The Influence of the Anchoring Effect on Buying Behavior in E-commerce

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Abstract

This paper explores the influence of the anchoring effect on consumer buying behavior in e-commerce, with a focus on how initial price displays shape product value perception. The study combines the theoretical foundations of behavioral economics with applied research based on a questionnaire completed by a sample of 130 respondents. Data analysis reveals that most consumers are affected by reference prices, often perceiving products as more valuable when a higher initial price is displayed and then discounted. At the same time, the results indicate an increasing awareness of the potentially manipulative nature of such pricing strategies and a more critical attitude towards online discounts. Respondents exhibit complex decision-making behavior, influenced not only by cognitive biases but also by social factors such as user reviews. This research contributes to a deeper understanding of online consumer behavior and provides practical insights for optimizing digital marketing strategies.

Key words: consumer behavior, anchoring effect, e-commerce, psychological pricing
J.E.L. classification: M31

1. Introduction

In recent decades, the rapid development of e-commerce has profoundly transformed the way consumers interact with products and make purchasing decisions. Unlike traditional shopping, where direct experience and physical interaction with the product play a central role, the online environment compels consumers to rely much more heavily on visual information, displayed prices, and user reviews. In this context, purchase decisions are influenced not only by rational factors, but also by subtle psychological mechanisms studied within the field of behavioral economics.

One of the most relevant mechanisms in this regard is the anchoring effect, which suggests that individuals tend to unconsciously rely on the first numerical information they receive especially the initial displayed price when evaluating the value of a product. This effect is frequently leveraged in digital marketing strategies through the use of "crossed-out" prices or visually striking discounts that create the perception of a better deal.

This paper aims to analyze the extent to which the anchoring effect influences consumer buying behavior in the online environment, combining a rigorous theoretical approach with empirical research based on a questionnaire administered to a relevant sample. The goal is to identify both the frequency with which this effect occurs in purchase decisions and the degree to which consumers are aware of the subtle influence exerted by the initial displayed price.

2. Literature review

Behavioral economics is an interdisciplinary field that combines economics and psychology to explain how individuals make economic decisions. Unlike traditional economic theory, which assumes that people act rationally and aim to maximize utility, behavioral economics demonstrates that decisions are influenced by psychological, emotional, and cognitive factors. The origins of this field can be traced back to early attempts to understand human behavior in economic contexts, although its development as a distinct discipline occurred in the second half of the 20th century.

Although behavioral economics is considered a relatively new field, concerns about understanding human behavior in economic contexts have their roots in the work of classical economists. Adam Smith, in his book The theory of moral sentiments (1759), discussed the influence of emotions, empathy, and social norms on economic decisions. While he is better known for The Wealth of Nations (1776), Smith already recognized in his earlier work that people are not purely rational and that emotions and subjective perceptions affect economic behavior.

Another influential thinker, John Maynard Keynes, introduced the concept of animal spirits in The General Theory of Employment, Interest and Money (1936), arguing that emotions and subjective expectations play a significant role in economic decision-making, particularly in relation to investments and economic fluctuations. Although these ideas were not formalized in behavioral terms, they anticipated many of the principles found in modern behavioral economics.

The theoretical foundations of behavioral economics were strengthened in the 20th century alongside advancements in psychology, particularly through the development of cognitive and experimental psychology. In the first half of the 20th century, psychologists such as Herbert Simon questioned the assumption of absolute rationality in individual decision-making. Simon introduced the concept of bounded rationality, suggesting that people do not make perfect decisions because they are limited by cognitive capacity and the availability of information (Simon, 1955). This concept became a cornerstone of behavioral economics, as it explains why individuals use heuristics (mental shortcuts) and why they often make suboptimal decisions in economic contexts.

Another crucial milestone in the development of behavioral economics was the research conducted by Daniel Kahneman and Amos Tversky, who demonstrated that people do not evaluate risks and probabilities objectively. In 1979, they introduced prospect theory, which explains how individuals perceive gains and losses asymmetrically losses are felt more intensely than equivalent gains. This discovery challenged the expected utility theory, which assumed that people make decisions strictly based on maximizing benefits (Kahneman & Tversky, 1979).

Prospect theory was revolutionary because it revealed that economic decision-making is not solely driven by rational thinking, but is significantly influenced by various cognitive biases that shape how people interpret information and assess risks and rewards. One of the most important phenomena supporting this perspective is the anchoring effect, described by Tversky and Kahneman (1974), which states that the first information received about a price or the value of an economic object heavily influences subsequent evaluations. For example, if a consumer initially sees a product priced high and later sees the same product significantly discounted, they are more likely to perceive the discount as advantageous than they would without that initial reference point.

This effect has substantial implications in e-commerce, where pricing strategies are deliberately structured to capitalize on this cognitive tendency. Subsequent studies have confirmed that users are likely to be influenced by initial reference prices, even when those prices are not objectively relevant to the product's actual value (Ariely et al., 2003).

Another fundamental psychological mechanism that influences economic behavior is the availability heuristic, explained by Tversky and Kahneman (1973). This phenomenon suggests that people make decisions based on the information that is most easily accessible in their memory, rather than considering the full range of relevant data. For example, consumers may avoid investing in stocks after being recently exposed to news of a market crash, even though historical data shows that investments tend to be profitable in the long term. The same principle applies to e-commerce, where products that have received recent negative reviews are often avoided by consumers, even if the majority of reviews are positive. This occurs because negative feedback is more mentally accessible and carries greater emotional weight in the decision-making process (Schwarz et al., 1991).

One of the most extensively studied phenomena in behavioral economics is loss aversion, formulated by Kahneman and Tversky in prospect theory (1979). This concept demonstrates that individuals are more motivated to avoid losses than to pursue gains of the same value. For example, losing 100 lei is perceived as more painful than the satisfaction gained from earning the same amount.

This asymmetry in risk perception explains why people tend to maintain the status quo and are reluctant to make changes, even when the potential benefits are evident. In the financial domain, loss aversion often causes investors to hold onto depreciating assets too long in the hope of recovery, while also making them overly cautious when it comes to taking necessary risks for capital growth (Barberis & Huang, 2001). In e-commerce, this principle is exploited through techniques such as limited-time offers or urgency-based messages, like “Buy now to avoid a price increase!” or “Only X items left in stock!”. Studies show that these strategies significantly increase conversion rates by prompting consumers to act quickly to avoid a perceived loss (Frederick et al., 2002).

These phenomena clearly demonstrate that economic decisions are not purely rational but are influenced by subtle psychological factors that shape consumer perceptions and behavior. Understanding these mechanisms has not only revolutionized economic theory but also had a profound impact on fields such as marketing, finance, and public policy, offering new perspectives on how individuals respond to economic stimuli and surrounding information.

Ultimately, these mechanisms have shown that traditional economics, based on the assumption of a rational actor, does not fully capture the reality of human behavior.

Considering these theoretical concepts, the following section presents an applied analysis. The case study developed within this research is grounded in the concepts presented in the theoretical chapter, particularly regarding the anchoring effect described by Tversky and Kahneman (1974). The theory suggests that individuals tend to base their evaluations on the first available piece of information in the context of e-commerce, this refers to the initially displayed price of a product. Therefore, analyzing how consumers react to “crossed-out” prices becomes a concrete way to test the applicability of behavioral economic principles in an everyday context. The questionnaire and the interpretation of the results contribute to a better understanding of the extent to which this cognitive heuristic influences perceived value and purchasing behavior in the digital environment.

3. Research methodology

The main goal of this research is to analyze how the anchoring effect influences consumer buying behavior in the online environment. Specifically, the study aims to observe whether the initially displayed price (crossed-out or comparative) alters the perception of product value and influences the purchasing decision.

This is a quantitative study, based on the application of a structured questionnaire containing closed and semi-closed questions. The questionnaire was designed to reflect key theoretical concepts from behavioral economics, with emphasis on the anchoring effect, loss aversion, and the availability heuristic.

The instrument used was an online questionnaire, distributed via social media and digital platforms. It consisted of 17 questions exploring respondents' attitudes and reactions toward displayed price reductions in e-commerce, particularly toward crossed-out prices and reference pricing.

The research was conducted on a sample of 130 respondents, selected using a non-probabilistic convenience sampling method. Respondents were active users of online shopping platforms, aged between 18 and 55, from various socio-professional backgrounds.

The research was guided by several key objectives: to identify how frequently consumers are influenced by crossed-out prices or significant discounts, to analyze their level of trust in the authenticity of prices displayed online, to evaluate the role of the anchoring effect in shaping perceived value, and to determine the importance of additional factors such as product reviews, contextual cues, and message framing in the decision-making process. The data collected through the questionnaire were analyzed descriptively using basic statistical tools, including frequency distributions, percentage calculations, and graphical representations. The results were interpreted in relation to the initial hypotheses and in light of the theoretical framework provided by behavioral economics.

4. Findings

To investigate the influence of the anchoring effect on product value perception in e-commerce, a questionnaire was administered to a sample of 130 respondents. The anchoring effect, theorized by Tversky and Kahneman (1974), describes the tendency of individuals to rely on the first piece of information received (typically an initial price), which acts as a "reference point" that influences subsequent evaluations.

One of the key questions in the research focused on how respondents perceive a product when it is displayed with a crossed-out initial price and a lower current price. By analyzing the answers to this question, the study aims to determine the extent to which reference prices affect purchasing behavior and value perception in the digital environment.

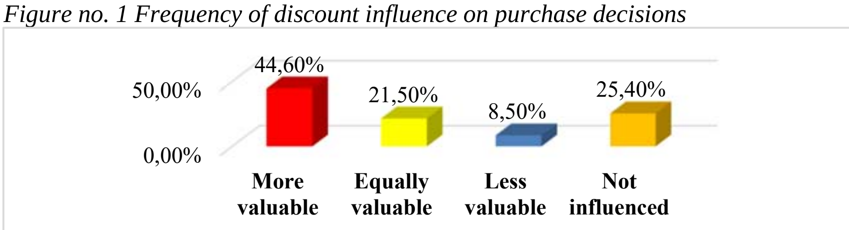
The results indicate that the anchoring effect is present to a significant degree among consumers. Specifically, 44,6% of respondents perceive the product as being more valuable when an initial (higher) price is displayed and crossed out, compared to when only the final price is shown.

This perception supports the hypothesis that the reference price acts as a cognitive anchor, influencing the way consumers assess the product's value. Essentially, the higher initial price prompts a mental comparison that gives the reduced price a higher perceived value, even though the product itself remains unchanged.

On the other hand, 25,40% of respondents state that they are not influenced by the display of the original price, while 21,50% consider the product equally valuable regardless of the pricing format. These percentages suggest the presence of a more rational or marketing-aware segment of the population, who do not assign greater value based solely on the visual presentation of price.

A small proportion, 8,50%**,** even report perceiving the product as less valuable when shown with a discounted price possibly due to skepticism about the product's quality or the authenticity of the discount (e.g., "too cheap to be good").

Figure no. 1 Frequency of discount influence on purchase decisions



Source: Authors' contribution

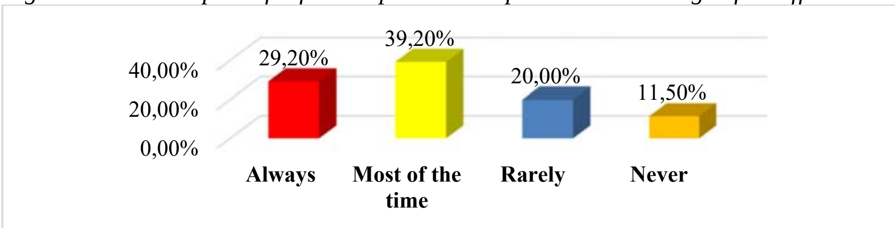
To better understand the depth of the influence that commercial strategies have on consumer behavior, the questionnaire included a question regarding the frequency with which respondents are influenced by discounts displayed online. This question aims to quantify the overall impact of discounts on purchasing decisions, beyond the perceived value of the product.

The results show that a significant proportion of consumers are sensitive to the presence of discounts. Specifically, 29,20% of respondents stated that they are always influenced by discounts, while 39,20% admitted they are influenced most of the time. Taken together, nearly 69% of participants indicate a high predisposition to react to reduced prices, which highlights a fertile ground for the triggering of impulsive or emotionally driven buying behavior.

On the other hand, 20% reported that they are rarely influenced**,** and 11,50% stated that they are not influenced at all. This segment may reflect either a higher level of experience in the digital environment or a more rational and deliberate attitude toward marketing stimuli.

The distribution of responses suggests that while the anchoring effect and the psychological pressure created by discounts are widespread, there remains a segment of consumers who exhibit caution or skepticism toward such commercial messages.

Figure no. 2 The impact of reference price on the perceived advantage of an offer



Source: Authors’ contribution

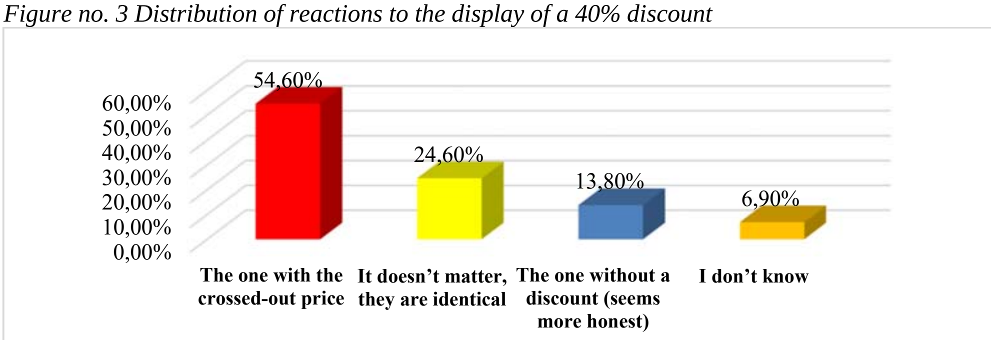
To directly test the applicability of the anchoring effect in a comparative scenario, respondents were asked to choose between two identical products, one of which had a crossed-out initial price. This exercise provides a clear illustration of how the reference price influences value evaluation.

The majority of participants, 54,60%, indicated that they would consider the product with the crossed-out price to be more advantageous, even though it was identical to the product without a discount. This result supports the hypothesis that the first numerical cue in this case, the initial price creates a mental reference point that influences perceived value and purchase decisions.

Another 24,60% of respondents considered the two products to be equivalent, indicating a more analytical understanding of the context and a certain resistance to manipulation through reference pricing. Interestingly, 13,80% of participants perceived the product without the discount as more honest or credible, suggesting a degree of skepticism toward the authenticity of price reductions. Only 6,9% admitted they could not accurately evaluate the advantage of the offer.

These findings highlight that although the anchoring effect strongly shapes general perceptions, there is still a considerable portion of the population that adopts a critical or independent stance toward pricing strategies.

Figure no. 3 Distribution of reactions to the display of a 40% discount



Source: Authors’ contribution

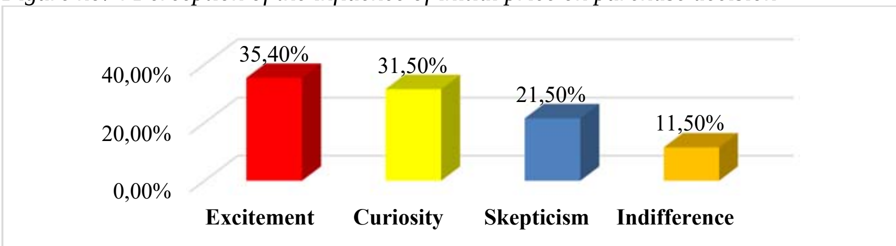
As part of the research, the immediate emotional reaction of consumers to significant percentage discounts was also examined. Large percentage discounts such as 40% are frequently used in e-commerce to attract attention and stimulate quick purchasing decisions.

The results indicate that 35,40% of respondents feel excited and motivated to buy immediately when seeing a 40% discount, while another 31,50% state that they become curious and begin to analyze the offer. This combination shows that two-thirds of participants exhibit a positive initial reaction, which may lead to an emotionally driven purchase decision.

In contrast, 21,50% of respondents express skepticism, reflecting a more reflective attitude and an awareness that deep discounts are not always genuine. A further 11,50% report that they are not affected by such discounts, which may suggest either a natural resistance to commercial influence or prior negative experiences.

These varied reactions suggest that large percentage discounts trigger strong emotional impulses in the majority of consumers. However, there remains a minority that adopts a rational or cautious approach, potentially reducing the effectiveness of such techniques among certain audience segments.

Figure no. 4 Perception of the influence of initial price on purchase decision



Source: Authors' contribution

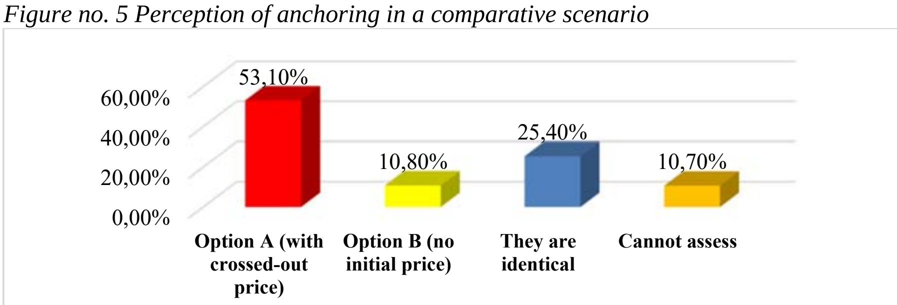
To concretely test the anchoring effect in a realistic scenario, respondents were presented with a hypothetical situation in which two identical products were shown at the same final price, but only one included a higher, crossed-out initial price. This question aimed to capture the reaction to reference pricing and how it influences the perception of which offer is more advantageous.

The results confirm the impact of cognitive anchoring on decision-making behavior. Over half of the respondents (53,10%**)** considered Option A - the product with the crossed-out price as the better deal, despite both options having the same final price. This outcome strongly supports the hypothesis that the initial price acts as an anchor that shapes value perception, leading consumers to perceive significant savings even when the product's intrinsic value has not changed.

A notable 25,40% stated that they viewed both offers as identical, suggesting a higher level of awareness regarding the psychological influence of reference pricing. Additionally, 10,80% said they could not assess the difference, while another 10,70% preferred the version without the initial price, possibly reflecting a critical or skeptical attitude toward commercial discount presentation techniques.

Overall, the question highlights a clear preference for offers that include a visual anchor in the form of a crossed-out initial price, while also revealing the presence of consumer segments that exhibit resistance or rational analysis in response to such tactics.

Figure no. 5 Perception of anchoring in a comparative scenario



Source: Authors' contribution

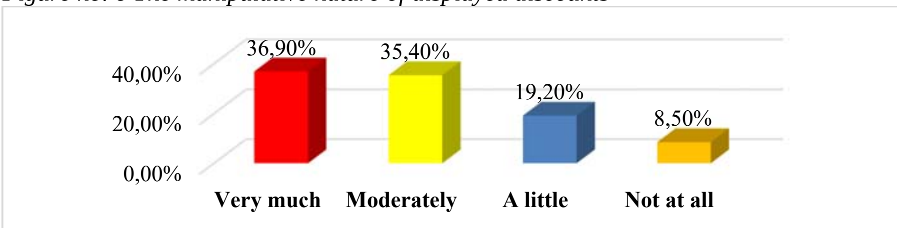
To complete the analysis of the anchoring effect, a question was included regarding the subjective perception of how much the initial price influences the purchasing decision. The purpose of this question was to assess the respondents' awareness of their own vulnerability to this psychological effect.

The distribution of responses shows that an overwhelming proportion of participants acknowledge a significant influence of the initial price on their buying behavior. Specifically, 36,90% stated they are influenced "very much"**,** while 35,40% reported a "moderate" influence. This awareness suggests that most consumers recognize the impact of displaying a higher initial price, even if the effect operates automatically and is not always consciously rationalized.

A further 19,20% believe that the initial price influences their decision "a little", while 8,50% claim to be not influenced at all. These figures may reflect either a strong confidence in their analytical skills or a general distrust of discount strategies, but they remain a minority compared to the percentages confirming the effect's presence.

In conclusion, the responses to this question support the finding that anchoring through initial pricing is not only effective, but also acknowledged as influential by most consumers further validating the theoretical robustness of the anchoring effect in a real-world context.

Figure no. 6 The manipulative nature of displayed discounts



Source: Authors' contribution

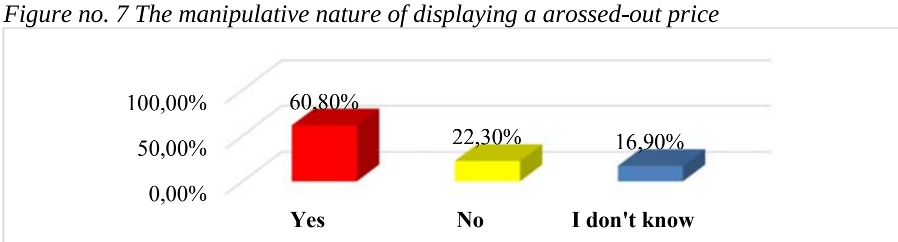
To complement the analysis of consumer perceptions regarding commercial strategies used in e-commerce, respondents were asked to express their opinion on the potentially manipulative nature of displaying a crossed-out initial price. This question aimed to reveal the extent to which consumers are aware that such practices may be used to influence purchasing decisions, even in the absence of a real discount.

The majority of respondents **(**60,80%**)** consider the display of a crossed-out price to be a manipulative technique, highlighting a high level of critical awareness regarding how discounts are presented in the online environment. This result may indicate a decline in trust in the authenticity of discounts frequently promoted on e-commerce platforms, as well as a more nuanced understanding of how psychological marketing operates.

A smaller percentage (22,30%) stated that they do not consider this strategy to be manipulative, which may suggest either acceptance of this approach as a standard and transparent commercial practice, or greater trust in the legitimacy of online offers. Additionally, 16,90% of participants reported that they do not know or cannot assess the manipulative nature of this method, which may reflect either a lack of interest or a difficulty in evaluating merchants' intentions beyond appearances.

Therefore, this question contributes to shaping a broader picture of the level of commercial and critical literacy among modern consumers. Even though the anchoring effect often functions automatically and unconsciously, a significant portion of the public appears to recognize the mechanisms through which value perception is intentionally influenced.

Figure no. 7 The manipulative nature of displaying a arossed-out price



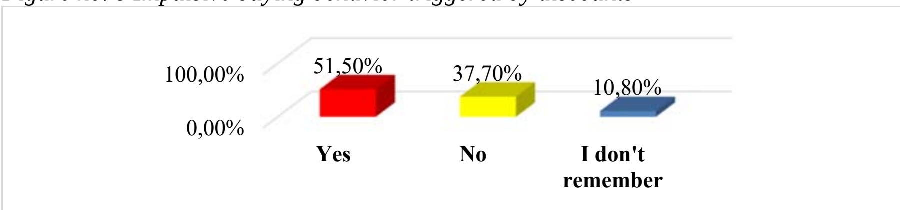
Source: Authors' contribution

The following question aims to identify impulsive purchasing behavior triggered solely by the stimulus of a discount, even in the absence of a real need. The goal is to evaluate whether the display of a significant price reduction can lead to emotionally driven and objectively unjustified purchases.

More than half of the respondents (51,50%) acknowledged that they had purchased a product at least once solely because of the displayed discount, despite not having a real need for it. This behavior supports the hypothesis that a reduced price acts as an emotional trigger, surpassing economic rationality. On the other hand, 37,70% stated that they were not influenced in this way, while 10,80% said they could not recall their exact behavior possibly indicating a low level of awareness regarding their own purchasing decisions.

These results highlight both the effectiveness of discounts as a sales conversion tool and the potential risk of promoting irrational consumerism.

Figure no. 8 Impulsive buying behavior triggered by discounts



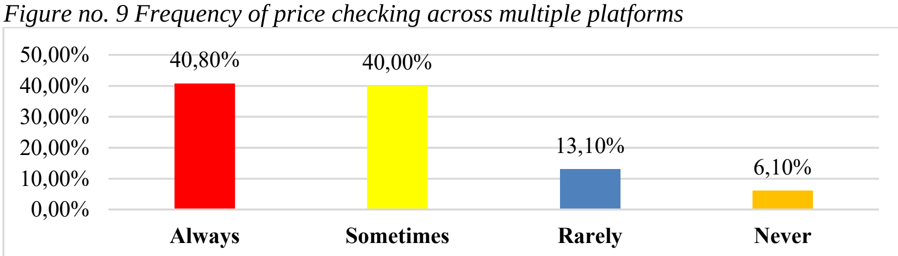
Source: Authors' contribution

The level of trust attributed to the displayed reference price, an essential element in perceiving a product's value, completes the anchoring analysis.

Only 13,10% of respondents declared themselves to be very confident in the accuracy of the initial displayed price, while 30% reported having fairly high confidence. On the other hand, 36,90% stated they had little confidence, and 20% had no confidence at all. These results suggest a clear trend of skepticism toward the authenticity of reference prices in the online environment.

Nevertheless, even under conditions of limited trust, the anchoring effect remains active, which demonstrates its cognitive strength in influencing purchasing behavior, even among cautious consumers.

Figure no. 9 Frequency of price checking across multiple platforms



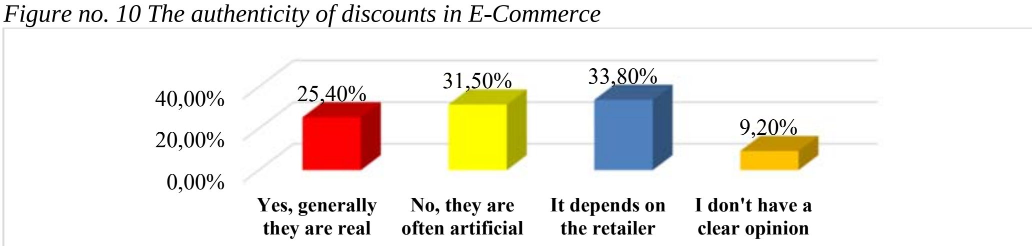
Source: Authors' contribution

In the context of commercial strategies frequently used in e-commerce, it is essential to understand how consumers perceive the authenticity of displayed discounts. The perception of the truthfulness of these discounts directly influences trust in sales platforms and, consequently, purchasing behavior.

An analysis of the responses shows that only 25,40% of participants believe that discounts generally reflect a real decrease in the product's value. In contrast, 31,50% consider them often artificial, while 33,80% offer a more nuanced view, stating that it depends on the retailer. A further 9,20% did not express a clear opinion, which may indicate uncertainty or a lack of interest in this aspect.

This distribution of responses indicates a high level of caution and even distrust toward commercial discount messages. Although anchoring, as a cognitive mechanism, continues to influence purchase decisions, its effectiveness appears to diminish among consumers who adopt a more rational and analytical approach. Limited trust in online discounts is likely an adaptive response to previous experiences with exaggerated or misleading offers.

Figure no. 10 The authenticity of discounts in E-Commerce



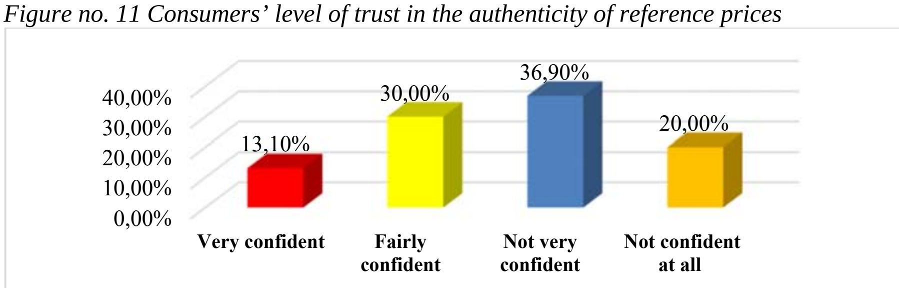
Source: Authors' contribution

Trust in the authenticity of the initial displayed price is essential in the context of e-commerce, where price reductions are often used as a marketing strategy. The question targets consumers' perception of the truthfulness of the reference value presented in online offers.

Only 13,10% of respondents declared themselves very confident that the initial displayed price is real, while 30% stated they have moderate confidence. In contrast, 36,90% reported having little confidence, and 20% said they have no confidence at all. These results highlight a predominantly skeptical attitude toward pricing practices in e-commerce.

Although the anchoring mechanism operates at a subconscious level, consumers are becoming increasingly aware that initial prices can be artificially inflated to enhance the perceived value of a discount. This low level of trust may negatively impact the effectiveness of such strategies, particularly among more informed consumers.

Figure no. 11 Consumers' level of trust in the authenticity of reference prices

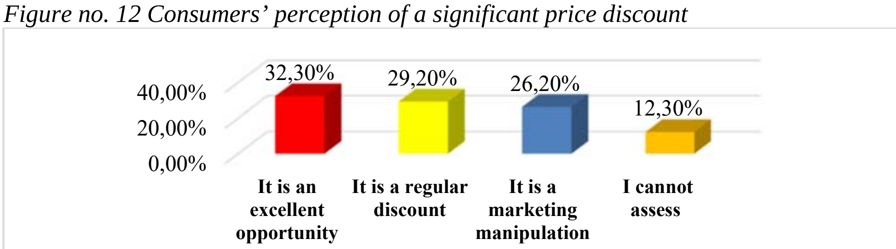


Source: Authors' contribution

A significant price reduction, such as a drop from 799 lei to 499 lei, can generate various reactions from consumers. The data show that 32,30% of respondents perceive such an offer as an excellent opportunity, while 29,20% consider it a typical discount. On the other hand, 26,20% interpret it as a possible marketing manipulation, and 12,30% state that they cannot properly evaluate the situation without additional information.

This balanced distribution between trust and skepticism highlights the fact that, although large discounts can trigger enthusiasm and purchase intention, they are not automatically accepted as authentic. Nearly a third of respondents question the honesty of such a price drop, reflecting the evolution of critical consumer behavior. Even when the scenario appears attractive, buyers seem to adopt an analytical and cautious attitude, consciously assessing whether the offer represents real value or is the result of a persuasive marketing strategy.

Figure no. 12 Consumers' perception of a significant price discount



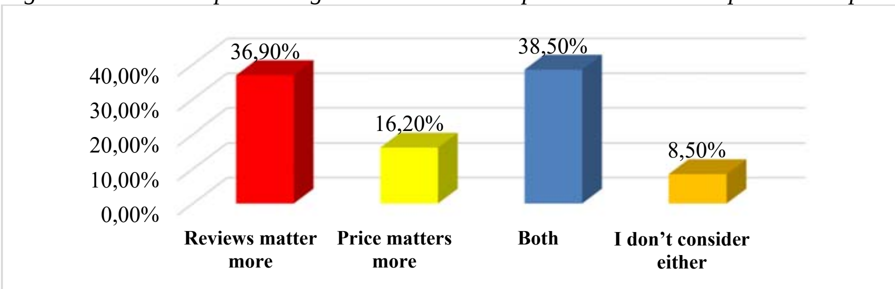
Source: Authors' contribution

In the context of online shopping, consumers are simultaneously exposed to both price discounts and user feedback. This question explores buyer priorities: do they respond more strongly to price stimuli, or do they place greater value on social trust?

38,50% of respondents stated that they try to balance price and reviews, while 36,90% consider reviews more important than price. Only 16,20% prioritize price, and 8,50% do not consider either reviews or cost. The results suggest that trust in the experiences of other consumers plays a key role in the decision-making process, sometimes outweighing the impact of a price discount.

This tendency indicates a maturation of online consumer behavior, where social factors and perceived product quality become essential criteria in the final choice.

Figure no. 13 The importance given to reviews compared to discounted price in the purchase decision



Source: Authors' contribution

5. Conclusions

The present study confirms that the anchoring effect plays a significant role in shaping consumers' perceptions and decisions in the context of online shopping. The results demonstrate that a large proportion of respondents are influenced by initial reference prices, particularly when discounts are visually emphasized. More than half of participants perceived identical products as more valuable when a higher, crossed-out price was displayed, validating the hypothesis that early exposure to numerical values skews evaluation and contributes to the perceived attractiveness of an offer.

Despite the clear evidence of the anchoring effect, the study also reveals that a substantial portion of consumers maintain a rational or skeptical approach toward such pricing strategies. Some respondents explicitly reported that they were either unaffected by reference prices or even distrusted heavily discounted products. This highlights the growing awareness and digital maturity among online shoppers, which may serve as a natural limitation to the effectiveness of psychological pricing tactics in the long term.

From the perspective of validity and credibility, the research employed a structured questionnaire based on well-established theoretical constructs in behavioral economics. However, as with any self-reported data, results may be subject to response biases, such as social desirability or overestimation of rational behavior. Moreover, the use of a non-probabilistic convenience sample limits the generalizability of the findings to the broader population.

Nevertheless, the study provides valuable insights into how pricing strategies rooted in behavioral theory operate in real-world e-commerce contexts. The anchoring effect, combined with other cognitive heuristics such as loss aversion and the availability bias, continues to shape how consumers interpret value and make decisions under uncertainty.

Future research could expand on this work by comparing results across different demographic groups, types of products, or cultural contexts. It may also prove useful to complement the current quantitative approach with qualitative methods, such as interviews or focus groups, to gain a deeper understanding of the reasoning behind consumer choices.

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