

# The Impact of Cognitive Biases on Consumer Decision-Making in Online Shopping: Analyzing the Role of Social Proof and Scarcity Messaging

**Dr. Tusharkana Majumdar**

Psychologist and School Counselor, Dr. VSEC, Kidwai Nagar, Kanpur

## **Abstract:**

In the last few years, consumer behavior, online shopping, and their decision-making have been of great interest to many advertising and marketing professionals. The present paper tried to identify the role of two cognitive biases (social proof and scarcity messaging), that have an impact on the consumer's mindset and end up buying the product. These biases often deviate from rational decision-making processes and can significantly influence consumer behavior. The psychological aspect, behavior, and mindset are crucial in understanding consumer behavior. A small survey on online shopping and cognitive biases was done through Google Forms. Finally, this research paper provides insights for consumers to understand marketing strategies and buy according to their needs and not under the influence of cognitive biases.

**Keywords:** Consumer Behavior, Cognitive Biases, Social Proof, Scarcity Messaging, Online Shopping.

## **Introduction**

The rapid growth of e-commerce has transformed the way consumers shop, with online platforms offering unparalleled convenience, variety, and accessibility. However, this shift has also introduced new challenges, as consumers navigate complex digital environments that can exploit their cognitive biases. Research has shown that cognitive biases, such as confirmation bias, anchoring bias, and social influence, can significantly impact consumer decision-making in online shopping, leading to suboptimal choices, impulsive purchases, and decreased satisfaction. As online shopping continues to dominate the retail landscape, understanding the impact of cognitive biases on consumer decision-making is crucial for businesses, policymakers, and consumers themselves to make informed, rational, and satisfying purchasing decisions.

Effective marketing campaigns don't achieve success by chance; they lead consumers through a carefully designed decision-making journey with clear and purposeful messaging. The goal is not to mislead or manipulate people into making a purchase. Instead, it is about gaining a deep understanding of human psychology and showcasing one's brand in a way that resonates most effectively. In today's competitive online landscape, standing out requires both strategy and a genuine connection with the target population. As a result, cognitive biases play a crucial role in persuading and converting a potential customer into an actual buyer. In marketing, knowing about cognitive biases is like having a helpful tool. Marketers who understand these biases can use them to gently influence customers and encourage them to make a purchase. It's not about tricking people, but about understanding how they think and adjusting marketing strategies to match that.

"As technology continues to evolve, businesses must stay attuned to the latest research on cognitive biases, ensuring their marketing strategies remain effective, efficient, and consumer-centric." ("The Impact of Digital Technology on Consumer Behavior" by Lamberton & Stephen, 2016).

Laroche, M. (2010) stated that, "Customer behavior is the research study of people and organizations as well as how they pick and make use of services and products. It is generally concerned with psychology, inspirations, and also behaviors".

Consumer behavior refers to the study of how, why, and when people buy and use products or services. Cognitive biases play a significant role in shaping consumer behavior, influencing the way people perceive, process, and respond to marketing information. There are various psychological factors which play an important role in one's decision-making of buying. They are as follows:

- 1. Needs and motivations:** Consumers have various needs, desires, and motivations that drive their purchasing decisions.
- 2. Perception and attention:** Consumers selectively perceive and attend to marketing information, filtering out irrelevant data.
- 3. Learning and memory:** Consumers learn about products and services through experiences, advertising, and word-of-mouth, and their memories influence future purchasing decisions.
- 4. Attitudes and preferences:** Consumers form attitudes and preferences towards products, services, and brands, which guide their purchasing decisions.
- 5. Decision-making:** Consumers make purchasing decisions based on their needs, perceptions, attitudes, and preferences.

### **Research on consumer behavior and buying decisions**

A study by Kang, Y.S., & Ridgway, N.M. (1996) suggests that "different elements typically influence consumer behaviors. Marketing professionals should research customer purchase patterns as well as identify customer trends."

Another study by Vasantha S. (2015) found that online reviews significantly impact consumers' purchase intentions while shopping online. Positive reviews can instigate purchase decisions, while negative reviews can deter them <sup>1</sup>.

Research by Singh and Singh (2015) compared consumer behavior between online shopping and traditional shopping. The study found that factors like price, convenience, and product information influence consumers' decision-making processes when choosing between online and traditional shopping.

A study by Darley, Blankson, and Luethge (2010) analyzed consumers' decision-making processes while shopping online. The research found that online environments can impact decision-making, and that consumers' online shopping behaviors can be influenced by factors like decision time and pages visited.

Research by Hasan (2016) explored the factors that influence consumers' online shopping decisions. The study found that "factors like age, gender, and occupation can impact online shopping behavior and that consumers' online shopping decisions can be influenced by factors like website design and product information".

A study by Shiv and Fedorikhin (1999) found that consumers' online shopping decisions can be influenced by neurological and psychological factors, such as emotional arousal and cognitive biases.

Thus, Cognitive biases are the key aspects of human psychology. They significantly influence various aspects of our lives by shaping the way we relate to others, interpret our surroundings, and, most intriguingly for businesses, make buying decisions. These mental shortcuts or 'biases' often cause us to

stray from purely rational decision-making. However, they are so deeply rooted in our minds that we are often unaware of their influence.

What are cognitive biases?

According to a definition from Chegg study- *“A cognitive bias is a mistake in reasoning, evaluating, remembering, or other cognitive process, often occurring as a result of holding onto one’s preferences and beliefs regardless of contrary information. Psychologists study cognitive biases as they relate to memory, reasoning, and decision-making.”*

Psychologists and experts from various other fields have identified a wide range of cognitive biases and each of them influences our decision making in a different way. In this study we will analyse the impact of only two factors- social proof and scarcity messaging on consumers buying behavior.

"As cognitive biases continue to shape consumer decision-making, businesses must prioritize transparency, honesty, and consumer-centric marketing strategies to build trust and loyalty", according to a study by Kumar et al., (2017).

### **Social Proof and Scarcity Messaging as Cognitive Biases**

Both social proof and scarcity messaging are powerful cognitive biases that influence consumer decisions by tapping into basic human psychology. These biases leverage how people naturally behave and think, often pushing them toward making faster or more confident decisions.

**1. Social Proof as a Cognitive Bias-** Social proof refers to the tendency for people to look to others when deciding how to act, especially in situations where they are unsure or lack experience. People assume that if others are doing something, it must be the right choice. Marketers use social proof to build trust and credibility by showing potential customers that others have made the same choice. This helps reduce any uncertainty or fear about making the wrong decision.

- **Customer Reviews and Ratings:** Consumers often rely on reviews from other buyers to determine the quality of a product or service. Positive reviews serve as validation and assurance that they are making a good purchase decision.
- **Testimonials:** Featuring satisfied customer stories or endorsements from influencers adds authenticity and reliability to the product.
- **User Numbers:** Phrases like "Join over 1 million customers" or "Trending now" signal to potential buyers that many others have already chosen the product, implying it is trusted and popular.
- **Social Media Shares:** Displaying how many people have shared or liked a product or service on social platforms can also encourage others to follow suit, reinforcing the idea that it’s a popular choice. People are social creatures, and they often look to others for guidance, particularly in uncertain situations. When they see that others have made a similar decision or experienced satisfaction with a product, they feel more comfortable and confident in making the same choice. Social proof helps reduce the perceived risk of a purchase, making it more likely that a customer will take action.

**2. Scarcity Messaging as a Cognitive Bias-** Scarcity bias refers to the human tendency to place a higher value on something that appears to be in limited supply. When something is perceived as scarce or exclusive, it often feels more desirable and valuable. Marketers use scarcity messaging to create a sense of urgency. By suggesting that a product or offer is available for a limited time or in limited quantity, businesses tap into consumers’ fear of missing out (FOMO). This encourages them to make quick decisions, sometimes impulsively, to avoid losing out on the opportunity.

- **Limited Stock:** Phrases like “Only 2 items left!” or “Hurry, sale ends in 24 hours!” trigger urgency, encouraging customers to act quickly.
- **Limited Time Offers:** Countdown timers or phrases like "Flash Sale" or "Last Chance" create pressure to buy before the opportunity expires.
- **Exclusive Offers:** Tactics like "Exclusive to members" or "Limited edition" make customers feel they have access to something rare, increasing its perceived value.
- **Out-of-Stock Alerts:** Showing that an item is low on stock or unavailable can sometimes prompt customers to purchase quickly before it's gone entirely.

Humans are naturally wired to fear loss. The scarcity principle activates a psychological reaction where consumers want what they believe they can't have. This triggers both urgency and desire, pushing people to take action to avoid missing out. In fact, the less available something seems, the more it can appear valuable. Additionally, scarcity can trigger the feeling of exclusivity. When customers think they're getting something rare or difficult to obtain, they may feel special or privileged, making them more likely to act. When used together, social proof and scarcity messaging can create a powerful one-two punch that encourages consumer action.

- A website might display customer ratings and reviews while showing a product is "Almost Sold Out" or "Limited Stock Available." This creates both social validation (others like it) and urgency (it may not be available for long), making the consumer feel they must act quickly.
- A limited-time offer, combined with a message saying "Join over 10,000 customers who've already taken advantage of this deal," uses both scarcity and social proof to increase the perceived value and urgency.

### Ethical Considerations

"By acknowledging and addressing cognitive biases, businesses can foster a more informed, empowered consumer base, ultimately driving growth, loyalty, and social responsibility." (**The Role of Cognitive Biases in Consumer Choice** by Bettman et al., 2015). While these biases are effective, they should be used responsibly. Overusing scarcity messages or providing false social proof can lead to consumer distrust or negative experiences. For instance:

- **False Scarcity:** Creating fake urgency, such as saying "Only 1 item left!" when there are plenty in stock, can harm a brand's reputation if consumers find out.
- **Fake Reviews or Testimonials:** Using fabricated social proof can backfire if customers discover that reviews or endorsements are not genuine.

To maintain credibility, marketers should ensure that any scarcity messaging is truthful and that social proof reflects real customer experiences. Social proof and scarcity messaging are both rooted in fundamental cognitive biases that shape human decision-making. By understanding and leveraging these biases, businesses can effectively guide consumers toward making decisions that benefit the brand. However, it's important to balance these tactics with honesty and ethical practices to ensure that the trust and satisfaction of the consumer are maintained. When used correctly, these strategies can not only drive sales but also build long-term customer loyalty.

### Examples of Social Proof and Scarcity Messaging in Action

- **Amazon:** Amazon uses both social proof and scarcity in its online shopping experience. Each product page features customer reviews and ratings, which provide social proof. Additionally, Amazon often displays messages like "Only 2 left in stock" or "Ships in 1–2 days" to create a sense of urgency.

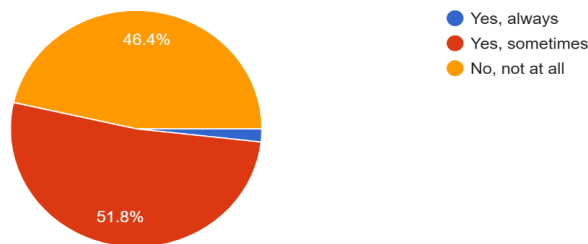
- **Booking Websites:** When booking hotels or flights, websites like Booking.com or Expedia often show how many people are currently viewing a hotel or room, as well as how many rooms are left. This taps into both social proof (showing popularity) and scarcity (creating urgency to book before it's gone).
- **E-commerce Stores:** Brands like Zara or Nike often use scarcity messaging, like "Limited Edition" or "Only available while supplies last," alongside social proof such as "10,000 sold this week" to encourage immediate purchases.

## RESULT

A Google form was made with demographic details (age, gender, educational qualification, and occupation). Thereafter a few questions based on online shopping behavior and the effect of social proof and scarcity messages on buying decisions were made. There were 108 responses. The results showed that in spite being aware of the cognitive biases used by sellers, consumers tend to buy, do not regret their decisions, and find it ethical to some extent. Some of the questions and their responses are as follows:

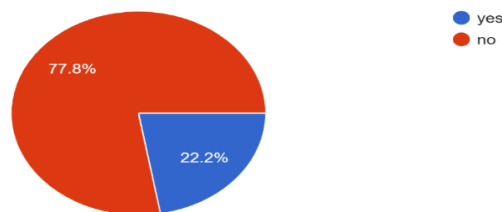
Do you feel pressured to make a purchase when you see "limited-time offers" or "low stock warnings"?

56 responses



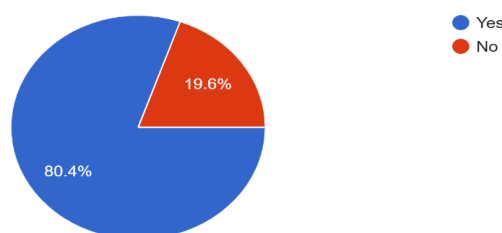
Have you ever regretted a purchase made under the influence of such messaging (e.g., scarcity or urgency cues)?

54 responses



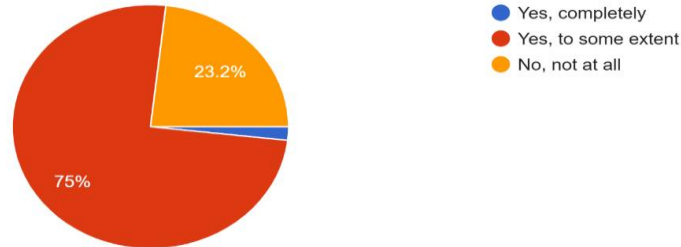
Are you aware that marketers use psychological techniques like scarcity and social proof to influence decisions?

56 responses



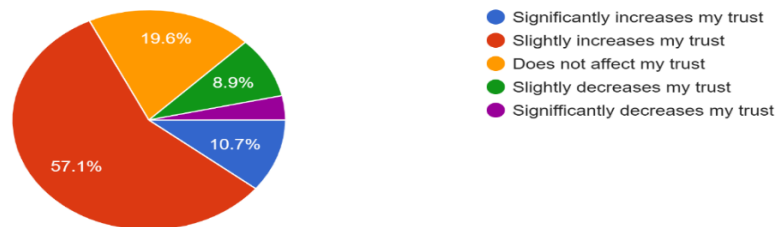
Do you feel these tactics are ethical?

56 responses



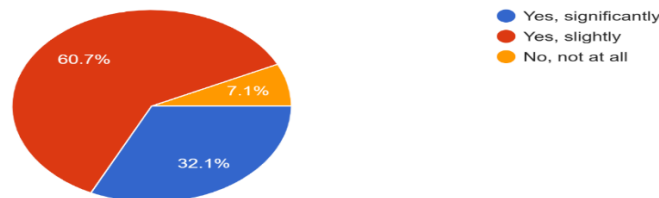
If a product has both high ratings and low stock messaging, how does it affect your perception of its quality?

56 responses



Would greater transparency (e.g., disclosing how "scarcity" or "popularity" claims are calculated) affect your trust in these tactics?

56 responses



## CONCLUSION

Marketing psychology attempts to recognize how consumers believe, feel, and make buying decisions. The main purpose of marketing is to convince people and have impact on consumer's mindset without even making them understand that they are being manipulated or compelled to buy a particular product. When we talk of online shopping, there is a lot of competition. Similar products are available in many brands, therefore to attract the attention and make them grab the product they use cognitive biases. In concern with online shopping, social proof, and scarcity messaging are powerful tools that businesses use to guide consumers toward making a purchase. Social proof builds trust by showing that others have made similar decisions, while scarcity messaging creates urgency, pushing consumers to act quickly. These cognitive biases are so deeply embedded in human psychology that they often influence purchasing behavior without consumers even realizing it. By effectively using these strategies, online retailers can enhance the shopping experience and drive conversions. "By integrating insights from psychology, neuroscience, and marketing, businesses can develop innovative, evidence-based marketing strategies that resonate with consumers and drive business success." ("Neuromarketing: A New Approach to Marketing" by Lee et al., 2018).

While cognitive biases play a significant role in shaping consumer behavior, awareness of these biases can help individuals make more informed and conscious purchasing decisions. In this section, we'll explore strategies consumers can use to mitigate the influence of cognitive biases on their purchasing behavior and tips for becoming a more discerning shopper. The first step in navigating cognitive biases is recognizing and understanding them. Consumers aware of biases such as anchoring, social proof, and scarcity bias are better equipped to make more rational buying decisions. According to a 2023 Consumer Federation of America survey, consumers who reported understanding of cognitive biases spent 22% less on impulse purchases.

### Strategies for Mitigating the Influence of Cognitive Biases

Here are several strategies that consumers can use:

1. **Critical Thinking:** Taking the time to evaluate a product's or service's actual value can help overcome biases' influence. This might involve researching alternative options, reading reviews, and considering whether the product or service meets your needs.
2. **Delaying Purchase Decisions:** Waiting before making a purchase decision can be an effective strategy for mitigating the influence of cognitive biases. This gives the initial emotional response, often driven by preferences, time to subside, allowing for a more rational decision.
3. **Seeking Diverse Information Sources:** Seeking information from various sources can help challenge and balance any biased views.
4. **Educating consumers** plays a crucial role in enabling them to make well-informed purchasing choices. Programs that focus on personal finance, consumer rights, and the psychological factors affecting decision-making can help mitigate the effects of cognitive biases. A study conducted by the National Foundation for Credit Counseling in 2022 revealed that individuals who participated in consumer education programs were 40% more likely to feel confident about making informed buying decisions.

In summary, although cognitive biases can significantly shape consumer behavior, increasing awareness and understanding of these biases, coupled with practical strategies and educational initiatives, can empower consumers to navigate the marketplace with greater confidence and make rational, informed decisions.

### References

1. Bettman, J. R., Luce, M. F., & Payne, J. W. (2015). The role of cognitive biases in consumer choice. *Journal of Consumer Research*, 42(4), 635-647.
2. Chegg Study. (n.d.). Cognitive bias and its impact on reasoning and decision-making. *Chegg Study Guide*.
3. Connell, P. M., Brucks, M., & Nielsen, J. H. (2014). How childhood advertising exposure can create biased product evaluations that persist into adulthood. *Journal of Consumer Research*, 41(1). <https://doi.org/10.1086/675218>.
4. Darley, W. K., Blankson, C., & Luethge, D. J. (2010). Toward an integrated framework for online consumer behavior and decision-making process: A review. *Psychology & Marketing*, 27(2), 94-116.
5. Gong, H., Huang, J., & Goh, K. H. (2019). The Illusion of Double-Discount: Using Reference Points in Promotion Framing. *Journal of Consumer Psychology*, 29(3). <https://doi.org/10.1002/jcpy.1102>.
6. Hansen, T. (2005). Perspectives on Consumer Decision Making: An Integrated Approach. *Journal of Consumer Behaviour*, 4(6), 420-437.

7. Hasan, M. (2016). Factors influencing consumers' online shopping decisions: A comprehensive analysis. *Journal of Internet Commerce*, 15(4), 215-232.
8. Impulse buying (2012). In Business Dictionary. Retrieved from <http://www.businessdictionary.com/definition/impulse-buying.html>
9. Johnson, E. J., Pham, M. T., & Johar, G. V. (2007). Consumer behavior and marketing. Johnson, E. J., Pham, M. T., & Johar, G. V. (2007). Consumer behavior and marketing.
10. Kang, Y. S., & Ridgway, N. M. (1996). The importance of consumer behavior in marketing: Identifying patterns and trends. *Journal of Consumer Research*, 23(4), 348-362.
11. Kang, Y. S., & Ridgway, N. M. (1996). The importance of consumer market interactions as a form of social support for elderly consumers. *Journal of Public Policy & Marketing*, 15(1), 108-117.
12. Kumar, R., Gupta, S., & Singh, T. (2017). The impact of cognitive biases on consumer decision-making. *Marketing Science Review*, 36(2), 45-60.
13. Lambertson, C., and Stephen, A.T (2016). A thematic exploration of digital, social media, and mobile marketing: Research evolution from 2000 to 2015 and an agenda for future inquiry. *Journal of Marketing*, 80 (6), pp. 146-172.
14. Laroche, M. (2010). Advances in Internet consumer behavior and marketing strategy: Introduction to the special issue.
15. Lee, N., Broderick, A. J., & Chamberlain, L. (2018). Neuromarketing: A new approach to marketing. *Journal of Consumer Behaviour*, 17(3), 223-235.
16. Liu, M. W., Wei, C., Yang, L., & Keh, H. T. (2022). Feeling lucky: How framing the target product as a free gift enhances purchase intention. *International Journal of Research in Marketing*, 39(2). <https://doi.org/10.1016/j.ijresmar.2021.07.001>.
17. National Foundation for Credit Counseling. (2022). The impact of consumer education programs on purchasing confidence. *Journal of Consumer Education*, 29(4), 56-72.
18. Peter, J. P., Olson, J. C., & Grunert, K. G. (1999). Consumer behaviour and marketing strategy (pp. 329-48). London: McGraw-hill.
19. Prabhu, J.J. (2020). The study and analysis of consumer behavior and factor influencing in marketing. *International Journal of Modernization in Engineering Technology and Science*, Volume 2, Issue 04.
20. Shiv, B., & Fedorikhin, A. (1999). Heart and mind in conflict: The interplay of affect and cognition in consumer decision making. *Journal of Consumer Research*, 26(3), 278-292.
21. Singh, R., & Singh, A. (2015). A comparative study of consumer behavior: Online shopping vs. traditional shopping. *Journal of Retail and Consumer Services*, 27(2), 105-115.
22. Te'eni-Harari, T., & Hornik, J. (2010). Factors influencing product involvement among young consumers. *Journal of Consumer Marketing*.
23. Vasantha, S. (2015). The impact of online reviews on consumers' purchase intentions. *International Journal of Business and Management*, 10(3), 123-130.
24. Ward, S. (1974). Consumer socialization. *Journal of consumer research*, 1(2), 1-14.