THE BIG FIVE PERSONALITY TRAITS AS ANTECEDENTS OF PANIC BUYING

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Abstract: This study aims to analyse the effects of personality traits as antecedents of panic buying. In extraordinary periods, certain behavioural changes could be observed in individuals, and panic buying behaviour could occur for specific products or product groups. The theoretical framework of the concept of panic buying comprises various theories, including individual and socio-psychological backgrounds. In line with the main objective of this study, the concept of panic buying is addressed in the light of theories that elaborate on individual factors. Even though there are many factors affecting panic buying, there is a limited number of studies discussing the subject within the context of personality traits, which are among the individual factors. In this study, data were acquired from 852 participants in Turkey by applying the questionnaire technique as a quantitative research method. The Big Five Personality Traits, one of the significant theories in measuring personality traits, are selected as the baseline. This study used the «The Big Five Inventor» scale. On the other hand, the «Panic Buying Scale» was applied in the measurement of panic buying. Data analysis was conducted through confirmatory factor analysis and structural equation modelling. Upon evaluating the findings, it was concluded that agreeableness (one of the five major personality traits) has a statistically significant and negative impact on panic buying. In contrast, neuroticism has a significant and positive effect. The more individuals have high agreeableness personality traits, the more panic buying decreases. Besides, the trait of high neuroticism causes an increase in panic buying. No significant effect of extraversion, conscientiousness, and openness personality traits on panic buying was determined. The findings indicate the effects of personality traits on the individual causes of panic buying behaviour. It is anticipated that this study will fill the relevant gap in the literature concerning considering personality traits as an antecedent of panic buying in the context of Turkish participants and examining both individual characteristics and cultural effects. Understanding the basic motivations of individuals regarding panic buying behaviour is of utmost importance for correctly managing the processes for similar extraordinary periods that may occur again in the future and for taking the necessary precautions.

Keywords: big five theory, COVID-19, panic buying, the big five personality traits, Turkey.

JEL Classification: M10, M19, M31

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Introduction. Global or regional economic crises, natural disasters, wars, and extraordinary periods concerning health or political issues trigger people to behave dissimilarly with different motives, depending upon the characteristics of the period. It is known that during such periods, individuals display panic buying behaviour, particularly for consuming certain products (Somani and Kumar, 2021; Yuen et al., 2020). The declaration of COVID-19 as a pandemic by the World Health Organization (WHO) on March 11, 2020, has led to a steep demand, especially for food and cleaning products, almost in every country. A similar situation emerged after Russia invaded Ukraine on February 24, 2022. The fact that international luxury cosmetics and personal care brands would shut down their stores in Russia due to the sanctions imposed has caused individuals to shop in panic and queue up for hours in front of these stores (Erkul Kaya, 2022). The increase in social media and communication channels makes it more possible nowadays that rational or irrational behaviour in any place in the world would create a global butterfly effect. In extraordinary periods such as pandemics, where inaccurate information is disseminated faster, it is likely for inaccurate behaviour to spread as well. In case such an extraordinary situation is on a global scale, the behaviours developed for this period may also be global. Similarly, the behaviours may be local if the extraordinary period is local. Whereas panic buying behaviour is observed in almost all countries throughout the pandemic, it has been only seen in Russia that the brands would leave Russia due to Russia’s attack on Ukraine.

It is known that historical epidemiology knowledge directs studies on pandemics. For instance, measures on social distancing and preventing the gathering of crowded groups such as schools, workplaces, and places of worship were adopted and proven to be successful during the «Spanish flu pandemic» of 1918-1919 (Waxman, 2020). As in epidemiology, historical and contemporary experiences and practices developed within the scope of psychology and sociology could generate important inputs for the future. Therefore, analysing the individual and social behaviours, the motivators of these behaviours, and the practices formed in these extraordinary periods could lay a foundation for managing similar processes to be encountered in the future. For this reason, correct understanding and explanation of the reasons and source of panic buying behaviour in extraordinary times are very important regarding developing various measures for similar periods that may be experienced in the following periods. The fact that individuals tend to basic necessities or products that are thought to be limited in their access with fear and panic, and stocking large quantities of products even though they do not need them not only negatively affects the accessibility of the products but also causes prices to hike and economic problems to occur (Steven et al., 2014). Managing the extraordinary processes experienced/to be experienced and preventing or mitigating these negative effects of panic buying behaviour entail interdisciplinary and multidimensional research.

It could be seen in the literature that studies implemented to define panic buying behaviours, clarify the concept, put forward the antecedents and consequences, as well as the related concepts have gained importance in the last few years (Barnes et al., 2021; Chua et al., 2021; Dammeyer, 2020; Herjanto et al., 2021; Jin et al., 2020; Prentice et al., 2022; Singh et al., 2021; Rajkumar, 2021; Yuen et al., 2020). Personality traits, which are discussed notably within the scope of individual factors, explain the characteristics of each individual that are peculiar and different from others, ways of coping and defending stressful situations, thinking styles, and emotional and behavioural reaction mechanisms (Furnham and Cheng, 1997). In addition, personality traits influence the buying behaviour of individuals and render valuable insight into the basic motivations underlying the purchasing act for certain products (Kotler and Armstrong, 2018). Even though the individual and socio-psychological factors affecting panic buying behaviour are addressed in the literature, there are limited and few studies on personality traits examined within the scope of individual factors (Dammeyer, 2020; Leherberger et al., 2021; Taylor, 2021; Yousaf et al., 2022). Dammeyer (2020) examined the stocking behaviour of individuals in Denmark and the United Kingdom during times of crisis. The scholar concluded that conscientiousness, neuroticism, and openness personality traits are associated with stocking and panic buying behaviour. Leherberger (2021) scrutinized the reasons for stocking and panic buying behaviour of non-perishable food products displayed by individuals in Germany. The findings showed attitudes, subjective norms, fear of not finding the product in the future, and neurotic personality traits related to stocking and panic buying behaviour. Likewise, based on the study performed by Pornpitakpan and Han (2013) with Singaporean and American participants, cultural differences impact impulse buying. Besides, Taylor (2021) stated panic buying pertains to dark (malevolent) personality traits such as Machiavellianism, psychopathy, and narcissism. Similarly, Nowak et al. (2020) highlighted that dark triad traits (Machiavellianism, psychopathy, and narcissism) caused more stocking behaviour during the Covid-19 pandemic. Yousaf et al. (2022) addressed the effect of the dark triad traits on panic buying behaviour in Pakistani individuals. This study revealed that while individuals with higher narcissism scores engage in less
Panic buying, those with higher scores for Machiavellianism and psychopathy make more panic buying. Individual personality traits unveil why some individuals engage in panic buying behaviour while others do not. From this point of view, it is of utmost importance to develop a more comprehensive understanding of the individual causes of the concept related to the field, particularly by clarifying the effects between the individual's personality traits in different cultures and their panic buying behaviours. That is because panic buying behaviour starts as an individual behaviour based on personality traits. It may turn into social action with the impact of the bandwagon effect if the process could not be managed. The negative impacts of panic buying behaviour, which has converted into social and even global action, could exacerbate. This study aims to investigate the effect of personality traits, one of the individual factors, on the panic buying behaviour of individuals within the context of the Turkish sample. Few studies measure the effect of personality traits on panic buying behaviour. However, unlike these studies, it is highly important to exhibit cultural differences, and it also constitutes the study's originality. Analysing panic buying behaviour, likely to pose a global butterfly effect, notably in pandemics in almost every society, could contribute to the management of the process. The examination of the individual factors of panic buying behaviour in the Turkish sample through this study may contribute to the integrity of other studies on the same subject.

The objective of this study is to inquire about the effect of personality traits, among the individual factors, on the panic buying behaviour of individuals. To that end, the Big Five Personality Traits, which deal with personality traits comprehensively and holistically, were used, and the effects of extraversion, agreeableness, conscientiousness, neuroticism, and openness, which entail personality traits, on panic buying behaviour were examined. The quantitative research technique was applied. The data were obtained through a questionnaire to test these effects empirically. The hypotheses developed to reveal the impacts of personality traits on panic buying were analysed through structural equation modelling.

**Literature Review.** Extraordinary, sudden, and unexpected changes bring about an alteration in consumption behaviours as well as changes in human life. Consumers face cognitive difficulties due to this sudden and unexpected circumstance. They may be prone to panic buying behaviour by developing intense emotional and behavioural reactions (Yuen et al., 2021). Panic buying refers to the behaviour of consumers to purchasing unusually large numbers of products during or following natural or man-induced disasters, large-scale catastrophes, economic or human health crises (Tsao et al., 2019; Wang et al., 2020).

It is known that consumers' mood and emotional state impact their buying behaviour. Although both positive and negative moods are effective in the impulse buying behaviour of consumers, the mediating effects of positive mood on impulse buying have been revealed depending on the results of the study conducted by Pornpitakpan et al. (2017). Panic buying differentiates from impulse buying, which is driven by impulses. Consumers with impulse buying focus on the process of shopping, browsing, choosing, and ordering rather than the use of the product they purchase. On the other hand, they centre around product and product use in panic buying (Müller et al., 2015; Taylor, 2021). There are critical relationships between panic buying and negative emotions, and the act of buying takes place to regulate the negative emotions of the consumers rather than their actual needs. Thus, consumers feel safe and relieved by making a purchase even though they do not need it in times of uncertainty. In other words, they attempt to escape the negative circumstance and emotions they are going through and try to reduce their stress levels by shopping (Fransen et al., 2019; Snejat et al., 2009). When the literature is examined, it is seen that individuals factors (Rajkumar, 2021) cover the concepts such as gender (Lins and Aquino, 2020), personality traits (Dammeyer, 2020; Leberberger et al., 2021), dark triad traits (Taylor, 2021; Youfa et al., 2022), fear, anxiety (Arafat et al., 2020; Sim et al., 2020; Taylor et al., 2020) perceived scarcity, perceived threat (Yuen et al., 2020), perceived lack of control (Chen et al., 2017) and attitude (Micalizzi et al., 2020); socio-psychological factors such as social influence (Kaur and Malik, 2020; Li et al., 2021; Naeem and Ozuem, 2021), social trust (Yuen et al., 2021), peer influence (Prentice et al., 2022), social risk, social determination (Singh et al., 2021), social norm (Li et al., 2021), as well as neurological factors such as anxiety and depression (Herjanto et al., 2021), affect panic buying behaviour.

Panic buying, an unusually large scale of buying behaviour for some products based on the nature of the extraordinary period, has been the subject of studies within the framework of theories enlightening individual and socio-psychological factors in the literature (Table 1). Since personality traits, among the individual factors affecting panic buying behaviour, are examined in this study, the theories referred to in the explanation of individual factors are discussed below.

According to compensatory control theory (CCT), consumers with lower perceived control try to gain a sense of control by exhibiting panic buying behaviour (Chen et al., 2017).
Thus, individuals purchase certain products or services, aiming to feel they have a say in their lives by getting rid of negative emotions such as fear, anxiety, and concern (Laurin et al., 2008). Based on the CCT, consumers prone to panic buying behaviour with the motivation to cope with this situation and regain their sense of control in cases of high uncertainty such as crises and disasters (Thompson, 2009).

According to the Regret Theory (RT), on the other hand, the consumer takes into consideration the regret that they would feel in the future if they do not buy a product while rendering a purchasing decision. When the perception of scarcity occurs, consumers make purchases to eliminate some negative emotions and not to feel regret in the future (Baumeister et al., 2007). This theory suggests that in times of crisis and uncertainty, people are more likely to experience regret than to feel positive emotions such as joy or satisfaction if they do not engage in panic buying behaviour due to perceived scarcity (Taylor, 2019; Yuen et al., 2020). Interruptions in product supply may lead to product stock shortages, thus increasing product prices. In such a case, consumers could buy with panic while having the opportunity to buy as a preventive measure and avoid future regret (Chua et al., 2021).

Another theory elaborating on panic buying behaviour is the Theory of Psychological Reactance. According to this theory, individuals have a stronger desire for products perceived as scarce when their individual freedoms are restricted or threatened (Brehm, 1966). The fundamental motivation that drives individuals to panic buying behaviour is the desire to take prohibited actions owing to restrictions. A small number of products, the limited access of individuals to the products, or their prohibition, indicates that their freedom is threatened. Thus, they tend to buy panic with psychological reactivity (Sterman and Doğan, 2015).

The Big Five Theory is one of the important theories used to explain personality (John and Srivastava, 1999; Marbach et al., 2016). Personality is the consistent and continuous psychological feature determining how individuals react to their environment, and different personality traits impact individuals' buying behaviours (Kotler and Armstrong, 2018). According to the Big Five Theory, Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness, which are described as the five big personality traits, represent the basic components of personality (McCrae and Costa, 1985).

Extraversion consists of the characteristics of individuals being social, affectionate, fun-loving, active, people-oriented, and talkative (McCrae and Costa, 1985). Introversion, which is the opposite of extraversion, defines the characteristics of quiet, introverted individuals, refrain from making friends, and have a negative point of view (John and Srivastava, 1999). Agreeableness refers to the compatibility of individuals in their relationships with other people. These individuals exhibit gentle, affectionate, flexible, cooperative, and reliable characteristics towards others in their social relationships (Bono et al., 2002). Likewise, hostility (the opposite of agreeableness) is identified as the personality trait of skeptical, aggressive, unsympathetic, and rude individuals (Weiten et al., 2012). Conscientiousness means how individuals control their behaviour and instincts towards any task and purpose. Individuals bearing the conscientiousness personality trait are described as organized, planned, reliable, responsible, and disciplined (McCrae and John, 1992). Besides, neuroticism, defined as emotional instability, involves negative emotional characteristics such as being nervous, indecisive, and anxious. Individuals with neuroticism tend to be aggressive, insecure, and more likely to be offended (Weiten et al., 2012). High neuroticism represents reactive emotional behaviour associated with negative emotions such as anger and anxiety (Migliore, 2011). Lastly, openness indicates that individuals are open to new ideas, artistically sensitive, willing to new experiences, imaginative, adventurous, and productive (McCrae and Costa, 1985).

**Methodology and research methods.** This study aims to analyse the effect of personality traits on the panic buying behaviour of individuals. In the relationship between five personality traits within the Big Five Theory and panic buying behaviour, individuals' perceptions and attitudes towards events can be affected by the fear and negative emotions or stress arising from the uncertain environment. Situations such as increased fear, uncertainty, and scarcity increase individuals' risk and threat perception (Slovic and Peters, 2006).
motivating them to take precautions and panic buying behaviour (Yuen et al., 2020). Therefore, revealing the relationship between personality traits classified under the Big Five Theory and panic buying behaviours may clarify the source of this reactive behaviour in extraordinary periods. At this stage, the study’s hypotheses were developed by addressing the relationships between each personality trait and panic buying behaviour.

Since people with extraversion personality traits are identified as those who enjoy being in social environments, have high energy and self-confidence, and have a positive impact (Giluk and Postlethwaite, 2015). Individuals with this trait tend to be happier than others (Weiten et al., 2012). According to Wayne et al. (2004), individuals with extraversion personality traits get less stressed about unexpected events and focus on the positive aspects of events. It is anticipated that the fact that people predominantly with extraversion traits have an extroverted and positive mood and behave more calmly in the face of events will cause them to act more controlled on their panic buying behaviour. In this respect, the hypothesis developed is as follows:

H1: Extraversion personality trait significantly and negatively impacts panic buying behaviour.

Individuals with agreeableness personality traits are more compassionate, understanding, and generous to others, and they could also have high empathy (McCrae and John, 1992). It is contemplated that individuals with agreeableness, which highlights harmonization in relationships, would avoid panic buying behaviour due to their high positive emotions and compatibility. Thus, the second hypothesis of the study is specified below:

H2: Agreeableness personality trait significantly and negatively impacts panic buying behaviour.

Conscientiousness personality trait, where properties such as planned behaviour, assuming responsibility, achievement and self-discipline are predominant, is also considered a substantial antecedent of buying behaviour. Especially people with high responsibility are less prone to impulsive buying behaviours and breaking the rules (Dammeyer, 2020). Even though the perception of scarcity and stocking behaviour are concepts closely related to panic buying, according to the outputs of Dammeyer’s (2020) study, individuals with low conscientiousness display stocking behaviour. Contrary to this finding, people with high conscientiousness levels tend to stock more toilet paper based on the study of Garbe et al. (2020), which addressed the effect of personality traits on toilet paper stocking in a sample of participants from 22 different countries. In this regard, the hypothesis developed is as follows:

H3: Conscientiousness personality trait has a significant impact on panic buying behaviour.

Although people with a high level of neuroticism are more reactive, they have more difficulty coping with stress or stressful situations and thus overreact (DeLongis and Holtzman, 2005; Mroczek and Almeida, 2004). Following the results of Lehberger et al. (2021), the fact that individuals have high neurotic features impacts their strong stocking intentions. The results of Dammeyer’s (2020) study are similar as well. High neuroticism affects both stocking and panic buying behavior. Within the context of the Regret Theory, it could be asserted that individuals with emotional fragility may be triggered by panic buying behaviour more, particularly if their buying behaviour or choice occurs depending on the intensity of negative emotion such as regret. Therefore, another hypothesis is put forward as follows:

H4: Neuroticism personality trait significantly and positively impacts panic buying behaviour.

It is known that individuals with the openness personality trait, which pertains to being open to new experiences, independence, and curiosity, demonstrate more flexibility in coping with stress and adapting to innovations and changes (Dammeyer, 2020; Whitbourne, 1986). Moreover, Dammeyer (2020) concluded that a low openness personality trait was associated with panic buying behaviour. Accordingly, the fifth and last hypothesis of this study is as follows:

H5: Openness personality trait significantly and negatively impacts panic buying behaviour.

Figure 1 presents the research model. Questionnaire-based quantitative research technique was used to empirically test the relationship between personality traits and panic buying behaviour. The research data were collected between April and May 2021. The participants answered the structured questionnaire form voluntarily with the convenience sampling method. 868 questionnaires were filled out by adults aged 18 and over in Turkey.

After the questionnaire forms were checked, 16 questionnaires that were filled in incorrectly and incompletely were excluded from the evaluation and analyses were conducted through data from a total of 852 questionnaires. Table 2 presents the demographic data of the research sample.

Five personality dimensions consisting of 15 items were used in the shortened version of «The Big Five Inventory (BFI)» developed by Soto and John (2017) to measure personality traits. Each dimension was measured with 3 expressions. The original version of the scale was proposed by John, Donahue and Kentle (1991). It is comprised of 44 items and 5 dimensions.
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The Big Five Personality Traits

The abbrevioted 15-item form of the scale was applied so that the participants could follow the questionnaire form effectively and carefully. In the measurement of panic buying, on the other hand, the «Panic Buying Scale (PBS)» devised by Lins and Aquino (2020) during the COVID-19 pandemic was applied. The scale involves one dimension and 7 items. Each BFI and PBS item of the participants was rated on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The two-stage approach proposed by Anderson and Gerbing (1998) was adopted in the data assessment. In the first stage, confirmatory factor analysis was performed for the measurement model to test the internal consistency reliability and convergent and discriminant validity of all the variables above. In the second stage, the hypothesis of the study was tested with structural equation modelling. Analyses were carried out via SPSS 26 and AMOS 26 package programs.

Results. Measurement model. Confirmatory factor analysis was practiced for five personality dimensions in the research model (extraversion, agreeableness, conscientiousness, neuroticism, and openness), and three expressions for each personality dimension, as well as panic buying behaviour variables consisting of 1 dimension and 7 expressions. As a result of the analysis, whereas the standardized factor loadings of the personality traits in the measurement model corresponded to values between 0.572 and 0.865, the standardized factor loadings of panic buying behaviour ranged from 0.694 to 0.931. Therefore, the model fit criteria and indices of the measurement model were examined (Schermelleh-Engel et al., 2003) based on critical value ranges through the standardized factor loadings of the constructs, which are above the desired value of 0.50 (Hair et al., 2010). It was concluded that the research model comprising 6 dimensions and 22 expressions yielded good fit indices (See Table 3).

Cronbach Alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE) values of the constructs were analysed in the evaluation regarding the internal consistency reliability of the research model. For internal consistency reliability, the CA and CR values of the constructs are required to have a value above the critical value of 0.70 (Hair et al., 2010). The CA values of all constructs given in the measurement model are between 0.73 and 0.93, and the CR values differentiate between 0.72 and 0.93. Thus, this criterion is met. Likewise, the AVE values of the constructs should have a value above 0.50 to ensure internal consistency.
reliability. Table 3 presents AVE values of all dimensions in the measurement model between 0.50 and 0.66, excluding the «Agreeableness» dimension of personality traits. The AVE value of the «Agreeableness» personality trait dimension was found to be 0.47. Notwithstanding, Fornell and Larcker (1981) asserted that AVE values below 0.50 are acceptable in case other safety criteria are fulfilled. Since other reliability criteria are ensured for the «Agreeableness» dimension, the internal consistency reliability is provided for all dimensions in the measurement model.

For testing the convergent validity of the measurement model, CR and AVE values were examined. For convergent validity, the CR values of the constructs were anticipated to have a higher value than the AVE values and the AVE values to be above 0.50 (Hair et al., 2010). According to Table 3, the AVE values of all dimensions in the measurement model, excluding the «Agreeableness» dimension of personality traits, produced values above 0.50, and convergent validity was achieved. Since the «Agreeableness» personality trait dimension fulfills the reliability criterion and the AVE value of 0.47 is approximate to the desired 0.50 value, it could be expressed that convergent validity is also provided for this dimension.

Table 3. Confirmatory factor analysis results

<table>
<thead>
<tr>
<th>Constructs/items</th>
<th>Standardized factor loadings</th>
<th>CA</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td></td>
<td>0.82</td>
<td>0.82</td>
<td>0.61</td>
</tr>
<tr>
<td>E1. Tends to be quiet.</td>
<td></td>
<td>0.793</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E2. Is dominant, and acts as a leader.</td>
<td></td>
<td>0.824</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E3. Is full of energy.</td>
<td></td>
<td>0.724</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agreeableness</td>
<td></td>
<td>0.73</td>
<td>0.72</td>
<td>0.47</td>
</tr>
<tr>
<td>A1. Is compassionate, and has a soft heart.</td>
<td></td>
<td>0.572</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2. Is sometimes rude to others.</td>
<td></td>
<td>0.747</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3. Assumes the best about people.</td>
<td></td>
<td>0.727</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td></td>
<td>0.74</td>
<td>0.75</td>
<td>0.50</td>
</tr>
<tr>
<td>C1. Tends to be disorganized.</td>
<td></td>
<td>0.711</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2. Has difficulty getting started on tasks.</td>
<td></td>
<td>0.793</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C3. Is reliable, and can always be counted on.</td>
<td></td>
<td>0.607</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td></td>
<td>0.76</td>
<td>0.76</td>
<td>0.52</td>
</tr>
<tr>
<td>N1. Worries a lot.</td>
<td></td>
<td>0.692</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N3. Is depressed, blue.</td>
<td></td>
<td>0.771</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N4. Is emotionally stable, not easily upset.</td>
<td></td>
<td>0.685</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Openness</td>
<td></td>
<td>0.80</td>
<td>0.80</td>
<td>0.58</td>
</tr>
<tr>
<td>O1. Is fascinated by art, music, or literature.</td>
<td></td>
<td>0.759</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O4. Has little interest in abstract ideas.</td>
<td></td>
<td>0.645</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O5. Is original, and comes up with new ideas.</td>
<td></td>
<td>0.865</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panic Buying</td>
<td></td>
<td>0.93</td>
<td>0.93</td>
<td>0.66</td>
</tr>
<tr>
<td>P1. Fear drives me to buy things to stock at home.</td>
<td></td>
<td>0.773</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P2. The fear of not having the needed products leads me to buy more things.</td>
<td></td>
<td>0.784</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P3. I panic when I think essential products may run out of the shelves. That is why I prefer to buy them in bulk.</td>
<td></td>
<td>0.811</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P4. Fear drives me to buy more than I usually do.</td>
<td></td>
<td>0.931</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P5. Panic makes me buy more things than I usually do.</td>
<td></td>
<td>0.918</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P6. One way to relieve the feeling of uncertainty is to ensure that I have a good amount of the products I need at home.</td>
<td></td>
<td>0.722</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P7. The feeling of uncertainty influences my buying habits.</td>
<td></td>
<td>0.694</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model fit indices: χ^2/df = 2.524; GFI = 0.950; AGFI = 0.934; TLI = 0.960; CFI = 0.967; RMSEA = 0.042

Notes: CA: Cronbach Alpha (α); CR: Composite Reliability = (Σλ^2) / (Σλ^2 + Σe); AVE: Average Variance Extracted = Σλ^2 / Σλ^2 + Σe and e=1- λ^2; χ^2/df – Chi-Square Test Statistic/Degrees of Freedom; GFI – Goodness of Fit Index; AGFI – Adjusted Goodness of Fit Index; TLI – Tucker and Lewis Index; CFI – Comparative Fit Index; RMSEA – Root Mean Square Error of Approximation.

Sources: developed by the author.

For testing the discriminant validity of the research model, the criteria proposed by Fornell and Larcker (1981) were analysed. According to these criteria, the AVE values square root for all the constructs in the model should be higher than the correlation values among the constructs. The values in the diagonal (Table
4) indicate the square root of the AVE values of the constructs. Upon examining all constructs, it is seen that discriminant validity is achieved. Furthermore, Table 4 lists the constructs' mean and standard deviation values.

### Table 4. Correlations between the constructs, means, and standard deviations

<table>
<thead>
<tr>
<th>Constructs</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>0.781</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>0.146</td>
<td>0.685</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.422</td>
<td>0.207</td>
<td>0.707</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>-0.404</td>
<td>-0.639</td>
<td>-0.260</td>
<td>0.721</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Openness</td>
<td>0.447</td>
<td>-0.011</td>
<td>0.462</td>
<td>-0.150</td>
<td>0.761</td>
<td>-</td>
</tr>
<tr>
<td>Panic Buying</td>
<td>-0.037</td>
<td>-0.237</td>
<td>-0.040</td>
<td>0.239</td>
<td>0.052</td>
<td>0.812</td>
</tr>
<tr>
<td>Mean</td>
<td>3.860</td>
<td>3.868</td>
<td>4.023</td>
<td>2.782</td>
<td>3.717</td>
<td>2.239</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>0.882</td>
<td>0.813</td>
<td>0.747</td>
<td>0.980</td>
<td>0.835</td>
<td>1.020</td>
</tr>
</tbody>
</table>

Notes: correlation significant at **p < 0.001; ***p < 0.01; *p < 0.05; The bold values represent the square root of AVE; 1 – Extraversion; 2 – Agreeableness; 3 – Conscientiousness; 4 – Neuroticism; 5 – Openness; 6 – Panic Buying

Sources: developed by the author.

Hypotheses test. Whether the five-factor personality traits in the research model significantly impacted panic buying behaviour, if so, the degree of this impact was tested through Structural Equation Modelling. As a result of the structural equation model analysis, the fit criteria and indices of the model were examined. It was determined that the model accommodated the data well (Model fit indices x²/df=3.813; GFI=0.925; AGFI=0.903; TLI=0.926; CFI=0.937; RMSEA=0.057).

### Table 5. Structural model

<table>
<thead>
<tr>
<th>Hypothesized path</th>
<th>Standardized estimate</th>
<th>CR</th>
<th>P</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panic Buying ↔ Extraversion</td>
<td>0.008</td>
<td>0.177</td>
<td>0.859</td>
<td>H1 Rejected</td>
</tr>
<tr>
<td>Panic Buying ↔ Agreeableness</td>
<td>-0.178</td>
<td>-4.185</td>
<td>***</td>
<td>H2 Supported</td>
</tr>
<tr>
<td>Panic Buying ↔ Conscientiousness</td>
<td>-0.014</td>
<td>-0.366</td>
<td>0.714</td>
<td>H3 Rejected</td>
</tr>
<tr>
<td>Panic Buying ↔ Neuroticism</td>
<td>0.228</td>
<td>5.419</td>
<td>***</td>
<td>H4 Supported</td>
</tr>
<tr>
<td>Panic Buying ↔ Openness</td>
<td>0.078</td>
<td>1.820</td>
<td>0.069</td>
<td>H5 Rejected</td>
</tr>
</tbody>
</table>

Notes: CR – critical ratio; P – p-value; ***p < 0.001

Sources: developed by the author.

The estimated structural coefficients, explanatory and significance levels of the constructs in the structural model, and information regarding whether the research hypotheses were accepted or not are presented in Table 5. After evaluating the findings, hypothesis H2 was accepted since the Agreeableness personality trait significantly and negatively affected panic buying behaviour. Neuroticism personality trait was also observed to significantly and positively impact panic buying behaviour. Therefore, hypothesis H4 was also accepted. In addition, neuroticism is the personality trait with the highest relative explanatory value (0.228) on panic buying behaviour. No statistically significant impact of extraversion, conscientiousness, and openness personality traits on the panic buying behaviour were found. Thus, hypotheses H1, H3, and H5 were rejected.

**Conclusions.** Although it doesn’t seem plausible to buy more toilet paper, pasta, cosmetics, and personal care products in extraordinary periods, it may cause us to feel as if we are taking reasonable precautions to minimize the risk. Since people have different risk tolerances, one individual may feel good about stocking up on a product, while another may not be so panicked, and their actions may not be changed. Even though there exist many factors affecting the panic buying process, individual characteristics are also one of the main determinants. Therefore, in this study, whether personality traits, as individual factors, impact the panic buying behaviour of individuals is analysed in the Turkish sample. Accordingly, data were analysed on 852 participants in Turkey by adopting the questionnaire technique. The findings determined that the dimensions of Agreeableness and Neuroticism, among the five major personality traits, are effective on panic buying behaviour. In contrast, the dimensions of extraversion, conscientiousness, and openness have no impact.

In the study, it has been detected that there is a reverse correlation between the agreeableness personality trait, representing understanding, flexibility, and cooperation with others, and panic buying behaviour. Thus, as the agreeableness personality trait increases, the panic buying behaviours of individuals decrease. Based
on the result of this study, individuals who maintain good relations and positive emotions in harmony with their environment are less affected by the chaos and uncertainty of crisis times, thus reflecting this situation in their buying behaviours. This finding from the study varies from that of Dammeyer (2020). In the study carried out by Dammeyer in a sample of individuals in Denmark and the United Kingdom, no significant relationship was observed between the agreeableness personality trait and the stocking and panic buying behaviour. Based on this research, it could be asserted that cultural differences are effective in the emergence of a significant impact on the agreeableness personality trait and panic buying behaviour.

Another significant study finding is the impact of the neuroticism personality trait dimension on panic buying behaviour. The more neuroticism tendencies of individuals increase, the more an increment is observed in panic buying behaviours. This finding parallels Dammeyer's (2020) and Lehberger et al.'s (2021) findings. It is extremely usual for individuals with a neurotic personality to feel nervous, restless, and anxious, particularly during crisis times, while having difficulties in coping with stress. Accordingly, these negative emotions drive them to panic buying. This study shows a similarity between the neuroticism tendency and panic buying behaviours of the participants in Turkey as in Denmark, England, and Germany.

No significant impact of extraversion, conscientiousness, and openness dimensions of personality traits was found on panic buying behaviour. It is anticipated that the superior skills of individuals with extraversion personality traits in managing unexpected events, the sensitivity of individuals with conscientiousness personality traits in complying with the rules, and the eagerness and high flexibility of individuals with openness personality traits are considered to be effective in the formation of this finding. It could be concluded that individuals with these personality traits behave more rationally than intuitive or emotional impulses (such as anxiety, fear, panic) in extraordinary periods.

Practical implications. Whereas it is normal for extraordinary periods to bring about panic in societies/people, it may be inevitable for societies/individuals to adopt decisions that do not seem rational in a panic situation. The predictability and manageability of the individual and social consequences of such decisions, which do not seem rational, are of importance economically, psychologically, and sociologically. In case the extraordinary periods could not be managed socially and individually properly, panic buying behaviour, like other irrational behaviours that occur due to different reasons, may negatively affect individuals and society. The panic buying behaviour triggered by extraordinary periods makes individuals feel a sense of trust at the beginning of the process. Notwithstanding, it subsequently causes negative affectivity, leading to unnecessary and excessive consumption and resource stockpiling. Managing these mood swings that individuals experience, particularly in extraordinary periods, is quite important for individual mental health.

In this study, figuring out the relationship between personality traits and panic buying that occurs in extraordinary periods is significant for individuals to manage their mental health. Individuals who know the characteristics of their personality traits are aware of the source of the basic motivation underlying their behaviour in extraordinary periods can make their behaviour more manageable. Therefore, in this study, one of the reasons for the panic buying behaviour of individuals with agreeableness and neuroticism personality traits is their personality traits, which may contribute to the rational management of the process. The rational management of the irrational process arising from a panic could also facilitate overcoming such a process with less mental and economic damage.

Irrational panic buying behaviour could drive both individual and social and economic negativities. Unplanned and sudden high demand can lead to bottlenecks in production and manufacturing processes. If the process could not be managed rationally, panic buying behaviour starting with some personality traits may turn into a bandwagon effect. Thus, negativity of the process may increase exponentially. The transformation of the process, arising from the trigger of some personality traits, into a bandwagon effect may also make the process unmanageable. The subsequent «empty shelf» images may create multiple negativities, individually and socially. Knowing that one of the fundamental causes of these negativities, which are difficult to manage, is derived from personality traits and that the information to be put forward at the beginning of the process is made accordingly can prevent the occurrence of many negativities. This study may contribute to managing panic buying behaviour encountered in extraordinary periods before it becomes a major problem. Lastly, campaigns, advertisements, and social studies that could be effective on the individual characteristics of the people in the society may be created, thereby ensuring public safety and preventing economic problems.

Theoretical implications. It is seen that studies on panic buying behaviour have gained importance following the Covid-19 pandemic. There are studies conducted within the framework of individual and socio-psychological factors that affect panic buying behaviour. However, it has been observed that very few studies
in the literature on personality traits as one of the individual factors. Accordingly, it is anticipated that this study will fill the relevant gap in the literature concerning considering personality traits as an antecedent of panic buying in the context of Turkish participants and examining both individual characteristics and cultural effects. Inquiring about the antecedents and consequences of panic buying behaviour, which is frequently experienced in extraordinary periods such as economic, political crises, pandemics, natural disasters, and wars, is of primary importance in terms of proper management of the processes that we may encounter in the future and eliminating their negative effects.

Limitations and future research. One of the limitations of this study is the convenience sampling method due to the cost and time constraints that may be experienced in reaching the participants. Moreover, the fact that only Turkish participants were selected causes a limitation. In this study, only personality traits, among the individual factors influencing panic buying behaviour that come to the forefront in extraordinary periods, are discussed. For further studies, more holistic results can be acquired through comparative studies, principally based on cultural characteristics. Moreover, research, where the cultural characteristics of societies and their individual features could be evaluated collectively, may lay a foundation for more rational management of extraordinary periods to be encountered in the future. The process could be examined through cross-cultural research by taking data from divergence and similarity, especially in the context of cultural dimensions (such as Hofstede’s Cultural Dimensions Theory). The relationships between panic buying behaviour and impulse buying could be further addressed in future studies. Circadian arousal, which represents the changes in the arousal level of individuals owing to biological variables, also influences how individuals react to advertisements (Pornpitakpan, 2004a). Thus, businesses and governments focus on advertisements, campaigns, and programs that prevent panic buying by considering circadian arousal can yield successful results. The effects of circadian arousal, which is utilized in both traditional and new media such as advertisements, news, and social media, on panic buying can also be examined.

Furthermore, it is known that a source with high credibility is more persuasive than a source with low credibility in changing the attitudes and behaviours of individuals (Pornpitakpan, 2004b). From this point of view, advertisements, campaigns, or programs that will be realized through governments, celebrities, and experts perceived as having high credibility may be more effective in preventing panic buying. Therefore, in future studies, practices to prevent panic buying behaviour of consumers and the effectiveness of these practices can be investigated.

Conflicts of Interest: Authors declare no conflict of interest.

Data Availability Statement: Not applicable.

Informed Consent Statement: Not applicable.

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П’ятифакторна модель особистості та передумови здійснення панічних покупок

Стаття присвячена аналізу індивідуальних рис особистості як передумов панічної покупки. Автор зазначає, що в надзвичайні періоди, людям властиво змінювати купівельну поведінку та панічно скуповувати певні продукти або групи продуктів. Теоретична основа концепції панічних покупок містить різні теорії, включаючи індивідуальну та соціально-психологічну. Відповідно до головної мети дослідження, концепція панічної покупки розглядається з точки зору індивідуальних теорій. Попри наявність низки наукових праць, присвячених дослідженню факторів, які спричиняють панічні покупки, автором наголошено на наявності прогалин у науковій літературі, присвяченій дослідженню ролі індивідуальних особистісних особистості під час панічних покупок. Детерміновану вибірку даних сформовано на основі результатів опитування 852 респондентів, які проживають у Туреччині. В основі даного дослідження покладено п’ятифакторну модель «Велика п’ятірка». Для тестування характеристик особистості, у роботі було застосовано опитувальник великої п’ятірки «The Big Five Inventory» та шкалу вимірювання панічних покупок «Panic Buying Scale». Емпіричне дослідження проведено з використанням інструментарію аналізу факторного аналізу та моделювання структурних рівнянь. Отримані результати засвідчили, що доброзичливість (одна з п’яти головних особистісних рис) має статистично значущий негативний вплив на панічні покупки, тоді як невротизм – статистично значущий позитивний вплив. Результати дослідження дають підстави стверджувати, що рівень панічних покупок є нижчим, коли люди мають розвинуту рису характеру – доброзичливість. Своєю чергою, невротизм сприяє панічним покупкам. За результатами дослідження не було встановлено суттєвого впливу сумлінності, відкритості та екстраверсії на панічні покупки. У статті наголошено, що розуміння головних мотивів поведінки людей під час панічних покупок є суттєвим для ефективного управління під час надзвичайних ситуацій та вживання необхідних запобіжних заходів.

Ключові слова: панічна покупка, теорія великої п’ятірки, COVID-19, риси особистості великої п’ятірки, Туреччина.