Racing Against Time

How Limited Time Offers Influence your Emotions, Thoughts and Actions

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Abstract

While commercial advertising is designed to drive product sales using persuasive techniques, its influence often extends beyond its intended scope, impacting consumers in other aspects of their life. Motivated by the realization that consumers often feel overwhelmed by these strategies, this study examines how time pressure in advertising affects emotional responses and behavior, aiming to provide insights into the unintended consequences of advertising on consumer wellbeing. This paper adds to the research on unintended advertising effects by examining limited time offers, and more specifically countdown timers in advertising, and their influence on (1) fear of missing out (FoMO), (2) financial wellbeing, (3) happiness, (4) satisfaction with life and (5) proneness to compensatory buying. Through a quantitative experimental study, we find that those exposed to advertisements including a countdown timer, experience higher levels of FoMO, and feel worse off financially compared to those exposed to advertisements without a countdown timer. Furthermore, our research reveals that individuals exposed to ads including a countdown timer feel less happy and less satisfied with their life. Moreover, we find that those exposed to an advertisement with a countdown timer are more likely to engage in subsequent compensatory buying. Overall, these observations emphasize the need for more ethically aware advertising practices in a time where advertising is omnipresent. The paper concludes with a discussion on the theoretical and practical implications, emphasizing the need for marketers to consider the broader effects of employing time scarcity tactics in advertising, advocating for more ethical marketing practices that prioritize consumer wellbeing. Finally, the paper identifies potential topics for future research.

Keywords: time scarcity, limited time offers, countdown timers, unintended advertising effects, FoMO, financial wellbeing, happiness, satisfaction with life, compensatory buying

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1. Introduction

1.1 Background

Have you ever felt pressured to take an offer that was only available for a limited amount of time? Did this make you worry that you might miss out on an opportunity that others could take advantage of? Think about how this may have influenced your decisions. Did it affect your financial choices? Did it impact your happiness or change how you view yourself compared to others? This research paper explores previously unexamined unintended effects of limited time offers. More specifically, we look at how the presence of a countdown timer in advertisements affects people's (1) fear of missing out (FoMO), (2) financial wellbeing, (3) happiness (4) satisfaction with life and (5) proneness to compensatory buying.

People encounter resource scarcity in all aspects of their lives (Sarial-Abi et al., 2021). Scarcity, a central concept in economics, holds that the limited availability of resources cannot adequately satisfy the unlimited demands of consumers, thereby referring to the state where supply does not meet demand (Kristofferson et al., 2016). According to the scarcity principle, items that are less available are often deemed more valuable, convincing consumers to purchase these items before they run out. In the marketplace, scarcity is created when the availability of resources is reduced for a limited amount of time (Salerno and Sevilla, 2019) or if there is only a certain quantity available (Ge, Messinger and Li, 2009), thereby enhancing consumer demand and encouraging immediate purchases.

In this study, we explore the impact of time scarcity in an online marketing context. Time scarcity messages encompass any communication tactic that uses the scarcity of time to motivate an immediate response from a consumer. Time scarcity messages incorporate limited time offers, a broad category that includes any promotional deal available only for a restricted period (Khetarpal and Singh, 2023). Examples of limited time offers are events like Black Friday, happy hours at bars or restaurants, as well as last-minute vacation deals and promotions such as "today only", "ends tomorrow" or countdown timers, utilized to immediately show how much time remains until an offer expires (e.g., "sale ends in 1 day: 1 hour: 7 minutes: 30 seconds"). Retailers make use of limited time offers on different

occasions. An observation of 50 online stores across diverse industries revealed that at the time of the search 38% of the retailers employed different forms of limited time offers on their homepages, highlighting the widespread use of this promotional tactic.

For product managers looking to generate excitement around their promotions, the use of scarcity appeals is a key strategic element (Aggarwal et al., 2011). This encompasses tactics such as exclusive product releases, limited product editions and limited time offers, enhancing perceptions of scarcity and urgency. Research on time pressure spans across various fields, including economics (Karagözoğlu and Kocher, 2018), psychology (Baer and Oldham, 2006), marketing (Hahn, Lawson and Lee, 1992) and finance (Nursimulu and Bossaerts, 2013). Previous studies have explored the impact of time constraints on consumer behavior. For instance Inman, Peter, and Raghubir (1997) found that imposing time limits can increase purchase intention and convince customers to act upon the offer. On the other hand, time constraints can create stress and pressure among customers (Sinha, Chandran and Srinivasan, 1999) and have been found to bring forth a number of emotions such as arousal (Wu et al., 2020), aggression (Griskevicius et al., 2009) and stress (Gärling et al., 2015).

The concept of time pressure is multifaceted, involving the imposition of limits, individuals' attitudes towards these limits and the emotional responses they evoke. Maule and Svenson (1993) describe time pressure as a direct result of decision-making time constraints. Similarly, Payne, Bettman and Johnson (1988) define it as the subjective emotional experience triggered by these constraints. Furthermore, it was found that time pressure could lead to anxiety when consumers feel overwhelmed by the deadline (Svenson and Edland, 1987). Research on consumer behavior has increasingly focused on the effects of time pressure on decision-making. For example, Kocher and Sutter (2006) examined how time pressure impacts the quality of decisions by looking at the relationship between decision quality, time pressure and material incentives. Although studies like those by Payne et al. (1988, 1996) indicate that time pressure might degrade decision quality, other research, including work by Ordóñez and Benson (1997) suggests that time pressure can actually accelerate decision-making and improve decision quality by promoting quicker, more decisive actions.

The impact of time scarcity messages on consumer emotions and behavior connects to concerns about modern advertising practices. Advertisement has significantly strengthened its impact to the extent that it reaches beyond the promotion of products and has the ability to impact people's perceptions of themselves and others, making them more selfish and anxious (Pollay, 1986) and less confident (Dimofte, Goodstein, and Brumbaugh, 2015). While these effects are unintended, they are disregarded and there is a need to recognize these beyond just the scope of the advertiser's interest (Dahlén, 2021). These negative impacts underscore the need for advertisers to consider the broader implications of their campaigns on consumer wellbeing and call for a more ethically aware and socially responsible advertising practice that aims to mitigate unintended negative consequences while promoting products (Dahlén, 2021).

1.2 Purpose and Research Question

In summary, the purpose of this research paper is to investigate the effects of limited time offers, specifically by employing countdown timers, on an individual's (1) fear of missing out, (2) financial wellbeing, (3) happiness (4) satisfaction with life, and (5) proneness to compensatory buying. Hypotheses are developed based on relevant literature on scarcity in advertising (e.g. Aggarwal et al., 2011), fear of missing out (e.g. Gupta and Sharma, 2021), financial wellbeing (e.g. Brüggen et al., 2017), happiness and satisfaction with life (Diener, 1993), and compensatory buying (Mandel et al., 2017). These relationships are then tested in an experiment, in which participants are randomly assigned to groups and exposed to advertisements with a countdown timer versus no countdown timer.

The overarching research question of this thesis is presented below:

How do countdown-based limited time offers influence consumer behavior and emotions, particularly fear of missing out, financial wellbeing, happiness, satisfaction with life, and compensatory buying?

1.3 Delimitations

In order to provide context on the following delimitations, this paper is based on a survey that was performed as part of the main study. The main study examines one offer in an

experimental set-up where participants are randomly assigned to one of two treatment groups and exposed to an advertisement with either a countdown timer or no countdown timer.

The first delimitation was the exclusion of brand/company names in the treatments. This decision was informed by an understanding of the participants' prior brand associations and their personal relationships with companies. By implementing this boundary, the respondents in the study were encouraged to adopt a more neutral mindset towards the advertisement, to achieve more unbiased results. Furthermore, only one product was tested as part of the main study, even though this restriction limits how applicable and valuable the results and contributions can be.

The study was carried out entirely online, allowing for a more targeted analysis. However, data collection was confined to an online survey shared within the author's personal network, leading to a convenience sample. This sampling method may affect the broader applicability and generalizability of the results due to limited diversity, potential biases as well as challenges in replication.

1.4 Contributions

This research paper draws from existing studies on the psychological impacts of marketing and the literature on unintended advertising effects and introduces new insights by exploring the influence of limited time offers in a promotional context using countdown timers. While previous research has mainly focused on the effectiveness of these persuasive methods, this study aims to highlight the potential adverse effects associated with them. The hypotheses were largely inspired by literature on social psychology, which upon review led us to focus our attention on how pressure felt under time constraints might impact a range of variables, namely FoMO, financial wellbeing, happiness, satisfaction with life, and compensatory buying. This comprehensive approach helps uncover the broader implications of marketing strategies on consumer wellbeing and behavior.

1.5 Disposition

The introduction (1) provides an overview of the thesis, detailing the background, purpose, delimitations, and contributions. Following this, the theoretical framework (2) is introduced,

which forms the basis of the study, analyses, discussions, and conclusions within the thesis. The methodology section (3) discusses the selection of methods and designs for data collection, outlines the research topic, and describes the study object. It also details the development of the measures used in the study. The results section (4) then presents the findings of the study, organized by the hypotheses previously outlined in the theoretical framework. Following the results is the discussion (5) section, where the results are thoroughly examined, discussing theoretical and practical implications as well as highlighting the limitations of the study and providing recommendations for future research. The thesis concludes with references (6) and any relevant appendices (7).

2. Theoretical Framework and Hypotheses

This research paper adopts a perspective through which exposure to limited time offers is examined in relation to the emotional response of fear of missing out (H1). This perspective serves as a framework for exploring various cognitive, emotional, and behavioral effects triggered by such exposure. Specifically, we hypothesize that this emotional response might impact an individual's financial wellbeing (H2), happiness (H3), satisfaction with life (H4), and proneness to compensatory buying (H5). The relationships as well as their directions are illustrated in *Figure 1*.

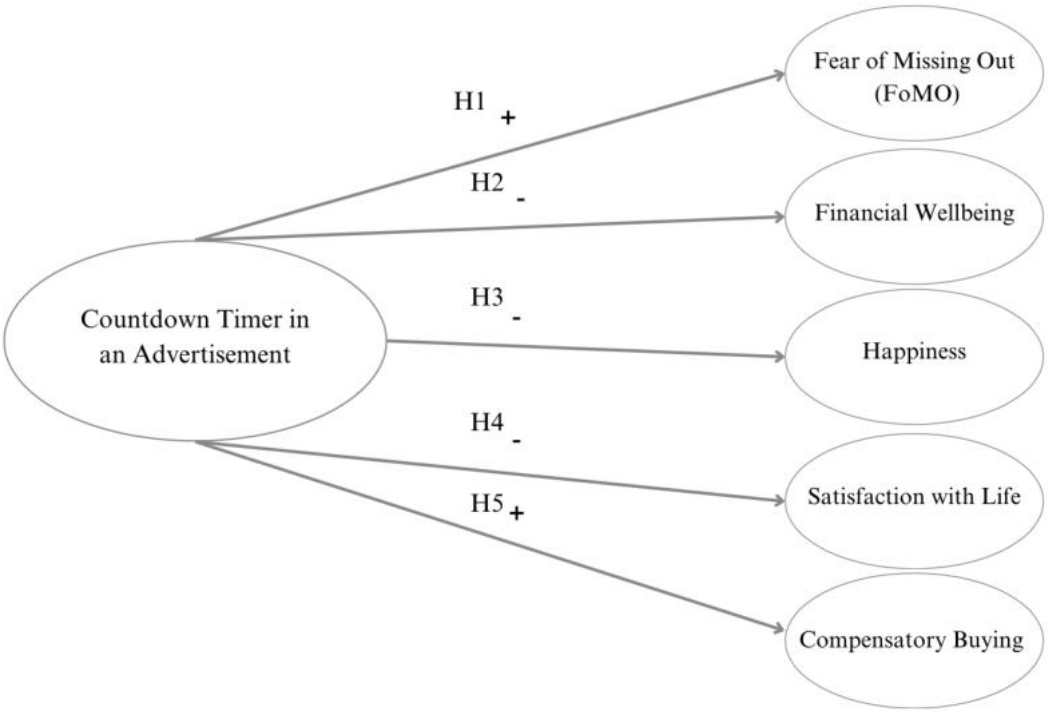

Figure 1. Visualization of relationship of independent and dependent variables.

2.1 Fear of Missing Out

Fear of missing out was first conceptualized by Herman (2000), highlighting a unique social anxiety stemming from the belief that others may be experiencing fulfilling events that one is missing. The phenomenon is further characterized by psychologists as ‘pervasive apprehension that others might be having rewarding experiences from which one is absent’ (Gupta and Sharma, 2021). The psychological groundings of FoMO have extensively been

explored in literature, highlighting that it originates from innate human needs such as belonging, esteem and self actualization (Alabri, 2022).

The popularity of the term FoMO has increased with the rise of digital platforms, particularly on social networking sites where users are constantly exposed to and updated with what others are doing (Elhai et al., 2016). This constant exposure to highlights of others' lives heightens the sense of missing out. FoMO is also characterized by strong social comparisons where individuals who experience FoMO tend to compare their achievements with others, resulting in feelings of inferiority (Tandon et al., 2021).

Marketers strategically employ FoMO in advertising. A feeling of FoMO arises when people think they will miss out on an opportunity that will benefit them, which is intensified when opportunities are scarce (Zhang, Jiménez and Cicala, 2020). Companies often create campaigns that emphasize limited time offers or exclusive deals, directly appealing to the customers' fear of missing out. These tactics are particularly effective because they leverage a psychological trigger: scarcity increases desirability (Lynn, 1991). Time scarcity messages in a promotional context therefore put pressure on consumers to act quickly to not lose the opportunity of getting the offer (Wu et al., 2020). Furthermore, research indicates that promotional messages that stress the scarcity of an offer pressure consumers into making quicker purchasing decisions. These decisions are not always rational but are driven by an emotional response to the rarity and value of the offer (Aggarwal et al., 2011). Individuals with high levels of FoMO are likely to engage in impulsive buying behavior, driven by the anxiety that failing to act might result in missing out on a great deal (Khetarpal and Singh, 2023; Tandon et al., 2021).

In this study we propose that when promotional offers are only available for a limited amount of time, consumers will experience a higher level of FoMO, brought forward by social comparison, which subsequently might influence their financial wellbeing, happiness, satisfaction with life and compensatory buying. We thus hypothesize:

H1: Exposure to an advertisement with a countdown timer (no countdown timer) will trigger a higher (lower) level of FoMO.

2.2 Financial Wellbeing

Measures traditionally used to assess financial wellbeing, such as income and net worth, often fail to account for an individual's personal evaluation of their financial status (Prawitz et al., 2006). Personal financial 'wellness' comprises four key sub components: objective status, financial satisfaction, financial behavior and subjective perception (Joo and Grable, 2004). In truth, the way people view their financial wellbeing is highly subjective, influenced by many factors beyond their objective financial status (Brüggen, 2017) as those objective indicators do not measure one's feelings about their financial situation nor their reaction to it (Prawitz et al., 2006). An example of this is that two people who might have the same income are likely to have different subjective perceptions about their financial situation, depending on their consumption and spending habits (Prawitz et al., 2006).

People's comparison with others in terms of what they possess or lack impacts their financial wellbeing (Dolan, Peasgood, and White, 2008; Ferrer-i-Carbonell, 2005). This also includes desired living standards as an important component of subjective financial wellbeing (Brüggen 2017). Those personal goals are not only unique and subjective to each individual but also affected by external influences. Advertisements can lead to shifts in the desired living standards of those exposed to them as they imply that other people might have the advertised product, leading to upward social comparisons such as lifestyle comparisons (Englis and Solomon, 1995). Exposure to advertisements that include time scarcity messages creates a sense of urgency that can lead to hasty purchasing decisions (Khetarpal et al., 2023). The pressure to act quickly, which might be driven by a fear of missing out on a good deal or other factors, may lead to impulsive financial behavior that is not aligned with an individual's long-term financial goals or current financial capacity. This might become even more prevalent for offers advertising high price items such as cars or a luxury vacation where individuals feel pressure to keep up with others' lifestyles, showing that social comparison as triggered by FoMO might pressure people into financial decisions they are not ready for. The second hypothesis is therefore summarized by the following:

H2: Exposure to an advertisement with a countdown timer (no countdown timer) will negatively (positively) influence financial wellbeing.

2.3 Happiness

Research consistently demonstrates that happiness is greatly impacted by various factors, including relationships, health and financial stability (Diener et al., 1999). Moreover, studies emphasize the significance of subjective wellbeing, which incorporates individuals' perceptions of life quality, including both emotional responses and cognitive assessments. This area of research highlights the crucial influence of personal evaluations and emotional experiences on overall happiness.

Leon Festinger's social comparison theory (1954) provides a framework for understanding how people assess their happiness based on comparisons with others. According to this theory, individuals determine their own social and personal worth based on how they stack up against others (Festinger, 1954), often leading to distorted personal expectations and feelings of inadequacy when these comparisons are unfavorable (Vogel et al., 2014). The social comparison theory further serves as a foundational concept for understanding the psychological impact of FoMO, especially in a social media context as the exposure to the idealized aspects of people's lives not only fosters unrealistic benchmarks for personal happiness and success, but also leads to emotional distress and potentially depression (Gupta and Sharma, 2021). Furthermore, exposure to limited time offers may bring forth unfavorable social comparisons in individuals against those who are able to get the offer within the limited time frame (Gärling et al., 2016). Our hypothesis is thus summarized in the following way:

H3: Exposure to an advertisement with a countdown timer (no countdown timer) will negatively (positively) influence happiness.

2.4 Satisfaction with Life

Life satisfaction represents a crucial cognitive component of subjective wellbeing and entails an individual's assessment of their overall quality of life. This assessment is generally considered a stable indicator of wellbeing, as it reflects an individual's long-term personal fulfillment. Pavot and Diener (1993) define life satisfaction as a subjective evaluation that is influenced by a person's unique criteria for happiness and fulfillment.

Research consistently shows a positive correlation between life satisfaction and self-esteem (e.g. Szcześniak et al., 2021). Self-esteem, which involves personal judgements of worthiness and competence, significantly impacts an individual's overall psychological health. According to Rosenberg (1965), high self-esteem contributes to greater life satisfaction because individuals with positive self-perceptions are likely to interpret life events more favorably and feel more in control of their outcomes. Research further suggests that self-esteem not only enhances life satisfaction but also buffers against the negative effects of stress, promoting a more resilient sense of wellbeing (Orth, Robins and Meier, 2009). The concept of upward social comparisons, where individuals compare themselves to those they perceive as better off, plays a significant role in influencing self-esteem and, by extension, life satisfaction (Gupta and Sharma, 2021). Festinger's (1954) social comparison theory posits that these comparisons can result in feelings of inferiority and decreased self-esteem when the comparisons are unfavorable. Frequent upward comparisons, especially in the context of social media, can exacerbate feelings of inadequacy and reduce overall life satisfaction (Wheeler and Miyake, 1992).

Recent studies have explored the relationship between FoMO and life satisfaction, typically finding an inverse relationship (Uram and Skalski, 2020). Przybylski et al. (2013) provide foundational insights into how FoMO negatively impacts life satisfaction by demonstrating that higher levels of FoMO are associated with lower satisfaction with life, as constant anxiety about missing out on rewarding experiences leads to chronic dissatisfaction and a diminished sense of wellbeing. Kasser and Ryan (1993) found that materialism and acquisition-driven lifestyles, often spurred by marketing tactics employing FoMO, correlate negatively with life satisfaction and wellbeing. Increasing urgency through limited time offers might intensify FoMO, thereby potentially negatively impacting life satisfaction. We therefore hypothesize:

H4: Exposure to an advertisement with a countdown timer (no countdown timer) will negatively (positively) influence satisfaction with life.

2.5 Compensatory Buying

Compensatory buying describes the psychological processes and behavioral patterns consumers exhibit following a significant purchase. Compensatory consumer behavior is defined by ‘any purchase, use or consumption of products or services motivated by a desire to offset or reduce a self-discrepancy’ (Mandel et al., 2017). The decision-making process in compensatory buying can be understood through mental accounting, as proposed by Thaler (1985), which posits that individuals categorize, evaluate and keep track of financial activities, assigning different expenditures to different mental accounts. When a consumer makes a significant purchase, the mental budget allocated for that category or time period might be depleted, which discourages further purchases in the near future. This is a form of self-regulation to avoid overspending and maintain financial balance.

From a behavioral economics standpoint, compensatory buying can also be seen as a manifestation of the pain of paying. The ‘pain of paying’ refers to the emotional discomfort caused by spending money (Prelec and Loewenstein, 1998). High expense purchases significantly amplify this pain, often causing people to avoid buying high price items for a while. To ease this financial discomfort, consumers might cut back on their spending, particularly on similarly expensive items.

Following an expensive purchase made under FoMO, consumers may experience buyers remorse or financial guilt, especially if the purchase strained their budget or deviated significantly from their typical spending behavior. This might disrupt their mental budgeting, leading to a need to compensate (Thaler, 1985). As a part of compensatory buying, individuals may opt for less expensive items than they would typically consider, in order to restore balance or to alleviate guilt from their initial expenditure. This behavior aligns with findings in consumer psychology that suggest compensatory savings or spending cuts after large purchases, which is further highlighted by the notion that consumers engage in more conservative spending following high-cost purchases (Soman & Cheema, 2002).

Cognitive dissonance theory, introduced by Leon Festinger (1962), proposes that individuals experience psychological discomfort when they hold contradictory beliefs, attitudes or behaviors. Dissonance here is defined as a psychologically uncomfortable state that arises

from inconsistencies between two or more cognitions. To alleviate this discomfort, individuals are motivated to reduce the dissonance, often by changing their attitudes or behaviors to become more consistent with each other. One way to resolve cognitive dissonance might be by devaluing the ‘unattainable’. When people cannot obtain something they desire, they may psychologically devalue that item to lessen the dissonance between their desire and their reality. After experiencing FoMO from a potentially lost opportunity due to a limited time offer, individuals might devalue the ‘unattainable’ and therefore settle for something dissimilar in the process of their compensatory buying. We aim to extend the research on how emotional triggers like FoMO might influence not just immediate buying choices but also subsequent consumer behavior and thus hypothesize:

H5: Exposure to an advertisement with a countdown timer (no countdown timer) will increase (decrease) the likelihood of engaging in subsequent compensatory buying of a dissimilar item.

3. Methodology

3.1 Research Method

In order to test the hypotheses, a quantitative research method was employed and an experimental study developed. The quantitative method is suitable for our purpose as it allows us to employ statistical analysis for exploring theoretical connections among several variables and to draw conclusions from a smaller sample size to a larger population (Eliasson, 2013, p.21 and p.30-31). A qualitative approach would have allowed for deeper analysis but was not considered to be well suited for our purpose and therefore disregarded in this study (Eliasson, 2013, p.30).

3.2 Choice of Approach

This study utilizes a deductive approach, drawing on established research, literature, and theories in the field. The hypotheses were derived from these theories and subsequently tested empirically in a new context. The quantitative method as described above is common for deductive research (Bryman 2018, p.48).

3.3 Choice of Subject

The selection of the study's subject is driven by the recognition that consumers often feel overwhelmed by the persuasive strategies utilized in advertising. Specifically, when under time pressure, emotional responses are intensified and individuals may engage in upward social comparison upon being exposed to advertisements. This study aims to investigate the impact of time pressure on consumer responses to advertising and to evaluate how consumers assess their emotional states after being exposed to such advertisementing tactics. The importance of this investigation is holding significance in comprehending the dynamics between limited time offers and consumer responses, providing valuable insights into unintended advertising effects and consumer wellbeing.

3.4 Study Object

3.4.1 Channel

The study was presented in a digital setting, focusing this thesis on consumer responses to e-commerce advertisements. Typical e-commerce advertisement designs were imitated to not create confusion for the respondents. This was done to ensure ecological validity by mimicking real-life situations which helped capture more accurate consumer behaviors and reactions as they occur in a natural setting. Digital environments that reflect real-world conditions tend to provide more reliable data that can be generalized to actual consumer experiences (Liu and Demosthenes, 2022).

3.4.2 Product Selection

Three high involvement experiences were selected to be tested as part of a pretest. High involvement experiences were chosen as they require more thoughtful decision-making due to their importance and cost (Jain, 2019). This heightened level of involvement was believed to magnify the effects of time pressure, making any influences and relationships between variables more observable. Furthermore, focusing on high involvement products only gives the thesis the opportunity to provide more nuanced theoretical and managerial implications.

All experiences chosen to be tested as part of the pretest are frequently promoted in the online marketplace. The study was designed to reduce surprises for the respondents to create a more authentic experience. By featuring commonly encountered products, this approach allowed respondents to focus better on the scenario and questions instead of needing to familiarize themselves with the products. Furthermore, the study ensured that the products were presented without any branding, logos, or other distinguishing features that might trigger existing brand associations, allowing for an unbiased assessment of the responses.

3.4.3 Promotion

In order to delimit the study, the authors decided to only examine one time limit in the treatment with the countdown timer. The countdown timer was set to approximately 22 hours, aiming for a duration just under 24 hours, a common practice in online retailing as observed on multiple retailers' websites. To determine the size of the percentage promotion to be used

in the main study, the pretest entailed both 15% and 20% discounts. These discount levels were selected based on their frequent application within the industry for comparable products (SendOwl, 2024).

3.5 Language

The pretest was presented to the participants in English. The main study's survey was conducted in English, German, and Swedish, accommodating the mother tongues of the participants and thus enhancing their comfort and the accuracy of their responses (Philomath Research, 2022). To ensure the translations were coherent and to prevent pitfalls from potential misunderstandings, an expert proficient in all three languages was consulted. Additionally, the advertisements used in the study were provided in all three languages and displayed according to the participant's selection at the survey's start. This approach ensured consistency in language use throughout the experiment. The results from each language group were later consolidated for analysis, enabling us to compare responses across the experimental groups effectively.

3.6 Pretest

3.6.1 Purpose of Pretest

A pretest was carried out in order to investigate which advertisements were most effective in triggering anxiety, a central component of FoMO (Hayran, Anik and Gürhan-Canli, 2020). The treatment consisted of advertisements for three different experiences (see *Appendix 1*). The intention was to determine if advertisements for these different experiences were perceived equally among participants to then decide which of them could be used in the main study. Both the effect of the countdown timer and a percentage discount on FoMO were tested in the prestudy. It was considered beneficial to assess the effects of the different ads separate from the main study as this approach allowed for the early identification of any issues, providing the opportunity to address potential problems before proceeding with the main study.

3.6.2 Pretest Design

The pretest was distributed as a digital questionnaire and conducted in an experimental set-up. The results were later analyzed using a quantitative method. The flow of the survey was that respondents were randomly allocated to one of four treatment groups and then exposed to three advertisements as well as brief instructions. A more detailed description of the four treatment groups can be found in *Appendix 1*. Participants were subsequently asked five questions.

The treatment consisted of advertisements for three different experiences: one for a vacation, one for a concert, and one for a dinner experience. To ensure comparability between the ads, we opted to create our own 'simulated' advertisements instead of using existing ads from real campaigns. This ensured that all advertisements were tailored to meet the study's requirements without any external influences. Each of the three experiences was advertised in four different ways for the purpose of the pretest. Two of them only showed a discount level of 15% or 20% respectively and the other ones showed either one of the discount levels as well as a countdown timer. Each respondent saw three distinct advertisements, one for each of the experiences, with the discount level and the presence of a countdown timer held constant *within* each treatment group (see *Appendix 1*). Therefore, all elements of the advertisements remained constant *across* the four treatment groups except for discount levels and the presence of the countdown timer. A brief instruction included the phrase 'Please inspect this ad'.

After being exposed to each of the three ads, respondents were asked to rate one measure to examine fear of missing out (FoMO), adapted from Zhang et al. (2020). The question was phrased "To what extent do you agree with the following statement", followed by "I feel anxious if I do not take this promotional offer". Answers were provided on a 7-point scale, ranging from "1 = strongly disagree" to "7 = strongly agree". This process was repeated after exposure to each of the ads, ensuring that responses were collected three times in total, one for each advertisement shown.

3.6.3 Pretest Sample

The sample included 87 respondents, distributed equally across the four treatment groups. This amounted to approximately 22 participants assigned to each of the groups which was deemed sufficient for the purpose of the pretest. The questionnaire was distributed to students of the Retail Management Program at the Stockholm School of Economics and therefore constitutes a convenience sample. Even though convenient samples are unable to produce fully generalizable results, they are sufficient for detecting early warning signals. and were therefore considered efficient for this purpose. Additionally, samples of this type and size have previously been utilized in comparable studies on the effects of advertising (e.g. Söderlund 2018, p.88).

3.6.4 Pretest Results

The results of the pretest showed that those exposed to the vacation advertisement with the countdown timer at a 20% discount felt a higher level of anxiety ($M = 4.29$) than those in the group without the countdown timer at the same discount level ($M = 3.0$). When performing a t-test, significance between the two was confirmed ($t = 2.42$, $p = 0.01$). Comparisons between other groups and other experiences did not yield significant results. It was therefore decided to use the vacation ad and the 20% discount for the main study.

3.7 Main Study

3.7.1 Study Purpose

The purpose of the main study was to examine the hypothesized relationships between the presence of countdown timers in advertisements on five different concepts, specifically fear of missing out, financial wellbeing, happiness, satisfaction with life and compensatory buying.

3.7.2 Study Design

An experimental method was used to test the causal effects of the presence of countdown timers. The use of experimental methods is widely recognized and appropriate for examining the effects of independent variables on a dependent variable, grounded in theoretical models (Söderlund 2018, pp. 16-18). The research employed a two-group, between-subjects design,

ensuring that participants in each of the groups were exposed to only one of the experimental conditions. Both groups were exposed to a vacation offer, similar to that in the pre-study. Group 1 was exposed to the ad with a discount of 20% and group 2 was exposed to the ad with a discount of 20% as well as a countdown timer (see *Appendix 2*).

It was important to ensure ecological validity to foster a natural environment and provoke authentic reactions of the participants (Bryman, 2018, p.74). Therefore, the advertisements were created to be as realistic as possible. A more detailed reasoning can be found in section 3.4.2. Brand names were excluded in the advertisement, since no emotional or personal connections to certain companies were supposed to be captured in the survey, since that could trigger previous personal bias towards the specific brand and not the actual offering (Ye and Van Raaij, 2004). In order to create a realistic experience, the advertisement featured an image of a family vacation, deliberately chosen to evoke feelings of happiness and relaxation. Utilizing emotional appeals in this way can significantly impact consumer behavior by making the advertisement more appealing and intensifying the longing for the depicted experience (Elliott, 1998). To further enhance its effectiveness, a compelling text was added, incorporating an additional element of realism to the advertisement.

Accompanying the advertisement was an instruction emphasizing that the participants should take as much time as they needed to inspect the ad. The directive maintained a neutral tone, allowing respondents to decide the duration of their ad inspection without imposing any expectations or pressure.

The survey also consisted of a questionnaire, measuring several emotional and behavioral effects, thereby providing a broad overview of the effects of limited time offers. Furthermore, a manipulation check was included within the framework of the experiment to avoid drawing false conclusions regarding cause and effect (Söderlund, 2018, p.86-87).

3.7.3 Survey Design

In the beginning of the survey, participants were asked to select their preferred language and were then guided to the instructions section, including information on GDPR in their respective language. The survey was then designed so that respondents were randomly

assigned and equally distributed to one of the two treatment groups, as introduced in 3.7.2. Subsequently, the advertisement was presented on the first page of the survey, permitting participants to allocate as much or as little time as they deemed necessary to examine the advertisement before proceeding to the next page.

The second page contained the manipulation check, which served the purpose of verifying that the treatment had the intended effect. The position of a manipulation check within a survey is strategically important. If placed immediately after the cause variable, it might impact the responses to the effect variables and reveal to the participants what the experiment is all about, which may affect the results. Conversely, positioning it at the end of the survey could lead to the effect variables influencing the responses to the manipulation check (Söderlund, 2018, p. 90-91).

In this study, the link between the manipulation check and the effect variables was deemed relatively abstract. Placing the manipulation check right after the cause variable ensures that any immediate effects of the treatment are captured before other variables can intervene or obscure these effects. Furthermore, placing the manipulation check close to the treatment helps in more accurately assessing and isolating the direct impact of the treatment, thereby refining the understanding of this complex relationship. Additionally, the manipulation check consisted of a single-item question, typically less noticeable than multi-item ones, which led the authors to conclude that the likelihood of the manipulation check unduly influencing the effect variables was minimal. Therefore, the manipulation check was placed right after the treatment. The consecutive pages contained questions measuring the independent variables in order to answer the hypotheses; (H1) FoMO, (H2) financial wellbeing, (H3) happiness, (H4) satisfaction with life and (H5) compensatory buying.

3.7.4 Measures

Time Measurement

This question was used as a manipulation check to measure how much time participants felt there was to use the offer they were presented with. Manipulation checks serve as post-experimental assessments commonly employed to confirm participants' comprehension of the treatment. The question "How much time do you feel there is to use the offer?" was

answered on a 10-point unipolar scale ranging from “1 = none at all” to “10 = a lot”. A single measurement scale was deemed efficient for this purpose due to the concrete nature of the question.

Fear of Missing Out

In developing the measurements for FoMO, we relied on the literature on psychology and marketing in this research paper. Fear of missing out was measured with three items adapted from Zhang et al. (2020). Respondents were asked “To what extent do you agree with the following statements”, followed by (1) “I feel anxious if I do not take this promotional offer”, (2) “I think I would fall behind others if I miss this offer” and (3) “I would regret not taking this promotional offer”. The respondents indicated their answers on a 10-point unipolar scale ranging from “1 = strongly disagree” to “10 = strongly agree”. Cronbach’s alpha was calculated ($\alpha = .87$) and the average computed to form an index.

Financial Wellbeing

There is no universally agreed on measurement for financial wellbeing yet. However, two features that are widespread are subjectivity, studied in different papers (e.g. Norvilitis, Szablicki, and Wilson, 2003; O’Neill, Sorhaindo, Xiao, and Garman, 2005) and financial satisfaction (Brüggen et al., 2017). Based on our review of the literature, we adopted measures from Dahlén et al. (forthcoming), and assessed financial wellbeing through the question “To what extent do you agree with the following statements”, followed by (1) “I feel I’m well off financially” and (2) “I feel like I have plenty of money”. The respondents indicated their answers on a 10-point unipolar scale ranging from “1 = strongly disagree” to “10 = strongly agree”. Cronbach alpha was calculated ($\alpha = .84$) and the average computed to form an index.

Happiness

The measurement for happiness in this study was taken from Etkin and Mogilner (2016). They base their measurement on Diener’s (1984) definition of happiness as an ‘experience of positive affect coupled with high life satisfaction’, which was examined through three statements. The question was “To what extent do you agree with the following statements”, followed by (1) **“**I feel happy”, (2) “I feel satisfied” and (3) “I feel content”, and answers

were provided on a 10-point unipolar scale from “1 = strongly disagree” to “10 = strongly agree”. Cronbach’s alpha was calculated (α = .92) and the average computed to form an index.

Satisfaction with Life

In order to measure how participants ranked their life satisfaction, three items were used from the ‘Satisfaction with Life Scale’, a psychological assessment tool designed to measure an individual’s subjective wellbeing and life satisfaction (Diener et al., 1985). The question was “To what extent do you agree with the following statements”, followed by (1) “In most ways my life is close to my ideals”, (2) “The conditions of my life are excellent” and (3) “I am satisfied with my life”. The respondents indicated their answers on a 10-point unipolar scale ranging from “1 = strongly disagree” to “10 = strongly agree”. Cronbach’s alpha was calculated (α = .87) and the average computed to form an index.

Compensatory Buying

In a further question, we wanted to investigate if those that were exposed to the offer with the countdown timer felt the need to regain control by buying either something similar but cheaper or something dissimilar. Therefore, we constructed a question where respondents could choose between a hoodie and a spa experience, formulated as “Which would you rather buy?”. The spa experience was selected to be part of this question because it offers a quick and less expensive way to relax, much like a mini-vacation. On the other hand, a hoodie was chosen because it is nothing like a vacation and does not provide the same type of escape or relaxation, making it a very different kind of purchase.

3.7.5 Sample and Data Collection

In order to determine the minimum sample size needed for this experiment, a G*Power analysis was conducted, using widely accepted values for effect size, α error probability and power. A sample of 199 participants was retrieved from the survey, equally allocated between the two treatment groups. The questionnaire was distributed via email and social media to students at the Stockholm School of Economics and the authors’ personal networks, which constitutes a convenience sample. This was deemed appropriate for this kind of experiment due to the convenience that allowed for a quicker and more efficient data collection, even

though one has to note that a convenience sample is not representative of the population and therefore unable to produce fully generalizable results as discussed in section 3.6.3. Responses were collected between March 25th and April 19th, 2024.

3.7.6 Reliability and Validity

All of the measurements have been developed to ensure the highest possible level of reliability and content validity. More detailed motivations for the development of each of the measurements can be found in section 3.7.4.

To guarantee content validity, the questions and response options were developed after a thorough review of relevant literature and in consultation with experienced researchers as recommended by Söderlund (2018, p.136). Academically established measures have been used where available, ensuring that the measurements employed in this study accurately assess what they are intended and purported to measure.

Multi-item scales were applied to those questions that required additional caution with regards to reliability (FoMO, financial wellbeing, happiness, and satisfaction with life). In all cases, Cronbach's alpha was calculated and results came out higher than the accepted level of 0.7 (Söderlund, 2018, p.136), which was considered satisfactory. The measurement for compensatory buying presented as a single item was less prone to error as it was measuring behavior (Söderlund, 2018).

4. Results and Analysis

The empirical results of the study are presented in the following section. The results from the manipulation check will be displayed first, followed by the results of the hypotheses in chronological order (H1 through H5).

Statistical significance was set at a level of 5% or below as is standard practice in academic research (Söderlund, 2018, p. 156). Statistically significant results were then interpreted as supporting the hypotheses.

A summary of the statistical test results between the two treatment groups (countdown timer versus no countdown timer at a 20% discount level) for each variable is presented in *Table 1*.

	Group 1: No Countdown Timer	**Group 2:** Countdown Timer			
Mean comparison	**M (SD)**	**M (SD)**	**Effect Size (Cohen's d)**	**t**	**p**
FoMO	2.27 (1.7)	2.94 (2.0)	0.358	-2.53	0.006
Financial Wellbeing	5.68 (2.2)	4.91 (2.1)	0.362	2.55	0.006
Happiness	7.32 (1.7)	6.33 (2.1)	0.521	3.67	<0.001
Satisfaction with Life	7.17 (1.6)	6.34 (2.1)	0.444	3.14	<0.001
Cross-tabulation	**N (%)**	**N (%)**		**x^2**	**p**
Compensatory Buying					
Hoodie	30 (30.3%)	50 (50%)			
				8.03	0.005
Spa	69 (69.7%)	50 (50%)			

Table 1. Summary of the Statistical Test Results.

4.1 Manipulation Check

Responses to the question about perceived time to use the offer were analyzed and then compared across the two groups. A mean comparison showed that the group exposed to the advertisement with the countdown timer perceived time to be more scarce ($M = 4.20$) than the group exposed to the offer without the countdown timer ($M = 6.35$). An independent t-test was then performed, confirming that the difference between the means was significant ($t = 6.02$, $p < 0.001$). Therefore, the manipulation check had the intended effect and the treatment was effective.

4.2 Fear of Missing Out

The first hypothesis (H1) examined fear of missing out. We predicted that exposure to an advertisement with a countdown timer (no countdown timer) would trigger a higher (lower) level of FoMO among individuals. The results show that those exposed to the offer with the countdown timer experienced higher levels of FoMO ($M = 2.94$) than those exposed to the ad without the countdown timer ($M = 2.27$). An independent t-test confirmed the differences to be statistically significant ($t = -2.53$, $p = 0.006$). Therefore, hypothesis 1 was supported.

4.3 Financial Wellbeing

The second hypothesis (H2) investigated the effects on financial wellbeing. It was proposed that those exposed to the advertisement with the countdown timer would negatively evaluate their financial wellbeing. From comparing the means, it became evident that those exposed to the advertisement with the countdown timer rated their financial wellbeing lower ($M = 4.91$) than those exposed to the ad without the countdown timer ($M = 5.68$). An independent t-test was carried out, confirming that the differences were significant ($t = 2.55$, $p = 0.006$). Hypothesis 2 was thus supported.

4.4 Happiness

The third hypothesis (H3) considered the participants' happiness. It was proposed that those exposed to the advertisement with the countdown timer would feel less happy. A mean comparison revealed that those who saw the ad with the countdown timer ranked their happiness to be lower ($M = 6.33$) than those exposed to the ad without the countdown timer

(M = 7.32). A t-test confirmed that the differences were significant ($t = 3.67$, $p < 0.001$). Hypothesis 3 was thus supported.

4.5 Satisfaction with Life

The fourth hypothesis (H4) argued that those exposed to the advertisement with the countdown timer would feel less satisfied with their life. A mean comparison of the responses from the two treatment groups disclosed that those subjected to the ad with the countdown timer were less satisfied with their life (M = 6.34) than those who saw the ad without the countdown timer (M = 7.17). An independent t-test confirmed the differences to be statistically significant ($t = 3.14$, $p < 0.001$). Therefore, hypothesis 4 was supported.

4.6 Compensatory Buying

For the final hypothesis (H5), we argued that those exposed to the offer with the countdown timer would be more likely to engage in compensatory buying of a dissimilar item. Based on the cognitive dissonance theory, it was predicted that participants exposed to the offer with the countdown timer were more likely to choose the hoodie as a way to resolve their discomfort from not acting on the initial high-pressure offer, by adjusting their attitudes towards the more practical choice and devaluing the option they missed by not choosing the similar spa experience. The difference in chosen response options between the two treatment groups was confirmed to be significant with a chi-square test ($\chi 2 = 8.03$, $p = 0.005$). Hypothesis 5 was therefore supported.

4.7 Hypotheses Summary

Table 2 provides a summary overview of the hypotheses and their results.

Hypothesis		**Result**
H1	Exposure to an advertisement with a countdown timer (no countdown timer) will trigger a higher (lower) level of FoMO.	supported ($p = 0.006$)
H2	Exposure to an advertisement with a countdown timer (no countdown timer) will negatively (positively) influence financial wellbeing.	supported ($p = 0.006$)
H3	Exposure to an advertisement with a countdown timer (no countdown timer) will negatively (positively) influence happiness.	supported ($p < 0.001$)
H4	Exposure to an advertisement with a countdown timer (no countdown timer) will negatively (positively) influence satisfaction with life.	supported ($p < 0.001$)
H5	Exposure to an advertisement with a countdown timer (no countdown timer) will increase (decrease) the likelihood of engaging in subsequent compensatory buying of a dissimilar item.	supported ($p = 0.005$)

Table 2. Hypotheses Summary

5. Discussion

5.1 Summary of Main Findings

At the start of this thesis, we questioned whether limited time offers could affect our emotions, thoughts, and actions; the results from our empirical analysis indicate that they do. In our experiment, we tested five relationships: that between the presence of a countdown timer in an online advertisement and a person's (1) fear of missing out (2) financial wellbeing, (3) happiness, (4) satisfaction with life and (5) proneness to compensatory buying. We were able to detect causal effects attributable to limited time offers by manipulating time information in an advertisement for a vacation. When exposed to the advertisement with the countdown timer (no countdown timer), people experienced a higher (lower) level of FoMO. Furthermore, we found that an individual's financial wellbeing was lower (higher) when exposed to an advertisement with a countdown timer (no countdown timer). Additionally, it was found that those exposed to the ad with a countdown timer (no countdown timer) ranked their happiness to be lower (higher). Satisfaction with life was found to be higher (lower) for those exposed to the advertisement without the countdown timer (with the countdown timer). Finally, a scenario was created to test if people's behavior would be affected as well. The results suggested that those exposed to an offer with a countdown timer (no countdown timer) were more (less) likely to engage in compensatory buying of a dissimilar item. Overall, our findings reveal consistent trends in the effects of limited time offers on the emotional, cognitive, and behavioral responses of individuals.

5.2 Theoretical Contributions

The main contributions of this paper are to the literature on marketing and wellbeing as well as the literature on unintended advertising effects, offering insights on the effect of limited time offers, adding to the research on time scarcity advertisements in the form of previously unexplored relationships. The theoretical implications of these relationships also extend to other academic fields, which we will now delve into further.

Our research extends the psychological understanding of Fear of Missing Out (e.g. Gupta and Sharma, 2021), by examining how limited time offers influence FoMO and related behaviors. In this paper, our proposal was that both the advertisement and the time pressure - by evoking

social comparison - would prime participants, influencing their subsequent assessments of their emotions and behaviors through a lens of FoMO. We find that limited time offers significantly elevate FoMO, which in turn might be the explanation for the negative effects on consumers' financial wellbeing, happiness, and satisfaction with life, while potentially increasing proneness to compensatory buying. These findings extend existing academic discussions by showing not only the immediate effects of such advertising tactics but also their broader psychological impacts, contributing to a deeper understanding of how urgency influences consumer decision-making and mental health. Future research may wish to examine whether FoMO truly acts as a mediating variable.

As highlighted by previous research, financial wellbeing is based on individuals' subjective assessments (e.g. Brüggen et al., 2017; Norvilitis et al., 2003, O'Neill et al., 2005). Existing research has identified a variety of factors, such as desired living standards and comparisons with others, that impact perceptions of financial wellbeing. However, the role of advertising efforts in shaping these perceptions has not been thoroughly investigated. Our study builds on the range of subjective elements empirically proven to affect financial wellbeing perceptions by exploring how limited time offers influences these assessments. We propose that advertisements might alter desired living standards and trigger social comparison, thereby affecting how individuals evaluate their financial situation. Moreover, the findings demonstrate that exposure to limited time offers negatively affects individuals' evaluation of their financial wellbeing. This suggests that marketing tactics leveraging time scarcity can induce feelings of inadequacy or pressure to keep up with others' lifestyles, ultimately impacting individuals' subjective perceptions of their financial status. The findings advance our understanding of the socio-cultural influences on financial wellbeing assessment, contributing to the broader literature on subjective wellbeing and consumer behavior (e.g. Prawitz et al., 2006).

Our findings on the effects of time pressure on happiness offer further insights into the negative impact of fear of missing out on subjective wellbeing, thus supporting existing literature from social psychology (e.g. Tandon et al., 2021). Building on the findings from Gärling et al. (2016), which explore time pressure and decision-making, this research extends the discourse by correlating time pressure specifically with happiness. By using reliable and validated measures of FoMO, the study offers insights into how such stressors affect

emotional states, contributing to broader discussions on consumer behavior and mental health in the context of marketing pressures. We expect these findings to be relevant to a number of research fields, including psychology and behavioral economics.

This thesis significantly contributes to understanding the relationship between limited time offers and satisfaction with life. By identifying a direct link between limited time offers and reduced life satisfaction, the study reveals how urgency in advertising can extend beyond immediate consumer reactions to affect broader aspects of wellbeing. It posits that exposure to limited time offers may not only pressure consumers into immediate purchasing decisions but also contribute to longer term dissatisfaction with life, extending existing research on the topic (e.g. Wheeler and Miyake, 1992).

Finally, the study expands on the concept of compensatory buying (Mandel et al., 2017) by demonstrating that exposure to limited time offers increases the likelihood of purchasing unrelated products as a form of compensation. This behavior, triggered by the initial unmet desire or frustration and social comparisons, illustrates a complex psychological and behavioral response to marketing stimuli. We demonstrate that the urgency created by limited time offers not only heightens the immediate desire to purchase but also triggers compensatory buying of unrelated products that occurs subsequently. Our study therefore sheds light on how specific advertising strategies can influence broader consumer behavior patterns, adding complexity to the traditional models of compensatory buying.

5.3 Practical Implications

In our thesis, we have brought forward new examples of how and when unfavorable unintended advertising effects occur. As these effects go beyond the scope of the advertiser's interest and affect large groups of people, they ought to be brought up and discussed. This debate does not only take place in academia but is relevant to policy makers and marketers alike.

Marketers should be mindful of the potential negative consequences of leveraging time scarcity as part of advertising. While limited time offers can be effective in driving sales and creating a sense of urgency among consumers, they may also lead to unintended outcomes such as increased stress levels and heightened anxiety. Ethical marketing practices that

prioritize transparency and consumer wellbeing are thus essential to maintain trust and credibility. Instead of exploiting consumers' fears, ethical marketing empowers them by providing relevant information and resources in order for them to make informed decisions. This involves highlighting the value proposition of the product or service without resorting to manipulative tactics (Dahlén, 2021).

In alignment with recent intensifying demand for corporate social responsibility efforts, policymakers may consider regulating advertising practices that exploit time scarcity to protect consumers' wellbeing. This could involve stricter guidelines on the use of limited time offers and explicit disclosure requirements regarding the terms and conditions of such promotions. Similarly to advertising for certain financial products or pharmaceuticals, advertisements containing time scarcity messages could be subject to regulations and restrictions, including potential 'side effects'. By implementing regulations that promote ethical marketing practices, policymakers can help safeguard consumers from possibly harmful advertising tactics. All these aspects contribute to the ongoing debate on unintended advertising effects, a topic that this research paper enriches but does not definitively resolve.

5.4 Limitations and Future Research

Although the empirical findings of our study provide support for all our hypotheses, it is important to acknowledge potential limitations and recognize the existence of further questions and perspectives to explore in future research.

The study was conducted in an artificial setting. Although we implemented measures to enhance the ecological validity and realism of the experiment, it still does not fully mirror the complexities of a real-world setting, which may differ significantly in our study. Furthermore, only one offer was tested, whereas in the real world, consumers encounter numerous advertisements every day. This study was more isolated and given the differences between real-world conditions and our experimental set-up, it is valid to question the extent to which our findings can be generalized. The study also faced limitations related to product selection. Identifying products that are neutral for all respondents is challenging, as individual familiarity with the products can vary significantly. This discrepancy could affect the participants' response to related promotions and result in gaps among different groups.

Expanding the range of offers tested, encompassing both low and high involvement items, could have provided a more comprehensive understanding and would therefore be a topic of interest for future research. Thus, a broader approach would enhance the study's applicability and facilitate a more extensive analysis of consumer behavior across diverse product categories.

This study only focused on one specific type of limited time offers, namely countdown timers. Future research could expand the scope to include and examine other types of limited time offers, such as flash sales or early bird specials, to investigate how they influence consumer emotions and behavior. Furthermore, only one time limit as well as one promotional discount were investigated as part of the main study. By altering the percentage discount rate across different experimental conditions, future research could assess its impact on consumer attitudes, and decision-making processes, similar to the effects assessed in this study. For instance, varying the discount percentage could reveal whether consumers are more responsive to higher discounts or if diminishing returns occur beyond a certain threshold. Additionally, it would be beneficial to explore a wider range of time limits to determine at which limit effects are strongest.

The study's use of a convenience sample, drawn primarily from social media, limits its generalizability. This method may not capture diverse perspectives outside of the network, potentially introducing bias and reducing the broader applicability of the findings. Nevertheless, given that this experiment incorporated a diverse demographic comprising German, Swedish, and other international participants, this limitation may have been somewhat mitigated. However, many of the participants still might have similar living standards since most of them came from our own social network. This observation highlights a potential limitation regarding the demographic composition of the study's population, predominantly consisting of students. While the findings regarding emotional, cognitive and behavioral responses in this study are valuable, they may not fully capture the experiences and challenges faced by individuals across different age groups and life stages. For future research, it would be beneficial to investigate how perceptions vary among diverse age cohorts as well as income groups.

It is important to note that FoMO was not tested as a mediating variable in this study. Future research should explicitly investigate whether FoMO acts as a mediator in the relationship between limited time offers and the constructs explored in this study. Testing FoMO as a mediator is crucial to understanding the underlying mechanisms of how urgency in advertising impacts consumer psychology and behavior. Additionally, exploring other potential mediators and moderators in this relationship could provide further valuable insights, enhancing the theoretical and practical implications of this area of research.

In our research, we measured compensatory buying in a specific way where participants could choose between two different options. However, it is crucial to acknowledge the existence of various forms of compensatory buying (e.g. Mandel et al., 2017). Future research could explore these to provide a more comprehensive understanding of this behavior. Furthermore, participants were merely exposed to advertisements without making actual purchases. For future research, it would be advantageous to investigate compensatory buying within a more realistic setting in order to enhance understanding of the variations in behavior observed between controlled environments and real-world contexts. Such a study is essential, as this area remains significantly underexplored despite its relevance to both marketing and psychology.

Finally, it is questionable if this study is able to capture or assess any long-term effects of advertising. It is possible that the effects observed in our study are short-term, potentially dissipating shortly after the respondents complete the survey. But they might also have lasting duration and might be able to produce long-term consequences. Future research may consider looking into the duration of the observed effects as lasting effects from our findings could greatly enhance the significance and reach of our observations.

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7. Appendices

7.1 Appendix 1: Pretest Treatments

Group 1:







Group 2:


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7.2 Appendix 2: Main Study Treatments

Group 1:



Group 2:



7.3 Appendix 3: Generative AI Transparency Account

During the process of writing this bachelor thesis, ChatGPT was utilized primarily as a tool for rephrasing certain sentences. The purpose of employing AI was to enhance the clarity and readability of the text. This experience provided several valuable insights. Firstly, the use of AI significantly improved the efficiency of the writing process. It allowed for quick adjustments to sentence structure and language, ensuring that complex ideas were communicated more clearly and effectively.

Furthermore, the use of AI enabled a greater focus on the content and quality of the arguments, rather than on linguistic refinement. This allowed for a more thorough and thoughtful engagement with the research material. However, potential risks associated with using AI in this context must be acknowledged. One major concern is the risk of over-reliance on AI, which might lead to diminished engagement with the writing process and a superficial understanding of the material. There is also the possibility of unintentionally introducing subtle biases or errors that ChatGPT might generate. Additionally, while AI can enhance the presentation of content, it cannot replace the critical thinking and originality essential to academic research.

Ethical considerations are also crucial; it is important to ensure that the use of AI does not compromise the authenticity and integrity of our work. In this thesis, ChatGPT did not generate original ideas nor did it conduct any research; its function was strictly limited to refining the presentation of already developed content. Thus, while AI proved to be a valuable aid in improving the clarity and readability of the thesis, it was used carefully, complementing rather than replacing the our critical thinking and original contributions.