

The Effects of Different Emotional States on Consumers' Consumption Behavior within TikTok Live streaming room

Chenxuan Wang

Beijing 101 Middle High School, Beijing, China

Keywords: Social media, Emotion, Behavioral economics

Abstract: As the online streaming and short video industry thrives, the business practices within are quickly developing. To increase their sales, numerous techniques to change the audiences' emotional state are applied. In our study, we focus on the effect of emotions (anxiety; reciprocity; sympathy) provoked by these live rooms on consumers' purchasing behaviors. We recruited 117 participants, including 67 females and 48 males, aged between 18 and 50 years, through online questionnaires. By comparing their performance, we concluded that the anxiety and sympathy atmosphere in live streaming rooms can influence people's desire to buy, while reciprocity atmosphere does not elicit a significant change. Additionally, there is a notable gender difference: females show a higher buying propensity than males after exposure to live streaming rooms. However, males do not exhibit a significant change in buying behavior after such exposure. The methods used in this study are not comprehensive; further research should consider additional factors to create a more realistic environment.

1. Introduction

In today's digital age, online shopping has emerged to be the mainstream method for purchasing goods. Among a great variety of online shopping forms, live streaming has rapidly gained popularity as a novel form of interactive e-commerce. Real-time interactions between the live streamer and individuals allow live streamers to build up an immersive environment with an emotional atmosphere in the live stream room, which is often considered to play a pivotal role in the success of a live stream room. However, there is a lack of research on this "key element". There remains a notable gap in research regarding how these emotional atmospheres specifically influence product sales. Fully understanding the effect of each type of emotional connection on purchasing behaviors is essential yet unexplored. Thus, the topic of this research paper has great significance and also requires further investigation. By comparing participants' rates on the likelihood of buying a certain product before and after watching the live streaming, it is clear how each emotional atmosphere affects individuals' desire to purchase alone. Online shopping has great potential and is still developing rapidly.

1.1 Online Stream Shopping

With the rise of social media platforms such as TikTok, Instagram, and Facebook, an increasing number of individuals are shifting their purchasing habits from offline to online channels. Online shopping offers various advantages, including prompt delivery, perceived security, and a wide range of products. These features significantly impact consumer satisfaction with specific brands and influence their brand loyalty (Mofokeng, 2021)[7]. As a result, online shopping has emerged as a dominant trend in the 21st century, becoming the primary mode of consumption for the majority of consumers.

Online streaming shopping is intricately linked with consumers' psychological states; factors such as subjective norms and perceived usefulness significantly influence online purchase intentions (Lim et al., 2016)[5].highlighting the interdependent relationship between emotion and consumption behavior. Additionally, a survey conducted among followers of a popular Spanish TikTok influencer revealed that originality and opinion leadership play pivotal roles in influencing purchasing decisions. Furthermore, due to TikTok's distinctiveness, humor enhances the effectiveness of messages, leading to an increase in purchasing behavior through hedonic experiences. These findings underscore the

power of online shopping and the potential influence of emotions and human consciousness on consumer behavior.(Barta et al., 2023)[2]

1.2 TikTok Live streaming room

"TikTok, known as DouYin in Chinese, stands as one of the most successful social media applications originating from China and has garnered global acclaim. TikTok offers a multifaceted platform encompassing three primary functions: short video creation, interactive engagement, and live-streamed shopping experiences [3]. These features collectively draw in a vast audience from around the world, contributing to the platform's widespread popularity. However, TikTok has faced criticism for its potentially addictive nature. By employing highly immersive features designed to captivate users for extended periods, TikTok aims to foster increased engagement, leading users to invest not only their time but also their resources. This approach has sparked concerns regarding addiction-like behaviors and parallels with gambling tendencies."(Montag et al., 2019)[8] Those characteristic increase the opportunity of consumption and make people's decision making strategy irrational.

Another distinctive reason why people prefer to buy items on TikTok rather than on other social media platforms is the lower prices. Compared to other online shopping venues, the same product is often available at a lower price on TikTok. This pricing strategy helps TikTok Live streaming rooms attract a diverse audience from all age groups, generating substantial profits. Social Media is actually in an oligopoly market. In this market, the firms seek to maximize discounted profit streams. (Friedman, 1982)[4] In TikTok Live streaming rooms, each anchor represents the official brand itself. The brand advertises directly on TikTok without the involvement of other companies, middlemen, or advertising fees. By avoiding these additional costs, brands can lower their product prices to attract more customers. This commercial model enhances TikTok's influence, solidifying its dominant position in the market.

1.3 Importance of understanding emotional influence on consumption

In the present era of internet, social media platforms are overflowing with an abundance of video clips that are roughly 20 seconds to a few minutes. These dynamic video clips can process a remarkable ability to craft a sensory-rich experience that captures viewers' attention within a brief timeframe. Compared to static slides, images, or text, short videos, adorned by vivid visual images, background music, and sound effects, provide a more comprehensive and immersive stimuli. These multifaceted sensory inputs often prompt viewers into experiential time mode, experiencing joyful emotions that one cannot feel in performing low-paced, mundane, daily tasks. Consequently, video clips are endowed with the remarkable ability to evoke a plethora of emotions and establish deep-seated emotional connections with audiences, all within a remarkably brief period of time.

1.4 Emotion provoke

A wide range of emotions can be provoked when people watch online streaming. To be specific, these emotions include but are not limited to sympathy, happiness, anxiety, fear, and anger. It has recently been found that people's decision making is greatly influenced by their emotional state when the decision is made. By analyzing the role of ventromedial prefrontal cortex during the process of decision making, it has been found that decision itself is greatly linked with the emotions related to it (Bechara, 2000) [19]. Therefore, a number of the emotions provoked by the videos is likely to have a positive influence on the audiences' purchasing behavior in various ways. For example, happier customers have an easier decision process and are more willing to accept advertising claims; a person within an anxious emotional state is more likely to make "risky" choices, meaning that they are more liable to impulsive purchasing behaviors.

1.5 Behavioral economics

Behavioral economics assumes *irrationality* in decision making. Individuals tend to make rash decision even though it's clear that the long-term outcome is poor. (Reed et al., 2013)[11]. In Microeconomics, the basic definition or principle is that we assume all people is rational, and will

make perfect decision at which MB (marginal benefit) =MC (marginal cost). For the reason to maximize the profit. (Musgrave & Kacapyr, 2009)[9] However, we investigate irrational and emotional decision-making strategy among people in Behavioral economics. In order to explain that irrationality, theorist take accounts of cognitive perspective [10]. Theorist contend that irrational behaviors are the result of mentalistic or psychological causes such as stereotype biases, cognitive fallacies, or psychological predispositions, confirming the connection between two disciplines. (Camerer, 1999)[4] However, these theories need further investment to be fully proved or understood.

2. Literature Review

2.1 Emotion on consumption

In psychology, emotions are defined by different models. There are three primary models used to describe emotion. First, the James-Lange theory, proposed by William James and Carl Lange, posits that we feel emotions as a result of biological changes caused by stress. According to this theory, we first experience a biological change in our bodies, and then we express our emotions.

Next, the Cannon-Bard theory, developed by Walter Cannon and Philip Bard, challenges this sequence of events. They argued that similar physiological changes can correspond with drastically different emotional states. Cannon believed that when the thalamus receives information about our environment, it sends signals simultaneously to our cortex and autonomic nervous system, creating awareness of the emotion and the physiological change at the same time.

Lastly, Stanley Schachter's two-factor theory explains emotion in a more complex manner. This theory demonstrates that emotion depends on the interaction between two factors: biology and cognition. According to Schachter, we experience physiological arousal and then use cognitive processes to interpret this arousal, which in turn leads to the experience of emotion. (McEntarffer & Weseley, 2012) [6]

Clearly example of different emotion theory is showed by Figure 1. (11.1 The Experience of Emotion – Introduction to Psychology, n.d.) (CHARLES STANGOR AND JENNIFER WALINGA draw) [1]

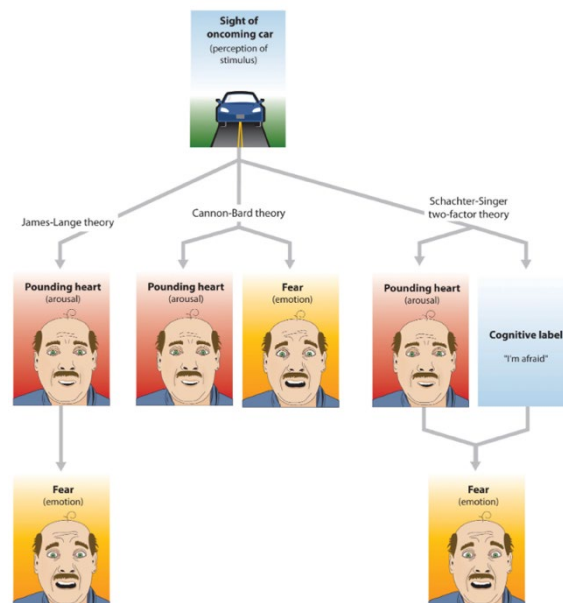


Figure 1 Emotion theory

(11.1 The Experience of Emotion – Introduction to Psychology, n.d.)

Emotion response toward advertising is measured by different theorist. Batra and Holbrook's study shows that the feeling elicits by advertisement can be describe in three factors: Up beat feelings, negative feelings and warm feelings. (Richins, 1997)[12] In this study, we describe those three feeling as: Sympathy, Anxiety and reciprocity.

2.2 Decision Making Comparison in Economic

Under certain emotional conditions, people often make irrational decisions, which contradicts the economic definition of rationality. In traditional microeconomics, we investigate the behavior of completely rational individuals who are assumed to make decisions aimed at maximizing their utility based on clear preferences and available information. This model assumes that people systematically and logically analyze choices to achieve the most beneficial outcome.

On the other hand, behavioral economics focuses more on the correlation between individuals' psychological states and their decision-making strategies. This field acknowledges that human behavior often deviates from rationality due to various cognitive biases, emotions, and social influences.

Behavioral economics explores how emotions like anxiety, sympathy, and reciprocity can lead to decisions that diverge from the purely rational model predicted by traditional economic theory[21].

2.3 Biological foundation

“In order to have anything like a complete theory of human rationality, we have to understand what role emotion plays in it” (Simon, 1990)[24]. Emotions play a significant role in decision-making by influencing people's cognitive processes and bodily arousal. When people experience emotions, they can affect our judgment and ability to think objectively, especially decision-making. (Damasio, 1994)[20] (Levin et al., 1991)[22]

When we make decisions, the decision is actually made far before we realize it. Biologically, a number of neurotransmitters are responsible for the process, the most important ones are dopamine, serotonin, cortisol, oxytocin and prolactin (Nermend & Łatuszyńska, 2017) [23]. The research on the area of the ventromedial prefrontal cortex is crucial for us to understand how people's emotions affect their decisions. Damage in the ventromedial prefrontal cortex leads to the irrelevance between emotional states and results anticipation between the actual decision making. These patients tend to make more risky decisions. Damage in amygdala leads to similar results as well. Therefore, we can say that these two parts of the brain strongly connects emotion states with decision making. (Bechara et al., 1999)[19]. Though what areas of the brain are responsible for decision making, the underlying mechanism is still unclear and needs further research.

Throughout human history, emotions are extremely important factors that would greatly increase our reproductive success due to its significant and quick influence on our actions. Our ancestors had to face countless survival problems and decisions, and for them to deal with such problems, special and specific mechanism is needed. These decisions include mating, hunting, escaping, feeding and countless others. The various emotions of human are certainly able to help human deal with radically different problems in different occasions. (“Irrational Emotions or Emotional Wisdom? The Evolutionary Psychology of Affect and Social Behavior,” 2012)

3. Method

We conducted a survey to investigate changes in individuals' buying desires under specific live streaming room conditions. To explore the effects of three different emotional states—anxiety, sympathy, and reciprocity—on personal consumption strategies, we selected three categories of goods: sun cream, fruits, and study guides. At the beginning of the survey, we collected demographic information from participants, including their gender and age. Following this, participants completed two assessments designed to measure changes in their buying desires under the influence of the different emotional states induced by the live room conditions. This approach allows us to examine how these emotions affect consumer behavior across various product categories.

We compared two buying conditions: one on the TikTok Live Room, which includes interpersonal interaction, emotion-provoking content, and price incentives; and another on the Taobao Online Shop, which features detailed product descriptions but lacks audio stimulation or interpersonal interaction.

3.1 Participants

We recruited a total of N=115 participants, comprising 67 females and 48 males, aged between 18 and 50 years throughout online invitation. Participants are randomly assigned to different emotional states within Live streaming room atmospheres, which include conditions designed to evoke anxiety, sympathy, and reciprocity. Our primary objective is to investigate the differences in the effects of these various emotional states on participants' buying desires. Participants' personal desires are excluded from the analysis, as the focus of the task is on the change in individual assessments rather than comparisons between different individuals. This approach ensures that the results reflect the impact of the live room conditions on each participant's buying desire, independent of their initial personal preferences.

3.2 Task

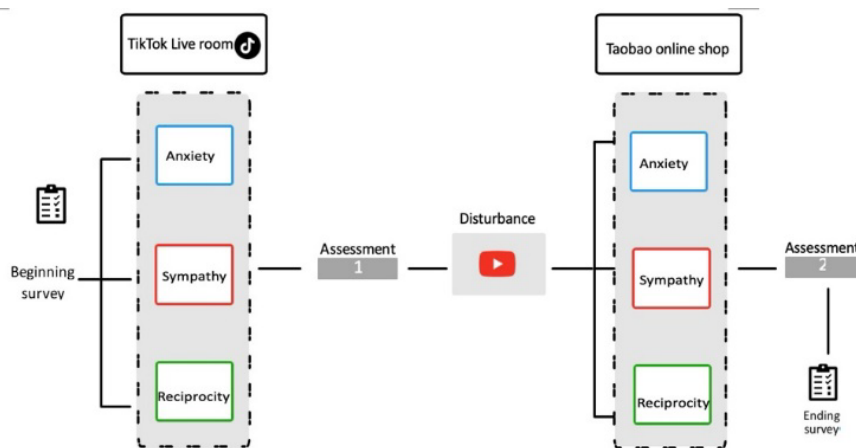


Figure 2 Task procedure

As shown in Figure 2, the diagram outlines the procedure of our survey in detail. Initially, participants are required to watch a Live streaming room advertisement on TikTok. This advertisement is designed to mimic a typical marketing scenario that users might encounter on the platform. Following this exposure, participants are asked to complete an assessment where they rate their buying desire on a scale from 1 to 5. This initial assessment aims to capture the immediate impact of the advertisement on their purchasing intentions.

Subsequently, participants are shown a disturbance video featuring animal photographs. This video serves as a neutral, emotionally engaging stimulus designed to temporarily shift their focus and emotional state. The inclusion of this disturbance video aligns with a single-blind procedure, ensuring that participants are unaware of the specific intent behind this part of the experiment, thus minimizing bias.

After viewing the disturbance video, participants proceed to the second phase of the survey. In this phase, they are exposed to a Taobao online shopping advertisement photo. This step is crucial as it introduces a different e-commerce platform to assess any changes in buying desire. Participants are then asked to complete a second assessment, again rating their buying desires on a scale from 1 to 5. This follow-up assessment allows us to compare the effects of the two different types of advertisements (TikTok Live streaming room vs. Taobao photo) on participants' purchasing intentions, providing valuable insights into how different emotional states and marketing formats influence consumer behavior.

Participants will be randomly assigned to different emotional states Live streaming room atmosphere (includes Anxiety, sympathy, reciprocity). We want to investigate the difference between the effects of different Live streaming room emotional states on buying-desire.

During data analysis, we will compare the changes in participants' buying desires from the first assessment to the second assessment. We hypothesize that there will be a significant difference in buying desires between the two assessments, reflecting the impact of the different emotional states

induced by the Live streaming room atmospheres. This comparison will help us understand how different emotional triggers influence consumer behavior within the context of TikTok live streaming.

3.3 Hypothesis

Prior studies have demonstrated that emotions significantly impact decision-making processes. We hypothesize that under Live streaming room conditions, which are highly emotional due to atmospheres created to evoke anxiety, reciprocity, and sympathy, individuals will exhibit an increased buying desire and consequently purchase more products. We anticipate the most distinctive change in buying behavior to occur within the anxiety group, as the limited time to make decisions will reduce the elasticity of demand for the goods.

Additionally, we hypothesize that females will exhibit a higher buying desire under Live streaming room conditions compared to males. This difference aligns with existing research indicating that males and females behave differently regarding online shopping. (“(PDF) The Influence of Gender on Online Consumer Decision Making,” 2024)

Age differences also play a crucial role in buying decisions. Younger individuals tend to rely more on their own interpretations rather than external advertisements. In contrast, older individuals are expected to show a higher tendency to purchase under Live streaming room conditions. This distinction highlights the varying influences of Live streaming room atmospheres on different age groups and underscores the importance of considering demographic factors in understanding consumer behavior within TikTok live streams.

3.4 Measure

We collected a total of 117 samples from the survey and selected 113 effective responses for analysis. To understand the impact of live streaming room conditions on buying desire, we analyzed the mean values of participants' buying desires for both the live streaming room and Taobao online shop. By employing fitting curves, we ensured that the data conformed to a normal distribution.

Utilizing software tools such as Origin and Prism 10, we created clear, correlated graphs that included standard deviation (SD) analysis. These graphs visually represent the changes in buying desires across the three product categories: sun cream, fruits, and study guides. The use of these advanced analytical tools allowed us to present the data in a comprehensive and easily interpretable manner, highlighting the effects of different emotional states on consumer behavior.

4. Results

4.1 Anxiety condition

4.1.1 Analysis of Purchase Willingness under Anxiety Conditions

1) Live Room (Black Bar Chart)

The purchase willingness frequencies in the live room setting are highest at levels 0 and 3, with frequencies close to 30 and 25, respectively. Overall, the distribution is relatively flat, with frequencies spread across all purchase willingness levels (0-5). The fitting curve for the live room shows a relatively flat trend with slight fluctuations between 0 and 3, indicating a concentration of purchase willingness at these points.

2) Taobao Online Shop (White Bar Chart)

In the Taobao online shop setting, purchase willingness frequencies are higher at levels 3 and 4, both around 30. The frequency at level 0 is approximately 15, while the frequency at level 5, although lower, is still higher than in the live room. The fitting curve for Taobao exhibits a noticeable peak and trough, with a significant peak at level 2, indicating the highest purchase willingness at this point. This distribution approximates a normal distribution (See Figure 3).

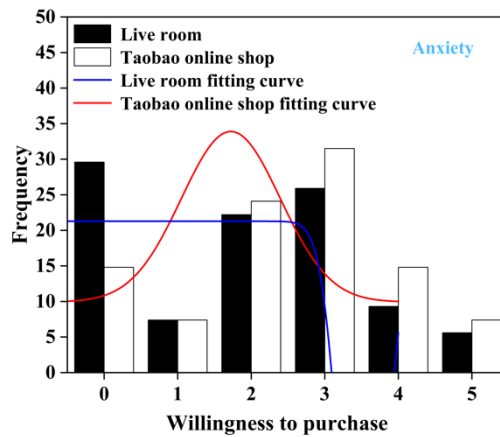


Figure 3 Change under anxiety Streaming condition

4.1.2 Relationship between Anxiety and Purchase Willingness

The chart indicates that anxiety impacts purchase willingness differently in the live room and Taobao settings. In the live room, the highest frequency of purchase willingness at level 0 suggests higher anxiety levels, leading to a greater reluctance to purchase. Conversely, for the Taobao online shop, the highest frequencies at levels 2 and 3 suggest lower anxiety levels, corresponding to a greater willingness to purchase.

Overall, purchase willingness in the live room is more evenly distributed, but lower willingness levels (0 and 1) occur more frequently. This suggests that users may experience increased anxiety in the live room, thereby reducing their purchase willingness. Consequently, live room shopping may induce more anxiety in users, affecting their purchase willingness and resulting in higher frequencies at lower willingness levels (0 and 1).

In contrast, Taobao online shop users exhibit purchase willingness concentrated more at mid-levels (2 and 3), indicating higher purchase willingness and relatively lower anxiety levels. This suggests that anxiety has a more negative impact on live room shopping, while Taobao online shopping shows higher purchase willingness with less influence from anxiety.

4.1.3 Summary

The analysis reveals that live room shopping may induce higher anxiety levels, leading to a lower overall purchase willingness compared to the Taobao online shop. In the Taobao setting, users demonstrate a higher purchase willingness with anxiety having a lesser impact. These findings suggest that the emotional atmosphere in live streaming rooms, particularly anxiety, significantly affects consumer behavior, resulting in varied purchase willingness across different online shopping platforms.

4.2 Sympathy condition

4.2.1 Analysis of Purchase Willingness under Sympathy Conditions

1) Live Room (Black Bar Chart)

Purchase willingness frequencies are highest at level 0, with a frequency close to 35. Besides, there is a decrease in frequency as purchase willingness levels increase from 3 to 5. The fitting curve shows the purchase willingness concentrate at level 0.

2) Taobao Online Shop (White Bar Chart)

Purchase willingness frequencies are highest at levels 2 and 3, with frequencies around 30 to 35, and frequencies at levels 0, 4, and 5 are significantly lower. The fitting curve suggests that purchase willingness is concentrated at mid-levels (See Figure 4).

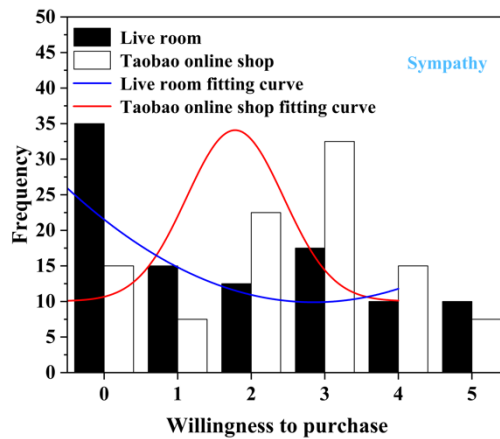


Figure 4 Change under Sympathy Streaming condition

4.2.2 Relationship between Sympathy and Purchase Willingness

The data indicates that sympathy impacts purchase willingness differently in live room and Taobao settings. Specifically, on TikTok Live Room, the highest frequency of purchase willingness is at level 0. In contrast, on Taobao Online Shop, the highest frequencies are at levels 2 and 3. This pattern indicates that moderate sympathy levels may correlate with higher purchase willingness in the Taobao setting than in live streaming rooms.

4.2.3 Summary

The Live Room environment may foster conditions where sympathy leads to lower purchase intent, whereas Taobao's structured online marketplace appears to leverage sympathy to enhance purchase willingness, particularly at moderate levels.

4.3 Reciprocity condition

Both the distribution of the score and the fitting curve are similar under the reciprocity condition. In both the TikTok Live Room and Taobao Online Shop settings, assessments of “0” appear most frequently. This indicates that purchase willingness tends to concentrate at a low grade across both platforms (See Figure 5).

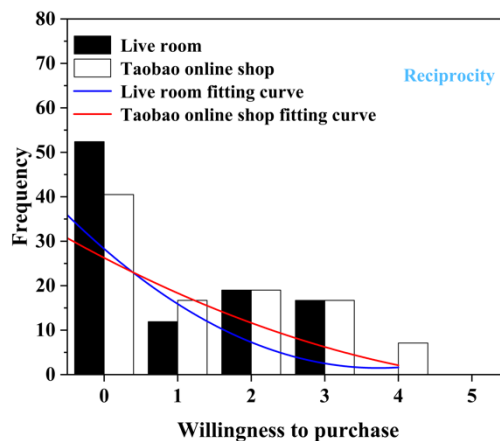


Figure 5 Change under Reciprocity Streaming condition

Specifically, the scores predominantly fall into the lowest category, suggesting that the reciprocity condition does not significantly enhance purchase willingness in either setting. This similarity in score distribution and fitting curve implies that the factors driving purchase willingness under the reciprocity condition are not distinctly different between TikTok Live Room and Taobao Online Shop.

4.4 Comparison of desire and refuse to buy under different condition

The X-axis of the graph displays three types of emotional states: reciprocity, anxiety, and sympathy, while the Y-axis represents the appearing frequency of “desire to buy” and “refuse to buy” within the survey, ranging from +100 to -100 to indicate the degree.

When comparing across different emotions, reciprocity emotion contributes to the purchasing willingness of the participants the least. In fact, in live streaming rooms, this emotion is likely to contribute negatively to the participants’ purchasing willingness. While reciprocity stood out of the three emotions, the purchasing willingness of participants who experience anxiety and sympathy does not have a significant difference between each emotion but is strongly promoted by both of the emotions, especially within the Taobao-online-shop context.

Under anxiety and sympathy conditions, the person who desires to buy usually shows a higher buying desire at Taobao's online shop pictures than in TikTok's live streaming room. Anxiety (frequency = 70 in TikTok, frequency = 82 in Taobao), sympathy (frequency = 65 in TikTok, frequency = 81 in Taobao). People who report "desire to buy" exceed people who reported "refuse to buy" by approximately 95 points under the anxiety condition and approximately 112 points under the sympathy condition (See Figure 6).

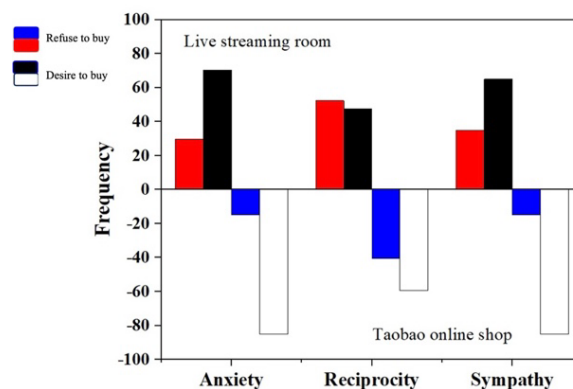


Figure 6 Comparison of desire and refuse to buy under different condition

In another perspective when the context is compared and contrasted, it is clear that the participants are far more willing to purchase in the Taobao online context. In such a context, fewer participants refuse to purchase the given item, and more participants desire to buy it regardless of the emotional state of the participants.

4.5 Gender difference on buying behavior

By analyzing the gender data, we observe differing performances between males and females in terms of their buying desire. The mean assessment score of buying desire reveals a distinctive difference among the female group. Specifically, for females, the mean buying desire score is higher on live streaming (Mean = 2.29846) compared to pictures (Mean = 2.03385). This indicates that females are more inclined to express a higher desire to buy when engaged in the live streaming environment, possibly due to the interactive and emotionally engaging nature of live content.

Conversely, the male group does not exhibit a significant difference in their buying desire between the two contexts. The mean buying desire score for males is 2.073 on live streaming and 1.975 on pictures, showing only a slight variation. This suggests that males' purchasing willingness is relatively stable across both live streaming and static picture presentations, indicating that the type of content—live or picture—does not significantly influence their buying desire.

The data indicates that females are more responsive to the live streaming environment in terms of purchasing desire, while males show a consistent level of buying desire regardless of the presentation format. This gender-based difference highlights the importance of tailoring marketing strategies to effectively engage different demographics. For female consumers, leveraging the interactive and dynamic nature of live streaming may enhance purchasing willingness, whereas for male consumers, maintaining consistent and informative content may be more effective.

5. Discussion

5.1 Interpretation of the results

The result of this survey shows several trends in the consuming practice of consumers. Firstly, compared to live streams using reciprocal techniques, live streams that use techniques that require more emotional connections lead to worse effects. Secondly, female participants consume more in live streams, while male participants show no statistically significant difference.

There are evolutionary and psychological mechanisms that can explain these trends. To begin with, the failure of live streams using emotional evoking strategies is due to multiple psychological reasons, including social comparison theory, aversion to manipulated scarcity, and reactance. While social comparison theory explains the failure of live streams aiming to gain sympathetic emotions, the other two focus more on anxiety-creating live streams.

Social comparison is the process by which people evaluate themselves by comparing properties and skills of their own with others. There are 2 types of social comparison, upward social comparison is one comparing himself with ones he considers better than him. Upward comparison is considered as an action showing one's desire to improve oneself (Wang JL, 2017)[13]. On the other hand, Downward social comparison is when one compares himself with others that he considers worse than him (Wills, 1981)[14]. By comparing to the inferior ones, one can feel pleasure and maintain a relatively high level of self-esteem. Despite the possibility of being an unconscious action, a downward social comparison happens when audiences are watching live streamers who are trying to make their audience pity them. Because of the pleasure of being proved to be of a higher social status, the audience may have the will to let the live streamers “stay poor and lower than me”, thus unconsciously avoiding buying their products (See Figure 7).

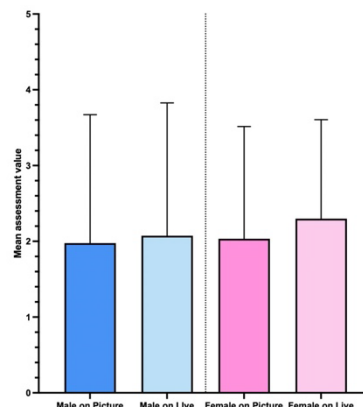


Figure 7 Gender difference on buying behavior

For the live streams that want to improve sales by evoking anxious emotions, the underlying reasons are more complex. Firstly, the psychological phenomenon of reactance. Reactance is generally defined as the natural will to gain back certain freedom after losing it or being threatened (Steindl, 2015)[15]. In this case, consumers at an anxiety-based live stream feel the loss of free consuming behavior when the live streamers emphasize the necessity of this product, using syntax such as “You must have”, or “This is a young girl like you have to own”. As a result, the reactance response is triggered, and one thus refuses to purchase that product to “protect” one's potential freedom of action. Besides, anxiety-provoking live streams often underline the scarcity of a particular product. It is human nature for people to gain something scarce, which is defined as the term scarcity loop. While scarcity can promote consuming behaviors, when there is a sense of manipulated scarcity, people will feel a strong aversion. In most anxiety-provoking live streams, the live streamers aren't professional actors, and the ways they try to create scarcity feelings are rigid and, obviously, faked. Moreover, the over-justification effect takes place explaining the failure of anxiety-promoting live-stream speaking skills.

Next, the distinct results due to gender can also be demonstrated from a biopsychosocial

perspective. From an evolutionary point of view, in ancient societies, females are responsible for maintaining ingroup relationships and nurturing future generations. Thus, this form of social organization made female individuals particularly sensitive to other's emotions and pain (Bryant, 1982; Olweus and Endresen, 1998) [16][17]. In a live stream, females are more likely to be emotionally connected to the live streamer and thus purchase products due to various emotional connections, in this case, sympathy and excitement. In addition, due to social issues and neurological foundations, females are more susceptible to anxiety and insecure moods. According to the research conducted by Schmitt, David P, et al., females show an overall higher score on neuroticism, the trait in the Big Five personality traits that represents one's likelihood to experience negative emotions (Schmitt et al., 2008)[18]. So, the anxiety-driving techniques in live streams are more likely to affect female audiences, who are the major target customers of these products. Furthermore, the form of a live stream provides more face-to-face interaction between consumers and sellers. The form itself provides the opportunity for constructing emotional bonds, and as mentioned above, females emotionally connect with others more easily, thus making the results collected from female participants show an overall tendency to purchase more objects in the live stream.

5.2 The limitations of this research

This research is done through an online survey. Therefore, several confounding variables are not rigorously controlled: First of all, it is hard to predict or control the participants' emotional states before the survey, which might in turn affect the effectiveness of the emotional disturbance process. Second, the data is collected from participants of different genders, ages, and locations. These differences might affect their view and emotions towards online streaming and their purchasing willingness. Also due to the online nature of the research. It is hard to predict to what degree the participants finished the questionnaire earnestly and reflected their willingness completely correctly.

Moreover, the sample size collected is limited (A total number of about 150 sets of data are collected from participants), and the data is collected from the people around us instead of a completely random sampling of the entire population (Most of the participants are focused in China, Beijing, under the age of 50). This leads to the result that the data collected and researched might not be able to represent the overall human population.

5.3 Novelty of this paper

Although immature, this research is still valuable and with great novelty. In the era of the internet and information, online shopping became a major way for younger generations, and buy things in live streams is a major way of online shopping. However, according to the current national and international status quo, there is a very limited number of research about the underlying biopsychosocial mechanism of live streaming, when live streaming is already gradually developing into a kind of culture. How will live streaming develop as consumers increase? Will live streaming become more popularized or it will become less favored in the future? What kinds of social impacts do life screaming impose on society as a whole and on different groups of people? These are all crucial unanswered questions that remain unclear. This paper, by conducting independent research and providing a multifaceted explanation and analysis of the results, delivers an innovative attempt to understand these unresolved puzzles. It highlights the need for further research and points to future directions.

6. Conclusion

The result of our research shows that under a highly emotional atmosphere in live streaming rooms, individuals exhibit diminished buying desire. Compared to males, females exhibit a higher buying desire under live streaming room conditions. The null hypothesis stating that individuals will consume more products under live streaming conditions is rejected, while the null hypothesis regarding the difference between female and male individuals is supported. To the content of our study, the result of this research reveals an astonishing fact that live streaming may not have the promoting effect on purchasing behaviors that the public assumed. The rejection of the former null

hypothesis emphasizes the underdevelopment of the live streaming industry, and from a broader point of view, online shopping and advertising industries. In addition, the accepted null hypothesis about gender differences also provides us an opportunity to reflect on society and the live-streaming industry based on this observed difference. What role the society play in shaping people with different gender identities? Do modern advertisements spread anxiety and create unnecessary needs? These are all questions revealed from this study, which are worth further consideration and study. The exact brain regions incorporated into a type of emotion remain unclear, the decision-making processes might differ between cultures, and how emotional reactions influence our rationality is still a mystery, future research is warranted.

References

- [1] *The Experience of Emotion – Introduction to Psychology*. (n.d.). Retrieved June 13, 2024, from <https://openpress.usask.ca/introductiontopsychology/chapter/the-experience-of-emotion/>
- [2] Barta, S., Belanche, D., Ana, F., & Marta, F. (2023). Influencer marketing on TikTok: The effectiveness of humor and followers' hedonic experience. *Journal of Retailing and Consumer Services*, 70(C).
- [3] Camerer, C. (1999). Behavioral economics: Reunifying psychology and economics. *Proceedings of the National Academy of Sciences of the United States of America*, 96(19), 10575–10577. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC33745/>
- [4] Friedman, J. (1982). Chapter 11 Oligopoly theory. In *Handbook of Mathematical Economics* (Vol. 2, pp. 491–534). Elsevier. [https://doi.org/10.1016/S1573-4382\(82\)02006-2](https://doi.org/10.1016/S1573-4382(82)02006-2)
- [5] Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., & Abdullah, S. (2016). Factors Influencing Online Shopping Behavior: The Mediating Role of Purchase Intention. *Procedia Economics and Finance*, 35, 401–410. [https://doi.org/10.1016/S2212-5671\(16\)00050-2](https://doi.org/10.1016/S2212-5671(16)00050-2)
- [6] McEntarffer, R., & Weseley, A. (2012). *Barron's AP psychology* (5. ed). Barron's.
- [7] Mofokeng, T. E. (2021). The impact of online shopping attributes on customer satisfaction and loyalty: Moderating effects of e-commerce experience. *Cogent Business & Management*, 8(1), 1968206. <https://doi.org/10.1080/23311975.2021.1968206>
- [8] Montag, C., Lachmann, B., Herrlich, M., & Zweig, K. (2019). Addictive Features of Social Media/Messenger Platforms and Freemium Games against the Background of Psychological and Economic Theories. *International Journal of Environmental Research and Public Health*, 16(14), 2612. <https://doi.org/10.3390/ijerph16142612>
- [9] Musgrave, F., & Kacapyr, E. (2009). *Barron's AP Microeconomics/Macroeconomics*. Barrons Educational Series. <https://books.google.com/books?id=HOgnCdK806EC>
- [10] (PDF) The Influence of Gender on Online Consumer Decision Making: A Review. (2024). *ResearchGate*. <https://doi.org/10.24940/theijbm/2020/v8/i7/BM2007-053>
- [11] Reed, D. D., Niileksela, C. R., & Kaplan, B. A. (2013). Behavioral Economics. *Behavior Analysis in Practice*, 6(1), 34–54. <https://doi.org/10.1007/BF03391790>
- [12] Richins, M. L. (1997). Measuring Emotions in the Consumption Experience. *Journal of Consumer Research*, 24(2), 127–146. https://econpapers.repec.org/article/oupjconrs/v_3a24_3ay_3a1997_3ai_3a2_3ap_3a127-46.htm
- [13] Wang JL, Wang HZ, Gaskin J, Hawk S. The mediating roles of upward social comparison and self-esteem and the moderating role of social comparison orientation in the association between social networking site usage and subjective well-being. *Front Psychol*. 2017;8:771.
- [14] Wills, T. A. (1981). Downward comparison principles in social psychology. *Psychol. Bull.* 90, 245–271.

[https://scholar.google.com/scholar?q=Wills,+T.+A.+\(1981\).+Downward+comparison+principles+in+social+psychology.+Psychol.+Bull.+90,+245%E2%80%9393271.&hl=en&as_sdt=0&as_vis=1&oi=scholar](https://scholar.google.com/scholar?q=Wills,+T.+A.+(1981).+Downward+comparison+principles+in+social+psychology.+Psychol.+Bull.+90,+245%E2%80%9393271.&hl=en&as_sdt=0&as_vis=1&oi=scholar)

[15] Steindl, C., Jonas, E., Sittenthaler, S., Traut-Mattausch, E., & Greenberg, J. (2015). Understanding Psychological Reactance: New Developments and Findings. *Zeitschrift für Psychologie*, 223(4), 205–214. <https://doi.org/10.1027/2151-2604/a000222>

[16] Bryant, B.K., 1982. An index of empathy for children and adolescents. *Child Dev.* 53 (2), 413–425, <https://www.jstor.org/stable/1128984>

[17] Olweus, D., Endresen, I.M., 1998. The importance of sex-of-stimulus object. Age trends and sex differences in empathic responsiveness. *Soc. Dev.* 7 (3), 370–388, <https://doi.org/10.1111/1467-9507.00073>

[18] Schmitt, David P., Anu Realo, Martin Voracek, and Jüri Allik. 2009. "Why can't a Man be More Like a Woman? Sex Differences in Big Five Personality Traits Across 55 Cultures": Correction to Schmitt Et Al. (2008)." *Journal of Personality and Social Psychology* 96 (1): 118. 10.1037/0022-3514.94.1.168

[19] Bechara A , Damasio H , Damasio A R ,et al.Different Contributions of the Human Amygdala and Ventromedial Prefrontal Cortex to Decision-Making[J].*Journal of Neuroscience*, 1999, 19(13):5473-5481.DOI:10.1523/jneurosci.19-13-05473.1999.

[20] Damasio, A. R. (1994). Descartes' error: emotion, reason, and the human brain. <http://ci.nii.ac.jp/ncid/BA81390277>

[21] Irrational emotions or emotional wisdom? The Evolutionary Psychology of affect and social behavior. (2012). In *Psychology Press eBooks* (pp. 33–52). <https://doi.org/10.4324/9780203720752-8>

[22] Levin H S , Eisenberg H M , Benton A L .Frontal Lobe Function and Dysfunction[M].Oxford University Press, 1991.

[23] Nermend, K., & Łatuszyńska, M. (2017). Neuroeconomic and behavioral aspects of decision making. In *Springer proceedings in business and economics*. <https://doi.org/10.1007/978-3-319-62938-4>

[24] Simon, H. (1990). Reason in human affairs. Stanford University Press.