How the Fear of Missing Out drives young Consumers to make Impulse Purchases: An experimental Study on (Over-)spending

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Abstract

The Fear of Missing Out (FOMO) refers to the anxiety that others are doing or in possession of more or something better. It leads to adverse effects on general well-being, particularly among younger generations. A frequently observed coping mechanism is impulsive purchasing, which often leads to overspending beyond consumers personal financial resources. This study empirically examines the effect by the means of an online experiment. It further assesses individual characteristics that heighten vulnerability to FOMO-induced spending and investigates consumers' willingness to exceed imposed budget constraints. The statistical results reveal that FOMO significantly increases impulse purchase likelihood, even under financial budget constraints. The phenomenon is further found to relate to the individual factors Loneliness, Lack of self-control, and Current money management stress. The findings highlight the need for awareness among young consumers, with potential implications for future long-term studies to conduct more profound investigations on this complex social phenomenon.

Abstract (versão portuguesa)

O Fear of Missing Out (FOMO) refere-se à ansiedade de que outros estão a fazer ou possuem algo melhor. Conduz a efeitos adversos no bem-estar geral, especialmente entre as gerações jovens. Um mecanismo de enfrentamento frequentemente observado é a compra impulsiva, o que frequentemente leva a um gasto excessivo por parte dos consumidores. Este estudo examina esse efeito através de um experimento online. Além disso, avalia características individuais que aumentam a vulnerabilidade aos gastos induzidos pelo FOMO e investiga a disposição para ultrapassar as restrições orçamentais impostas. Os resultados revelam que o FOMO aumenta a probabilidade de compra impulsiva, mesmo sob restrições orçamentais. O fenómeno é ainda encontrado como significativamente relacionado com os fatores individuais de Solidão, Falta de autocontrolo, e Stress atual na gestão financeira. Os resultados destacam a necessidade de consciencialização entre jovens consumidores, com implicações para futuros estudos de longo prazo para explorar mais a fundo este complexo fenómeno social.

Keywords: FOMO, Impulse Purchasing, Overspending, Experiment, money management stress

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List of Abbreviations

BudgetConstraint = Budget constraint framing in experiment

DV = dependent variable

EG = experimental Group

FOMO = Fear of Missing Out

H1 = hypothesis 1

IV = independent variable

noFOMO = Absence of a verbal FOMO framing in experiment

noBudgetConstraint = Absence of a verbal budget constraint framing in experiment

PL = Purchase Likelihood

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1 Introduction

In the landscape of contemporary consumer culture, the results of a 2023 survey on US consumers reveal a surprising trend: 88% of Millennials and 80% of Gen Z admit to regularly overspend their budget and to take on debt to keep up with their friends' lifestyle (Credit Karma, 2023). The fear of not doing enough or missing out on once-in-a-lifetime experiences drives young consumers to make financial sacrifices for social events, like concerts and friend trips, much more than generations before them (Thomas, 2023). To afford the substantial expenditures despite their frequently constrained financial budgets, adolescents are open to borrowing money, taking on credit card debt, and tapping into their emergency savings. Also, for example in Germany, the inclination for immediate purchases, that surpass the current budget, is rationalized by the possibility to defer payment into the future. "Buy now pay later" options, such as those offered by the Swedish fintech company Klarna, are experiencing an unprecedented surge in popularity among young users (Bocksch, 2023).

The phenomenon of Fear of Missing Out (FOMO) and so-called "FOMO spending" is gaining vast attention in the banking and business sectors, as well as in academic research (Przybylski et al., 2013; Siroto, 2023, p. 1). The topic is more pertinent than ever, driven not only by the escalating significance of individual identity in the age of social media and the constant comparison with other people's lives (Barry & Wong, 2020). Also, in times of global crises, among others the rapidly rising inflation, regular overspending can pose a threat to consumers' future financial security (McKinsey, 2023).

What exactly is the Fear of Missing Out and how does it drive young individuals toward present-biased spending habits? This research aims to understand the socio-psychological mechanism behind FOMO and how it leads to impulse purchasing and financial overspending among young consumers.

1.1 Current State of Research

FOMO first arose as a psychological construct ten years ago (Tandon et al., 2021). Since then, numerous researchers have contributed empirical studies and theoretical frameworks (e.g., Przybylski et al., 2013; Good & Hyman, 2020, 2021) aiming to shed light into the socio-psychological phenomenon. However, until today, only very few researchers have conducted research on the particular relation of FOMO, impulsive spending, and overspending. The foundation of this research is built upon three pivotal lines of research representing the latest state of academic findings on these concepts, sourced from top-tier journals.

Firstly, work by Przybylski and co-authors (2013) as well as Good and Hyman (2020, 2021) serves as a starting point to define and classify the FOMO concept, while emphasizing the role of personality and context. Secondly, research on the *scarcity mindset* (e.g., Sharma, Tilly, & Wang, 2023; Zhao & Tomm, 2018) explores the circumstance when an individual's urgent current need or negative feeling intersects with financial constraints such as an insufficient budget. Multiple experiments show that individuals tend to prioritize the present over the future and adopt a myopic and irrational spending behavior. Thirdly, the article by Netemeyer and co-authors (2018) on financial well-being underscores that late payments, materialism, and lack of self-control stimulate current money management stress, which ultimately deteriorates the person's general well-being.

These three research streams will be combined to serve as a basis for this study, highlighting the novelty, complexity, and significance of further research on FOMO spending.

1.2 Contribution of this Study

This work aims to answer three research questions, with the general objective to contribute to a profound understanding of the behavioral mechanism of FOMO spending. First of all, grounded in Festinger's social comparison theory (1954), that is frequently cited in articles on social media usage and FOMO, this study will explore the process of upward comparison and its adequacy for understanding FOMO spending among young consumers. The first research question is: "What is FOMO and how does it influence purchase behavior?"

Furthermore, not every individual is found to be equally vulnerable to feeling FOMO and to acting impulsively based on that emotion. Researchers like Przybylski and co-authors (2013) argue for certain personality traits to play a significant role. Therefore, it will be investigated: "What individual characteristics play a role in the effect of FOMO on impulsive purchase behavior?"

Thirdly, this research is the first to introduce the psychological phenomenon of *scarcity mindset* to the research field of FOMO and investigates whether consumers under a financial budget constraint are willing to overspend for the sake of prioritizing momentary feelings of FOMO. The last research question is: "Are young consumers more likely to overspend their financial budget under the influence of situationally felt FOMO?"

Based on the quantitative findings, practical conclusions will be drawn on how young consumers can combat impulsive spending and overspending caused by FOMO. The ultimate aim of this study is to support young consumers in protecting themselves from money management stress, and thereby minimizing the effect of FOMO on their general well-being.

2 The Phenomenon of FOMO Spending and its Relevance for Gen Y and Z

2.1 Defining Fear of Missing Out

Fear of Missing Out, commonly referred to as FOMO, has been defined by researchers as 'the uneasy and sometimes all-consuming feeling that you're missing out' and that 'your peers are doing, are in the know about, or in possession of more or something better than you' (Przybylski et al., 2013, p. 1842). Complementary, reports from Wunderman Thompson define FOMO as a ubiquitous fear 'that others might be having rewarding experiences from which one is absent' (JWT, 2011, as cited in Przybylski et al., 2013). Both definitions collectively portray FOMO as a **feeling of inferiority** of the self and the own life as the result of the upward comparison to other people. FOMO is gaining rapidly growing attention in academic research since the nascence of the concept in 2013 (Tandon et al., 2021).

Fear of missing out should be clearly distinguished from the fear of not belonging. They are related concepts, but they capture different aspects of social and psychological experiences:

Individuals experiencing FOMO may worry that the experiences or achievements of others highlight a perceived insufficiency of their own lives, leading to feelings of anxiety or depression (Przybylski et al., 2013). On the other hand, the fear of not belonging is a broader concept related to the overall concern of not being accepted or included in social groups. It is not tied to missing out on specific events but encompasses a more pervasive fear of social rejection or isolation (Ellemers & Haslam, 2012).

Research on the Fear of Missing Out goes into two different directions, with one constructing it as an **enduring FOMO trait,** a stable part of the personality, while the other one depicts it as rather context-specific FOMO state. The first direction claims that some individuals are more susceptible to FOMO due to several preconditions, such as the parenting style one grew up with in their childhood (Alt & Boniel-Nissim, 2018), personal goals and values (Franchina et al., 2018), a lack of need fulfillment (Elhai et al., 2016), and low self-esteem and loneliness (Barry & Wong, 2020). Also, a heavy social media usage was numerously found to increase the individual's development of an enduring FOMO trait (Barry & Wong, 2020).

A rather new research direction has been rising in the last years, with articles mainly published in marketing journals, that suggests that there is a **situational and context-specific FOMO state** for all consumers (Hodkinson, 2019; Rifkin et al., 2019). In this research direction, the context-specific feeling of anxiety is found to appear under certain circumstances, for example while participating in a dull activity (Good & Hyman, 2020) or when the individual is convinced that the experience "will be favorable and relevant" to the personal self (Good & Hyman, 2020, p. 2). Situational FOMO can be both **anticipated** ("if I don't buy the ticket, I will miss out on something"), where consumers assign value to the experience before deciding whether or not to participate, or in the **current moment** ("everybody is having fun, while I am doing this dull task") (Hayran et al., 2020). For instance, Rifkin et al. (2015) found that exposure to social media photos produces FOMO, reduces enjoyment of the ongoing activity, and raises anticipated enjoyment of the missed event.

2.2 Antecedents and Consequences of FOMO Spending

Several reasons explain the relevance of FOMO spending in today's society, particularly in the young generations. The following case example gives an idea of factors that drive FOMO spending:

> "Nikita scrolls on Instagram and sees a post from her best friend on vacation in Hawaii, then a photo from her brother-in-law celebrating his new job offer in Miami. The next day, her college friend group invites her to their upcoming trip to Paris. Nikita spontaneously says yes, even though she has a different income level than her friend group" (Axos Bank, 2022).

This case example describes how FOMO leads the woman to impulsive overspending despite her lower available income. Nikita's FOMO expense occurs for a travel experience, a trip to Paris. This goes in line with academic findings, which show that FOMO spending occurs mainly in products and services that are particularly associated with social experiences (e.g., traveling, going to festivals or music events [Good & Hyman, 2020]), fasion trends (e.g., clothing, beauty products [Dinh & Lee, 2022]), which both foster a sense of belonging. The four main antecedent of the FOMO spending behavior are presented in the following.

Firstly, **social media exposure** is named by many FOMO researchers as the main trigger of the fear of missing out (e.g., Good & Hyman, 2021; Przybilski et al., 2013). Technology and social media have contributed to the constant real time checking on other people's lives and has increased social comparison (Barry & Wong, 2020). The high exposure to visual triggers on social media that show only a selective and visually appealing presentation of lives that can create a perception that others are constantly engaged in exciting and fulfilling activities (Rifkin et al., 2015). Moreover, despite the hyperconnection via digital platforms, younger generations report to feel more socially isolated, with **face-to-face interactions diminishing** in favor of online communication (McKinsey Health Institute, 2023). The superficial interactions lead young generations (especially 16- to 24-year-old [Bakhtiari, 2023]) to suffer from immense loneliness and depression, even more than previous generations.

Furthermore, especially **young people want to belong to a peer group**. The desire to belong is a fundamental aspect of human nature that is particularly pronounced during young adulthood. During adolescence, individuals go through a process of identity formation (Baumeister & Leary, 2017). They seek to understand themselves, their values, and their place in the world. According to the social identity theory by Tajfel and colleagues (1986), belonging

to social groups helps in shaping one's identity by providing a sense of purpose, connection and self-esteem (Hornsey, 2008). Hence, young consumers would be willing to spend and even overspend their money to align with a group (Hornsey, 2008).

Moreover, consumer insights show that the young generations particularly **seek experiences and hedonism.** In addition to the stress and loneliness that the young generations are already exposed to, the COVID-19 pandemic caused a further wave of stress and worry. Researchers found that experiencing pleasurable emotions serves as a buffer between chronic stress and depression (Zwanka & Buff, 2021). Cataclysmic events like the pandemic have brought a new set of values especially to the young cohort that was particularly affected by the lockdowns, as they occurred while they were "coming of age" (between 17-25). Gen Y and Z have adopted hedonistic attitudes like "I could die tomorrow" or "You Only Live Once" (Zwanka & Buff, 2021, p. 61). Hence, they focus more than before the pandemic on embracing today, seeking every possibility to make new experiences, travel, celebrate and not to worry too much about financial security and the future, that has never been more uncertain in the minds of young adults (Hodkinson, 2019; McKinsey, 2022a).

Regarding their saving attitude, **young consumers deprioritize their financial future.** "Just 44% of emerging adults rate financial security as 'important' when making life decisions" (Bitette, 2019, p. 1). A common opinion stated by young consumers is that cutting back on spendings is not their priority while being young. They want to enjoy their freedom and the fact that they are not in a full-time job yet to spend time with friends and go on joyful experiences like travels and festivals (Zaman et al., 2022). Based on the theory of psychological distance, researchers highlight that current experiences are both more salient and more emotionally loaden compared to experiences in the future (Trope, Yaacov, & Liberman, 2010; Williams et al., 2013). Also, Hershfield and co-authors (2011) prove in their research that individuals lack future financial preparation due to their high identification with their "present self" over their future self (p. 33). Hence, financial insecurity is perceived by young people as a problem of the distant future. Furthermore, Gen Z is found to be more **pessimistic about reaching financial milestones** like homeownership or retirement, resulting in financial defeatism (McKinsey, 2022b). A considerable number of young individuals express uncertainty about ever reaching significant economic milestones. For example, almost 25% of Gen Z respondents do not expect to retire, and only 41 % foresee owning a home one day (McKinsey, 2022b). So they would rather spend their money while they are young to keep up with friends. This present-bias poses a significant facilitator for FOMO spending.

Overall, fear of missing out is a human, psychological emotion, yet it is reaching its peak relevance in today's society and especially among young consumers. The detrimental consequences of FOMO spending as a result of high social media exposure and social comparison, present-bias, hedonic consumerism, and disregarded long-term financial security are receiving increased academic attention.

Despite momentary joy found in the impulse purchases, FOMO leads to a decreased general well-being of the young generations (Milyavskaya et al., 2018). Frequently found symptoms include "increasing negative affect, fatigue, stress, [...] and decreased sleep" (Milyavskaya et al., 2018, p. 725). Consumers' FOMO tendencies on impulse buying leads them to continuously spiral deeper into lowering their personal budget, by overborrowing or postponing payments. Netemeyer et al. (2018) found that late payments, frequent overborrowing, lack of self-control create **current money management stress**, especially among Millennials. Ultimately, money management stress is found to significantly affect long-term well-being (Netemeyer et al., 2018). Alarmingly, Gen Z is found to suffer the most from depression and anxiety disorders among all generations (Deloitte, 2022). FOMO spending could play a substantial role in this generational mental health crisis.

3 Theoretical Framework

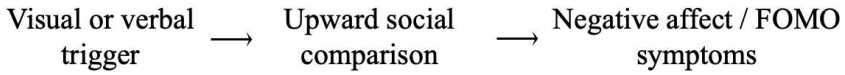
In this chapter, the mechanism that leads from FOMO to impulse purchasing will be explained based on Festinger's social comparison theory. A framework for the first theoretical stream will be presented at the end of the first theoretical review (chapter 3.3). To answer the third research question ("Are young consumers more likely to overspend their financial budget under the influence of situationally felt FOMO?"), prior literature and theories on the *scarcity mindset* will be reviewed to accentuate its relevance in the research field of FOMO spending under budget constraints. This will ultimately set the foundation for the second theoretical stream and its respective conceptual framework.

3.1 Social Comparison Theory and FOMO Spending

Reasons why FOMO is tendentially felt by young people are mainly found in Gen Y and Z's high usage of social media platforms, which is widely proven to induce FOMO (Przybylski et al., 2013). "Social networks such as Facebook and Instagram not only provide many opportunities to compare with others but also confront people with a biased view on social reality" (Crusius, Corcoran & Mussweiler, 2022, p. 15). Users act under the constant perception that others lead more exciting lives, possess more and better things, and have more friends compared to the self (Dimock, 2019; McKinsey Health Institute, 2023).

The **social comparison theory** that was initially proposed by Leon Festinger (1954) states that every person has a basic need to maintain a positive and stable view of the self. In order to evaluate one's self-image, one seeks feedback through social comparison with others. This process can either be strategic and intentional, with the aim for self-enhancement (Taylor, Wayment & Carillo, 1996), however, in the majority of times it happens spontaneously and without any intention (Mussweiler & Rüter, 2003). It can be triggered unconsciously, for example through visual or verbal stimulation, like a social media post or by a friend's narrative of an experience in the past or a planned activity in the future (Rifkin et al., 2015).

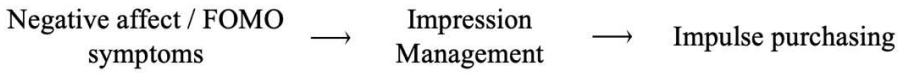
According to Festinger, social comparison differs in two main ways: **downward and upward comparison**. In downward comparison, the counterpart is perceived as inferior in the examined attributes, which leads to a positive boost of the self-view (Wills, 1981). Meanwhile, in upward comparison, the others are perceived as better off, which poses a threat to one's self-image. The perceived own inferiority expresses itself through negative emotions such as envy, shame and ultimately anxiety and fear of devaluation of the self-image (Smith, 2000).



Commonly described FOMO symptoms include the all-consuming feeling of stress, anxiety and a pain felt of envying people (Smith, 2000; Steckler & Tracy, 2014). Lockwood and Pinkus (2014) found that the emotions can be particularly painful, when the chosen people for comparison are very close, share the same interests and pursue similar goals. Hence, social comparison to friends and romantic partners can create the strongest feelings of FOMO.

3.2 The Effect of FOMO on Impulse Purchase Behavior

When experiencing the negative affect resulting from upward social comparison, individuals search for ways to feel better about themselves and to reduce devaluation by others (Festinger, 1954). Impulse buying, being closely tied to emotions, is often employed as a mechanism for self-comfort when faced with negative feelings (Herabadi, Verplanken, & Van Knippenberg, 2009). Another coping strategy to exit from the perceived inferiority is impression management. Leary and Kowalski (1990) define impression management as a two-step process, in which individuals are first motivated to control how others see them, which leads them to construct an impression of the desired identity image.



Impulse purchases motivated from the desire to manage the self-perception include products and services closely connected to the personal identity (e.g., new clothes to appear more fashionable, concert tickets to appear more exciting). In the research field of FOMO spending, researchers have therefore conducted studies on clothing purchases (Dittmar, Beattie, & Friese, 1995), influencer-endorsed beauty products (Dinh & Lee, 2022), and concert tickets (Good & Hyman, 2020), verifying a positive relation between FOMO and the purchase likelihood.

3.3 Hypothesis Development I

Based on the presented theories and past research findings, this study aims to test the direct effect of FOMO on impulse purchase likelihood of young people. As previously explained, a FOMO state is often triggered through a visual or verbal message. Researchers like Good and Hyman found that FOMO can be manipulated by a specific communication framing ("FOMO-laden appeals", [Good & Hyman, 2020, p. 2]), which ultimately increases purchase likelihood. Therefore, this study's experiment will be based on a communication text particularly framed to cause a sense of FOMO in participants. The success of the verbal framing manipulation will be checked via the mediator Situational FOMO, as suggested by Good and Hyman (2020), as well as other researchers that investigated how to create emotions in experimental subjects (Albertson and Gadarian, 2016). Ultimately, the direct effect of a situational FOMO state will be tested in first hypothesis, stating that:

H1: People that are in a situational FOMO state have a higher impulse purchase likelihood compared to people that are not in a situational FOMO state.

Secondly, the presented literature review shows that FOMO can also be an enduring personality trait, in which one constantly suffers from anxiety and stress that their own life is inferior compared to others (Barry & Wong, 2020). Accordingly, it can be predicted that those people show higher inclination to impulse purchases. The second hypothesis states that:

H2: People with a stronger FOMO trait have a higher impulse purchase likelihood compared to people with a weaker FOMO trait.

Lastly, as distinguished in chapter 2.1, FOMO is related to the fear of not belonging. Some studies even treat the two concepts as the same (e.g., Alabri, 2022). Although clearly separated in 2.1, the psychological construct **loneliness** is often found to play an important role both in empirical studies on FOMO as well as studies on impulse purchasing (e.g., Hunt et al., 2018). Loneliness refers to feeling excluded or left alone by society or by a reference group (Hunt et al., 2018). As explained in chapter 2.2, particularly adolescents suffer from loneliness and isolation despite being hyperconnected in the virtual world. A direct effect of loneliness on an enduring FOMO trait will be tested with the third hypothesis, stating that:

H3: People that are lonelier have a stronger FOMO trait compared to people that are less lonely.

In summary, the theoretical basis provided by Festinger's social comparison theory as well as the broad literature review on impulse purchases as a result of negative emotions serve as a basis for the first conceptual framework.

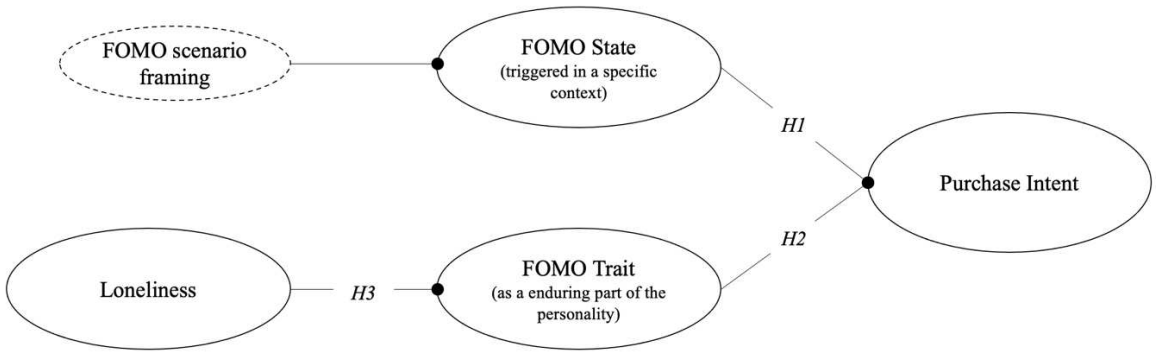


Figure 1. Conceptual Framework I (FOMO & Impulse Purchasing)

3.4 The Role of the Scarcity Mindset

When deciding whether to make a purchase decision, consumers are often limited by the inability to afford a desired product or service. Especially adolescents are restricted in their leisure budgets because they do not get a full-time salary yet. In recent years, increased academic attention is given to the so-called *scarcity mindset* that drives people to make purchase that are biased to prioritize the present (Sharma, Tully, & Wang, 2023, p. 1037). The scarcity mindset is activated in one's mind, when two conditions are met:

1. The person has constrained resources (e.g., limited financial budget or time available)
2. The person has a strong momentary emotion or need (e.g., pain, sadness, fear)

In the case of financial constraints, this requires individuals to make tradeoffs between the costs and benefits of saving, spending and borrowing money to fulfill or not fulfill the need.

Limited budget ⚡ Urgent (hedonic) need or desire ⟶ Scarcity mindset

Multiple theories contribute to the perspective that a scarcity mindset diminishes self-control, "causing **myopic** and impulsive behavior" (Zhao & Tomm, 2018, p. 4). Researchers argue that this state of mind creates a tendency to **irrational** behavior, in which "insufficient attention is paid to whether the benefits outweigh the costs" (Shah et al., 2012, p. 683). Moreover, the scarcity mindset creates a **present-bias**, in which the near-term needs are sought to be satisfied immediately, while more long-term concerns lose salience (Loewenstein, 1996).

Scarcity mindset ⟶ Myopic, present-biased purchase decision

3.5 FOMO Overspending as a Result of the Scarcity Mindset

According to Loewenstein (1996), when felt on a sufficient level of intensity, negative emotions create an urgent need for relief. Whether or not a person activates the scarcity mindset therefore depends on the level of fear to miss out on the particular experience and the associated need for impression management.

Limited budget ⚡ FOMO ⟶ Scarcity mindset ⟶ Impulse purchase

Limited budget ⚡ No FOMO ⟶ Rational reasoning ⟶ No impulse purchase

In a scenario, where the financial budget is limited, but the purchase is not particularly relevant to the self (and thereby does not cause FOMO), rational reasoning prevails.

3.6 Hypothesis Development II

When people deal with financial scarcity, they are intuitively hindered from unrestrained spending behaviors (Sharma, Tully, & Wang, 2023). Those individual hence exhibit a lower likelihood of making impulse purchases. Therefore, the fourth hypothesis states:

H4: People with an imposed budget constraint have a lower impulse purchase likelihood compared to people with no imposed budget constraint.

However, if FOMO drives the urgent need for impression management, it activates the scarcity mindset, which increases the prioritization of the present purchase over future consequences (Sharma, Tully, & Wang, 2023). Hence, FOMO makes people ignore their budget constraint. The fifth hypothesis states:

H5: Among the people that have an imposed budget constraint, those that are in a FOMO state have a higher impulse purchase likelihood compared to people that are not in a FOMO state.

The constructs that relate to the scarcity mindset, and their hypothesized effects on each other can be visualized in a conceptual model, illustrating the proposed relationships among the variables involved.

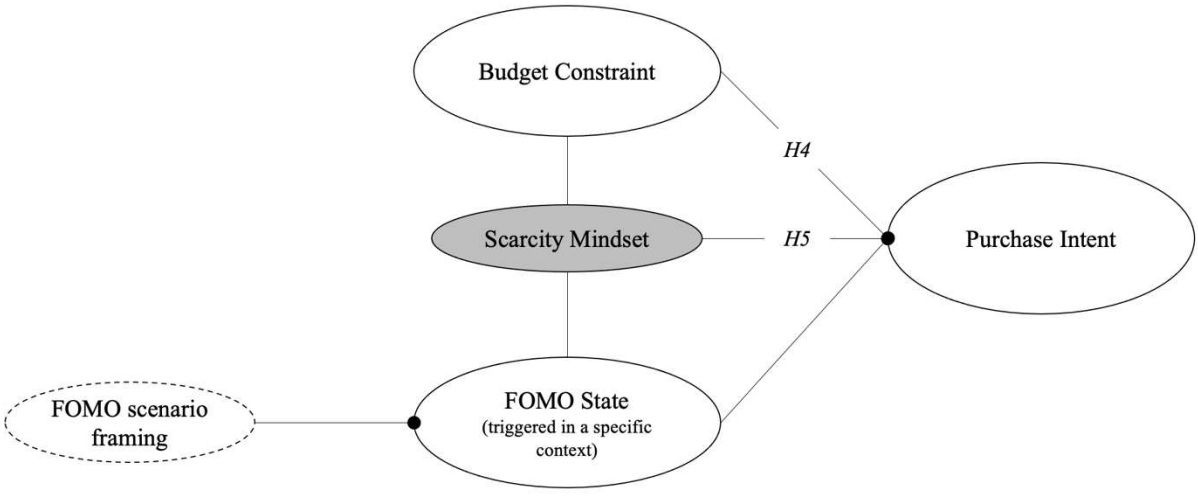


Figure 2. Conceptual Framework II (FOMO & Overspending)

3.7 Further influencing Factors

Literature reviews highlight that FOMO is a highly complex and not yet fully uncovered psychological phenomenon (Przybylski et al., 2013). Many other factors influence both the intensity of the situational FOMO state as well as the likelihood to purchase impulsively in a moment. For this reason, this study will include explanatory variables that will be tested in order to shed further light into the research field.

3.7.1 Lack of self-control

Lack of self-control includes personal traits like impulsivity and a deficiency in exercising restraint (Maloney, Grawitch, & Barber, 2012). Prior research highlights that there are individual differences between consumers' lack of self-control, where some are more prone to overspend than others.

3.7.2 Current money management stress

Netemeyer and co-authors (2018) found that current money management stress, the emotional strain individuals experience due to challenges or difficulties in effectively handling their financial resources, is influenced by several factors, including late/min payments and lack of self-control. Also, recent surveys (e.g., McKinsey, 2023) underpin that young consumers particularly suffer from money management stress, as they often have a limited budget, but many things they want to spend their money on. Therefore, the concept needs to be operationalized and tested in this study, as it could play a significant role in understanding the relations of FOMO and impulse purchasing.

4 Methodology

This quantitative research includes an experiment and a survey, that will be presented in detail in the following chapter. The operationalization of the theoretical constructs, the structure of the questionnaire, and the pretest will follow in chronological order. The data collection and the final subject sample complete the chapter and lead to the statistical analysis.

4.1 Research Design

The research topic of this study was investigated by means of an experiment, where the effect of two manipulated independent variables on one dependent variable was observed. The participants were randomly assigned to one of four experimental conditions in a 2x2 factorial design, in which every subject was only exposed to one of the four conditions (Raithel, 2008).

		Budget Constraint	
		No	Yes
Situational FOMO	Yes	EG 1	EG 2
	No	EG 3	EG 4

Figure 3. Experimental Groups in 2x2 Factorial Design

This random assignment to the observation groups aimed at minimizing person-related effects and other possible interfering factors, such as "time influences, maturation processes, and measurement effects" (Raithel, 2008, p. 52). Participants could not recognize which group they were assigned to and were, therefore, blind to the manipulation (Kuss et al., 2018). Furthermore, the study is cross-sectional, as the empirical investigation was conducted only once.

The dependent variable (DV) of this study is Purchase Likelihood. Drawing on Festinger's social comparison theory and researchers' experimental designs on FOMO and the scarcity mindset, the independent variables (IVs) FOMO and Budget Constraint were manipulated in two levels (FOMO vs. noFOMO; BudgetConstraint vs. noBudgetConstraint). Furthermore, the predictor variables FOMO trait, Loneliness, Lack of self-control and Current money management stress were examined for their moderating role in the main effect of the experimental manipulation on the DV.

4.2 Operationalization of Measures

The theoretical concepts are not directly observable; hence they were operationalized to allow empirical measurements (Kuss et al., 2018). Established item formulations from previous studies served as a basis for the questionnaire, as they increase its validity (Raithel, 2008). The

item scales were selected after checking the original study context and, if necessary, they were aligned to match the conceptualization in this present research.

4.2.1 Independent Variable 1 – FOMO State

To manipulate the participant groups and activate a feeling of situational FOMO, Good and Hyman's (2021) approach to message-framing was adopted. Similar to their experiment, in this study, a hypothetical concert taking place in the city was chosen as a case. The following introduction text was presented to the four participant groups.

> "Please imagine the following situation: You are a student and have just started your 1st semester. A friend tells you about a concert taking place in your city next week. You do not know the artist, but generally like the genre of music."

A concert scenario is likely to create a feeling of FOMO for two main reasons, including its relevance for young consumers, which is crucial to drive social comparison (Hornsey, 2008). Moreover, concerts are a commonly attended with friends and peers. In line with findings from Lockwood and Pinkus' (2014), FOMO emotions are particularly strong, when the chosen people for comparison are very close, share the same interests and pursue similar goals.

The introductory text was followed by two distinct blocks to manipulate the first independent variable FOMO state.

EG 1 and 2 = **FOMO Condition**	EG 3 and 4 = **NoFOMO Condition**
Your friend tells you that it is supposed to be the best party of the entire semester and that many other people you know are also attending the concert. You think that if you do not purchase the concert ticket, you will miss out on an amazing experience with those other people.	You have not heard from many other people that want to attend the concert.

Table 1. FOMO Manipulation Scenario

To ensure internal validity, which refers to the extent to which an experiment accurately assesses the causal relationship between the IV and the DV, a manipulation check was included to confirm that any observed effects can be attributed to the experimental manipulation rather than confounding variables (Raithel, 2008). The mediator variable Situational FOMO was measured with a five-item scale, adopted from Good, 2019, which was previously shortened from originally eight items.

4.2.2 Independent Variable 2 - Budget Constraint

Also, regarding the independent variable Budget Constraint, the concert case makes sense, because concerts can be very expensive (varying between 80-113 euros in European capitals [Dobrev, 2018]), and it is very relatable that young consumers cannot afford to buy many tickets from their leisure budget. The following sentence was shown to all participant groups:

> "Then you check the ticket price and start calculating. A while ago you had decided to set yourself the personal goal of only spending a certain amount of money per month on leisure activities like dining out parties and concerts."

The second set of two blocks manipulates the second independent variable Budget Constraint.

EG2 and 4 = **Budget Constraint**	EG1 and 3 = **No Budget Constraint**
Checking your budget, you have already spent more than you had previously put aside for this month. The ticket price would go beyond your pre-defined amount. So, you can technically not afford it and would need to cut down your budget for the next month. You might even have to cancel activities you had roughly planned for the next month.	Checking your budget, the ticket price would be within your pre-defined amount. So, you can technically afford it. Alternatively, you could save the money and increase your budget for the following month.

Table 2. Budget Manipulation Scenario

The long-term benefit (saving the money for the next month) and the long-term costs (decreasing savings for next month) were included in the text, as research findings show that the scarcity mindset leads to prioritizing the present need (escaping the FOMO emotions) over long-term costs (sacrificing savings for future needs) (Sharma, Tilly, & Wang, 2023).

A manipulation check was also carried out for the Budget Constraint manipulation by a single-item question: "On a scale from 1 to 5, how much were you aware that you technically can or cannot afford the concert ticket?"

4.2.3 Dependent Variable - Purchase Likelihood

Purchase Likelihood was measured using a existing single-item scale, "on a scale from 1 to 5, how likely are you to buy the concert ticket?", followed by a five-point Likert scale ranging from 1 (= "extremely unlikely") to 5 (= "extremely likely"). It was shown to be valid and reliable in previous research (Juster, 1969, from Good & Hyman, 2021).

4.2.4 Predictor Variables

FOMO trait. This measure of FOMO as a non-context-specific personality trait was adopted from Przybylski et al. (2013) and shortened from ten to seven items. The item describing the subjective importance of sharing good moments online was extended by the bracket "(e.g., instagram stories)", to clarify the question in the light of today's usage of social media.

Loneliness. This individual trait was measured by a selection of six items of the long-established UCLA Loneliness Scale (Russell, Peplau & Cutrona, 1980). Three items were reversed to minimize the dissent bias (Raithel, 2008), which is likely to occur due to a lack of attention and the desire to get through the survey faster.

Lack of self-control. The item battery was adopted from Maloney, Grawitch, and Barber (2012) and reduced from originally eight to six items. The appropriateness for this study context was ensured because Netemeyer et al. (2018) have used the items in their research on financial well-being. Like them, three items were reversed.

Current money management stress. The five-point scale items were adopted from Netemeyer et al. (2018), as their study conceptualizes the concept in the same context.

Demographics. Socio-demographic items were added to the questionnaire in order to compare the test subject sample with the population it is meant to represent. Based on the variables gender, age, highest educational level, current employment, country of residence, household composition, and estimated monthly gross income, conclusions can be drawn on the sample's representativeness (Kuss et al., 2018).

4.3 Structure of the Questionnaire

The questionnaire forms the core of the study (Raithel, 2008) and can be found in the appendix. Due to its well-established image among researchers, the survey tool Qualtrics was chosen. English was chosen as the only language of the research to include a wide range of young people's nationalities The survey structure is described in the following.

1. Introduction text - ensures anonymity, encourages honest responses, and allows to contact the researcher,
2. Exclusion criterion - checks whether respondents enjoy going to concerts, as this is a fundamental condition to the experiment case. Answers included "yes", "sometimes", and "no". Respondents that chose "no" were eliminated from the final sample, as it can be assumed that they do not respond to the manipulation,
3. Concert experiment (described in detail in 4.2.1 to 4.2.3),
4. Survey questions on predictor variables (FOMO trait, lack of self-control, loneliness, and money management stress) - respondents were encouraged to answer truly and reflecting their self-perception,
5. Demographics
6. Closing text

The full questionnaire is attached in the appendix.

4.4 Pretest and Reliability Check

Before the actual data collection, it is of significant relevance to test the questionnaire for its "applicability, completeness, comprehensibility and the general quality" (Raithel, 2008, p. 29). Therefore, in this study, a pretest under similar conditions to the subsequent main study was carried out by eight participants (25 % male, 75 % female) from the 8th to the 10th of October, 2023. To prevent learning effects, these participants were excluded from the main study (Raithel, 2008). During and after the pretest, the subjects had the opportunity to comment on each item to optimize the questionnaire. The following adjustments were made before the start of the main survey.

Firstly, the item batteries of FOMO trait, Lack of self-control and Loneliness were shortened, reducing redundancy, and decreasing the time required for the survey. Secondly, the text introducing the IV1 condition (FOMO trait) condition was slightly reformulated by adding the sentence "You do not know the artist, but generally like the genre of music." According to one pre-test participant, this created a feeling of moderate interest in the concert ("I am interested, yet not too sure whether to purchase the ticket, because it is not my favorite artist or band" [participant interview]).

Furthermore, the money management stress scale was slightly reformulated. Multiple pre-test candidates were confused whether the word "finances" referred to their money spent on leisure activities or their investment in the stock market. To clarify, the original "I am currently behind with my finances." (Netemeyer et. al., 2018) was changed to "I am currently having difficulties managing my money".

Lastly, unstructured interviews were conducted with three participants individually, where they were presented the conditions (FOMO vs. noFOMO; BudgetConstraint vs. noBudgetConstraint) and then asked about their feelings. Consecutively, the texts describing the concert case were modified in order to maximize the likelihood to perceive the intended feeling. For example, the sentence "it is supposed to be the best party of the entire semester" was identified as a key trigger for anticipated FOMO, which is why it was added in the second sentence and highlighted in bold letters.

4.5 Data Collection and Exclusion Criteria

The online questionnaire was conducted in the period from the 8th the 30th of October, 2023. After the publication, the generated link was distributed through several channels, including the social and career networks of Whatsapp, LinkedIn, and Instagram. By spreading the survey very intensively in a short period of time, it was possible to carry out the data collection in the shortest possible time, thus minimizing development effects and the likelihood of impacting external events whose influence could affect the survey results (Raithel, 2008).

Since the target group based on prior research was adolescents that can afford to make their own purchases, only Generation Y and Z older than 16 years were considered in the final data set. Generation Z are classified as the birth years of 1997 to 2007, hence they have the age range 16 to 26 in 2023 in this sample. Meanwhile, Generation Y who were born between 1981 and 1996 and ranges from 27 to 36 in 2023 in this sample (Beresford Research, 2023). For a deeper insight in the descriptive analysis, the two generational cohorts were split into early vs. late Gen Z and Gen Y respectively.

4.6 Final Subject Sample after Data Cleansing and Processing

"In general, the stability of the factor equation increases with increasing sample size, since the sampling error decreases" (Bühner, 2004, as cited in Raithel, 2008, p. 107). A total sample size of **309** people took part in the main survey. The survey had an average completion rate of 80.64 %. Nevertheless, the responses of 62 participants had to be eliminated in the course of data cleaning due to high incompleteness. These participants have stopped the survey directly after the filter question and have not even participated in the experiment. After careful elaboration, eight questionnaires were removed from the data set because they contained various contradictory information (e.g., always the same scale point, age below 17 and retired), combined with unrealistically short duration times (identified as outliers in the data set). In the process of data cleansing, due to the filter question at the beginning, one respondent who said to dislike going to concerts was excluded from the further course of the analysis. Furthermore, four respondents were younger than 17 or older than 36 and therefore not in the research target group and were therefore eliminated. Lastly, the manipulation check item asking whether respondents were aware that they were or were not under a budget constraint when indicating their purchase likelihood of the concert ticket, was answered with an average of $\mu = 3.86$ ($s =$

.496). This was accepted as a successful manipulation; therefore no further participant was eliminated due to a failed manipulation check.

In sum, 234 data sets could be used for the evaluation of the study.

Data Cleansing	Subjects
Completed questionnaires (gross sample)	309
Incompleteness + short completion time	- 62
Contradictions + short completion time	- 8
Filter question failed	- 1
Outside target age group (17-36)	- 4
Final Data Set	**234**

Table 3. Data Cleansing Process and final Data Set

For the further treatment of single missing values in the data analysis, the "pairwise case exclusion" of missing values, hence the calculation of conditional means and variances with the pairwise calculation of covariances, was chosen (Raithel, 2008, p. 113). In contrast to the alternative listwise case exclusion method, the "information of the database can be better exploited, and the size of the study can be reduced less" (Raithel, 2008, p. 113).

4.7 Reliability Check with Cronbach's Alpha

Following the suggestion of Schnell, Hill, and Esser (2013), a reliability check using Cronbach's alpha and the corrected item total correlation test were performed on all item batteries. The table is to be found in the appendix. The item batteries of the majority of constructs show high reliability with values of $\alpha > 0.70$ for FOMO Manipulation Check (4 items, $\alpha = .861$), FOMO trait (7 items, $\alpha = .866$), Loneliness (6 items, $\alpha = .718$) and money management stress (6 items, $\alpha = .896$). The test shows that for Loneliness a higher alpha value of .752 can be achieved by removing the 6th item ("I can find companionship whenever I want to (R)"). Therefore, in the following analysis, the loneliness scale will be shortened to five items. Also, the Lack of self-control scale shows a lower alpha value (6 items, $\alpha = .629$). According to theory, only values of $\alpha > 0.70$ should be accepted (Streiner, 2013). However, the lower alpha could be explained by the fact that the scale covers different facets of self-control

(e.g., self-discipline, impulsivity, restraint [Maloney & Barber, 2012]) Therefore, in this case, the slightly lower alpha value will be accepted.

Lastly, to draw univariate and bivariate inferences and test the hypotheses, the measured item batteries of the corresponding variables were combined into uni-dimensional indices during the data processing step (Raithel, 2008). The index construction was carried out by forming the mean value of the items. The MEAN function of the statistical program SPSS was utilized for this purpose. Following, single values like “Lonliness_total” were developed.

5 Results

Following the data collection and processing, the final sample was analyzed to derive quantitative results. In the following, the phases of descriptive, univariate, and bivariate analysis are presented. Finally, the five hypotheses are systematically tested.

5.1 Check for Normal Distribution

An essential precondition for applying many statistical procedures for interval scaled and higher scaled variables is an (approximate) normal distribution of the variables (Raithel, 2008). “Especially for parametric tests, the normal distribution of the study variables is condition” (Raithel, 2008, p. 121). Figure 4 shows the respective histograms of the frequency distribution, including the normal distribution curves, which provide a first visual assessment. Analytically, the Kolmogorov-Smirnov test was used for the verification. The histograms in Figure 4 indicate partially asymmetric frequencies. For instance, the Lack of self-control distribution shows a left-skewed distribution. The graph of the Current money management stress distribution is compressed in the direction of the abscissa. The Kolmogorov- Smirnov test confirms the abnormal distribution for all variables. It points to significance levels of $p < 0.001$. The null hypothesis of the normal distribution assumption is hence rejected for all variables. The alternative Shapiro-Wilk test confirms the abnormal distribution. Based on these measures, non-parametric methods are generally to be used in the data analysis. Nevertheless, the distributions can be described as “sufficiently normally distributed” (Raithel, 2008, p. 121), especially following graphical observation. Furthermore, following the central limit theorem, it would require a very large sample size to achieve normal distribution. Consequently, instead of

the non-parametric Mann-Whitney U-test, the parametric t-test was applied in the analysis, as it has proven to be very robust to abnormal distributions.

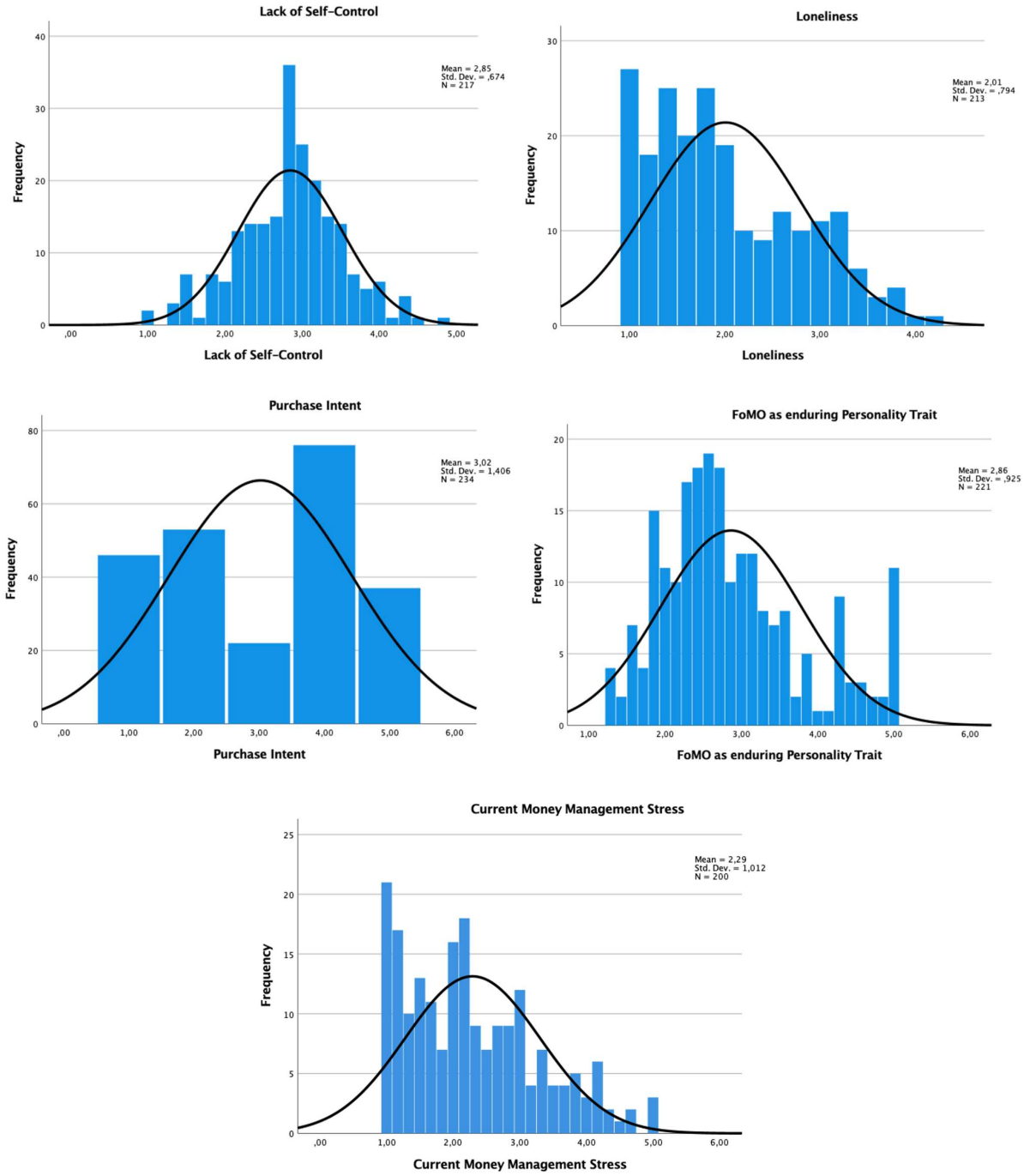


Figure 4. Experimental Variables Check for Normality (Histograms)

5.2 Descriptive Analysis

Tables 4 to 6 and Figures 5 to 6 provide an overview of the sociodemographic structure of the underlying sample. The gender distribution shows that the majority of participants, 60.4 % (n

= 122), is female. In contrast, 39.6 % (n = 80) belong to the male gender and five subjects to the diverse group (table 4). Compared to the national average, an overrepresentation of females might bias the findings. Przybylski et al. (2013) found in their study that younger men in particular tended to report the highest levels of FOMO. Hence, the gender-bias in this sample shall be acknowledged and find regard in the discussion. Additionally, 27 subjects have not indicated their gender due to early termination of the survey.

Regarding the four experimental groups, they are all comparable in terms of total size (n_{EG1} = 51; n_{EG2} = 53; n_{EG3} = 47; n_{EG4} = 56). This is a necessary precondition for all further analyses (Raithel, 2008).

Experimental Group \ Gender	male	female	other/prefer not to say	n/a	Total
EG1 (FoMO*NoConstraint)	21	29	1		51
EG2 (FoMO*Constraint)	18	33	2		53
EG3 (NoFoMO*NoConstraint)	21	26	0		47
EG4 (NoFoMO*Constraint)	20	34	2		56
n/a					27
Total	80	122	5	27	234

Table 4. Subject Sample (Experimental Groups and Gender)

The age range of the final sample is 17 to 36 years. The predominantly represented age group is 21 to 26 years old, with 60% of respondents belonging to this “early Gen Z group”. The distribution is right-skewed, hence there is an overrepresentation of Gen Z compared to Gen Y in the sample.

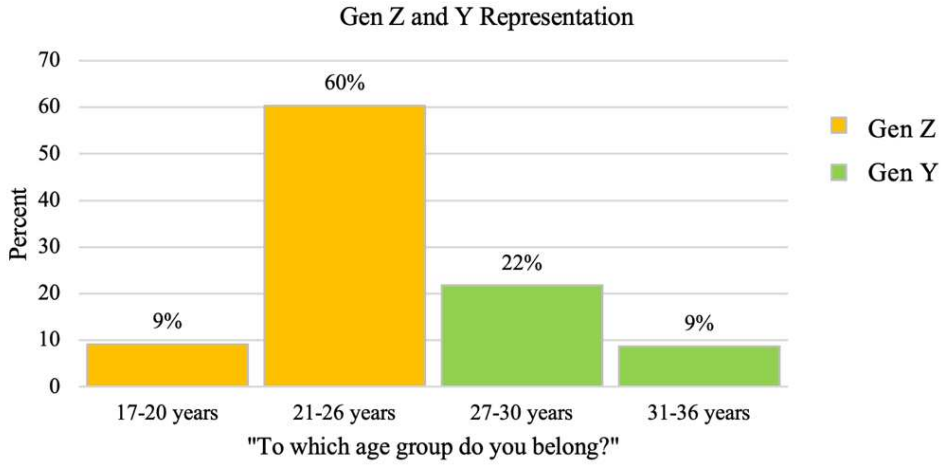


Figure 5. Subject Sample (Age Groups in Bar Chart)

Regarding countries of residence, half of the participants are German (54%), followed by 11% Portuguese and 6% French. Hence, there is a European bias in this sample. Other countries include Denmark, Mexico, Netherlands, Sweden, Tunisia, UK, and the USA in descending order. As FOMO is a global social phenomenon, found in statistics worldwide, an international sample of participants was also chosen by Przybylski et al. (2013), who state that "the international sample was intended to be representative of a wide range of potential respondents" (p. 1843).

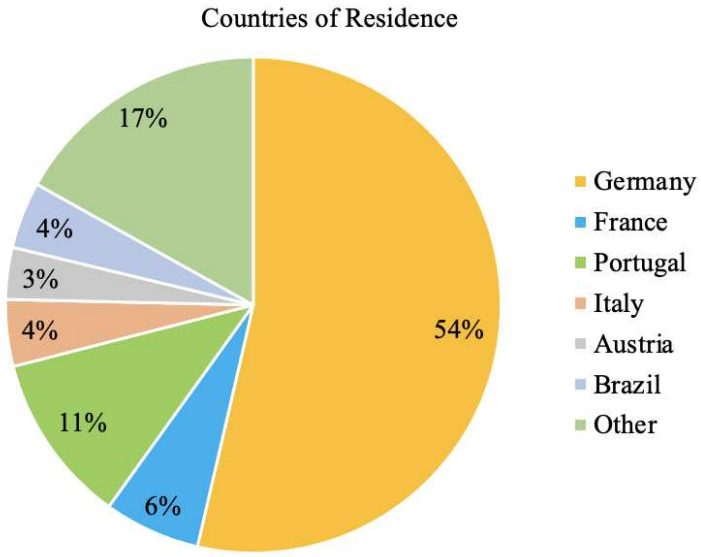


Figure 6. Subject Sample (Countries of Residence in Pie Chart)

Analyzing the frequency distribution of employment status, as expected during the choice of distribution channels, half of the participants (52.5%) are students. Multiple researchers like Milyavskaya et al. (2018) and Przybylski et al. (2013) have investigated the effects of FOMO on 1st year university students, as the phenomenon was found to play a significant role in this life stage. Furthermore, it can be assumed that the majority of subjects has a limited financial budget, since 69.6% are not employed full-time yet.

Employment Status	Student	Employed full-time	Employed part-time	Mini job	Unemployed	Other
Percent of Cases*	52.5 %	30.4 %	15.0 %	9.2 %	6.8 %	3.8 %

*Multiple response set (excluding 27 incomplete surveys)

Table 5. Subject Sample (Current Employment Status)

Going in line with the high representation of students in the scope, 44.9% of subjects share their household with flatmates, which is a common choice of affordable living during the studies in Europe. 15% live with their parents which might indicate that they have higher savings due to the absence of rent payments. Nevertheless, most likely these subjects do not work yet.

Household Composition	Flatmates	Alone	Partner	Parents	Siblings	Children
Percent of Cases*	44.9 %	19.8 %	18.8 %	15.0 %	5.3 %	1.4 %

*Multiple response set (excluding 27 incomplete surveys)

Table 6. Subject Sample (Household Composition)

After the sociodemographic presentation of the sample, it can be concluded that the present study is comparable to other researchers' scopes that were used as a basis for this research. It cannot guarantee representativeness of a specific national population. However, the randomization into the experimental groups has worked very well with a balanced number of participants and genders represented in all four groups. Consequently, these control variables' effect is held constant and should not lead to biases in the main effects.

5.3 Univariate Analysis

For the univariate analysis of the experiment's dependent variable Purchase Likelihood, a box plot was used to graphically illustrate and compare the frequency distributions of the DV regarding the four experimental groups (Raithel, 2008). Figure 7 provides an overview of the dependent variable, which was measured based on a five-point- Likert scaling with values from 1 (= "strongly disagree") to 5 (= "strongly agree"). The boxplot visualization shows that the highest Purchase Likelihood appears under the manipulation of FOMO and no budget constraint ($\mu_{EG1} = 4.17$; $\sigma = .94$), interestingly, followed by the condition of FOMO and a budget constraint ($\mu_{EG2} = 2.95$; $\sigma = 1.34$). It seems that the imposed budget constraint does not deter participants much from intending to make the purchase of a concert ticket.

The lowest average yet widely dispersed purchase likelihood appears in EG4, in which no FOMO and a budget constraint were manipulated ($\mu_{EG4} = 2.05$; $\sigma = 1.12$). Apparently, there was a generally high willingness to purchase the ticket, also without FOMO. Lastly, in EG3 (no FOMO and no budget constraint), Purchase Likelihood was moderate ($\mu_{EG3} = 3.06$; $\sigma = 1.3$), and slightly above the overall average ($\mu_{total} = 3.3$).

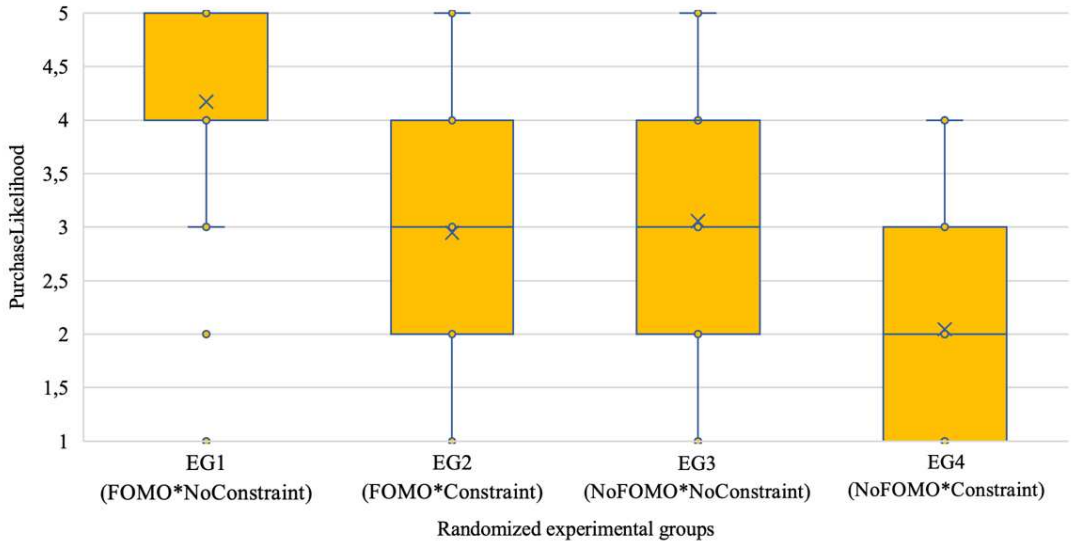


Figure 7. Purchase Likelihood across four Groups (Boxplot)

Visualizing the individual factors in Figure 8, a moderate FOMO trait ($\mu_{PersonalityFOMO} = 2.86$; $\sigma = .92$) can be observed in this sample. Also, this scope shows a close to average perceived Lack of self-control ($\mu_{SelfControl} = 2.85$; $\sigma = .67$). Not many participants perceive themselves as lonely ($\mu_{Loneliness} = 2.01$; $\sigma = .79$). Also, participants in this sample show a below average Current money management stress ($\mu_{MoneyStress} = 2.29$; $\sigma = 1.01$), however the higher standard deviation and range from 1 to 5 indicates that respondents differentiate a lot in their answers.

Figure 7. Individual Factors (Boxplot)

5.4 Bivariate Analysis

In the following, attention is paid to the exploration of correlations of the four predictor variables and the dependent variable Purchase Likelihood in order to determine the strength of their relationship (Raithel, 2008). Moreover, the correlations of variables with the experimental conditions (0 = "noFOMO"; 1 = "FOMO" and 0 = "noBudgetConstraint"; 1 = "BudgetConstraint") give first indications of differences between the four experimental groups.

Since the distributions were proved to not be normally distributed (chapter 5.1), as it is required for parametric tests like the Pearson Correlation Coefficient (Raithel, 2008), the corresponding non-parametric Spearman Correlation Coefficient test is used instead. The effect sizes of Spearman's rho correlation (rS) are interpreted after Dancey and Reidy (2007): $rS \geq 0{,}2$ weak relationship; $rS \geq 0{,}3$ moderate relationship; $rS \geq 0.4$ strong relationship, $rS \geq 0.7$ very strong relationship.

The DV Purchase Likelihood significantly positively correlates with the FOMO state manipulation (.381**), Perceived Situational FOMO (.439**) and significantly negatively correlates with the Budget Constraint manipulation (-.419**). This indicates that the hypothesized framework can be accepted, but correlations alone do not allow for causality. The four predictor variables FOMO trait, Lack of self-control, Loneliness, and Current money management stress show no significant correlation with PL.

Furthermore, significant positive correlations can be observed between the FOMO state manipulation and Lack of self-control (.182**). This might be because the subjects were asked directly after the experiment about their perceived self-control and realized by auto-observation that they could not resist their impulsiveness to buy the concert ticket. The Lack of self-control also correlates with Current money management stress (.224**), which goes in line with research findings by Netemeyer et al. (2018) that showed that Lack of self-control stimulates Current money management stress.

Regarding Loneliness, it positively correlates with Current money management stress (.205**) and FOMO trait (.252**). This goes along with prior literature by Hunt et al. (2018) highlighting the connection of both concepts. Interestingly, a strong positive relation is found between FOMO trait and Current money management stress (.560**).

Variable	FOMO Manipulation	Perceived Situational FOMO	Budget Constraint Manipulation	Purchase Intent	FOMO trait	Lack of Self-Control	Loneliness	Current Money Management Stress
FOMO Manipulation		.537**	-.059	.381**	.027	.182**	.067	-.005
Perceived Situational FOMO	.537**		-.051	.439**	.254**	.176**	.136*	-.003
Budget Constraint Manipulation	-.059	-.051		-.419**	.112	.077	.117	.103
Purchase Intent	.381**	.439**	-.419**		-.007	.101	-.079	-.114
FOMO trait	.027	.254**	.112	-.007		.111	.252**	.560**
Lack of Self-Control	.182**	.176**	.077	.101	.111		.081	.224**
Loneliness	.067	.136*	.117	-.079	.252**	.081		.205**
Current Money Management Stress	-.005	-.003	.103	-.114	.560**	.224**	.205**	

**. Correlation is significant at the 0.01 level (2-tailed)

Table 5. Correlations with Spearman

Overall, Purchase Likelihood in this scope is related to whether a FOMO mindset and a budget constraint were triggered. Moreover, the individual factors show many interrelations, which resonates with the prior research on antecedents and influencing factors of the FOMO phenomenon. Especially Current money management stress seems to be closely tied to the concept of the enduring FOMO trait. However, the correlation coefficients alone say nothing about a causal relationship and the direction of the effects (Hayes, 2017).

5.5 Testing of the Hypotheses

In addition to the findings derived from the correlation analysis, simple linear regression analyses and mean comparisons among groups were executed for the hypothesized effects. Since correlation alone does not permit implications about causality, “the primary objective of regression analysis is the investigation of causal relationships” (Hayes, 2017; Raithel, p. 158).

H1: People that are in a situational FOMO state have a higher impulse purchase likelihood compared to people that are not in a situational FOMO state.

To test whether there is a significant difference in mean Purchase Likelihood of the experimental groups EG1 and EG2 in comparison to EG3 and EG4 (that had no FOMO manipulation), an independent samples t-test was conducted. Looking at the general group statistics, the mean Purchase Likelihood of those under FOMO manipulation is $\mu_{FOMO} = 3.56$, while under no FOMO manipulation it is $\mu_{NoFOMO} = 2.49$. Equal variances can be assumed based on Levene's homogeneity test (Sig. = .555 > .05). With p-values of <.001, the null hypothesis that the means are equal can be rejected. Moreover, the effect size measured with Cohen's d (widely used measure of effect size for t-tests [Raithel, 2008]) shows that the point estimate equals d = -.820, which can be considered a large effect size. Hence, Hypothesis 1 can be accepted in this scope. All statistical tables leading to this conclusion are found in the appendix.

H2: People with a stronger FOMO trait have a higher impulse purchase likelihood compared to people with a weaker FOMO trait.

To test the direct effect of the interval-scaled variable FOMO trait on the interval-scaled DV in SPSS, a linear regression analysis was conducted. The average self-reported level of FOMO trait is $\mu_{EnduringFOMO} = 2.86$. No significant correlation can be found between both variables. Also, the ANOVA table shows a non-significant regression with p = .920. The very low R2 = .000 indicates that none of the variance in the DV can be explained by the model with only this predicting variable. Hence, Hypothesis 2 is rejected.

H3: People that are lonelier have a stronger FOMO trait compared to people that are less lonely.

As both, the predicting and the dependent variable are metric, a linear regression was conducted to test the hypothesis. A small, significant correlation of .252*** is found between the variables. The ANOVA regression shows an unstandardized $B_{Loneliness} = .293$ with $p < .001$. However, considering the small R2, only 6.3% of the variance in FOMO trait can be explained by the factor Loneliness. Hence, Hypothesis 3 will be accepted, as the effect is significant, yet it is noted that the effect is rather small in this sample.

H4: People with an imposed budget constraint have a lower impulse purchase likelihood compared to people with no imposed budget constraint.

Following the same procedure as the testing of H1, an independent samples t-test was carried out. The descriptives reveal that participants under a budget constraint manipulation show a much lower mean purchase likelihood of $\mu_{Constraint} = 2.47$ compared to the group with no budget constraint ($\mu_{NoConstraint} = 3.65$). Equal variances can be assumed based on Levene's homogeneity test (Sig. = .138 > .05). The p-values of >.001 and a large effect size of Cohen's d = .920 confirm that the mean difference is significant. Hence the null hypothesis of mean equality is rejected. The sample means suggests that participants that have a limited financial budget are less likely to purchase the concert ticket.

H5: Among the people that have an imposed budget constraint, those that are in a FOMO state have a higher impulse purchase likelihood compared to people that are not in a FOMO state.

To test the hypothesized scarcity mindset, in which consumers are more prone to impulse purchasing when they encounter both FOMO and a financial constraint, a univariate general linear model was created. The results show the main effects of the FOMO manipulation (as confirmed in H1) and the budget constraint manipulation (as confirmed in H4). However, there is no significant interaction effect, since p = .495. Therefore, H5 cannot be accepted.

Tests of Between-Subjects Effects (DV: Purchase Intent)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	140.082[a]	3	46.694	33.476	< .001
Intercept	2169.783	1	2169.783	1555.588	< .001
FOMO Manipulation	59.108	1	59.108	42.376	< .001
Budget Constraint Manipulation	72.626	1	72.626	52.068	< .001
FOMO*BudgetConstraint	.652	1	.652	.467	.495

a. $R^2 = .304$ (Adjusted $R^2 = .295$)

Table 7. General Linear Model (Testing Interaction Effect)

When comparing the mean Purchase Likelihood of participants from EG2 (FOMO * Constraint) with the one of EG4 (NoFOMO * Constraint) via an independent samples t-test, EG2 shows a higher mean Purchase Likelihood of $\mu_{EG2} = 2.95$ compared to EG4 ($\mu_{EG4} = 2.05$). This mean difference is also significant with p < .001. However, this mean difference is not larger than the

mean difference of EG1 and EG3. So, the scarcity mindset cannot be detected in this study scope.

5.6 Further Findings

As identified in 5.4, the individual factors identified as important concepts related to FOMO in the literature review Loneliness, Lack of self-control, and Current money management stress show correlations among each other. To check for causal effects, a general linear model was performed on these factors. The results of a model that includes all factors' main effects and interaction effects shows that Current money management stress is significantly positively influenced mostly by FOMO trait and followed by Lack of self-control, but not directly by Loneliness. However, there is an interaction effect indicating that Loneliness significantly increases Current money management stress, when moderated by Lack of self-control. The Adjusted R2 value reveals that 84% of the variance in the DV can be explained by this model.

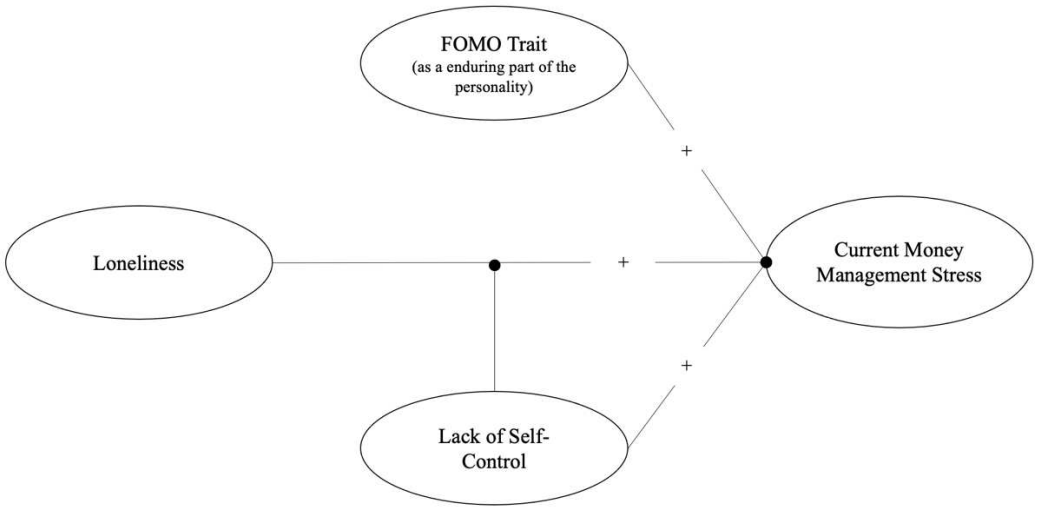


Figure 8. Antecedents of Current money management stress (based on General Linear Model)

The linear regression reveals that an enduring FOMO trait as part of the personality has the strongest significant effect on Current money management stress ($B = .457$; $p < .001$), followed by Lack of self-control ($B = .168$; $p = .004$) and the interaction effect of Lack of self-control*Loneliness ($B = .128$; $p = .012$). Overall, the high influence of FOMO on the stress related to financial well-being will find regard in the discussion.

Furthermore, related to the demographics, it was found that the age group plays a role in the self-perception of FOMO. Concretely, the Spearman correlation of r = -.286** between enduring FOMO trait and age group indicated that younger participants report a higher level of FOMO. Furthermore, age group negatively relates to Current money management stress (r = -.156*), hence younger participants are found to be more stressed about their personal finances in this sample. Regarding gender, interestingly, men are found to be significantly more stressed about their personal finances (r = - .248**) compared to women.

Lastly, investigating the role of monthly income and available budget for leisure activities, multiple significant correlations were identified. As expected, monthly income correlates quite strongly with leisure budget (r = .435**), which is logical since a higher income allows the consumer to spend more money on leisure activities. Moreover, both variables relate to age group ($r_{MonthlyIncome}$ = .482**; $r_{LeisureBudget}$ = .270**). Interestingly, an enduring FOMO trait as part of the personality shows small, yet significant correlations both to monthly income (r = -.178*) as well as to leisure budget (r = -.232**). This means that participants with less finances at hand show a higher fear of missing out, probably because they are used to being unable to afford all purchases and need to prioritize under a restricted monetary budget. Current money management stress shows small, yet significant correlations with monthly income (r = -.202**) as well as leisure budget (r = -.142*). Hence, participants with less liquidity tend to stress more about their financial situation.

Despite the significant correlations among predictor and demographic variables, a multivariate general linear model reveals significant effects only on a few variables (figure 9). Clearly, younger participants in the sample are found to have higher FOMO and are more stressed about personal finances.

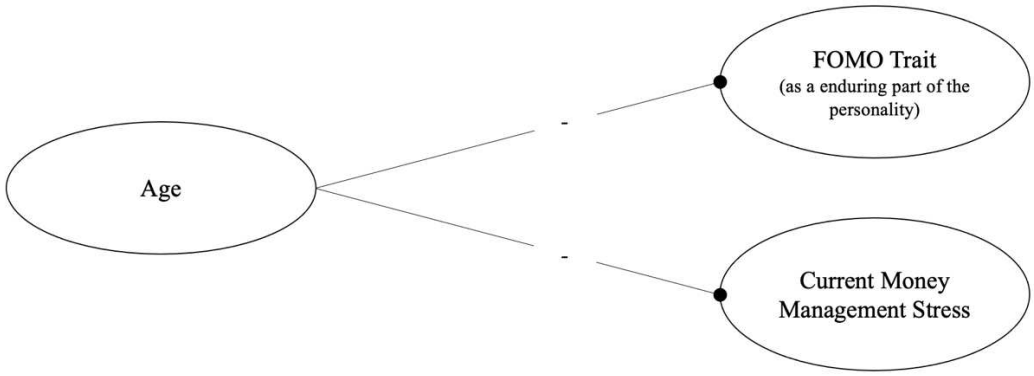


Figure 9. The Role of Age (based on Multivariate General Linear Model)

6 Discussion

In the following, the results of the statistical analyses are summarized and put in context with the literature around the topic. Moreover, limitations of the study will be presented and implications for future studies will be proposed.

The experimental findings reveal the positive effect of FOMO on impulsive spending. Participants that were triggered through communication framing to perceive a momentary FOMO on a concert, showed a significantly higher purchase likelihood for a ticket compared to those that thought nobody they knew would go to the concert. Hence, the purchase decision clearly did not depend on the general interest in the concert, but on whether they would miss something exciting if they did not join. This confirms empirical findings of other researchers in the field of FOMO purchasing.

Furthermore, as opposed to prior research streams that define FOMO as an enduring personality characteristic (especially the contributions of Przybylski et al. [2013]), the concept FOMO trait did not show any significant effect on Purchase Likelihood in this study. A possible explanation for the lack of significance of the variable could be that the scale was developed by Przybylski and co-authors within the context of social media usage. The items refer to general FOMO symptoms (e.g. “I get anxious when I don’t know what my friends are up to” [p. 1847]) rather than concrete action intentions like impulse purchasing as a result of FOMO. Complementary, FOMO spending is a highly unconscious mechanism, which might explain why the manipulation itself worked (as H1 was accepted), but the self-perception of FOMO did not show significant effects. Social desirability bias might also explain the lack of effect, as participants might not want to admit to themselves and the researcher that they were vulnerable to FOMO feelings.

Meanwhile, in accordance with previous research, participants who self-reported elevated levels of loneliness experienced pronounced long-term FOMO. The persistent negative thoughts regarding potential enjoyment missed with friends were identified as contributing to heightened financial stress. This suggests the existence of a detrimental cycle involving loneliness and FOMO, extending even to personal financial concerns. The findings complement Netemeyer and co-workers’ antecedent model of Current money management stress and its

effect on general well-being (2018), as the enduring FOMO personality trait can be added as a further antecedent.

The two research streams on FOMO as an enduring personality trait and FOMO as context-specific anxiety state are proven in this study to be slightly correlated, but not further intertwined. While the enduring FOMO trait is shown to have more long-lasting antecedents (loneliness and young age) and also the persistent consequence of stress about personal finances, it does not trigger immediate reactions. Overall, both sides of FOMO, the short-term and the long-term, pose a threat to the individual, by fostering impulse spending and financial stress.

After investigating the relation of FOMO to financial overspending, H4 was accepted which indicates that a budget constraint by itself hinders consumers from purchasing a concert ticket. Generally, those participants with a budget constraint showed lower purchase likelihood. Also, FOMO was found to play an influencing role in the consumer's decision to purchase, as FOMO-participants were more willing to overspend compared to NoFOMO-participants. However, the absence of an interaction effect of BudgetConstraint and FOMO leads to the conclusion that no scarcity effect can be detected in this research.

6.1 Answering the Research Questions

Based on the research findings, the three initially posed research questions will be answered in the following.

Research Question 1: "What is FOMO and how does it influence purchase behavior?" The Fear of Missing Out is a socio-psychological phenomenon that often occurs unconsciously as a consequence of upward social comparison. FOMO has two related expressions that should, however, be treated separately. On the one hand, it is an enduring personality trait, which is stimulated by social media usage and loneliness. Over a longer time, this FOMO trait can have detrimental consequences like money management stress, which ultimately decreases the general mental well-being. On the other hand, FOMO can also emerge as a short-term, situational feeling of anxiety, which occurs as a response to a trigger (in this experiment a verbal message). The situational FOMO state leads to impulsive purchase behavior.

Research Question 2: "What individual characteristics play a role in the effect of FOMO on impulsive purchase behavior?" Not every individual is equally vulnerable to perceiving FOMO. The phenomenon is predominant among the Generation Z consumers, although it also appears among Millennials. Particularly those with a low monthly income and a low available leisure budget suffer from enduring FOMO. Moreover, lonely consumers are more susceptible to the fear of missing out, as it is linked to the fear of social exclusion. When addressing the short-term FOMO state, especially those consumers that struggle to control immediate temptations are found to be more susceptible to FOMO and are more willing to spend money to calm the negative condition.

Research Question 3: "Are young consumers more likely to overspend their financial budget under the influence of situationally felt FOMO?" The experiment results show that young consumers were more willing to go beyond a constrained financial budget when they were under the condition of situationally felt FOMO. However, this cannot be explained by the scarcity mindset in this sample. To test whether consumers really adopt a myopic, present-biased view on the purchase decision when they are under a FOMO state, further research needs to be conducted.

6.2 Limitations

Despite the general success of the study experiment in proving the hypothesized relations and effects, several weaknesses of the study design and methods applied should be acknowledged. Firstly, the manipulation check experienced partial failure, particularly in evoking a genuine emotional response through the described concert scenario. Following the design of Sharma, Tilly, and Wang (2023), manipulation checks were applied for the Budget Constraint condition with a one-item question and for the FOMO condition with a mediator "Perceived Situational FOMO". Yet, not all participants indicated a high average score of perceived FOMO, although they were randomly assigned to one of the two FOMO-manipulation experimental groups. This problem was also auto-criticized by Good and Hyman (2021) that acknowledge that participants only "made **hypothetical decisions** based only on a written scenario rather than an actual decision" (Good & Hyman, 2021, p. 8).

It is commonly known that creating emotions like fear, jealousy, or any other complex emotional state in a laboratory experiment involves carefully designing experimental

manipulations that elicit specific emotional responses. Albertson and Gadarian (2016) agree that there is no "magic [...] anxiety pill" (p. 485) that participants can take to feel the desired emotions and act on their basis. They suggest the usage of mediation models, which was also applied in this analysis through the construct "Perceived Situational FOMO" after the experimental stimulus. Yet, future research should record more responses to measure and objectively assess the emotional state of FOMO (e.g., heart rate, facial expressions [Albertson & Gadarian, 2016]). These measures could complement the self-report level of situationally felt FOMO and thereby provide a more comprehensive and robust measurement of FOMO as an emotional response to the stimulus.

Furthermore, methodologically, the study was constrained by a relatively **small sample size**, with approximately 50 participants per experimental group, which limits the generalizability of findings. Also, several insignificant relations and effects could turn out significant with a larger sample (Raithel, 2008). It should be critically reflected that a considerable number of participants dropped out prematurely, suggesting that the survey might have been overly lengthy. The study was conducted during a period marked by elevated stress levels for many individuals (e.g., due to upcoming exam periods in universities), which potentially influenced students' motivation to respond with sufficient time and concentration. Future research should consider shortening the survey or providing incentives upon completion.

6.3 Implications for future Research

Despite its numerously acknowledged importance in understanding FOMO, this study did not conceptualize **the role of social media** in the research framework. However, researchers like Tandon et al. (2021) have included constructs like social media fatigue in their research framework and have achieved higher model explainability. The extension of research variables to these constructs can help uncover nuanced relationships and to identity potential early indicators of FOMO spending.

Furthermore, although the scarcity mindset could not be empirically supported in this study, expanding the scope of research on the role of the scarcity mindset in Fear of Missing Out and overspending can provide a more nuanced examination of the cognitive processes underlying consumers' financial behaviors. Specifically, research can delve deeper into the exploration of how individuals make tradeoffs between the costs and benefits of **overspending across time**

periods, as already touched upon in studies by Frederick, Loewenstein, and O'donoghue (2002).

Generally, given the inherently hypothetical nature of this study's experiment, where overspending does not have tangible consequences, a longitudinal study involving **real financial transactions** could provide deeper insights into the long-term implications of FOMO-driven spending behaviors. The same limitation was detected by Sharma, Tilly, and Wang (2023) in their research on the scarcity mindset, where the phenomenon was not diagnosed with longitudinal methods, which decreased the internal validity of findings. FOMO has already been investigated with qualitative methods. For example, Alutaybi et al. (2020) interviewed focus groups and created a diary study involving 30 participants who reported their experience with FOMO over a longer study period. These methods could help to shed further light into the relation of FOMO and personal finances, for example by asking participants to self-reflect about their prioritization of current and future spendings. Finally, to **understand the full cycle of FOMO spending** future research should extend its focus beyond the point of purchase. Investigating post-purchase experiences, such as feelings of regret, shame, or heightened money stress, would contribute to a more comprehensive understanding of the psychological consequences of FOMO-driven spending. Moreover, there is an opportunity to explore potential cycles that may perpetuate FOMO and dissatisfaction among young consumers. This could involve investigating whether post-purchase emotions contribute to a heightened sense of FOMO, creating a cyclical pattern that shapes future spending behaviors.

6.4 Practical Implications for Consumers

Coping mechanisms to counteract both the short-term FOMO state as well as the long-term FOMO trait can support young consumers in increasing awareness of their own spending behavior, finding ways to be mindful of their impulses to purchasing and combat overspending.

First, according to Festinger's theory, although social comparison is a human, oftentimes unconscious process that cannot be avoided, the negative effect on one's self-image and emotional state can be reduced by focusing on **multiple comparison attributes**, as highlighted by Crusius and co-authors (2022). By comparing oneself and one's life on more dimensions besides the level of excitement and the number of aspirational experiences, such as travels,

concerts, this reduces the urge for impression management. No one has a perfect life, no matter what it looks like.

In line with that, researchers like Przybylski and co-authors (2013) highlight the importance of **mindful social media usage**, as it often involves curated representations of others' lives. Dossey (2014) states that the most important way to deal with FOMO is to realize that these lives do not really exist as shown. He calls for awareness that the lives of the people who share are not all those photographs, but that other life domains (like job satisfaction, physical health, and relationship support satisfaction [Netemeyer et al., 2018]) are often not shared on social media.

Furthermore, this research found that the enduring FOMO trait is significantly stimulated by loneliness. To **counteract loneliness**, several proactive steps are recommended by psychologists and practitioners. Building a like-minded social circle that fosters a natural sense of belonging can support young adults in promoting a healthier and more fulfilling life (e.g. Hunt et al., 2018; Pettigrew & Roberts, 2008). Loneliness is also found to be reduced by gratitude practices. Sokol (2016) suggests that gratitude journaling can help to become mindful of one's own achievements, possessions, and fosters pride in personal life achievements.

To counteract overspending by escaping the myopic, present-biased perspective caused by the scarcity mindset, according to Sharma, Tilly, and Wang (2023), two strategies can be applied. While a financial constraint is an unchangeable condition, the urgent need or feeling can be treated in multiple ways to escape the scarcity mindset. On one hand, providing **alternative means to calm FOMO symptoms** (e.g., calling a friend, going for a walk, performing an activity that brings enjoyment) can calm the momentary negative feelings. On the other hand, they propose interventions that change the **relative importance of needs over time** (e.g., reducing the importance of an upcoming concert on the perception of one's own life, making future financial security more important). Young consumers should ask themselves: “Does this one concert that I am potentially missing really make my life boring compared to my friends’ lives?” Complementary, Hershfield and co-authors’ (2022) work on the **identification with the future self** can help to encourage more future-oriented behavior. They found that “when the future self shares similarities with the present self, when it is viewed in vivid and realistic terms, and when it is seen in a positive light”, consumers are more likely to make present choices that may benefit them at some point in the upcoming years (Hershfield, 2011, p. 30).

As an external support, young consumers should receive more education in managing their finances more responsibly and reducing current money management stress. Empirical evidence shows that traits like self-control are malleable still in early adulthood (Moffitt et al., 2011). The public sector could play a role in helping young people to better manage their personal finances, for example by **teaching financial literacy**. Netemeyer and co-authors (2018) support the approach of more financial education (especially at the young age, e.g., in school) and the establishment of "financial self-efficacy" (p. 21).

In a nutshell, impulsive FOMO spending is a very complex process that young consumers are particularly vulnerable towards. The severity of their overspending in times of crisis should not be overlooked. Nevertheless, collective efforts from all involved actors can promote optimism for a future in which young individuals no longer fear not keeping up with their friends and missing out on once-in-a-lifetime experiences, but instead embrace self-assurance in their unique life journey.

References

Alabri, A. (2022). Fear of missing out (FOMO): The effects of the need to belong, perceived centrality, and fear of social exclusion. *Human behavior and emerging technologies*, *2022*.

Albertson, B., & Gadarian, S. K. (2016). Did that scare you? Tips on creating emotion in experimental subjects. *Political Analysis, 24*(4), 485-491.

Alt, D., & Boniel-Nissim, M. (2018). Parent–adolescent communication and problematic internet use: The mediating role of fear of missing out (FoMO). *Journal of Family Issues, 39*(13), 3391-3409.

Alutaybi, A., Al-Thani, D., McAlaney, J., & Ali, R. (2020). Combating fear of missing out (FoMO) on social media: The FoMO-R method. *International journal of environmental research and public health, 17*(17), 6128.

Axos Bank (2022). *Are You Guilty of FOMO Spending?* Retrieved November 24, 2023, from https://www.axosbank.com/blog/Are-You-Guilty-of-FOMO-Spending

Bain (2023). *Is TikTok's 'shoppertainment' sales model pushing Gen Z into debt? Just look at the numbers.* The Guardian. Retrieved November 11, 2023, from https://www.theguardian.com/commentisfree/2023/mar/16/tiktoks-shoppertainment-model-gen-z-debt

Bakhtiari (2023). *Gen-Z, The Loneliness Epidemic and The Unifying Power Of Brands.* Retrieved December 1, 2023, from https://www.forbes.com/sites/kianbakhtiari/2023/07/28/gen-z-the-loneliness-epidemic-and-the-unifying-power-of-brands/

Baumeister, R. F., & Leary, M. R. (2017). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Interpersonal development,* 57-89.

Beresford Research (2023). *Generations defined by birth year, and ages in 2023.* Retrieved September 27, 2023, from https://www.beresfordresearch.com/age-range-by-generation/

Bocksch (2023). *#KlarnaSchulden - Gen Z lebt auf Pump.* Statista. Retrieved September 20, 2023, from https://de.statista.com/infografik/29303/anteil-der-befragten-verschiedener-generationen-die-klarna-bnpl-nutzen/

Barry, C. T., & Wong, M. Y. (2020). Fear of missing out (FoMO): A generational phenomenon or an individual difference? *Journal of Social and Personal Relationships, 37*(12), 2952-2966.

Brown, J. D. (1986). Evaluations of self and others: Self-enhancement biases in social judgments. *Social cognition, 4*(4), 353-376.

Credit Karma (2023). Gen Z and millennials are losing friends over money, study finds. Retrieved September 15, from https://www.creditkarma.com/about/commentary/gen-z-and-millennials-are-losing-friends-over-money-study-finds

Crusius, J., Corcoran, K., & Mussweiler, T. (2022). Social comparison: Theory, research, and applications. *Theories in social psychology*, 165.

Deloitte (2022). *The mental health of Gen Zs and millennials in the new world of work.* Retrieved September 20, 2023, from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/deloitte-2022-genz-millennial-mh-whitepaper.pdf

Dimock, M. (2019). Defining generations: Where Millennials end and Generation Z begins. *Pew Research Center, 17*(1), 1-7.

Dinh, T. C. T., & Lee, Y. (2022). "I want to be as trendy as influencers"–how "fear of missing out" leads to buying intention for products endorsed by social media influencers. *Journal of Research in Interactive Marketing, 16*(3), 346-364.

Dittmar, H., Beattie, J., & Friese, S. (1995). Gender identity and material symbols: Objects and decision considerations in impulse purchases. *Journal of economic psychology, 16*(3), 491-511.

Dossey, L. (2014). FOMO, digital dementia, and our dangerous experiment. *Explore: The Journal of Science and Healing*, *10*(2), 69-73.

Elhai, J. D., Levine, J. C., Dvorak, R. D., & Hall, B. J. (2016). Fear of missing out, need for touch, anxiety and depression are related to problematic smartphone use. *Computers in Human Behavior, 63*, 509-516.

Ellemers, N., & Haslam, S. A. (2012). Social identity theory. *Handbook of theories of social psychology, 2*, 379-398.

Festinger, L. (1954). A theory of social comparison processes. *Human relations, 7*(2), 117-140.

Franchina, V., Vanden Abeele, M., Van Rooij, A. J., Lo Coco, G., & De Marez, L. (2018). Fear of missing out as a predictor of problematic social media use and phubbing behavior among Flemish adolescents. *International journal of environmental research and public health, 15*(10), 2319.

Frederick, S., Loewenstein, G., & O'donoghue, T. (2002). Time discounting and time preference: A critical review. *Journal of Economic Literature, 40*(2), 351–401

Good, M. C., & Hyman, M. R. (2020). 'Fear of missing out': antecedents and influence on purchase likelihood. *Journal of Marketing Theory and Practice, 28*(3), 330-341.

Good, M. C., & Hyman, M. R. (2021). Direct and indirect effects of fear-of-missing-out appeals on purchase likelihood. *Journal of Consumer Behaviour, 20*(3), 564-576.

Hayran, C., Anik, L., & Gürhan-Canli, Z. (2020). A threat to loyalty: Fear of missing out (FOMO) leads to reluctance to repeat current experiences. *PLoS One, 15*(4), e0232318.

Herabadi, A. G., Verplanken, B., & Van Knippenberg, A. (2009). Consumption experience of impulse buying in Indonesia: Emotional arousal and hedonistic considerations. *Asian Journal of Social Psychology, 12*(1), 20-31.

Hershfield, H. E. (2011). Future self-continuity: How conceptions of the future self transform intertemporal choice. *Annals of the New York Academy of Sciences*, *1235*(1), 30-43.

Hershfield, H. E., Goldstein, D. G., Sharpe, W. F., Fox, J., Yeykelis, L., Carstensen, L. L., & Bailenson, J. N. (2011). Increasing saving behavior through age-progressed renderings of the future self. *Journal of marketing research*, *48*(SPL), S23-S37.

Hodkinson, C. (2019). 'Fear of Missing Out'(FOMO) marketing appeals: A conceptual model. *Journal of Marketing Communications, 25*(1), 65-88.

Hornsey, M. J. (2008). Social identity theory and self-categorization theory: A historical review. *Social and personality psychology compass, 2*(1), 204-222.

Hunt, M. G., Marx, R., Lipson, C., & Young, J. (2018). No more FOMO: Limiting social media decreases loneliness and depression. *Journal of Social and Clinical Psychology*, *37*(10), 751-768.

JWT (2012). *Fear of Missing Out (FOMO).* Retrieved September 28, 2023, from http://www.jwtintelligence.com/wp-content/uploads/2012/03/F_JWT_FOMO-update_3.21.12.pdf

Leary, M. R., & Kowalski, R. M. (1990). Impression management: A literature review and two-component model. *Psychological bulletin*, *107*(1), 34.

Lockwood, P., & Pinkus, R. T. (2014). Social comparisons within romantic relationships. *Communal functions of social comparison*, 120-142.

Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational behavior and human decision processes, 65*(3), 272-292.

Maloney, P. W., Grawitch, M. J., & Barber, L. K. (2012). The multi-factor structure of the Brief self-control Scale: Discriminant validity of restraint and impulsivity. *Journal of Research in Personality, 46*(1), 111-115.

McKinsey (2022a). *How COVID-19 caused a global learning crisis.* Retrieved November 16, from: https://www.mckinsey.com/industries/education/our-insights/how-covid-19-caused-a-global-learning-crisis

McKinsey (2022b). *How does Gen Z see its place in the working world? With trepidation.* Retrieved November 12, 2023, from https://www.mckinsey.com/featuredinsights/sustainable-inclusive-growth/future-of-america/how-does-gen-z-see-its-place-in-the-working-world-with-trepidation

McKinsey (2023). *What is Gen Z?* Retrieved September 28, 2023, from https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-gen-z

McKinsey Health Institute (2023). *Gen Z mental health: The impact of tech and social media.* Retrieved September 27, 2023, from https://www.mckinsey.com/mhi/our-insights/gen-z-mental-health-the-impact-of-tech-and-social-media

Mussweiler, T., & Rüter, K. (2003). What friends are for! The use of routine standards in social comparison. *Journal of Personality and Social Psychology, 85*(3), 467.

Milyavskaya, M., Saffran, M., Hope, N., & Koestner, R. (2018). Fear of missing out: prevalence, dynamics, and consequences of experiencing FOMO. *Motivation and emotion, 42*(5), 725-737.

Netemeyer, R. G., Warmath, D., Fernandes, D., & Lynch Jr, J. G. (2018). How am I doing? Perceived financial well-being, its potential antecedents, and its relation to overall well-being. *Journal of Consumer Research, 45*(1), 68-89.

Pettigrew, S., & Roberts, M. (2008). Addressing loneliness in later life. *Aging and Mental Health*, *12*(3), 302-309.

Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in human behavior, 29*(4), 1841-1848.

Raithel, J. (2008). *Quantitative Forschung*. Wiesbaden: VS Verlag für Sozialwissenschaften.

Rifkin, J., Cindy, C., & Kahn, B. (2015). FoMO: How the fear of missing out leads to missing out. *ACR North American Advances.*

Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA Loneliness Scale: concurrent and discriminant validity evidence. *Journal of personality and social psychology, 39*(3), 472.

Shah, A. K., Mullainathan, S., & Shafir, E. (2012). Some consequences of having too little. *Science, 338*(6107), 682-685.

Sharma, E., Tully, S. M., & Wang, X. (2023). Scarcity and intertemporal choice. *Journal of Personality and Social Psychology.*

Siroto (2023): *What is FOMO Spending?* SoFi Learn. Retrieved September 28, 2023, from https://www.sofi.com/learn/content/how-to-avoid-fomo-spending/

Smith, R. H. (2000). Assimilative and contrastive emotional reactions to upward and downward social comparisons. *Handbook of social comparison: Theory and research*, 173-200.

Sokol. R (2016). *Here are 8 ways to shut down your FOMO.* Retrieved December 29, 2023, from https://www. rd.com /advice/relationships/fear-of-missing-out

Steckler, C. M., & Tracy, J. L. (2014). The emotional underpinnings of social status. *The psychology of social status*, 201-224.

Tandon, A., Dhir, A., Almugren, I., AlNemer, G. N., & Mäntymäki, M. (2021). Fear of missing out (FoMO) among social media users: a systematic literature review, synthesis and framework for future research. *Internet Research, 31*(3), 782-821.

Taylor, S. E., Wayment, H. A., & Carrillo, M. (1996). Social comparison, self-regulation, and motivation. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition,* 3–27.

Thomas, S. (2023). Gen Z FOMO Fuels Big Spending Despite Inflation. Kiplinger. Retrieved September 17, 2023, from https://www.kiplinger.com/personal-finance/spending/gen-z-spends-big

Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological review*, *117*(2), 440.

Williams, L. E., Stein, R., & Galguera, L. (2014). The distinct affective consequences of psychological distance and construal level. *Journal of Consumer Research*, *40*(6), 1123-1138.

Wills, T. A. (1981). Downward comparison principles in social psychology. *Psychological bulletin, 90*(2), 245.

Zaman, U., Barnes, S. J., Abbasi, S., Anjam, M., Aktan, M., & Khwaja, M. G. (2022). The bridge at the end of the world: Linking Expat's pandemic fatigue, travel FOMO, destination crisis marketing, and vaxication for "greatest of all trips". *Sustainability*, *14*(4), 2312.

Zhao, J., & Tomm, B. M. (2018). Psychological responses to scarcity. *Oxford research encyclopedia of psychology*.

Zwanka, R. J., & Buff, C. (2021). COVID-19 generation: A conceptual framework of the consumer behavioral shifts to be caused by the COVID-19 pandemic. *Journal of International Consumer Marketing, 33*(1), 58-67.

Appendix

Appendix 1. Reliability Test Main Study using Cronbach's alpha

		Corrected item total correlation (Trennschärfe-koeffizient)	Cronbach's Alpha if item removed	Overall Cronbach's Alpha
FOMO Manipulation Check	If I don't go to the concert…			.861
	I will worry about what I'm missing.	.595	.863	
	I will feel concerned that my friends are having more fun without me.	.735	.811	
	I will feel left out.	.798	.784	
	I will feel anxious about not being with my friends.	.709	.823	
FOMO trait	I get worried when I find out my friends are having fun without me.	.715	.837	.866
	I get anxious when I don't know what my friends are up to.	.753	.830	
	It is important that I understand my friends "inside jokes".	.560	.858	
	Sometimes, I wonder if I spend too much time keeping up with what is going on.	.673	.843	
	When I have a good time it is important for me to share the details online (e.g. instagram stories).	.557	.860	

	When I miss out on a planned get-together it bothers me.	.558	.859	
	When I go on vacation, I continue to keep tabs on what my friends are doing.	.671	.843	
Lack of self-control	I do certain things that are bad for me, if they are fun.	.365	.583	.629
	Pleasure and fun keep me from getting work done.	.437	.553	
	I often act without thinking through all the alternatives.	.266	.624	
	I am good at resisting temptation (R).	.332	.596	
	People say that I have iron self-discipline (R).	.351	.589	
	I am able to work diligently toward a long-term goal (R).	.422	.565	
Loneliness	I feel part of a group of friends (R).	.450	.680	.718
	There are people I feel close to (R).	.546	.663	
	My interests and ideas are not shared by people around me.	.495	.666	
	I feel like my social relationships are superficial.	.455	.681	
	I feel like people are	.628	.623	

	around me but not with me.			
	I can find companionship whenever I want to (R).	.205	.752 (removed for higher alpha)	
Current money management stress	I feel stressed because of my current money situation.	.729	.877	.896
	I am currently having difficulties managing my money.	.664	.886	
	My finances seem to control my life.	.733	.876	
	Whenever I feel in control of my finances, something happens that sets me back and makes me stress out.	.724	.877	
	I am often unable to enjoy life, because I obsess too much about money.	.709	.879	
	Because of my money situation, I often feel I will never have the things I want in life.	.762	.871	

Appendix 2. Questionnaire Design

Introduction Text

Dear participant,

this survey is part of my master dissertation at Católica Lisbon School of Business & Economics. The estimated duration is **7-10 minutes**.

Please note the following instructions:
- Answer all questions spontaneously.
- There is no right or wrong information, only your personal opinion counts.
- All data will be stored and evaluated completely anonymously.

If you have any questions or comments, please feel free to contact me by e-mail:
s-atippmann@ucp.pt

Thank you very much for your support!

Alma Tippmann

Exclusion Criterium

Do you enjoy going to concerts?
- Yes
- Sometimes
- Not at all

Part I: Concert Case Experiment

Please imagine the following situation:

You are a student and have just started your 1st semester. A friend tells you about a **concert taking place in your city** next week. You do not know the artist, but you generally like the genre of music.

IV1 Manipulation (randomized):

FOMO Condition
Your friend tells you that it is supposed to be the **best party of the entire semester** and that many other people you know are also attending the concert. You think that if you do not purchase the concert ticket, you will miss out on an amazing experience with those other people.

NoFOMO Condition
So far, you have not heard from any other people that want to attend the concert.

IV2 Manipulation (randomized):

Then you check the **ticket price** and start calculating.

A while ago, you had decided to set yourself the personal goal of only spending a certain amount of money per month on leisure activities like dining out, parties and concerts.

BudgetConstraint Condition
Checking your budget, you have already spent more than you had previously put aside for this month. The **ticket price would go beyond** your pre-defined amount. So you can technically not afford it and would need to cut down your budget for the next month. You might even have to cancel activities you had roughly planned for the next month.

NoBudgetConstraint Condition
Checking your budget, the **ticket price would be within** your pre-defined amount. So you can technically afford it. Alternatively, you could save the money and increase your budget for the following month.

On a scale from 1 to 5, how likely are you to buy the concert ticket?

- Extremely unlikely
- Somewhat unlikely
- Neither likely nor unlikely
- Somewhat likely
- Extremely likely

Manipulation Check FOMO
On a scale from 1 to 5, how much do the following statements describe your feelings before/while deciding whether or not to buy the concert ticket?

If I don't go to this concert ....

- I will worry about what I'm missing.
- I will feel concerned that my friends are having more fun without me.
- I will feel left out.
- I will feel anxious about not being with my friends.

(Five-point Likert matrix scale from "does not describe my feeling" to "clearly describes my feelings")

Manipulation Check BudgetConstraint
On a scale from 1 to 5, how much were you aware that you technically can or cannot afford the concert ticket?

- Not at all
- Slightly
- Moderately
- Very
- Completely

Part II: Individual Characteristics Survey

In the following, you will be given **statements about your personality, habits and everyday experiences**. Please indicate how true the statements are to you personally (how much they reflect your self-perception).

Please **take enough time** and respond in line with your self-reflection, rather than indicating what you think your answers should be. **There is no right or wrong!**

FOMO trait

- I get worried when I find out my friends are having fun without me.
- I get anxious when I don't know what my friends are up to.
- It is important that I understand my friends "inside jokes".
- Sometimes, I wonder if I spend too much time keeping up with what is going on.
- When I have a good time it is important for me to share the details online (e.g. instagram stories).
- When I miss out on a planned get-together it bothers me.
- When I go on vacation, I continue to keep tabs on what my friends are doing.

(Five-point Likert matrix scale from "does not describe me" to "describes me extremely well")

self-control

Please indicate from 1 to 5, how true the general statements are to you personally (how much they reflect your self-perception).

- I do certain things that are bad for me, if they are fun.
- Pleasure and fun keep me from getting work done.
- I often act without thinking through all the alternatives.
- I am good at resisting temptation.
- People say that I have iron self-discipline.
- I am able to work diligently toward a long-term goal.

(Five-point Likert matrix scale from "does not describe me" to "describes me extremely well")

Loneliness

Please indicate from 1 to 5, how true the general statements are to you personally (how much they reflect your self-perception).

- I feel part of a group of friends.
- There are people I feel close to.
- My interests and ideas are not shared by people around me.
- I feel like my social relationships are superficial.
- I feel like people are around me but not with me.
- I can find companionship whenever I want to.

(Five-point Likert matrix scale from “does not describe me” to “describes me extremely well”)

Current money management stress

Please indicate from 1 to 5, how true the general statements are to you personally (how much they reflect your self-perception).

- I feel stressed because of my current money situation.
- I am currently having difficulties managing my money.
- My finances seem to control my life.
- Whenever I feel in control of my finances, something happens that sets me back and makes me stress out.
- I am often unable to enjoy life, because I obsess too much about money.
- Because of my money situation, I often feel I will never have the things I want in life.

(Five-point Likert matrix scale from “does not describe me” to “describes me extremely well”)

Part 3: Demographics

To which age group do you belong?

- Below 17 years
- 17-20 years
- 21-26 years
- 27-30 years
- 31-36 years
- Above 36 years

Which gender do you identify with?

- Male
- Female
- Non-binary / third gender
- Prefer not to say

What is the highest level of education you have completed?

- Less than high school
- High school graduate
- Some college
- Bachelor’s degree
- Master’s degree
- Doctorate or higher
- Other

What is your current employment status? (multiple responses possible)

- Employed full-time
- Employed part-time
- Minor employment / mini kob
- Unemployed
- Student
- Retired
- Homemaker
- Other

What is your country of residence?

- Germany
- France
- Portugal
- United Kingdom
- Italy
- Spain
- Netherlands
- Belgium
- Switzerland
- Austria
- Other, please specify: ____

With whom do you live in a household? (multiple answers possible)

- Alone
- Partner
- Flatmates
- Parents
- Children
- Siblings
- Other, please specify: ___

Please select the option that best represents your estimated monthly gross income.

- Less than €500
- €500 - €999
- €1,000 - €1,999
- €2,000 - €2,999
- €3,000 - €3,999
- €4,000 - €4,999
- €5,000 - €5,999
- €6,000 - €6,999
- €7,000 or more

What is your estimated monthly budget for leisure activities? Please include expenses related to dining out, parties and concerts. If you are unsure, you can provide an estimate.

- Less than €50
- €50 - €99
- €100 - €199
- €200 - €299
- €300 - €399
- €400 - €499
- More than €500
- I'm not sure

Closing Text

Thank you very much for your time and participation. You made an important contribution to my research.

Your answers will be carefully and anonymously processed.

Appendix 3. H1 Independent Samples T-Test

H1.1 Descriptive Statistics

	FOMO Manipulation	N	Mean	Std. Deviation	Std. Error Mean
Purchase Intent	No	118	2.49	1.30	.12
	Yes	116	3.56	1.31	.12
Total		234			

H1.2 Independent Samples Test

		Levene's Test for Equality of Variances		T-test for equality of means			
		F	Sig.	t	df	One-Sided p	Two-sided p
Purchase Intent	Equal variances assumed	.349	.555	-6.272	232	< .001	< .001
	Equal variances not assumed			-6.272	231.872	< .001	< .001

H1.3 Independent Samples Effect Sizes

	Standardizer	Point Estimate	95% Confidence Interval	
			Lower	Upper

Purchase Intent	Cohen's d	.349	.555	-6.272	232

Appendix 4. H2 Linear Regression

H2.1 Descriptive Statistics

	Mean	Std. Deviation	N
Purchase Intent	3.05	1.21	221
FOMO trait	2.86	.92	221

H2.2 Model Summary[b]

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.007[a]	.000	-.005	1.41

a. Predictors: (Constant), Enduring FOMO trait

b. DV: Purchase Intent

H2.3 ANOVA[b]

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.020	1	.020	.010	.920[a]
Residual	437.328	219	1.997		
Total	437.348	220			

a. Predictors: (Constant), Enduring FOMO trait

b. DV: Purchase Intent

Appendix 5. H3 Linear Regression

H3.2 Model Summary[b]

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.252[a]	.063	.059	.896

a. Predictors: (Constant), Loneliness

b. DV: Purchase Intent

H2.3 ANOVA[b]

	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.454	1	11.454	14.267	< .001[a]
Residual	169.395	211	.803		

Total	180.849	212

a. Predictors: (Constant), Loneliness

b. DV: Enduring FOMO trait

Appendix 6. H4 Independent Samples T-Test

H4.1 Descriptive Statistics

	Budget Constraint Manipulation	N	Mean	Std. Deviation	Std. Error Mean
Purchase Intent	No	110	3.65	1.25	.12
	Yes	124	2.47	1.30	.12
Total		234			

H4.2 Independent Samples Test

		Levene's Test for Equality of Variances		T-test for equality of means			
		F	Sig.	t	df	One-Sided p	Two-sided p
Purchase Intent	Equal variances assumed	2.211	.138	7.025	232	< .001	< .001
	Equal variances not assumed			7.042	230.477	< .001	< .001

H4.3 Independent Samples Effect Sizes

		Standardizer	Point Estimate	95% Confidence Interval	
				Lower	Upper
Purchase Intent	Cohen's d	1.28	.920	.649	1.189

Appendix 7. H5 Independent Samples t-test

H5.1 Descriptive Statistics

	Randomized Experimental Group	N	Mean	Std. Deviation	Std. Error Mean

Purchase Intent	EG2 (FOMO*Constraint)	58	2.95	1.34	.18
	EG4 (NoFOMO*Constraint)	66	2.05	1.12	.14
Total		124			

H5.2 Independent Samples Test

		Levene's Test for Equality of Variances		T-test for equality of means			
		F	Sig.	t	df	One-Sided p	Two-sided p
Purchase Intent	Equal variances assumed	7.626	.007	4.088	122	< .001	< .001
	Equal variances not assumed			4.039	111.201	< .001	< .001

H5.3 Independent Samples Effect Sizes

		Standardizer	Point Estimate	95% Confidence Interval	
				Lower	Upper
Purchase Intent	Cohen's d	1.28	.736	.370	1.099

Appendix 8. Antecedents of Current money management stress (Predictors)

Tests of Between-Subjects Effects (DV: Current money management stress)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	202.847[a]	193	1.051	6.395	.012
Intercept	639.331	1	639.331	3890.012	< .001
FOMO trait	33.756	24	1.407	8.558	.007
Lack of self-control	21.514	18	1.195	7.272	.011
Loneliness	6.414	15	.428	2.602	.122
FOMO trait *Lonelin.	4.254	4	1.089	6.623	.022

a. $R^2 = .995$ (Adjusted $R^2 = .840$)

ANOVA[b]

	Sum of Squares	df	Mean Square	F	Sig.
Regression	71.614	3	23.871	35.387	< .001[a]
Residual	132.219	196	.675		
Total	203.833	199			

a. Predictors: (Constant), Lack of self-control, Enduring FOMO trait; Enduring FOMO trait*Loneliness

b. DV: Current money management stress

Appendix 9. Antecedents of Current money management stress (Demographics)

Variable	Enduring FOMO trait	Lack of self-control	Loneliness	Current money management stress	Age Group	Gender
Enduring FOMO trait		.111	.252**	.560**	-.286**	-.095
Lack of self-control	.111		.081	.224**	-.075	-.137
Loneliness	.252**	.081		.205**	.091	-.106
Current money management stress	..560**	.244**	.205**		-.156*	-.248**
Age Group	-.286**	-.075	.091	-.156*		-.009
Gender	-.095	-.137	-.106	-.248**	.-.009	

**. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

Tests of Between-Subjects Effects (DV: Current money management stress)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	35.594[a]	7	5.085	6.030	< .001
Intercept	588.461	1	588.4611	697.830	< .001
Gender	14.148	1	14.148	16.778	< .001
Age Group	14.236	3	4.745	5.627	.001
Gender*Age Group	7.609	3	2.536	3.008	.032

a. $R^2 = .186$ (Adjusted $R^2 = .155$)

Appendix 10. Full Multivariate General Model

Tests of Between-Subjects Effects (DV: Purchase Intent, Current money management stress (CMMS))

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Purchase Intent	139.621	11	12.693	9.134	< .001
		71.585	11	6.508	9.815	< .001
Intercept	Purchase Intent	34.155	1	34.155	24.580	< .001
	CMMS	.050	1	.050	.076	.784
FOMO trait	Purchase Intent	.918	1	.918	.660	.418
	CMMS	39.866	1	39.866	60.124	< .001
Lack of self-control	Purchase Intent	2.438	1	2.438	1.754	.187
	CMMS	3.047	1	3.047	4.595	.033
Loneliness	Purchase Intent	.571	1	.571	.411	.522
	CMMS	.655	1	.655	.988	.322
Age Group	Purchase Intent	1.790	1	1.790	1.288	.258
	CMMS	.050	1	.050	.075	.784
FOMO state	Purchase Intent	47.835	1	47.749	34.370	< .001
	CMMS	.012	1	.012	.018	.894
Budget Constraint	Purchase Intent	47.835	1	47.835	34.425	< .001
	CMMS	.787	1	.787	1.187	.277