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A psychographic view on panic buying: Lessons learned from the COVID-19 pandemic for crisis communication

Eine psychografische Sichtweise auf Panikkäufe: Lektionen aus der COVID-19 Pandemie für Krisenkommunikation

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Abstract (English):

Especially during the outbreak of the COVID-19 pandemic, panic buying could be observed worldwide, leading to empty shelves and stock-outs of medical products in pharmacies and supply chain disruptions for several product categories. Stock-out situations can prevent vulnerable individuals from accessing daily necessities and medical supplies. The question of why people exert panic buying has been investigated broadly, but little attention has been paid to investigating who exerts panic buying. Thus, the present study develops a psychographic influencing chain of panic buying. The authors report on an empirical study with 309 respondents by applying an online survey among the student base of a mid-sized Austrian university. The results derived from SEM emphasize the importance of neuroticism, conscientiousness, COVID-19 involvement, and anxiety as valuable antecedents, the latter two being mediated by risk perception on the extent of panic buying. The findings have implications for the theory and practice of communication during pandemics.

Abstract (German):

Vor allem während des Ausbruchs der COVID-19-Pandemie waren weltweit so genannte Panikkäufe zu beobachten, die zu leeren Regalen und Lieferengpässen bei medizinischen Produkten in Apotheken sowie zu Unterbrechungen der Versorgungskette für mehrere Produktkategorien führten. Panikkäufe können jedoch die Gesundheit von besonders gefährdeten Personen gefährden. Die Frage, warum Menschen Panikkäufe tätigen, ist bereits auf breiter Basis untersucht worden, aber die Frage, welche Personen mehr Panikkäufe tätigen als andere, ist bisher kaum untersucht worden. In der vorliegenden Studie wird daher eine psychographische Einflusskette von Panikkäufen entwickelt. Die Autor*innen berichten die Ergebnisse einer empirischen Studie mit 309 Befragten, die unter Studierenden einer mittelgroßen österreichischen Universität durchgeführt wurde. Die SEM-Ergebnisse unterstreichen die Bedeutung von Neurotizismus, Gewissenhaftigkeit, COVID-19-Involvement und Angst als Antezedenzen, wobei die beiden letzteren durch die Risikowahrnehmung vermittelt werden, für das Ausmaß von Panikkäufen. Die Ergebnisse haben Auswirkungen auf die Theorie und Praxis der Kommunikation bei Pandemien.

Keywords: *panic buying, psychographic variables, SEM*

1. Introduction and aim of the study

Although the outbreak of the COVID-19 pandemic was two years ago, many people can still remember a phenomenon that was particularly noticeable in many countries shortly before the first lockdown: panic buying. Due to the high reproduction factor and the rapid spread of the disease, the World Health Organisation declared COVID-19 a worldwide pandemic in March 2020 World Health Organisation (2020). In Austria, all shops selling non-essential goods were closed for the first time in March 2020. Although no shortage of goods was expected in principle, panic buying could be observed worldwide. High quantities of toilet paper, tins, pasta, disinfectants, and household products were bought. In many places, individual product categories were suddenly sold out, and consumers were faced with empty shelves. In particular, at-risk groups and the elderly no longer had access to essential products, and panic buying led to supply chain disruptions and a retail emergency (Yuen et al., 2020). Many researchers worldwide have provided theoretical approaches to explain the motives of panic buying, i.e., to address the "why" of panic buying. However, scientific contributions to clarify

the question of "who" panic-bought during the outbreak of the COVID-19 pandemic are rare. Therefore, this study aims to find out which psychographic factors contribute to panic buying. An influence chain of different psychographic influencing factors is developed and tested using structural equation modeling.

2. Literature review and theoretical background

2.1 Definition and epidemiology of panic buying behavior

The term "panic buying" suggests that panic behavior is responsible for purchases. However, this is not necessarily the case. Taylor (2021), therefore, sees the term "panic buying" as a misnomer for the phenomenon that unusually high quantities of one or more essential goods of daily use or medical supplies are bought. So-called *panic buying* is triggered by a disaster or pandemic outbreak, so there is ultimately an imbalance between supply and demand (Arafat et al., 2020). The Cambridge Dictionary (2020, cited in Taylor, 2021) defines panic buying as follows: "Panic buying (PB), also known as stockpiling, is a situation in which many people suddenly purchase as much food, supplies, and so forth as they can because they are worried that something bad might happen." Such purchasing behavior has also been observed during pandemics in the past (Yuen et al., 2020). However, the global use of social media has arguably contributed significantly to the perception of panic buying during the outbreak of the COVID-19 pandemic compared to previous epidemics and crises (Sherman et al., 2021).

2.2. Theoretical explanations for panic buying

In the literature, several theoretical approaches and empirical studies on panic buying have answered the question of "why" in particular. Various theoretical explanations have dealt with explanations on why people panic buy in general. These include, in particular, *contagion theory* (LeBon, 1960, cited in Prentice et al., 2022), *resource scarcity theory* (Yoon et al., 2018), *crowd psychology theory* (Drury, Novelli, & Scott, 2013), *compensatory control theory* (Barnes, Diaz & Arnaboldi, 2021) and *game theory* (Taylor, 2021). Even though these theoretical explanations are all suitable and valuable in explaining panic buying, little research has been done to date on the predispositions of individuals which lead to more or less panic buying by a person. Thus, a psychographic influencing chain of panic buying has, to the best of our knowledge, not been developed so far.

2.3 Psychographic variables to develop a possible influencing chain and hypotheses

For a psychographic consideration, various psychological constructs are associated with fear and uncertainty triggered in crisis situations. Therefore, the basic question is which psychographic variables might play a role in the influencing chain explaining panic buying.

On the one hand, **neuroticism** is an essential component of Costa and McCrae's (1992) Big Five concerning anxiety. In his study, Dammeyer (2020) showed a correlation between the stocking of products in Denmark and Great Britain and high neuroticism scores. In addition, Lippold et al. (2020) showed that neuroticism is a strong factor in fear of the coronavirus. Garbe, Rau, and Toppe (2020) also found the influence of neuroticism on the perceived threat of COVID-19, which directly influenced toilet paper stockpiling. **On the other hand, conscientiousness** reflects the level of sense of duty a person feels towards their tasks and goals. In the study by Garbe et al. (2020), it was found that individuals with high conscientiousness scores tended to stockpile toilet paper at the beginning of the COVID-19 pandemic. Taylor (2021) was also able to demonstrate a statistically significant association

between highly conscientious individuals and stockpiling in a meta-analysis, albeit with a small effect size.

H1a: Neuroticism has a direct, positive influence on panic buying.

H1b: Conscientiousness has a direct, positive influence on panic buying.

In addition to personality factors, which are largely present in humans as a disposition, emotions such as fear and external circumstances such as active exposure to media coverage also play a significant role. In the case of emotions, due to the dangers associated with a pandemic outbreak, it can be assumed that the perceived COVID-19 anxiety directly influences the **perceived COVID-19 risk**.

H2a: COVID-19 anxiety has a positive impact on perceived COVID-19 risk.

As mentioned earlier, the mediatisation of society plays a significant role in making panic buying more noticeable than in previous pandemics. Yang et al. (2020) found that higher **COVID-19 involvement** is associated with an increased willingness to purchase useful products. The associated hypothesis is:

H2b: COVID-19 involvement has a positive impact on perceived COVID-19 risk

Risk perception refers to the individual's assessment of potential dangers to which a person is exposed (Lanciano et al., 2020). A study in Brazil found a positive association between high perceived COVID-19 risk and panic buying (Lins & Aquino, 2020). The associated hypothesis is:

H3: Perceived COVID-19 risk has a positive influence on panic buying.

Finally, it can be assumed that past behavior tends to manifest itself through learning mechanisms in the sense of instrumental conditioning (i.e., through positive reinforcement mechanisms). Consequently, if someone has shown panic-buying in the past, there is also a tendency to show this behavior in the future. Thus, our last hypothesis is:

H4: Panic buying in the past positively influences the intention to show panic buying in the future.

3. Method

3.1 Study design and sample description

The present study was conducted as an online survey using LimeSurvey in June and July 2021. A total of 392 students from an Austrian university took part in the survey, leaving a calculation sample of $n=301$ for testing the hypotheses after eliminating incomplete questionnaires and failed attention checks. Of the $n=301$ respondents, 27.2% were male, 72.2% were female, 0.70% were diverse, and 1% did not specify their gender. The age range was between 19 and 68 years ($MW=27.7$ years). As a participation requirement (filter question), the students had to have been primarily responsible for purchasing daily necessities in their household at the start of the first lockdown in March 2020 (16 March to 14 April 2020). The evaluation was conducted using SPSS version 26.0 and AMOS version 26.0.

3.2 Construct operationalisation

All constructs of interest were assessed using five-item validated scales: the extent of *panic buying* (Lehberger et al., 2021), *neuroticism and conscientiousness* using the German language version of the BFI by Rammstedt and John (2005), *COVID-19 anxiety* (Lee, 2020), *COVID-19 involvement* (Yang et al., 2020), *perceived COVID-19 risk* (Wise et al., 2020). At the end of the questionnaire, socio-demographic variables were collected and asked whether

the persons themselves or persons living in the household belonged to the COVID-19 risk group.

4. Results

4.1 Judgement of the measurement model

To analyse the proposed path diagram (H1 - H4), the two-step procedure according to Kline (2005) was used. In the first step, a confirmatory factor analysis (CFA) was calculated, whereby the scales were adjusted, and the measurement model was optimised. The average variance recorded was at least .54, and all values were above the required threshold of .50 (see Figure 1). Discriminant validity was checked according to the Fornell-Larcker criterion (Fornell & Larcker, 1981). Overall, a valid measurement was confirmed, followed by the second step of hypothesis testing.

4.2 Judgement of the structural model

Overall, there was a satisfactory global fit for the structural model (see Figure 1). As expected, there is a direct positive influence of *neuroticism* ($\beta=0.158^*$) and *conscientiousness* ($\beta=0.189^*$) on the extent of panic buying. *COVID-19 anxiety* ($\beta=0.185^{**}$) and *COVID-19 involvement* ($\beta=0.355^{***}$) were significant antecedents of perceived *COVID-19 risk*. *Perceived COVID-19 risk* had a direct, very strong positive influence ($\beta=0.245^{***}$) on panic buying. *Panic buying (in the past)*, in turn, is a very strong influencing factor ($\beta=0.375^{***}$) for *panic buying in the future*. All hypotheses were confirmed.

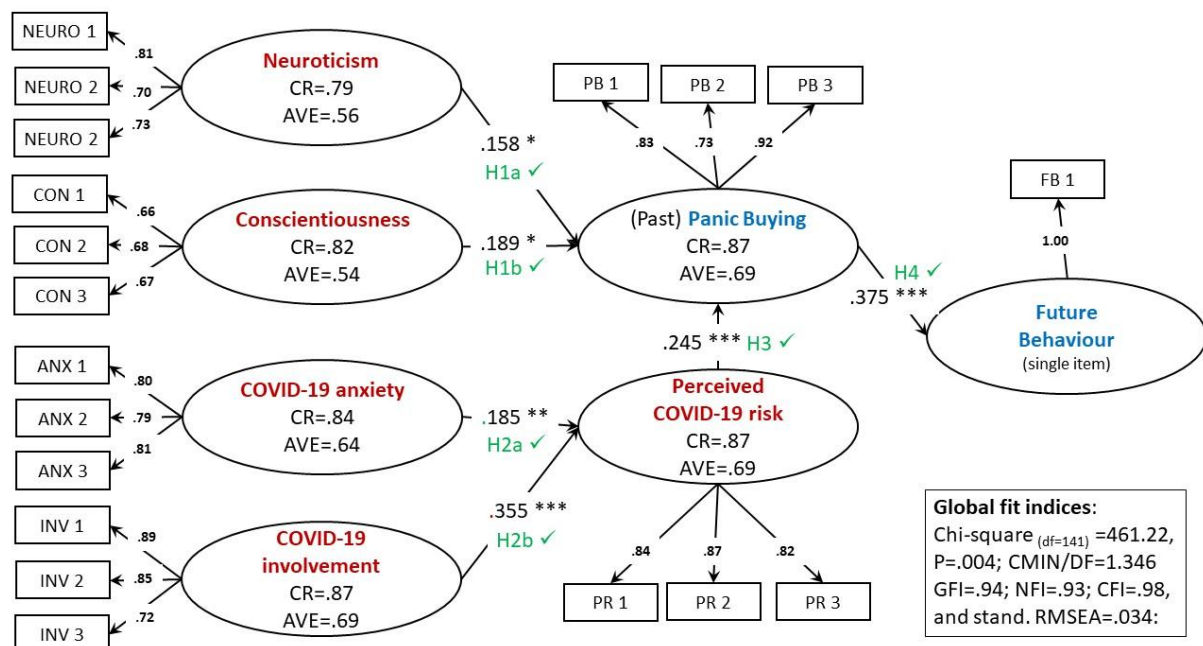


Figure 1: Structural model

5. Discussion

In the present study, the personality dimensions neuroticism and conscientiousness are found to influence the extent of panic buying directly. *Perceived COVID-19 anxiety* and *perceived COVID-19 involvement* have an influence on panic buying via perceived COVID-

19 risk as a mediator. *Perceived COVID-19 involvement* was operationalised by asking whether people were also intensively involved with COVID-19 in the media during the specified period at the beginning of the first lockdown. Since the media coverage at that time was extremely negative, this knowledge obviously strongly influenced the perceived risk. From the level of the influence paths, the personality dimensions are less effective than perceived anxiety and involvement. Therefore, if one wants to prevent panic buying again in the future, i.e., when the next pandemic breaks out, one should primarily pay attention to which messages are conveyed by the media.

6. Limitations, future outlook, and practical implications

One limitation is that using a student sample does not allow for the generalisation of the population as a whole. In addition, the study was conducted one year after the outbreak of the COVID-19 pandemic, i.e., the retrospective questioning of one's behaviour after more than 12 months. Even though people who said they could not remember were filtered out, memory effects cannot be completely ruled out. In addition, the proposed model was limited to a psychographic chain of effects and used cross-sectional data. In the next step, socio-demographic variables and the presence of at least one person in the household who belonged to the COVID-19 risk group could now be included in the analysis. As a practical implication of the results, several considerations can be made. In particular, conscientious persons should also be informed that panic purchases made by themselves may serve the security of supply of their own household and family but may ultimately pose a serious risk, especially to vulnerable persons, which should be avoided from a society's social responsible perspective. Individuals with high scores in conscientiousness should be thrown into a conflict of conscience by information about their ethical responsibility towards the weaker members of society and be persuaded to refrain from buying panic. People with high neuroticism scores will probably not be impressed by this. For this group of people, building trust in the supply chain of supermarkets and pharmacies is particularly important. In the event of a pandemic outbreak, the focus for this buyer segment should be on building trust in the supply chain of supermarkets and pharmacies through the media and not on reports of panic buying. If there is confidence in the availability of products, it is easier for fearful people to refrain from panic buying. As there is a trade-off mechanism between trust and perceived risk, building trust, reduces perceived risk, which acts as a key mediator of panic buying.

7. References

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