed with the study unless they provided a response. Consequently, we obtained no incomplete data. The questionnaire contained two control questions (attention checks) such as "*If you read this sentence, choose strongly disagree*". Individuals who failed

to select correct answers, were considered as potentially contaminating the data set and were not included in the analysis.

Measures

Financial threat

A *Financial Threat Scale* (FTS, Marjanovic et al., 2015) was used to measure Financial threat. It is a 6-item questionnaire intended to measure how people feel about stability and security of their personal finances. Participants indicated how threatened they feel by their financial situation on a five-point scale (1=not at all, 5=a lot). A higher score indicated that participants perceived the situation as more threatening. The McDonald's omega test showed an excellent reliability of this questionnaire (ω = .93; *SE* = .01; 95% CI [.92, .94]).

Psychological resources

Neuroticism. To measure neuroticism, we used the Neuroticism subscale of Big Five Inventory – 2 adapted into the Slovak language and cultural context (Halama, Kohút, Soto, & John, 2020). Participants had to assess themselves on the attribution of 12 traits indicative of neuroticism/negative emotionality using a five-point scale (1=strongly disagree, 5=strongly agree). The scale consists of 3 subscales (*anxiety*, *depression*, and *emotional volatility*), each measured with 4 items. 6 items (2 in each of the subscales) are reverse-scored (example of a standard item: "I am a person who worries a lot"; example of a reversed item: "I am a person who stays optimistic after experiencing a setback"). A higher score indicated stronger neuroticism. The McDonald's omega test showed a good reliability of this scale (ω = .88; *SE* = .01; 95% CI [.86, .90]).

Uncertainty intolerance. A 12-item inventory, Intolerance of Uncertainty Scale (IUS), adopted from Carleton, Norton, and Asmundson (2007) was used to measure attitudes toward

uncertainty. Participants assessed their intolerance of uncertainty on a five-point scale (1=not at all characteristic of me, 5=entirely characteristic of me). The inventory consists of two subscales measuring *prospective anxiety* (7 items, example item: "Unforeseen events upset me greatly") and *inhibitory anxiety* (5 items, example item: "Uncertainty keeps me from living a full life"). A higher score was indicative of greater uncertainty intolerance. The McDonald's omega test showed a good reliability of this scale (ω = .86; *SE* = .01; 95% CI [.84, .88]).

Behavioural responses

Consumption patterns. To measure changes in consumption patterns, we used the *Willingness to change financial behaviour scale* developed by Fiksenbaum et al. (2017). The scale consists of 15 items aimed at assessing an individual's (1) willingness to take actions that increase incomes (example item: "Getting a second job to earn extra money"), (2) reduce expenses ("Buying lower end goods and services to save cash where I can"), and (3) decrease debts ("Using my savings to make purchases instead of credit"). Each of the three subscales consists of 5 items. In the context of the COVID-19 pandemic, participants assessed each of the items on a five-point scale (1=strongly disagree, 5=strongly agree). The McDonald's omega test showed a good reliability of this scale (ω = .89; *SE* = .01; 95% CI [.87, .91]).

Coping strategies. To measure coping strategies, we used the *Brief cope* inventory adapted from Carver (1997) intended to assess individual coping responses to stressors. The scale was adapted in order to ask which coping strategies participants used while facing their financial hardship posed by the COVID-19 pandemic. The 28-item scale consists of three subscales: *maladaptive coping* (10 items, example item: "I've been using alcohol or other drugs to make myself feel better"), *problem-focused* (8 items, example item: "I've been concentrating my efforts on doing something about the financial situation I'm in"), and *emotion-focused* (10 items, example item: "I've been accepting the reality of the fact that it has happened").

Participants declared how often they used certain forms of coping on a four-item scale (1=I haven't been doing this at all, 4=I've been doing this a lot). Higher scores indicate greater involvement in a given type of coping behaviour. The McDonald's omega test showed a good reliability of this scale (ω = .89; *SE* = .01; 95% CI [.86, .92]).

Financial hardship

Acute financial hardship. To measure acute financial hardship caused by the COVID-19 pandemic, we used three indicative questions. First, we asked: "*Did your financial situation get negatively affected by the COVID-19 crisis?*". Second, we questioned: "*Did you lose any of your financial income in consequence of COVID-19 crisis?*". Third and last, the government of Slovak Republic established a state-funded support for those who got into severe financial problems. In such cases, where their financial situation got significantly worse, people could ask for this state-funded financial support. In this study, we asked participants: "*Did you ask for a state-funded financial support because of the current COVID-19 crisis?*".

Chronic financial hardship. To measure chronic financial hardship, we used three indicative questions. We asked: *"Do you have any savings at the moment?"*, *"Do you have any debts (credit, mortgage, or loan)?"*, and *"Are you the subject of a debt collection lawsuit?"*

Results

Descriptive statistics and relationships between observed variables

First, before testing our hypotheses, we outline the descriptive statistics and correlation matrix for the measured variables in this study (Table 1). For the purpose of future meta-analytical studies, we present the means, standard deviations and relationships for the whole scales as well as their specific subscales. Overall, neuroticism showed to be moderately positively correlated with uncertainty intolerance. Likewise, willingness to change financial

behaviour showed to be moderately positively correlated with brief cope. These results initially suggest that they could represent the common latent constructs of psychological resources and changes in financial behaviour. Lastly, financial threat showed weak-to-moderate relationships with all measures from our proposed mediation model.

Table 1

Descriptive statistics and correlation matrix

Variable	Mean	SD	AGE	NEUR	$NEUR_1$	$NEUR_2$	$NEUR_3$	UI	UI_1	UI_2	FTS	WTC	WTC_1	WTC_2	WTC_3	BC	BC_1	BC_2
AGE	44.52	16.07																
NEUR	2.77	.73	-.16***															
$NEUR_1$	2.85	.77	-.16***	.91***														
$NEUR_2$	2.66	.90	-.10*	.89***	.75***													
$NEUR_3$	2.80	.79	-.18****	.85***	.69***	.60***												
UI	3.09	.67	-.10*	.58***	.51***	.56***	.47***											
UI_1	3.29	.67	-.09	.47***	.42***	.43***	.39***	.90****										
UI_2	2.82	.86	-.09	.57***	.48***	.56***	.45***	.88****	.59****									
FTS	2.62	.97	.04	.29***.	.25***	.34***	.16***	.28****	.24****	.27****								
WTC	2.61	.79	-.33*****	.15**	.11*	.18***	.11*	.19****	.17****	.17****	.38****							
WTC_1	2.56	.95	-.36*****	.15**	.10*	.16**	.14**	.14***	.14***	.11*	.32****	.89****						

WTC_2	2.87	.84	-.28***	.15**	.10*	.19***	.08	.20***	.16**	.20***	.38***	.89***	.71***					
WTC_3	2.39	.90	-.24***	.11*	.08	.14**	.06	.15**	.13**	.14**	.32***	.86***	.61***	.64***				
BC	1.97	.45	-.14**	.24***	.23***	.26***	.14**	.29***	.26***	.25***	.43***	.40***	.35***	.41***	.30***			
BC_1	1.48	.46	-.02	.39***	.34***	.42***	.27***	.33***	.24***	.35***	.39***	.25***	.22***	.23***	.21***	.72***		
BC_2	2.31	.67	-.17***	.21***	.21***	.24***	.10*	.28***	.29***	.20***	.48***	.47***	.40***	.48***	.36***	.87***	.48***	
BC_3	2.18	.56	-.13*	.01	.03	<.01	<.-01	.11*	.11*	.09	.20***	.25***	.22***	.29***	.16**	.82***	.33***	.60***

Note. NEUR – Neuroticism scale, $NEUR_1$ – Neuroticism anxiety subscale, $NEUR_2$ – Neuroticism depression subscale, $NEUR_3$ – Neuroticism emotional volatility subscale, UI – Uncertainty Intolerance scale, UI_1 – Uncertainty Intolerance prospecting anxiety subscale, UI_2 – Uncertainty Intolerance inhibitory anxiety subscale, FTS – Financial Threat Scale, WTC – Willingness to Change Behaviour scale, WTC_1 – Willingness to Change Behaviour scale willingness to take actions that increase incomes subscale, WTC_2 – Willingness to Change Behaviour scale reduce expenses subscale, WTC_3 – Willingness to Change Behaviour scale decrease debts subscale, BC – Brief Cope scale, BC_1 – Brief Cope maladaptive coping subscale, BC_2 – Brief Cope problem-focused coping subscale, BC_3 – Brief Cope emotion-focused coping subscale, * $p < .05$; ** $p < .01$; *** $p < .001$

Testing the mediation model

By testing the model proposed in Figure 2, we aimed to investigate the mediation effect of financial threat on the relationship between psychological resources and behavioural responses. Psychological resources were represented by anxiety, depression, and emotional volatility—three subscales of neuroticism scale—and two subscales of uncertainty intolerance, namely prospective anxiety and inhibitory anxiety. Behavioural responses latent construct combined three subscales of willingness to change financial behaviour scale, namely willingness to take actions that increase incomes, reduce expenses, and decrease debts. Also, it contained three subscales of the Brief cope inventory—problem-focused strategies, emotion-focused strategies, and maladaptive coping strategies—to see what coping strategies people tend to use to reduce their financial hardship.

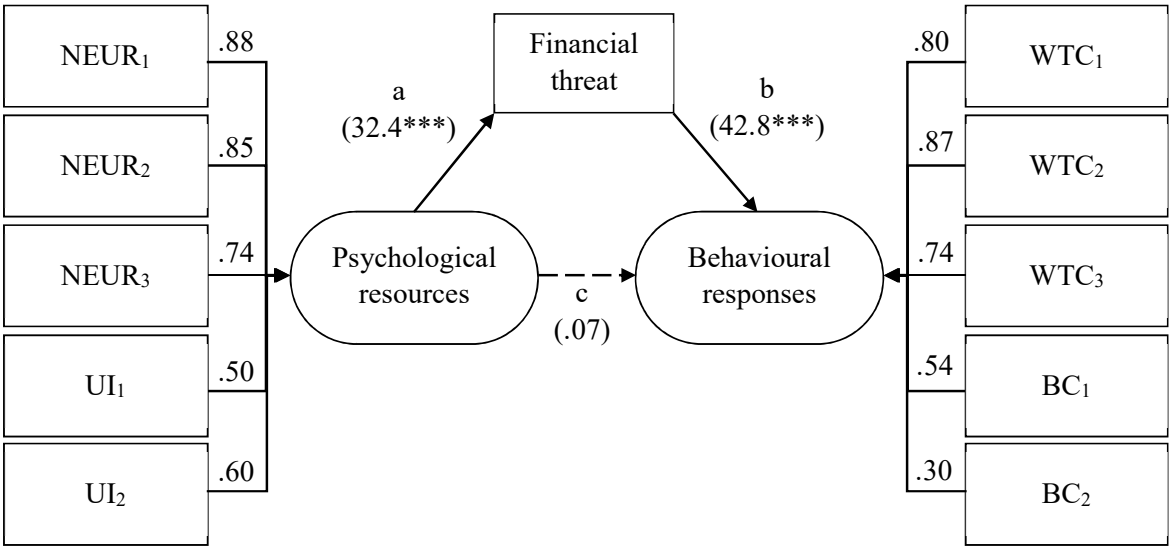
According to Baron and Kenny (1986) mediation process, we expected in the first step that psychological resources will significantly predict both financial threat and behavioural responses. Subsequently in the second step, the prediction of behavioural responses should no longer be significant if a direct path between financial threat and behavioural responses was added (see Figure 2 for the mediation model tested). To conduct these analyses, we used a structural equation modelling (SEM) approach using AMOS software. Firstly, before analysing relations between constructs, we applied confirmatory factor analysis to investigate measurement models for the proposed constructs. Unfortunately, the results showed that the fit of the measurement models was not satisfactory for conducting our analyses ($\chi^2 = 6.08$; $df = 50$; $p < .001$; $TLI = .84$; $CFI = .88$; $NFI = .86$; $RMSEA = .11$) for two main reasons. First, the error term for maladaptive coping strategies subscale showed strong covariance with the error term of psychological resources latent factor, indicating that this subscale potentially measures a certain stable disposition serving as a resource when facing financial hardship, rather than specific unstable strategies focused on solving one's financial problems. Second, there was

a high covariance in the error terms of problem-focused and emotion-focused coping strategies. Since these two subscales measure the same common construct of coping strategies, this covariance seemed to be more theoretically understandable than the covariance problem of maladaptive coping strategies. Considering these two aspects, we have decided to make two changes in the next model. We omitted the problematic maladaptive coping strategies subscale and we added a link between the error terms for problem-focused and emotion-focused coping strategies.

The new model tested showed an acceptable overall fit with the data ($\chi^2 = 3.94$; $df = 40$; $p < .001$; $TLI = .92$; $CFI = .94$; $NFI = .92$; $RMSEA = .08$), so we have decided to conduct our analyses with the second proposed model. In the first step, psychological resources showed to significantly predict both financial threat ($R^2 = .11$; $\beta = .34$; $SE = .10$; $p < .001$) and behavioural responses ($R^2 = .05$; $\beta = .23$; $SE = .09$; $p < .001$), explaining a considerable amount of variance. When a direct path between financial threat and behavioural responses was added in the second step (see path 'b' in Figure 2), the direct prediction of behavioural responses by psychological resources dropped to insignificant level ($R^2 = .028$; $\beta = .10$; $SE = .08$; $p = .21$), while the indirect path showed to be significant (see Figure 2 path "a" and "b"). In addition to the classical mediation process proposed by Baron and Kenny (1986), we adopted a percentile-based bootstrapping estimation approach with 2000 samples (Hayes & Scharkow, 2013). If the relative indirect effect was different from zero according to a percentile-based bias-corrected bootstrap confidence intervals (CIs), we concluded that the mediating effect was present (see Hayes & Preacher, 2014). The indirect effect was significant with CI not containing a zero ($\beta = .21$; $p < .001$; $SE = .04$; 95% CI [.14, .30]), suggesting that the financial threat fully mediated the relationship between psychological resources and behavioural responses.

Figure 2

Results of the mediation model



Note. The model shows standardized regression weights. After adding path "b" between financial threat and behavioural responses, the direct effect of psychological resources on behavioural responses (path c) became insignificant, indicating that financial threat fully mediated the relationship between psychological resources and behavioural responses. $NEUR_1$ – Neuroticism anxiety subscale, $NEUR_2$ – Neuroticism depression subscale, $NEUR_3$ – Neuroticism emotional volatility subscale, UI_1 – Uncertainty Intolerance prospecting anxiety subscale, UI_2 – Uncertainty Intolerance inhibitory anxiety subscale, WTC_1 – Willingness to Change Behaviour willingness to take actions that increase incomes subscale, WTC_2 – Willingness to Change Behaviour reduce expenses subscale, WTC_3 – Willingness to Change Behaviour decrease debts subscale, BC_1 – Brief Cope problem focused coping subscale, BC_2 – Brief Cope emotion focused coping subscale, *** $p < .001$.

Moderated mediations for chronic and acute financial hardship

To see whether our indirect mediation model effect remains constant across different levels of chronic and acute financial hardship, we have aimed to explore six moderated

mediation models with each financial hardship indicator question separately. Unfortunately, due to the very low number of participants, who answered that they (1) were subjects of a debt collection lawsuit (10 participants), and (2) did ask for a state-funded financial support because of the current COVID-19 crisis (19 participants), we had to omit these two financial hardship indicators in our analyses. As a result, we ended up examining the moderating effect of two indicators of chronic financial hardship and two of acute financial hardship (see Table 2 for these questions). Since all four questions had binomial "yes or no" answers, we used the MyModMed plug-in for AMOS (Gaskin, 2016) that allows examining indirect mediation effects for two research sample subgroups separately (e.g., those who did or did not have any savings) as well as the comparison of estimates of these two indirect effects. Since the indirect mediation estimates of groups differed significantly, with 95% confidence interval not containing a zero value, we concluded that a moderated mediation was present. Similarly, as in the mediation analyses, we used a percentile bootstrapping estimation approach with 2000 samples for this method (Hayes & Scharkow, 2013). Table 2 shows standardised regression coefficients for indirect mediation effects of each two respective groups for four specific moderators. The descriptives show that for all examined groups of participants, the indirect mediating effect was significant. What is important, the indirect mediating effects were very similar for those individuals who did as for those who did not have debt as well for those who did or did not have savings. However, for acute financial hardship indicators, the differences between groups showed to be very obvious. Indeed, Table 3 reporting the comparisons of these indirect effects showed that the mediation model was significantly moderated by the acute financial hardship indicator, regarding the worsening of the financial situation in consequence of the COVID-19 crisis. Specifically, the indirect mediating effect was significantly stronger for those whose financial situation got worse during the COVID-19 crisis compared to those

who did not report any negative changes. Other financial hardship indicators did not significantly moderate the mediation model.

Table 2

Indirect mediation effects for specific research sample subgroups

Financial hardship indicator	Group	*n*	β	*SE*
Chronic - Do you have debt (credit, mortgage, or loan)?	Yes	156	.14***	.05
	No	244	.12***	.03
Chronic - Do you have any savings at this moment?	Yes	272	.13***	.03
	No	128	.13***	.03
Acute - Did your financial situation get negatively affected by the COVID-19 crisis?	Yes	188	.14***	.04
	No	212	.04**	.02
Acute - Did you lose any of your financial income in consequence of COVID-19 crisis?	Yes	111	.19***	.05
	No	289	.09***	.03

Note. ** $p < .01$; *** $p < .001$

Table 3

Results of the moderated mediations analyses for specific chronic and acute financial hardship indicators

Financial hardship indicator	Estimations difference	95% CI [LL, UL]	*p*
Chronic - Do you have debt (credit, mortgage, or loan)?	.03	[-.14, .21]	.72
Chronic - Do you have any savings at this moment?	<.01	[-.14, .14]	.98
Acute - Did your financial situation get negatively affected by the COVID-19 crisis?	.10	[.004, .23]	.04
Acute - Did you lose any of your financial income in consequence of COVID-19 crisis?	.08	[-.06, .26]	.26

Discussion

Apart from apparent health risks, the COVID-19 pandemic posed an unprecedented threat to global economy and individual financial well-being. Although the full range of consequences of the current economic turmoil are yet to be established, it has already been speculated that the oncoming crisis is the deepest one since the Great Depression (Barrafrem, Västfjäll, & Tinghög, 2020). Severe and unexpected shocks—such as the pandemic—have the potential to make people's financial situation more precarious by diminishing their income and threatening employment stability, which, in turn, may have negative consequences on individuals' mental health, substance abuse, divorce and even suicide rates (Marjanovic et al., 2018). Therefore, it is particularly important to identify determinants of financial threat and the impact the threat may have on individual behaviour. This study tested a model investigating

relations between individual psychological resources, perception of financial threat and behavioural responses to the threat. Specifically, we investigated how neuroticism and uncertainty intolerance affect perceived financial threat and how these feelings of threat change individuals' consumption patterns and use of specific coping strategies to live through the crisis. Additionally, the model distinguishes between chronic and acute financial hardship as potential moderators of the effect.

Financial threat mediates the relationship between psychological resources and behaviour

The main premise of this study was that psychological resources make people particularly prone to feelings of financial threat. As we hypothesised, individuals high in neuroticism and uncertainty intolerance perceived the financial threat posed by the COVID-19 pandemic as more severe (H1). These findings are consistent with a recent study by Mann et al. (2020), who found that economic anxiety related to the COVID-19 pandemic increases with neuroticism and the propensity to derive social belongingness from collective assemblies. Also, the study indicates that uncertainty intolerance is another significant factor that could enhance perception of financial threat. In other words, individuals, who feel less comfortable with uncertain conditions, feel more threatened by the sudden shock caused by the COVID-19 pandemic and its yet unknown economic consequences, regardless of their actual economic situation. These findings contribute to the growing evidence that acute economic shocks can trigger more anxiety among people, who generally do not tolerate ambiguity or uncertainty well (Gasiorowska, 2014). Following Marjanovic et al. (2013), we conclude that feelings of financial threat are not solely about one's actual financial situation but about an individual's predisposition to feel threatened.

Next, we have investigated whether feelings of financial threat lead to changes in consumption patterns and what specific coping strategies individuals activated to face the financial stress. In line with our hypothesis (H2), increased financial threat elicited stronger behavioural responses. Specifically, heightened perception of financial threat led to intentions to increase income, decrease expenses, and manage debts more optimally. In line with the study by Fiksenbaum et al. (2017), the present study shows that more threatened individuals are willing to change their consumption patterns. Particularly, the individuals' willingness to change financial behaviour was more pronounced in respect to expense reduction. Interestingly, our results also suggest that individuals are inclined to use mostly adaptive problem-focused coping strategies instead of maladaptive strategies (e.g., drug or alcohol abuse) or emotion-focused strategies. The findings indicate that, so far, the unpredictable and uncontrolled economic consequences did not inhibit people's sense of control over their own financial situation and steer them toward adoption of individually adaptive forms of behaviour. However, such tendency may be very unstable and our findings could have been affected by the course of the pandemic in Slovakia. Specifically, we conducted the study during the first wave of the COVID-19 pandemic, where Slovakia had the mildest health-related consequences among all European countries. Even in such relatively mild conditions, we found a moderate relationship between using maladaptive coping strategies and neuroticism, uncertainty intolerance, as well as financial threat. With the more severe course of the pandemic, individuals may feel more threatened, which may increase the adoption of maladaptive consumption and coping strategies (Holmgren et al., 2019; Marjanovic et al., 2015).

Finally, the mediation analysis supports the view that the relation between psychological resources and behavioural responses is not straightforward and can be explained by the perception of financial threat. It was showed that, the more neurotic and uncertainty intolerant individuals perceived their financial situation as threatening the more they were willing to adapt

their consumption patterns and apply specific coping strategies. In other words, the perception of financial threat serves as a trigger of behavioural changes among neurotic and uncertainty intolerant individuals. These findings corroborate our hypothesis that the perception of financial threat mediates the relation between psychological resources and behavioural responses (H3). The findings are consistent with studies by Marjanovic et al. (2013, 2015), who found that subjective perceptions of threat predict behavioural outcomes better than objective indicators of one's financial situation. Similarly, Fiksenbaum et al. (2017) show that people who perceive themselves as financially vulnerable are more prone to suicidal thoughts and suffer from greater psychological distress. Finally, Greenglass and Mara (2012) observed that individuals with certain psychological resources (self-efficacy) perceive their financial situation as less threatening and consequently experience less psychological distress. Our findings support the view that behavioural responses to financial threat are grounded in subjective evaluation of the situation and depend on psychological resources more than on individual's objective financial circumstances.

Moderating role of acute and chronic financial hardship

Finally, the paper extends the current knowledge by distinguishing between the moderating effect of acute and chronic economic hardship. Our study shows that the mediation effect of financial threat on the relationship between psychological resources and behavioural responses was stronger for individuals, who were forced to ask for state-funded financial support. In contrast, experiencing chronic financial hardship (including the absence of savings and having debts) did not matter for the mediation effect of financial threat. This suggests that acute changes in one's financial situation caused by the COVID-19 pandemic have greater potential to induce financial threat and, thus, are also more responsible for the changes in one's financial behaviour and adaptation of specific coping strategies. In other words, during sudden

negative economic shock, like the one brought by the COVID-19 pandemic, people may start to overlook the chronic financial hardship they experienced before the shock. Instead, they may focus more on the acute changes in their financial situation and perceive them as far more damaging to one's sense of financial security. A possible explanation of this effect is that during turbulent times, it is particularly difficult to predict how the situation will change and adjust behaviour accordingly. Our findings are consistent with the study by Marjanovic et al. (2018), who observed that recent experience of financial hardship together with uncertainty concerning the future development of economic circumstances have the greatest potential to cause financial anxiety.

Study limitations and implications for future research

Despite our best efforts, the study has limitations that are worth mentioning. First, when interpreting our findings, one should be aware that the Willingness to change financial behaviour scale is a self-reported measure of behavioural intentions, not the behaviour itself. Self-reported willingness to introduce changes in one's financial behaviour does not yet mean that individuals will inevitably follow these intentions and adjust their behaviour accordingly. Further studies could determine to what extend this self-reported willingness to change correlates with actual behavioural changes.

Second, we were not able to include maladaptive coping strategies in our model because of the strong covariance of its error term with the error term of psychological resources latent factor. A possible explanation of this covariance is that the Brief cope inventory (Carver, 1997) was originally constructed to measure relatively stable coping tendencies, rather than investigating which specific strategies individuals use in adaptation to certain stressful events. Before using this instrument, we have made significant changes in the instructions and items just to be sure that participants would report what specific strategies they have used to face

negative consequences of the COVID-19 pandemic, and not strategies that they generally use. Despite this effort, it seems that this instrument—especially maladaptive coping strategies—still captured the relatively stable tendency. In other words, those who used maladaptive coping strategies to face negative financial consequences of COVID-19 pandemic, like using drugs or alcohol, tend to use these strategies in general. Maladaptive strategies serve them as a psychological resource for coping with various stressors, not only the pandemic.

Third, we used only a limited number of acute and chronic financial hardship indicators. Even with the aim to use six objective indicators, we were able to use only four of them because of the limited number of participants, who reported having been the subject of a debt collection lawsuit or were forced to ask for a state-funded financial support. Future research should focus on investigating other indicators. Specifically, future studies may use more consumption indicators of economic hardship, than the Economic Hardship Questionnaire (Lempers, Clark-Lempers, & Simons, 1989) measures. This includes postponing clothing purchases, or changing food shopping habits to save money. In this specific instrument, the items are focused rather on chronic hardship, but could be adopted also to identify changes in financial hardship in response to acute economic turmoil. In addition to more economic indicators, like having debt or savings, such consumption-focused indicators could help to provide broader image of one's actual financial hardship.

Conclusions

The COVID-19 pandemic dramatically changed lives of billions of people around the world. Containment measures adopted to slow down the virus spread had adverse effects on individuals' economic activities and raised questions about their capacity to maintain financial security. A positive message from the present study is that threatened individuals are willing to get involved in adaptive behaviours such as reducing expenses, saving more and adopt

mostly problem-focused coping strategies. However, the study was performed during the first wave of the pandemic, which had relatively mild health-related consequences in Slovakia. With the worsening epidemic situation, attitudes may change and individuals may become less resilient both psychologically and economically. Consequently, it is possible that the share of maladaptive forms of behaviour may increase as the situation worsens, which may have negative consequences both at individual and societal level (Marjanovic et al., 2015). Apart from pointing to individual maladaptive behaviour, past studies send an alarm that economic threat may bring about various socially undesired behaviours and attitudes, like increased in-group bias and out-group hostility, ethnic prejudices, xenophobia and antisemitism (Becker, Wagner, & Christ, 2011; Dubey et al., 2020; Fritsche & Jugert, 2017). To prevent socially harmful behaviour, we highlight the importance of providing individuals with reliable and comprehensible information about economic opportunities and supportive measures adopted at the institutional level. All measures should be communicated in a way that would have potential to reduce uncertainty and mitigate adverse effects of economic shock (Barrafrem et al., 2020). Decision-makers at the institutional level should also keep in mind that cutting consumption may also have a negative effect on the pace of recovery of the economy on a macro scale. Thus, our findings suggest that some institutional actions may be necessary to sustain optimal levels of individual demand and consumption in order to secure that cautious individual decisions will not interfere with the economic recovery after the crisis.

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