



Materialism Moderates the Relationship between Pandemic Threats and Preference for Eco-Friendly Products

Yaming Wang^a, Yongtian Yin^b, Chubo Gong^{c,*}

Shandong University of Traditional Chinese Medicine, Jinan 250355, China

^a60070073@sduetcm.edu.cn, ^byinyongtian2004@163.com,
^cgongchunbo168@163.com

Abstract. Previous research has demonstrated that pandemic threats increase consumers' preference for eco-friendly products. However, the effect does not always exist. The current research proposes that materialism plays a moderating role between the pandemic threats and the preference for eco-friendly products. Specifically, when low materialists are faced with a pandemic threat, their preference for eco-friendly products is significantly enhanced, while the preference of high materialists for eco-friendly products does not show significant change.

Keywords: Pandemic threats; Eco-friendly products; Materialism

1 Introduction

Pandemics pose an extremely great threat to humanity. To deal with the threat of pandemics, during the long process of evolution, humans have developed a series of defensive behaviors. For example, aversion to disease cues, exclusion of out-groups, obedience to norms, and so on. When a pandemic breaks out, information related to the pandemic often spreads through various channels and forms, attracting great attention. Schools, restaurants and workplaces have been closed one after another, and hand sanitizers, disinfectants, storable food, and even toilet paper on the shelves of major stores are out of stock. This vividly illustrates that pandemics can arouse strong emotional responses in individuals and thus affect consumers' choices. Therefore, it becomes more important to understand how the threat of pandemics affects consumer behavior.

The threat of epidemics may have a systematic impact on consumers' product preferences. Relevant research has found that under the influence of the threat of pandemics, consumer behavior changes. Consumers may reduce their preference for typical products; they may also increase the quantity of products purchased; some may reduce the purchase of second-hand products; some may increase the purchase of familiar products and brands.

To understand the changes in people's consumption awareness and behaviors during the COVID-19 pandemic, Friends of Nature, an environmental protection organization,

launched a public questionnaire survey in early April 2020. The results showed that people's green, environmentally friendly, and low-carbon behaviors had increased significantly. More than 90% of the respondents believed that the environment, climate, and a better life were highly correlated. And there are lots of studies demonstrating that a pandemic threat can increase consumers' preference for eco-friendly products. The finding is not surprising. In times of crisis, people frequently become more aware of the environment.

However, it has been observed that this effect is not always present. To shed light on this inconsistency, the current research posits that materialism plays a moderating role in the relationship between pandemic threats and the preference for eco-friendly products. Specifically, when low materialists are faced with a pandemic threat, their preference for eco-friendly products is significantly enhanced. These individuals, who place more emphasis on material possessions, are less likely to increase their interest in eco-friendly products. By exploring this moderating role of materialism, we hope to gain a deeper understanding of consumer behavior in times of crisis and provide valuable insights for businesses.

2 Theoretical Background and Hypothesis Summary

2.1 Pandemic Threat

A pandemic is defined as an epidemic disease that emerges over an extremely wide area. In this situation, most people lack immunity. It affects many people and can spread easily across international borders, having a significant impact [1]. The impacts of pandemic threats are mainly manifested in aspects such as culture, economy, industries like the hotel and aviation industries, people's lifestyles, emotions and mental health, as well as prejudices and innovation. Pandemics have disrupted consumers' shopping habits and consumption patterns.

It is mainly manifested in the following aspects: First, pandemic threat affects consumers' demands and requirements for brands and products. Second, pandemic threat increases consumers' irrational purchasing behaviors. Third, pandemic threat increases consumers' sensitivity to price and degree of thrift. Fourth, pandemic threat affects consumers' payment methods, purchasing methods and contact methods. Fifth, pandemic threat has an impact on consumers' waiting time for shopping, privacy concerns and the pursuit of diversification.

2.2 Eco-Friendly Products

Agenda 21 puts forward that unsustainable production and consumption patterns are the main reasons for the continuous deterioration of the global environment. This is particularly evident in industrialized countries, which has led to the continuous intensification of imbalance and poverty. Against this background, the concept of "Environmentally Friendly" was formally put forward. With the continuous development of environmentally friendly technologies, consumers have gradually come to recognize the

environmentally friendly consumption patterns, and environmentally friendly products have also been vigorously developed and promoted.

Eco-friendly products refer to products that can significantly reduce environmental hazards in the process of production, use, or treatment [2]. Generally, people believe that products that are pollution-free, low in toxicity, renewable, and recyclable are eco-friendly products.

Relevant research on the consumption behavior of environmentally friendly products mainly focuses on the antecedent variables that affect environmentally friendly consumption behavior. The factors that influence the purchase intention of environmentally friendly products can be divided into external situational factors, consumer personal factors and product factors.

2.3 The Moderating Role of Materialism

Materialist values emphasize the importance of material wealth to individuals, who use material wealth to measure their achievements and those of others [3]. Materialists tend to be self-centered, pay attention to the acquisition of property, ignore interpersonal relationships [3], pay attention to the maintenance of personal interests without caring about natural environmental problems [4], and rarely make charitable donations to social problems. Materialistic values stimulate individuals to pay attention to their own needs and compensate for the lack of self-security through conspicuous and mass consumption [5].

Studies have also shown that materialism negatively affects individuals' pro-environmental attitudes [6]. High materialists do not have a correct understanding of or pay attention to environmental problems [7]. Thus, we have reason to believe that even under the pandemic threats, their concerns may be more focused on how to ensure that their material standard of living is not affected and how to obtain more resources to cope with the crisis, rather than turning to eco-friendly product choices. Based on this, H1 is proposed. The theoretical framework is shown in Figure 1.

H1: Materialism negatively moderates the relationship between pandemic threats and consumer preference for eco-friendly products.

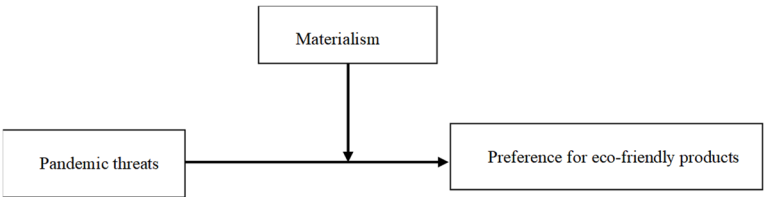


Fig. 1. Theoretical framework

3 Experimental Design and Result Analysis

Participants and experimental design. One hundred and sixty participants were recruited from wjx.cn for this experiment. Before the experiment, using the materialism

scale adopted from the mature scale compiled by Richins and Dawson (1992) [3], which has good reliability ($\alpha = 0.87$), to measure participants' materialistic tendency. According to the measurement results, 60 high materialists and 60 low materialists were selected to participate in this experiment. Participants were randomly assigned to 2 (article: Spanish flu vs. genetic diseases) $\times$ 2 (materialism: high materialism vs. low materialism) between-subjects design.

Procedure. First, the participants completed a simple calculation task. The purpose of this task was to reduce the participants' sense of the real purpose of the experiment and to increase the participants' involvement in the experiment. Second, based on the manipulation method of Huang and Jaideep (2020) [8], the participants in the pandemic threat group and control group read different articles. The participants in the pandemic threat (vs. control) group read an article about a real historical record related to the Spanish flu (vs. genetic diseases). After reading, they were asked to write down what they would feel if the Spanish flu (vs. genetic diseases) broke out in their community. Next, the participants looked at the pictures and details for eco-friendly toilet cleaner (toilet cleaner A) and traditional toilet cleaner (toilet cleaner B) and indicated their product preference (1 = completely prefer toilet cleaner A, 8 = completely prefer toilet cleaner B). Then, all participants reported their buying habits for eco-friendly products and filled in the attention test item. Finally, the participants provided demographic information and filled in the item of pandemic threat manipulation.

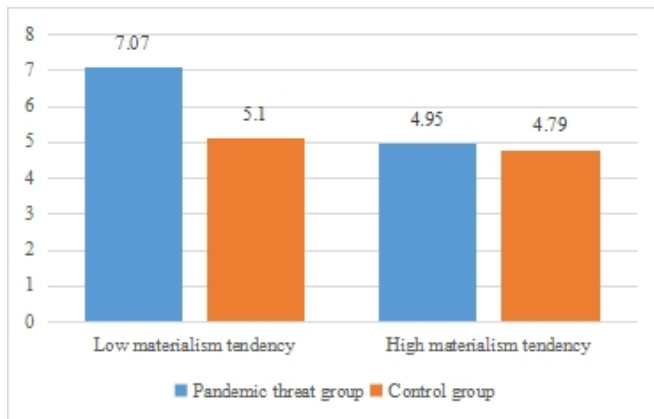


Fig. 2. The moderating role of materialism

Result analysis. Seven participants failed the attention test, so only the data from the remaining 113 participants (M age = 30.27; 49.60% female) were analyzed. The perception of pandemic threat in the pandemic threat group ($M = 5.27$, $SD = 1.30$) was significantly higher than that in the control group ($M = 3.28$, $SD = 1.77$; $t = 6.59$, $p < 0.001$), indicating that manipulation was successful. Analysis of the participants' daily purchase habits of eco-friendly products revealed no significant differences between the pandemic and control groups ($p = 0.84$). For easy reading, eco-friendly and control products were reverse-coded. Using a general linear model (univariate) to regress the impact of pandemic threats, materialism, and their interactions on the eco-friendly product

preference, the results showed that the interaction between pandemic threats and materialism was significant ($F(1,109) = 4.30, p = 0.04$). A simple effect analysis found that the preference of low materialists for eco-friendly products in the face of a pandemic threat ($M = 7.07, SD = 1.41$) was significantly higher than that of those not under a pandemic threat ($M = 5.10, SD = 2.50; p = 0.01$). The preference of high materialists for eco-friendly products under pandemic threat ($M = 4.95, SD = 2.01$) was higher than those not under a pandemic threat ($M = 4.79, SD = 2.02$), but there was no significant difference ($p = 1.00$). The results were shown in Figure 2.

4 Discussion

4.1 Conclusion

In conclusion, previous research has established that pandemic threats can enhance consumers' preference for eco-friendly products. However, this effect is not consistently present. The current research has identified materialism as a moderating factor in the relationship between pandemic threats and the preference for eco-friendly products. When low materialists encounter a pandemic threat, their preference for such products is notably increased. In contrast, the preference of high materialists for eco-friendly products does not experience a significant alteration.

4.2 Theoretical Implications

This study reveals that the effect of pandemic threats on eco-friendly products is not stable. The current research innovatively proposes that materialism plays a moderating role in the relationship between pandemic threats and preference for eco-friendly products. Through in-depth analysis, the complexity of consumer preference for eco-friendly products in the context of a pandemic is clarified.

4.3 Practical Implications

For enterprises, comprehending the moderating influence of materialism is crucial for the precise formulation of marketing strategies. During a pandemic, it is advisable for marketers to increase low materialists' purchase intention of eco-friendly products by highlighting their environmental attributes and positive future impacts. Conversely, alternative marketing strategies should be developed to increase the purchase intention of high materialists, such as emphasizing product quality and uniqueness.

4.4 Research Limitations and Future

First, this study did not explore other factors such as self-identity or environmental concern that may further influence the relationship between pandemic threats and eco-friendly preference. Second, we should study the effect of materialism on the relationship between pandemic threats and eco-friendly products in different cultural contexts

to improve the general applicability of research in future study. Third, the impact of pandemic threats on various categories of eco-friendly products, such as daily necessities and luxury items, may differ significantly. Fourth, future research should employ longitudinal methodologies to monitor the evolution of consumer preferences for eco-friendly products in the context of prolonged pandemic conditions.

Acknowledgments

This project is supported by Shandong Province Social Science Planning Project (Grant No. 21CJYJ29) and (Grant No. 24CSHJ14)

References

1. Madhav, N., Oppenheim, B., Gallivan, M., Mulembakani, P., & Wolfe, N. (2017). Pandemics: Risks, Impacts, and Mitigation. DOI:10.1596/978-1-4648-0527-1_ch17.
2. Tmg, A., Dr, A., Gc, B., Hp, B., Ch, C., & Vf, C., et al. (2021). Towards eco-friendly marine antifouling biocides-Nature inspired tetrasubstituted 2,5-diketopiperazines. DOI: 10.1016/j.scitotenv.2021.152487.
3. Richins, M. L., & Scott, D. (1992). A consumer values orientation for materialism and its measurement: scale development and validation. *Journal of Consumer Research* (3), 303-316. DOI:10.1086/209304.
4. Kilbourne, W., & Pickett, G. (2008). How materialism affects environmental beliefs, concern, and environmentally responsible behavior. *Journal of Business Research*, 61(9), 885-893. DOI: 10.1016/j.jbusres.2007.09.016.
5. Sun, S., Kong, Y., & Zhou, J. (2020). A Study on the Relationship between Childhood Environment, Materialism and Conspicuous Consumption: The Moderating Effect of Chinese Traditional Values. *Journal of Southwest University for Nationalities*, 40(1), 215-223. DOI: CNKI: SUN: XNZS.0.2020-01-031.
6. Hurst, M., Dittmar, H., Bond, R., & Kasser, T. (2013). The relationship between materialistic values and environmental attitudes and behaviors: a meta-analysis. *Journal of Environmental Psychology*, 36(DEC.), 257-269. DOI: 10.1016/j.jenvp.2013.09.003.
7. Hirsh, J. B., & Dan, D. (2007). Personality predictors of consumerism and environmentalism: a preliminary study. *Personality & Individual Differences*, 43(6), 1583-1593. DOI: 10.1016/j.paid.2007.04.015.
8. Huang, Y., & Jaideep, S. (2020). The influence of disease cues on preference for typical versus atypical products. *Journal of Consumer Research* (3), 3. DOI:10.1093/jcr/ucaa029.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

