

# CRYPTO-MANIA: How fear-of-missing-out drives consumers' (risky) investment decisions

Felix Friederich  | Jan-Hinrich Meyer  | Jorge Matute  | Ramon Palau-Saumell

Business Management, IQS School of Management, Universitat Ramon Llull, Barcelona, Spain

## Correspondence

Felix Friederich, IQS School of Management, Universitat Ramon Llull, Via Augusta 390, 08017 Barcelona, Spain.  
Email: [FelixFriederich@iqs.url.edu](mailto:FelixFriederich@iqs.url.edu)

## Abstract

The cryptocurrencies (cryptos) market has undergone rapid development in the last years. Although this market is highly volatile and has frequently crashed, consumers show continued interest as well as widespread possession of such assets. Therefore, this research explores the mechanisms underlying consumers' engagement in crypto trading. The results of five studies including eight experiments reveal that externally evoked fear-of-missing-out (FOMO) appeals influence consumers' investment decisions and that this effect is mediated by affective processes and moderated by impulsivity. The results further demonstrate that FOMO appeals lead consumers to repeated investment decisions, even if prior losses have been incurred. Finally, the findings suggest that the effects of FOMO can be mitigated via communication strategies (i.e., fear messages). The results provide notable implications for academics and policymakers concerned with consumers' crypto engagement.

## KEYWORDS

adverse decision-making, affective processes, communication messages, Cryptocurrencies, fear-of-missing-out, impulsivity

## 1 | INTRODUCTION

Cryptocurrencies (cryptos) have experienced rapid development in the last years. They enjoyed increased attention from the media, investors, and regulators and became a popular asset in global financial markets (Almeida & Gonçalves, 2023). Specifically, many private investors have shown interest in cryptos, as for instance, 16% of the U.S. population have invested in, traded, or used cryptos at some time (Perrin, 2022). At the same time, the crypto market has frequently crashed in recent years, stripping many private investors of their savings, and especially hurting less financially literate segments of the population, including minorities and vulnerable segments (Krugman, 2022). Interestingly, even amidst a decrease in overall trading volume, the number of individuals owning cryptos has surged in this current depressed market (De Best, 2023).

Furthermore, the downturn of the big crypto brands like Bitcoin and Ethereum has given rise to an ever-increasing amount of newly emerging coins ranging from risky serious options to dubious offers and outright fraud (Lewis & Morga, 2023). This may result in an increased complexity of the overall market, which might pose serious threats to the financial well-being of the most vulnerable investors (Kirby & Smith, 2023). This is especially relevant, since financially vulnerable minorities, and particularly men keep being overrepresented as investors (Mundolikkalam, 2022). Given consumers' continuous interest and their widespread crypto possessions, coupled with the inherent risk of crypto trading, one might ask: What drives crypto purchases and why have consumers been increasingly investing in such volatile and risky assets?

Despite surging consumer interest and increased ownership of this asset, the literature on cryptos only recently began to emerge

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2023 The Authors. *Psychology & Marketing* published by Wiley Periodicals LLC.

(e.g., Breidbach & Tana, 2021). For instance, while Martin et al. (2022) found that personality traits affect consumer attitude and buying intention, the literature lacks to explore the mechanisms underlying consumers' crypto investments. Interestingly, the crypto market is largely dependent on socially constructed opinions (Niforos, 2017), meaning that private investors heavily rely on social media and online platforms to get investment information (Bouri et al., 2019). In this sense, a major driver for consumers to engage in the use of social media, as well as a significant influence on online purchase decisions, is fear-of-missing-out (FOMO) (Zhang et al., 2020). FOMO originally referred to the anxiety experienced by social media users when they perceive their peers are doing, experiencing, or possessing something rewarding while they are not (Przybylski et al., 2013). Beyond its linkage to excessive social media usage (Fang et al., 2020), it has been shown as a decisive element in consumer decision-making, including investment decisions (Bouri et al., 2019). Actually, many crypto investments might be attributed to externally evoked FOMO appeals that constitute a decisive factor influencing consumers' decision-making (Kim et al., 2020). As most literature on FOMO has conceptualized it as a trait rather than context-specific anxiety, it has not yet been explored how FOMO appeals affect consumers' investment decisions. Nevertheless, recent studies show that FOMO can be manipulated (or externally evoked) to induce consumer behavior (Good & Hyman, 2021). Therefore, introducing FOMO appeals in the crypto context seems pivotal to better understand the reasons that explain why consumers purchase this type of digital asset. Given the increased complexity of the market including more crypto coins and investment options daily, combined with the social-media focused information flow, FOMO might be a relevant investment driver irrespective if the markets are bullish or bearish. While a bullish market might trigger a general FOMO on a hype (Balcilar & Ozdemir, 2023), bearish markets have the potential to trigger people to take risky measures, as they see newly emerging cryptos, or see sporadic upward market movements (Poshakwale and Mandal, 2014). Therefore, FOMO might amplify the risk of private investors falling into scams or questionable crypto projects that seek to exploit private investor's desperation for quick gains (Lewis & Morga, 2023). Furthermore, it remains unclear whether and, if so, how affective processes explain the effect of FOMO appeals on consumers' investment intention. First, consumers' expected pleasure is considered to impact decision-making (Moore, 2013). When consumers are faced with choices, they are likely to anticipate how they will feel about the consumption experience and then decide the option with the most promising expected pleasure (Baumgartner et al., 2008; Mellers et al., 1999). FOMO appeals likely elevate consumers' expected pleasure as the investment opportunity might seem attractive and socially gratifying. Second, anticipated regret constitutes an important construct in consumers' decision-making processes (Shih & Schau, 2011). Specifically, consumers might experience negative feelings from imagining the potential negative consequences of an investment decision before actually making a decision (Hayran et al., 2020). As FOMO appeals urge consumers to conduct specific behaviors, they might achieve this by reducing

consumers' anticipated regret when exposed to investment opportunities. Therefore, introducing both affective processes seems critical in the context of the study, as they might mediate the impact of FOMO appeals on consumers' investment intentions. Moreover, little is known about how individual differences relate to FOMO appeals and subsequent behavioral outcomes (Holte & Ferraro, 2020). Thus, this paper explores the individual difference in impulsivity. This trait relates to underestimating risk in different situations (Jia et al., 2015) and reflects an enduring disposition to act spontaneously in specific consumption contexts (Iyer et al., 2020). As individuals' impulsivity levels are likely to affect consumers' apprehensions of missing out, this study introduces impulsivity as a contingent variable in explaining how FOMO appeals affect consumers' investment intentions.

Beyond the theoretical expansions discussed above, we further investigate the strength and duration of the FOMO effect to advance prior literature (e.g., Zhang et al., 2020) dealing with wins and losses. Finally, we primarily identify potential FOMO-reducing interventions, such as communication tactics, to reduce the effect of FOMO on consumers' investment intentions, thereby extending previous findings (e.g., Good & Hyman, 2020; Tannenbaum et al., 2015). In sum, this study aims to elucidate one of the major drivers of consumers' crypto investment behavior, by drawing on FOMO, as a potential underlying mechanism explaining this up-to-date phenomenon in online financial markets and social media.

## 2 | FEAR-OF-MISSING-OUT

FOMO describes a general apprehension that is evoked by the perception of missing out on an experience or product that other people enjoy or possess (Zhang et al., 2020). FOMO has become an increasingly popular social phenomenon since the widespread adoption of social media (Dutot, 2020) and is currently an evolving scientific concept in consumer psychology (Bui et al., 2022; Hayran et al., 2020). Yet, FOMO appears to be inherent in, as well as different from, certain related constructs. An essential condition for FOMO to occur is that missing an experience is relevant to oneself (Good & Hyman, 2021). This implies that it relates to an individual's self-concept. Therefore, FOMO ingrains the notion of social comparison and reflective appraisals because of their inherence in self-conceptualization (Tedeschi, 1986).

Previous studies show that FOMO is conceptually different to other related relevant consumer behavior constructs such as novelty seeking, consumers' susceptibility to interpersonal influence, and envy (Good & Hyman, 2020; Zhang et al., 2020). In addition, the construct differs from perceived scarcity since scarcity encompasses the state of shortage that might compel people to conduct specific actions (Suri et al., 2007), whereas FOMO represents an inner sense of missing out on experiences others discuss, have or enjoy. FOMO also presents certain differences to other related social constructs, such as social exclusion, social norms and desirability, that emphasize its relevance as a psychological mechanism. For example, social exclusion encompasses the condition of being excluded or isolated

from a specific social group, typically because of structural factors such as incompetence or deviance (Baumeister & Tice, 1990), while FOMO might simply arise from an abundance of options, making it impossible to pursue them all, resulting in negative feelings (Chan et al., 2022). When individuals encounter exclusion, they may feel compelled to seek connection with others as a means of reinstating a sense of belonging. This can manifest in actions such as rejoining the group from which they were excluded or engaging in consumption behaviors that symbolize their affiliation with that group. While intentional social exclusion can elicit FOMO, it is not invariably a prerequisite (Hayran et al., 2020). FOMO commonly arises when individuals inadvertently become aware of experiences in which others are engaging (Good & Hyman, 2020). Thus, similar to envy, feeling socially excluded does not necessarily coexist with FOMO.

Similarly, social norms, as the shared standards of acceptable behavior by groups, have been shown to substantially influence consumption behavior (e.g., Ivanic, 2016). Yet, social norms differ from FOMO in that sense that it might be a driver rather than an intertwined construct. Behaving according to group standards might lead to higher FOMO, in line with recent results showing FOMO as a mediator in the relationship between social norms and phubbing behavior (Li et al., 2021). We suggest that this reasoning also applies for social desirability. This is explained because acting out of normative pressure to attempt showing oneself positively in accordance with a socially appropriate behavior, does not necessarily entail potentially missing out on something (Hayran et al., 2020). For example, having FOMO on a potential investment opportunity does not imply acting in accordance with some specific appropriate social standards.

Finally, the literature differentiates between self-initiated and externally initiated FOMO. The former is treated as an individual trait, while the latter is evoked by external appeals (Hodkinson, 2019). External FOMO appeals are considered as initiating tactics, hence, any appeal whether in person or impersonal in which FOMO or 'missing out' is mentioned or expressly implied (Hodkinson, 2019). Scholars who consider FOMO a personal trait link the concept to negative psychological externalities that go beyond excessive social media usage, such as smartphone overuse (Fang et al., 2020) and anxiety and depression severity (Elhai et al., 2020).<sup>1</sup> However, more recent work has started to explore FOMO as a momentary, context-specific feeling, elucidating its impact on consumers' behavioral outcomes (e.g., Good & Hyman, 2021). Accordingly, while most previous work on FOMO treats it as a trait variable, this study investigates momentary FOMO triggered by information received at a specific moment, displaying a present-time orientation (Hayran et al., 2020). Therefore, regardless of individuals' disposition to experience FOMO, this study explores FOMO that appears situationally in reaction to contextual factors. Scholars have recently suggested that FOMO appeals have a positive influence on purchase behaviors (Good & Hyman, 2021). Consequently, consumers might

succumb to FOMO appeals in the crypto context, influencing consumers' decision-making.

### 3 | EMPIRICAL STUDIES

Five studies including eight different experiments were conducted.<sup>2</sup> Study 1A aims to establish the FOMO appeal manipulation and explores whether and, if so, how it affects consumers' investment intentions. Study 1B explores if the effect of FOMO appeals on consumers' investment behavior holds with a behavioral outcome in a laboratory setting. Study 1C extends the FOMO manipulation into a real-life setting by replicating the effect established in Studies 1A and 1B with a Google ads study. Study 2 then tests whether the effect of FOMO appeals on consumers' investment intention is mediated by affective processes, and Study 3 further examines if the personality trait impulsivity moderates this relationship. Study 4 examines whether FOMO appeals cause consumers to repeatedly invest in cryptos. Finally, Study 5 tests how communication messages reduce the effect of FOMO appeals on consumers' investment intention. Figure 1 presents the conceptual model of the study.

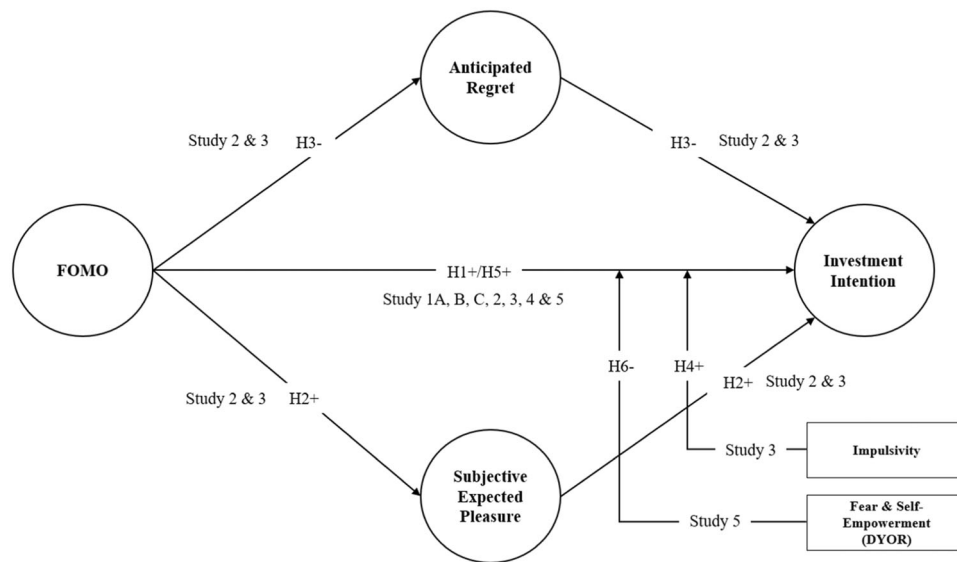
#### 3.1 | Study 1A: FOMO appeals and investment intention

Study 1A aims to establish the manipulation of the FOMO appeal in the crypto context and explores whether FOMO appeals influence consumers' investment decisions. Context-specific FOMO can be created or induced in consumers by using different appeals or communication tactics (Good & Hyman, 2020; Hodkinson, 2019). These FOMO appeals contain fear-arousing endorsements and advocate for conduct to defend against "missing out." For instance, a FOMO appeal containing others who experience or have something from which one is absent can cause a sense of tension and the sensation of lacking something that others enjoy (Good & Hyman, 2021). Therefore, an appeal containing a potential investment opportunity about a (unknown) crypto commented on social media will likely create FOMO (Delfabbro et al., 2021). Consequently, consumers will try to avoid this FOMO by heeding those appeals and by performing a behavior that alleviates that internal tension. As previous empirical evidence suggests, FOMO appeals can influence consumers' buying decisions (Good & Hyman, 2021; Zhang et al., 2020). Accordingly, we posit that:

**H1.** Consumers who are exposed to a FOMO appeal (vs. non-FOMO appeal) will have a higher intention to invest in cryptos.

<sup>1</sup>Please see Hayran et al. (2020) for an extensive summary of previous academic work on FOMO.

<sup>2</sup>All studies were conducted when (1) search interest in Bitcoin was relatively neutral to relative highs (Google Trends) and (2) the crypto market's fear and greed index was relatively neutral to relative highs (Alternative.me).



**FIGURE 1** Conceptual model.

### 3.1.1 | Design and procedure

We conducted a between-subjects experiment with two conditions representing FOMO versus non-FOMO appeals. First, a filter question ensured that participants had invested in cryptos at least once in the previous 6 months. Then, following Good and Hyman (2021), participants were exposed to a vignette that asked them to assume they would like to trade and invest their money. Further, the vignette exposed participants to the information that someone recently posted concerning the coming launch of a new crypto, and they would have to decide whether to invest or not. To avoid decision-making based on cost, the vignette stated that the initial launching price would be typical. Participants were then randomly exposed to the FOMO or non-FOMO appeal condition (appendix A).

### 3.1.2 | Measures, coding, and reliability

After the respondents had been assigned to their respective conditions, participants indicated whether the narrative was credible and readily comprehended. Participants then submitted scores on FOMO with an 8-item measure (e.g., "I'm afraid later I will feel sorry I did not invest.") adapted from Good (2019), as this study did not measure FOMO as a trait and neither was it centered in the social media context (Przybylski et al., 2013). Investment intentions were measured with one item ("It's very likely that I will invest in this new crypto") adapted from Good and Hyman (2021). All items were measured using a 7-point Likert scale. We recruited 150 participants from Amazon MTurk. Nineteen respondents were dropped from the analyses due to having failed attention check questions, leaving a final sample of 131 participants. The attention check asks participants to confirm that they have read the instructions ("a new crypto

has been launched" vs. "a new stock has been launched"). The demographics indicated that the respondents had a mean age of 37 years ( $SD = 11.37$ ) and that 63% of them were male. All scales achieved high reliability (Cronbach's alpha was  $>0.7$ ; see appendix B).

### 3.1.3 | Results and discussion

We tested the manipulation using an independent samples *t*-test on the FOMO scale ( $M_{\text{FOMO-COND.}} = 4.67$ ,  $SD = 1.12$ ;  $M_{\text{NON-FOMO-COND.}} = 3.61$ ,  $SD = 1.36$ ;  $t(129) = 4.85$ ;  $p < 0.01$ ,  $r = 0.39$ ), providing confidence for the manipulation. Respondents' scores regarding the narrative's credibility ( $M_{\text{FOMO-APPEAL}} = 4.69$ ,  $SD = 1.34$ ;  $M_{\text{NON-FOMO-APPEAL}} = 4.76$ ,  $SD = 1.19$ ;  $t(129) = -0.29$ ,  $p > 0.1$ ,  $r = 0.03$ ) and comprehensibility ( $M_{\text{FOMO-APPEAL}} = 4.65$ ,  $SD = 1.32$ ;  $M_{\text{NON-FOMO-APPEAL}} = 4.82$ ,  $SD = 1.10$ ;  $t(129) = -0.80$ ,  $p > 0.1$ ,  $r = 0.00$ ) did not differ between the conditions.

An analysis of variance (ANOVA) revealed a significant main effect of FOMO on investment intention and showed that the FOMO appeal rather than the non-FOMO appeal increases investment intention ( $M_{\text{FOMO-APPEAL}} = 4.66$ ,  $SD = 1.52$ ;  $M_{\text{NON-FOMO-APPEAL}} = 3.95$ ,  $SD = 1.38$ ;  $F_{(1,124)} = 8.40$ ,  $p < 0.01$ ,  $r = 0.25$ ). We controlled this effect for gender, age, education, investment frequency, and income. The results of Study 1A suggest that FOMO appeal leads participants to show higher levels of investment intention, compared to the non-FOMO appeal condition, thereby confirming H1.

After establishing the main effect for FOMO in the crypto investment context, the question arises as to whether the participant's investment intention is not solely driven by dispositional espousal to social norms. We conducted an ancillary study ( $n = 123$ ) to address this question by including the social desirability measure from Strahan and Gerbasi (1972). An independent samples *t*-test revealed no significant difference in social desirability ( $M_{\text{FOMO-APPEAL}} = 5.10$ ,  $SD = 0.88$ ;

$M_{\text{NON-FOMO-APPEAL}} = 5.14$ ,  $SD = 0.94$ ;  $t(121) = -0.26$ ,  $p > 0.1$ ,  $r = 0.01$ ) among the FOMO conditions. Additionally, when controlling for social desirability, the effect of FOMO on investment intention remained significant ( $M_{\text{FOMO-APPEAL}} = 4.88$ ,  $SD = 1.09$ ;  $M_{\text{NON-FOMO-APPEAL}} = 4.00$ ,  $SD = 1.30$ ;  $F_{(1,120)} = 17.25$ ,  $p < 0.001$ ,  $r = 0.36$ ), hence ruling out this potential issue.

### 3.2 | Study 1B: FOMO appeals and investment decision: A laboratory study

Study 1B aims to extend the findings from Study 1A with a behavioral outcome measure in a laboratory setup.

#### 3.2.1 | Design and procedure

Another between-subjects experiment with two conditions representing FOMO vs. non-FOMO appeals was conducted. We recruited 100 undergraduate students from a small European university on a voluntary basis. In the laboratory, each participant received €2 to invest. Participants were instructed that they would be compensated based on their investment decisions. That is, they were instructed that they could win or lose, and that they could also choose not to invest (or invest only a part of the money). Participants were then randomly exposed to the FOMO or non-FOMO appeal condition (similar to Study 1A). Afterwards, individuals indicated how much they would like to invest and were finally compensated based on their investment decision. Sixteen respondents were dropped from the analyses due to having failed attention check questions, leaving a final sample of 84 participants. The demographics indicated that the respondents had a mean age of 23 years ( $SD = 12.10$ ) and that 59% of them were female.

#### 3.2.2 | Results and discussion

The results revealed a significant main effect of FOMO on investment decision and showed that the FOMO appeal rather than the non-FOMO appeal increases the amount of money invested ( $M_{\text{FOMO-APPEAL}} = €1.60$ ,  $SD = 0.55$ ;  $M_{\text{NON-FOMO-APPEAL}} = €0.92$ ,  $SD = 0.69$ ;  $F_{(1,78)} = 27.76$ ,  $p < 0.001$ ,  $r = 0.48$ ). This effect was controlled for gender, age, investment frequency, and income. Furthermore, nine participants decided not to invest (eight of them in the non-FOMO appeal condition). A Chi-square test showed a statistically significant relationship between the FOMO condition and the decision to invest ( $\chi^2(1) = 6.88$ ,  $p < 0.05$ ), in such a way that respondents in the non-FOMO condition were more likely not to invest at all.

The study illustrated that the effect of FOMO appeals on consumers' investment decision holds with an actual decision involving real money, further supporting H1. In Study 1C a field study was applied to further increase the external validity for the observed effects.

### 3.3 | Study 1C: Field experiment in the blockchain context

To confirm that FOMO drives individuals' decisions and to show that the proposed effect extends to a real-life setting, a field experiment was conducted following recent suggestions by Fronczek et al. (2022).

#### 3.3.1 | Design and procedure

The setup of the field study was a Google ads campaign which was linked to a website where potentially interested consumers could leave a contact to receive more product information. This setup allowed us on the one hand to track the click-through rates (CTR) of the ads, and furthermore to compare the number of conversions on the landing page. The advertising setup needed to be chosen carefully, as crypto- and financial advertisements fall under certain regulations. For advertisements of financial investments and specifically cryptos, Google ads requires a verification of the advertising companies, which was beyond this study's scope for the researchers to obtain. Therefore, advertising a new crypto was legally impossible according to Google's regulations. Thus, the advertisement campaign was focused on the related topic of Blockchain investment education, a topic loosely connected to cryptos, which does not have the regulations that impede the launch of a Google ads campaign. In line with the previous studies, it was hypothesized that a FOMO appeal would trigger higher interest of consumers to click on the ad and also yield higher potential conversions on the landing page.

Similarly to the pretested stimuli from Studies 1A and 1B, two conditions were used. One Google ad included FOMO appeals, while the other ad included pure informational appeals (see appendix C). In the FOMO (informational) condition the title of the ad read: "Don't miss out (inform yourself) - Blockchain course - Blockchain education" and the textual part read: "Act now to understand Blockchain! Join FinXXX<sup>3</sup> today and don't miss out." While the informational counterpart stated "Inform yourself to understand Blockchain! Visit FinXXX and explore the offers." The ads were programmed to run for a list of pre-specified keywords such as "Blockchain course" or "Finance education" or "Blockchain coin" (see appendix C). When internet users searched for one of the specified keywords, they might have been exposed to one of the two ads from this hypothetical company offering financial education for Blockchain services. In line with previous scholars using a similar field study approach (e.g., Fronczek et al., 2022), we chose a maximize click strategy in Google ads. When consumers clicked on one of the ads, they were taken to two different copies of the same landing page of the hypothetical company FINXXX which was soon to launch online education classes about financial services and Blockchain. Potentially interested consumers could leave a contact note, to receive further information

<sup>3</sup>The real name of the website has been modified in this version of the manuscript to ensure anonymity of the submission.

(see appendix C). This allowed the research team to trace the conversions related to the two different campaigns. All consumers who left their email were debriefed after the conclusion of the study. In total, the ad campaign ran for 5 days at a daily limit of 50€ (25€ for each ad).

### 3.3.2 | Results and discussion

During the time the campaign was running, it generated 47,278 impressions and 1272 clicks, according to the Google analytics console. Interestingly, the landing page console only registered 1021 landings. According to Google this can happen, as a click on an ad is very quick and straightforward to record, while a session on a given website needs some loading time, protocols and processes to establish a recorded visitor (Google, 2023). Therefore, there are several elements which might fail, leading to less visits than clicks. When turning to the results of the two campaigns, we compared the number of clicks for each ad, given the number of ad impressions. Due to the daily payment limits, both ads had similar overall clicks, as Google charges on a per-click basis, yet the numbers of impressions differed strongly across the two ads. The informational ad reached 29,187 impressions and had 616 clicks, yielding a CTR of 2.11%, while the FOMO ad reached 18,091 impressions and had 656 clicks, yielding a CTR of 3.68%. The Chi-square test for independence signaled a strong significant difference in clicks for the FOMO ad ( $\chi^2 = 97.99$ ,  $p < 0.001$ ). When looking at the conversions from the landing page analytics, a similar, yet less strong pattern emerged. In the informational condition, 500 visits, and 19 conversions were recorded yielding a conversion rate of 3.79%, while in the FOMO condition, 521 visits and 28 conversions occurred, yielding a conversion rate of 5.36%. Yet, the corresponding hypothesis test found no significant differences for the proposed higher conversion in the FOMO condition ( $\chi^2 = 1.44$ ,  $p > 0.1$ ). The results provide further evidence for the effects of FOMO appeals in technologically advanced investment contexts.

In sum, the joint results from Studies 1A, 1B, and 1C demonstrate that FOMO appeals trigger higher investment intentions, as well as higher monetary investments in cryptos and enhance the interest to visit websites giving financial education using Blockchain technology. The following studies focus on the causal effects of FOMO appeals with the additional variables included.

### 3.4 | Study 2: The interplay between FOMO appeals, affective processes, and investment intention

Study 2 aims to explain how FOMO appeals affect consumers' intention to invest via affective processes. First, we speculate that experiencing FOMO in an investment opportunity leads to expected pleasure from monetary, as well as social satisfaction gains. This is because according to social comparison theory (Festinger, 1954; Gerber et al., 2018), FOMO appeals activate consumers' emotional

response by emphasizing the occurrence of an impending experience that others may already be enjoying or may enjoy in the near future. This response can be especially powerful in uncertain contexts (i.e., crypto environment), where consumers tend to evaluate the outcomes of their decisions by comparing themselves to the achievements of others. Thus, consumers immersed in this transient FOMO situation might anticipate the possible emotions derived from those possible outcomes. In detail, subjective expected pleasure depicts a state of mind when individuals are certain about the positive feelings they will encounter in a future consumption event (Moore, 2014). Individuals imagine how good or bad it would feel to experience specific outcomes, given that the envisioned future event has actually happened (Baumgartner et al., 2008). Hence, if consumers perceive strong positive feelings toward a consumption opportunity, they predict greater expected pleasure from buying and consuming (Alba & Williams, 2013). In this sense, individuals who invest their money might feel positive when making a gain and feel bad when suffering a loss, and therefore an expected pleasure deriving from an investment may influence the investment decision (Cheng, 2014).

On the other hand, FOMO has a strong social component, as is apparent in the fear of not being part of something (Zhang et al., 2020). Thus, the anticipated expected pleasure might also be derived from the feeling of being part of the group of crypto investors, or even from the idea of being smarter than others and having spotted an opportunity when it arose. Previous studies suggest that FOMO appeals can drive consumer behavior by anticipating the enjoyment derived from a consumption experience (Good & Hyman, 2021). For instance, anticipation elation refers to a feeling of euphoria (Brandstätter & Kriz, 2001) that is experienced before a purchase as a consequence of the act of predicting the positive outcomes that will result from that decision (Sierra & Hyman, 2011). Therefore, in the crypto investment context, individuals might forecast the economic and/or social gains that can be earned as a consequence of having purchased such an asset. Therefore, we argue that FOMO appeals enhance one's subjective expected pleasure, which extends to increased intentions to invest (Moore, 2014).

Second, in purchasing situations, consumers frequently produce thoughts about "if I buy it today and find it for less later, I will regret my purchase" (McConnell et al., 2000). This is particularly pronounced in online environments where, for example, investment information can be accessed and shared within seconds and feelings of regret can arise immediately. Based on recent literature indicating a potential association between FOMO and anticipated regret (Hayran et al., 2020), we further posit that individuals experiencing FOMO tend to foresee less feelings of regret (of having invested). The importance of regret in judgment and decision-making has been recognized by several scholars (e.g., Shih & Schau, 2011). While regret refers to the negative evaluation of past decisions, anticipated regret occurs before making a choice when individuals envision the regret they will likely feel if they make a particular decision (Wong & Kwong, 2007). Therefore, this study focuses on anticipated regret, as

it considers an individual's experience concerning potential future decisions (i.e., decision to invest) rather than past decisions (Hayran et al., 2020). Individuals might anticipate potential counterfactual alternatives and their associated emotional costs before an investment decision by mentally stimulating the potential outcomes (Shih & Schau, 2011). Thus, before making a decision, consumers may expect that if the outcome is not as expected they will feel an anticipated regret that could push them to modify their decision. In situations where there is a stimulus that induces situational FOMO, consumers may adopt more risky behaviors to reduce this feeling of remorse for not having devoted their resources to acquire other alternatives or deploy other behaviors (e.g., saving their money). This happens because FOMO appeals may alleviate anticipated regret by providing consumers a personally acceptable rationale for purchasing assets (Good & Hyman, 2020), like cryptos. In other words, FOMO appeals might lessen individuals' anticipated regret of investing in cryptos by giving a personally acceptable justification for the investment, which extends to increased intentions to invest (Good & Hyman, 2021).

Based on this reasoning, we propose that subjective expected pleasure and anticipated regret mediate the influence of FOMO appeals on investment intention. More specifically:

**H2.** Subjective expected pleasure mediates the effect of FOMO appeals on investment intentions. Specifically, FOMO appeals enhance the expected pleasure, which will amplify the intention to invest.

**H3.** Anticipated regret mediates the effect of FOMO appeals on investment intentions. Specifically, FOMO appeals reduce anticipated regret, which will amplify the intention to invest.

### 3.4.1 | Design and procedure

We conducted a between-subjects experiment with two conditions representing FOMO versus non-FOMO appeals. We used the same vignette as in Study 1A. Participants were randomly exposed to the FOMO or non-FOMO appeal condition, and then the measurements of the study were collected. We recruited 255 participants from Amazon MTurk. Twenty-one respondents were dropped from the analyses due to having failed attention check questions, leaving a final sample of 234 participants. The demographics indicated that the respondents had a mean age of 34 years ( $SD = 11.81$ ) and that 53% of them were male.

### 3.4.2 | Measures, coding, and reliability

After the respondents had been assigned to their respective conditions, the participants submitted scores on subjective expected pleasure with a four-item measure (e.g., 'When you think about investing in this crypto, how does that make you feel?') adapted from Mellers et al. (1999) and Van Boven and Ashworth (2007), on

anticipated regret with a three-item measure (e.g., 'I would be sorry because I should save money') adapted from Tsiros and Mittal (2000), and on investment intention with a one-item measure adapted from Good and Hyman (2021). All items were measured using a 7-point Likert scale, and all scales achieved high reliability (Cronbach's alpha was  $>0.7$ ; see appendix B).

### 3.4.3 | Results and discussion

We performed an ANOVA, revealing a significant main effect of the FOMO appeal on investment intention and showed that FOMO appeal, rather than non-FOMO appeal, increases the intention to invest ( $M_{\text{FOMO-APPEAL}} = 5.52$ ,  $SD = 0.99$ ;  $M_{\text{NON-FOMO-APPEAL}} = 4.05$ ,  $SD = 1.81$ ;  $F_{(1,228)} = 57.10$ ,  $p < 0.001$ ,  $r = 0.44$ ). To test hypotheses 2 and 3, we carried out a mediation analysis (Process Model 4; 5000 bootstrapped samples; Hayes, 2017) to further investigate the mediating role of subjective expected pleasure (M1) and anticipated regret (M2) in the relationship between FOMO appeal (X) and investment intention (Y).

First, results indicated that the path from FOMO appeal to subjective expected pleasure was positive and significant ( $\beta = 1.05$ ,  $SE = 0.18$ ,  $p < 0.001$ ), whereas to anticipated regret it was negative and significant ( $\beta = -1.92$ ,  $SE = 0.20$ ,  $p < 0.001$ ). The direct effect of subjective expected pleasure on investment intention was positive and significant ( $\beta = 0.65$ ,  $SE = 0.05$ ,  $p < 0.001$ ), while anticipated regret had a significant negative effect on investment intention ( $\beta = -0.12$ ,  $SE = 0.05$ ,  $p < 0.05$ ). The main effect of FOMO appeal on investment intention remained positive and significant ( $\beta = 0.55$ ,  $SE = 0.19$ ,  $p < 0.01$ ), while the indirect effect of FOMO appeal on investment intention via subjective expected pleasure ( $\beta = 0.69$ ,  $SE = 0.14$ ,  $CI95 = [0.43, 0.99]$ ) as well as anticipated regret ( $\beta = 0.24$ ,  $SE = 0.11$ ,  $CI95 = [0.04, 0.47]$ ) was also significant, indicating a partial mediation, as illustrated by the index of the mediation ( $\beta = 0.93$ ,  $SE = 0.17$ ,  $CI95 = [0.61, 1.25]$ ).

Study 2 suggests further support for the impact of FOMO appeals on consumers' investment intention (H1). Moreover, the study illustrates the mediating role of subjective expected pleasure and anticipated regret (partially) in this relationship, thus confirming H2 and H3.

## 3.5 | Study 3: The interplay between FOMO appeals, affective processes, and individual's impulsivity levels

Study 3 aims to further explore how FOMO appeals affect consumers' intention to invest via affective processes, that is, subjective expected pleasure and anticipated regret, by incorporating a personality trait. Specifically, it assesses whether individuals' impulsivity moderates how FOMO appeals affect their investment intention. Since FOMO is used as an impulsive tool in marketing activities (Aydin et al., 2021) and induces consumers to make

impulsive purchases (Zhang et al., 2022), it is essential to investigate the connection between FOMO appeals and one's impulsivity levels.

Impulsivity has been found to play a critical role in individuals' decision-making choices and has been widely studied as a substantial personality risk factor (Fenton-O'Creevy et al., 2018; Passanisi & Pace, 2017). Impulsivity refers to an individual's 'predisposition towards rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions to the impulsive individuals or to others' (Moeller et al., 2001, p.1784). It can be considered a personal tendency of lacking thorough consideration and planning of tasks, seeking stimulation, and taking risks and rapid decision-making (Chen et al., 2015). Previous literature suggests that individuals with firm impulsivity trait levels are more likely to respond to marketing overtures, including ads, visuals, and promotions, than those with lower impulsivity trait levels (Youn & Faber, 2000). More importantly, recent findings found that individuals with higher FOMO levels are more likely to be impulsive (Çelik et al., 2019). However, while individuals with higher trait-based FOMO have higher impulsivity levels, we speculate that for situationally induced FOMO, that is FOMO appeals, the positive relationship between FOMO appeals and investment intentions is stronger for individuals with lower impulsivity levels. Recent advances by Suher and Hoyer (2020) showed that impulsive people tend to derive motivation for purchases from internal motives, while less impulsive people might be more responsive to external motives, when completing unplanned purchases. This means that impulsive people have a tendency to follow their inner motivation (e.g., "I love the product so much"), while less impulsive people need external stimuli to trigger unplanned purchases (e.g., "Wow, this is a good opportunity"). Following this logic, it might well be the case that impulsive consumers are very likely to invest in cryptos in the presence or absence of FOMO appeals, given their greater disposition to gamble and to overspend, and their general internal motivation for reduced and quick decision-making (Passanisi & Pace, 2017). Less impulsive consumers, on the contrary, might be externally triggered by FOMO appeals, which might augment their intention to invest in crypto. In general, it has been shown that overall, less impulsive people are just as likely to engage in unplanned purchases (Hui et al., 2013), yet typically need an external impulse to do so (Suher & Hoyer, 2020). Accordingly, for highly impulsive individuals, impulsivity might drive the effect on consumers' investment intentions rather than FOMO appeals. Conversely, low impulsive individuals' investment intention is likely to be driven by externally evoked FOMO appeals, serving as the external impulse to engage in unplanned purchases (Hui et al., 2013; Suher & Hoyer, 2020). In line with previous literature applying impulsivity as a moderator for consumers' decision-making (Van Steenburg & Naderi, 2019), FOMO appeals should have a higher effect on consumers' intention to invest when participants possess lower levels of impulsivity. Thus, we propose:

**H4.** Individuals' impulsivity levels will moderate the effect of FOMO appeals on investment intentions, such that the effects will be stronger (weaker) at lower (higher) impulsivity levels.

### 3.5.1 | Design and procedure

We conducted a between-subjects experiment with two conditions representing FOMO versus non-FOMO appeals. Before participants were exposed to the vignette and the respective FOMO conditions, the personal trait impulsivity was measured. We used the same vignette as in Study 1A. Participants were randomly exposed to the FOMO or non-FOMO appeal condition. Afterwards, the measurements of the study were collected. We recruited 250 participants from Amazon MTurk. Twenty-three respondents were dropped from the analyses due to having failed attention check questions, leaving a final sample of 227 participants. The demographics indicated that the respondents had a mean age of 33 years ( $SD = 10.12$ ) and that 55% of them were male.

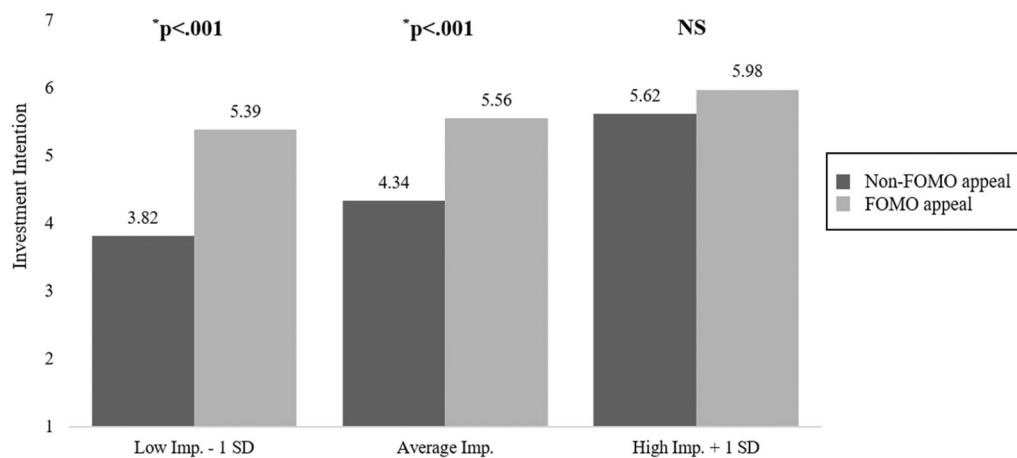
### 3.5.2 | Measures, coding, and reliability

After the filter variables, personal trait impulsivity was measured with an 8-item scale (e.g., "I act on the spur of the moment") with the Barratt Impulsiveness Scale-Brief from Steinberg et al. (2013). After the respondents had been assigned to their respective condition, participants submitted scores on subjective expected pleasure, anticipated regret, and investment intention. All items were measured using a 7-point Likert scale, and all scales achieved high reliability (Cronbach's alpha was  $>0.7$ ; see appendix B).

### 3.5.3 | Results and discussion

An ANOVA revealed a significant main effect of FOMO appeal on investment intention. The results indicated that FOMO appeal, rather than non-FOMO appeal, increases the intention to invest ( $M_{\text{FOMO-APPEAL}} = 5.67$ ,  $SD = 1.13$ ;  $M_{\text{NON-FOMO-APPEAL}} = 4.36$ ,  $SD = 1.93$ ;  $F_{(1,221)} = 38.78$ ,  $p < 0.001$ ,  $r = 0.41$ ). To test hypothesis 4, we conducted a mediation analysis with moderation on the main effect (Process Model 5; 5000 bootstrapped samples; Hayes, 2017) to further investigate the mediating role of subjective expected pleasure (M1) and anticipated regret (M2) in the relationship between FOMO appeal (X) and investment intention (Y), as well as the moderating role of impulsivity (W). The findings showed that FOMO appeal (X) had a significant positive effect on subjective expected pleasure (M1) ( $\beta = 1.18$ ,  $SE = 0.19$ ,  $p < 0.001$ ) and a significant negative effect on anticipated regret (M2) ( $\beta = -1.37$ ,  $SE = 0.22$ ,  $p < 0.001$ ). For investment intention (Y), subjective expected pleasure had a significant positive effect ( $\beta = 0.79$ ,  $SE = 0.05$ ,  $p < 0.001$ ), whereas anticipated regret had a significant negative effect ( $\beta = -0.10$ ,  $SE = 0.05$ ,  $p < 0.05$ ). Impulsivity had a significant effect on investment intention ( $\beta = 0.15$ ,





**FIGURE 2** FOMO and non-FOMO appeal in interaction with impulsivity. FOMO, fear-of-missing-out.

$SE = 0.07$ ,  $p < 0.05$ ), while the interaction between impulsivity and FOMO appeal was significant ( $\beta = -0.27$ ,  $SE = 0.08$ ,  $p < 0.01$ ).

On turning to the mediation results, it became apparent that FOMO appeal has significant direct effects on investment intention ( $\beta = 1.19$ ,  $SE = 0.31$ ,  $p < 0.01$ ). The indirect effects on investment intention were significant for both subjective expected pleasure ( $\beta = 0.94$ ,  $SE = 0.16$ ,  $CI95 = [0.61, 1.28]$ ) and anticipated regret ( $\beta = 0.14$ ,  $SE = 0.06$ ,  $CI95 = [0.04, 0.26]$ ). The index of the mediation was also significant ( $\beta = 1.07$ ,  $SE = 0.17$ ,  $CI95 = [0.73, 1.42]$ ).

To identify ranges of impulsivity scores where the effect on investment intention was significant and where it was not, a floodlight analysis was conducted (Spiller et al., 2013). Conducting the floodlight analysis over a range of the moderator variable from 1 = very low impulsivity to 7 = very high impulsivity yields a Johnson-Neyman point for  $p = 0.05$  ( $t = 1.97$ ) at a value of 5.28. This value indicates that when impulsivity scores were 5.28 or higher, the conditional effect of FOMO became nonsignificant. In contrast, when impulsivity scores were below the critical value, the effect of FOMO was significant. In the sample, 83% of the respondents scored below the significance point. Figure 2 shows the FOMO appeal and non-FOMO appeal interaction with impulsivity.

Study 3 illustrates that impulsivity moderates the FOMO effect in such a way that highly impulsive consumers are likely to invest in crypto, regardless of the presence of a FOMO appeal, while the FOMO effect is stronger for less impulsive consumers. Hence, as expected, the results suggest that FOMO appeals have stronger effects on less impulsive individuals, demonstrating its relevance in affecting consumers who usually do not act impulsively, thereby supporting H4.

### 3.6 | Study 4: FOMO appeals and repeated investments

Study 4 aims to explore whether and, if so, how individuals exposed to FOMO appeals repeatedly invest in cryptos, even if a prior loss has

been experienced before. For example, recent research by Wen and Chang (2022) showed that winning perceptions generally induce feelings of power and control, and subsequent risk taking, while losing reduces feelings of power, and in turn lowers risky behaviors. Following this logic, consumers who actually win money out of a crypto investment should be more inclined to reinvest, while those that lose money, should have a lower intention to reinvest. However, since situational induced FOMO has a strong influence on consumer investment behavior, and lowers risk mechanisms like anticipated regret, it is interesting to see how FOMO appeals might alter the natural effects of winning or losing. Therefore, we developed a crypto-decision task that simulates investment decisions taking into account subsequent rewards and punishments to further investigate the construct. In this line, individuals' FOMO levels can account for frequent and excessive behaviors that likely have adverse effects on their well-being, such as social media and online gaming addictions (e.g., Duman & Ozkara, 2021; Dutot, 2020). In fact, individuals involved in sports betting and high-risk stock trading are also often engaged in crypto trading, of whom a substantial number are day traders (Mills & Nower, 2019). As individuals with online gaming addictions are likely to gamble—repeatedly—even if losses have been experienced, the same might apply to crypto investments. Consequently, by drawing upon the above discussion, FOMO appeals may induce consumers to repeatedly invest in cryptos. Hence, we propose:

**H5.** FOMO appeals induce individuals to repeatedly conduct adverse financial decisions. Specifically, when consumers are exposed to FOMO appeals, they show higher tendencies to reinvest, even if a prior loss has been experienced.

#### 3.6.1 | Design and procedure

We used a 2 (FOMO vs. non-FOMO appeal)  $\times$  2 (winning vs. losing condition) between-subjects design to test the hypothesis.

Participants were randomly exposed to the FOMO or non-FOMO appeal condition (same as in Study 1A). Afterwards, we measured individuals' investment intentions. They were then randomly exposed to the condition of winning versus losing by receiving information that the price of the crypto they invested in had increased (decreased) by 60%, and now have the chance to invest again in a new crypto. After that, again, individuals' investment intention was measured (appendix A). We recruited 290 participants from Amazon MTurk. Fifteen respondents were dropped from the analyses due to having failed attention check questions, leaving a final sample of 275 participants. The demographics indicated that the respondents had a mean age of 34 years ( $SD = 10.44$ ) and that 58% of them were male.

### 3.6.2 | Measures, coding, and reliability

After the respondents had been assigned to their FOMO appeal (non-FOMO appeal) condition, participants submitted scores on investment intention (II1). Afterwards, respondents were assigned to their winning (losing) condition and, again, submitted scores on investment intention (II2).

### 3.6.3 | Results and discussion

The 2 (FOMO vs. non-FOMO appeal)  $\times$  2 (winning vs. losing condition) between-subjects ANOVA indicates a significant main effect of FOMO appeal ( $F_{(1,271)} = 26.73$ ,  $p < 0.001$ ,  $r = 0.30$ ) and a significant main effect of winning ( $F_{(1,271)} = 7.96$ ,  $p < 0.01$ ,  $r = 0.17$ ) on II2. Importantly, a significant interaction effect of FOMO appeal and winning was found ( $F_{(1,271)} = 8.29$ ,  $p < 0.01$ ,  $r = 0.17$ ). Using planned comparisons, we found that participants showed higher II2 in the non-FOMO appeal condition when they win, rather than lose ( $M_{\text{NON-FOMO-Winning}} = 4.32$ ,  $SD = 1.26$ ;

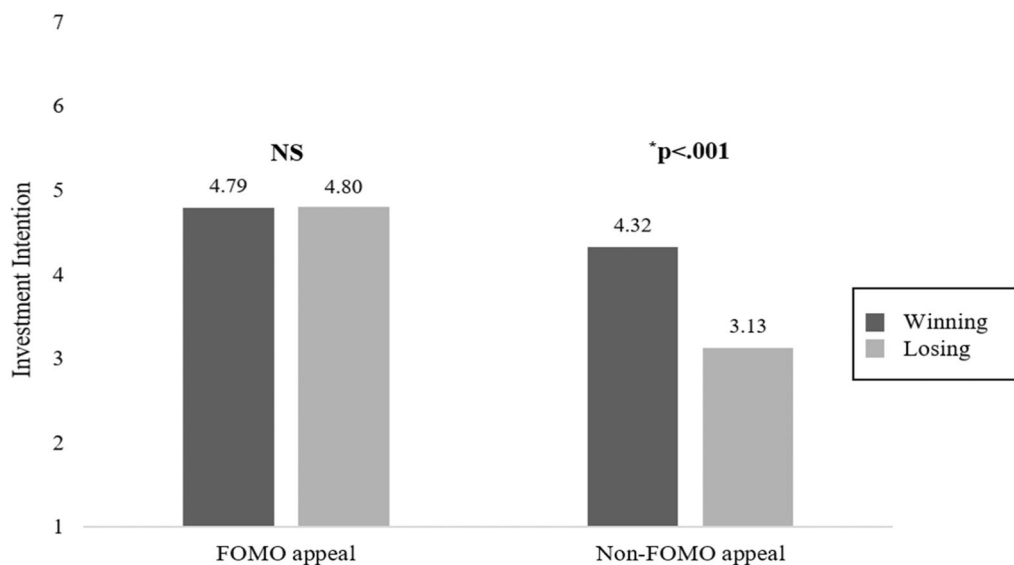
$M_{\text{NON-FOMO-Losing}} = 3.13$ ,  $SD = 1.85$ ;  $F_{(1,271)} = 16.80$ ,  $p < 0.001$ ,  $r = 0.24$ ). Interestingly, in the FOMO appeal condition, the win or loss incurred did not alter participants' II2 ( $M_{\text{FOMO-Winning}} = 4.79$ ,  $SD = 1.94$ ;  $M_{\text{FOMO-Losing}} = 4.80$ ,  $SD = 1.79$ ;  $F_{(1,271)} = 0.00$ ,  $p > 0.1$ ,  $r = 0.00$ ), giving support for H5. Figure 3 shows the means for II2 by the FOMO and non-FOMO appeal condition.

The results of Study 4 support H5. The results suggest that the influence of FOMO appeals extends beyond winning or losing money, as individuals exposed to the FOMO appeal and loss condition were slightly more likely to reinvest than individuals in the non-FOMO appeal and winning condition.

### 3.7 | Study 5: The interplay between FOMO appeals and counter-message tactics

The final study aims to explore whether fear and self-empowerment messages reduce the influence of FOMO appeals on individuals' investment intention. On the one hand, fear appeals have been widely used in political, public health, and advertising campaigns to minimize consumers' risky intentions and behaviors (e.g., Xu et al., 2015). Fear appeals are persuasive messages that attempt to arouse fear by typically emphasizing the potential harm that will befall individuals if they do not embrace the messages' recommendations. Previous studies suggest that fear messages are effective in influencing individuals' attitudes, intentions, and behaviors (e.g., Vermeir et al., 2017). In addition, they illustrated that the effectiveness of fear messages increases when they depict high severity and recommend one-time-only behaviors (e.g., Tannenbaum et al., 2015).

On the other hand, self-empowerment appeals involve enhancing an individual's perception of their ability to accomplish tasks, fostering the belief of being capable of taking action (Janssen et al., 2006). For example, in the crypto context, "do your own



**FIGURE 3** Means for II2 by FOMO conditions with winning and losing scenarios. FOMO, fear-of-missing-out.

research" (DYOR) messages have been recently used to encourage investors to understand cryptos before investing (e.g., Fotsing, 2021). Thus, this DYOR philosophy seeks to educate individuals about cryptos to prevent unfavorable and unthought behaviors. As a self-empowerment appeal, DYOR messages are particularly facilitated by the provision of information which individuals use to arrive at qualified decisions (Koinig, 2022). Hence, self-empowerment might enable investors to take control of their decision by encouraging self-reliance and autonomy in researching and evaluating investment options, as previous findings show that induced self-empowerment strongly influences consumers' consumption behaviors (e.g., Koinig et al., 2017).

As both fear and self-empowerment were found to impact consumer behavior (e.g., Koinig et al., 2017; Tannenbaum et al., 2015), and mainly used to prevent adverse conduct (Xu et al., 2015), we developed two counter-messages (i.e., fear and self-empowerment; see appendix D), in an attempt to reduce the effects of FOMO appeals. Accordingly, we propose:

- H6.** Fear and self-empowerment (DYOR) messages will reduce the effect of FOMO appeals on investment intention. Specifically, the effects of the FOMO appeal will be weaker when exposed to fear or self-empowerment (DYOR) messages.

### 3.7.1 | Design and procedure

The fear message included refers to the potential of losing money when investing in cryptos (i.e., "9 out of 10 investors suffer severe losses when investing in crypto"). Conversely, the self-empowerment (DYOR) message enables taking control of the investment decision (i.e., "Be smarter than others and do your own research first"). We tested both messages before this study.<sup>4</sup>

We used a 2 (FOMO vs. non-FOMO appeal)  $\times$  3 (fear vs. self-empowerment vs. neutral) between-subjects design to test the hypothesis. We applied the same vignette as in Study 1A. Participants were first randomly exposed to the FOMO or non-FOMO appeal condition. Second, they were randomly exposed to one of the three conditions. Afterwards, the measurements of the study were collected. We recruited 281 participants from Amazon MTurk. Twenty-five respondents were dropped from the analyses due to having failed attention check questions, leaving a final sample of 256 participants. The demographics indicated that the respondents had a mean age of 34 years ( $SD = 11.05$ ) and that 54% of them were male.

<sup>4</sup>Participants ( $n = 93$ ) scored the different messages within the frames of a multipoint rating option, ranging from a scale of 1 (fearful/resigned) to 9 (confident/hopeful). Paired sample  $t$ -tests (fear vs. neutral, self-empowerment vs. neutral, and fear vs. self-empowerment message) revealed that participants perceived the fear message as being significantly more fearful than the neutral message ( $M_{\text{Fear}} = 4.94$ ,  $SD = 2.92$ ;  $M_{\text{Neutral}} = 5.69$ ,  $SD = 2.42$ ;  $t(92) = 5.23$ ,  $p < 0.001$ ,  $r = 0.56$ ). Also, participants perceived the self-empowerment message as being significantly more confident/hopeful than the neutral message ( $M_{\text{Empowerment}} = 6.67$ ,  $SD = 2.01$ ;  $M_{\text{Neutral}} = 5.69$ ,  $SD = 2.42$ ;  $t(92) = -4.71$ ,  $p < 0.001$ ,  $r = 0.59$ ). Further, the fear message was perceived as more fearful than the self-empowerment message and vice versa ( $M_{\text{Fear}} = 4.94$ ,  $SD = 2.92$ ;  $M_{\text{Empowerment}} = 6.67$ ,  $SD = 2.01$ ;  $t(92) = -7.05$ ,  $p < 0.001$ ,  $r = 0.66$ ).

### 3.7.2 | Measures, coding, and reliability

After the respondents had been assigned to their FOMO appeal (non-FOMO appeal) and message condition (fear vs. self-empowerment vs. neutral), they submitted scores on investment intention.

### 3.7.3 | Results and discussion

The 2 (FOMO vs. non-FOMO appeal)  $\times$  3 (fear vs. self-empowerment vs. neutral) between-subjects ANOVA indicates a significant main effect of FOMO appeal ( $F_{(1,250)} = 10.52$ ,  $p < 0.01$ ,  $r = 0.20$ ) and a significant main effect of message ( $F_{(1,250)} = 5.73$ ,  $p < 0.01$ ,  $r = 0.19$ ) on investment intention. Further, a nonsignificant interaction effect of FOMO appeal and message was found ( $F_{(1,250)} = 1.35$ ,  $p > 0.1$ ,  $r = 0.11$ ).

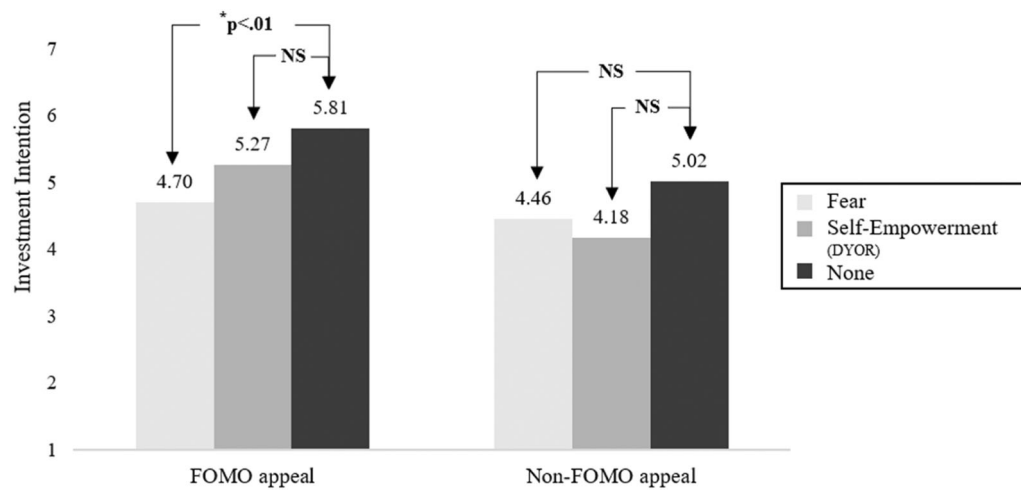
More narrowly, planned comparisons reveal the full scope of the results. With regard to the fear message, participants in the non-FOMO appeal condition showed similar levels of investment intention to those observed in the FOMO appeal condition ( $M_{\text{NON-FOMO-Fear}} = 4.46$ ,  $SD = 2.15$ ;  $M_{\text{FOMO-Fear}} = 4.70$ ,  $SD = 1.87$ ;  $F_{(1,250)} = 0.17$ ,  $p > 0.1$ ,  $r = 0.01$ ). Interestingly, the results showed that the fear message significantly lowers investment intention in the FOMO appeal condition, when contrasting with the FOMO appeal and neutral condition ( $M_{\text{FOMO-Fear}} = 4.70$ ,  $SD = 1.87$ ;  $M_{\text{FOMO-Neutral}} = 5.81$ ,  $SD = 0.98$ ;  $F_{(1,250)} = 10.51$ ,  $p < 0.01$ ,  $r = 0.20$ ). Furthermore, regarding the self-empowerment (DYOR) appeal, participants in the non-FOMO appeal condition demonstrated significantly lower levels of investment intentions than in the FOMO appeal condition ( $M_{\text{NON-FOMO-Empowerment}} = 4.18$ ,  $SD = 2.21$ ;  $M_{\text{FOMO-Empowerment}} = 5.27$ ,  $SD = 1.79$ ;  $F_{(1,250)} = 6.42$ ,  $p < 0.05$ ,  $r = 0.16$ ). Yet, in the FOMO appeal condition, the self-empowerment message did not significantly lower investment intentions compared to the neutral condition ( $M_{\text{FOMO-Empowerment}} = 5.27$ ,  $SD = 1.79$ ;  $M_{\text{FOMO-Neutral}} = 5.81$ ,  $SD = 0.98$ ;  $F_{(1,250)} = 3.47$ ,  $p > 0.05$ ,  $r = 0.12$ ).

Figure 4 illustrates the means for investment intention by the FOMO and non-FOMO appeal condition.

The findings indicate no significant interaction between messages and FOMO appeal, thus rejecting H6. However, the results indicate that the fear and FOMO appeal condition show no significant differences from the three non-FOMO appeal conditions. Accordingly, the fear message fully mitigates the FOMO appeal effect, while the self-empowerment message only gradually lowers it.

## 4 | GENERAL DISCUSSION AND IMPLICATIONS

This research presents five empirical studies related to consumer research on cryptos. We find that externally evoked FOMO appeals represent an underlying mechanism of consumers' crypto purchasing (Studies 1A, 1B, and 1C). Moreover, we show that consumers' subjective expected pleasure and anticipated regret partially mediate



**FIGURE 4** Means for investment intention by FOMO conditions with counter-messages. FOMO, fear-of-missing-out.

the effect of FOMO appeals on consumers' investment intention (Study 2). We further indicate how individual's impulsivity levels moderate the effect of FOMO appeals on investment intention (Study 3). The study also demonstrates that consumers exposed to FOMO appeals reinvest in cryptos despite prior losses, thereby exemplifying the construct's potential adverse consequences (Study 4). Finally, the study examines how counter-message tactics can reduce the effects of FOMO appeals. It illustrates how fear messages fully mitigate such effects on consumers' investment intention (Study 5).

In sum, this study primarily examines the mechanisms underlying consumers' engagement in cryptos and advances the nascent literature on consumer research in the crypto domain. Cryptos remain a unique asset class characterized by volatility and complexity. The contemporary global landscape, marked by uncertainty due to external factors (i.e., inflation, geopolitical tensions, and the financial turmoil of major entities), further intensifies the risk associated with crypto investments and FOMO. This is combined with the tremendous amount of offers proliferating on social media platforms, amplifying the risks associated with adverse investment decisions in bullish as well as bearish markets. Given that our findings repeatedly and reliably show the power of FOMO appeals in shifting people's intentions (Studies 1A, 2, 3, 4), as well as their behavior (Studies 1B and 1C) over several years including a multitude of market conditions, we assume that externally evoked FOMO can be a driver for risky investment decisions. All in all, these findings show an increased risk-taking behavior, as well as a reduced processing of concerns, which in sum should enhance people's propensity to invest in crypto assets, including bearish or bullish market conditions.

#### 4.1 | Theoretical contributions

This research makes several contributions to the extant literature. First, the study informs the debate about the positive effects of

externally evoked FOMO appeals on consumers' investment intention in the crypto context and directly addresses recent calls from the literature on FOMO (e.g., Hayran et al., 2020). Exploring FOMO as a momentary feeling triggered by information received at a particular juncture allowed the study to examine FOMO in a broader population and determine how it situationally influences consumers' behavior. Specifically, while previous research showed that FOMO appeals have a positive influence on purchase intention for services (i.e., concert tickets) (Good & Hyman, 2021), this study primarily explores FOMO appeals in the crypto context and provides further theoretical elaboration beyond the widely applied trait conceptualization (Przybylski et al., 2013). It demonstrated how FOMO appeals enhance the willingness to invest in highly volatile assets, both in actual monetary terms and in investment intentions, as well as the interest to visit websites giving financial education using Blockchain technology (Google ads field experiment).

Second, the study provides insights on how the FOMO effects can be explained. On the one hand, FOMO appeals augment consumers' expected pleasure from engaging in crypto investments. The appeals enhance consumers' positive affective states by increasing the expected pleasure of a seemingly profitable investment opportunity. On the other hand, FOMO appeals reduce consumers' anticipated regret when engaging in crypto investments. The literature found anticipated regret to be a relevant determinant for consumers' security and avoidance behavior (e.g., Verkijika, 2019). As FOMO appeals lower consumers' anticipated regret (of having invested) and, therefore, their emotional safety net, it shows its potential negative consequences in the crypto context, which directly relates to consumers' financial hazard. Hence, both consumers' increased positive affective states and lessened emotional safety nets explain the effects of FOMO appeal on crypto investments.

Third, this study shows that individuals' impulsivity levels moderate the effect of FOMO appeals. For impulsive individuals, the internal motives, that is, their firm impulsivity levels, drive the effect of investing in cryptos rather than FOMO appeals. However,

on the other hand, impulsivity moderates the effect of FOMO appeals in such a way that it is more substantial for less impulsive persons. This connects to recent literature suggesting that less impulsive people are more responsive to external motives in completing unplanned actions (e.g., Suher & Hoyer, 2020). The appeals, therefore, drag individuals who usually do not act impulsively into adverse financial decision-making, while highly impulsive individuals are likely to invest in the absence or presence of FOMO appeals, indicating a ceiling effect.

Fourth, the influence of FOMO appeals extends beyond winning and losing money. Individuals exposed to the FOMO appeal and loss condition were more likely to reinvest than those with the non-FOMO appeal and win condition. The study, thus, primarily indicates that FOMO appeals have substantial and lasting effects on consumers' investment decisions, which might even offset actual financial losses, and which are stronger than financial gains in the absence of FOMO appeals.

Finally, we provide further insights into FOMO-reducing mechanisms (Bui et al., 2022), by focusing on the role of counter-message tactics in alleviating the effects of FOMO appeals. An affective message such as fear can counter the affective state generated by FOMO appeals. The results showed that the fear message could fully mitigate the effect of FOMO appeals, in line with previous literature (Tannenbaum et al., 2015). In contrast, messages that do not explicitly emphasize the potential danger and hazard related to crypto investment, thus not evoking fear, such as the applied self-empowerment message, might not be helpful in reducing the effects of FOMO appeals and only develop their full strength in the absence of FOMO appeals.

## 4.2 | Managerial contributions

The findings also offer implications for practice. The study states practical inferences for policymakers and nonprofit agencies to prevent consumers from succumbing to FOMO appeals. It also offers inferences for for-profit organizations that may help managers improve and overhaul current business models.

First, given that FOMO appeals influence consumers' investment intentions, policymakers should design public service announcements and communication messages that downplay FOMO. Based on the results of the study, these activities should concentrate on content that conveys fear, stressing that following others based on previously experienced FOMO can lead to unfavorable outcomes. In addition, policymakers should make media creators aware of their responsibility in fueling FOMO induced behavior. Also, social media or online platforms should introduce automated warning vignettes when investment content was created from, for instance, influencers, bloggers or youtubers. The vignette could link to objective information to alert consumers, similar to the COVID19 seals during the pandemic, to reduce FOMO effects. These vignettes could also use fear appeals to reduce the FOMO effect. Given the moderating role of the impulsivity trait, nonprofit agencies, and policymakers should

focus on segmenting the market and target reactions to different groups of consumers. Notably, activities could be oriented to less impulsive persons, as they showed themselves to be particularly susceptible to FOMO appeals.

Second, regarding for-profit organizations, they should overhaul their investment platforms' marketing activities. For instance, they should reduce the systematic bias of FOMO appeals in their technological applications (i.e., investment platforms) to maximize consumers' long-term wealth. For example, investors could be informed more explicitly about the risk inherent in crypto trading and the existing bias of FOMO appeals. Additionally, for-profit organizations could establish automated processes that limit investment amounts based on recent trading history, account balance, and income information. Based on the findings, FOMO appeals can induce consumers to invest repeatedly in unknown cryptos even if prior losses have been suffered. Accordingly, limited investment amounts might reduce the consequences of FOMO appeals experienced in the crypto context.

## 4.3 | Limitations and directions for future research

Some limitations of this study suggest topics for future investigations. First, we used text vignettes for the FOMO manipulation. Future research could use other stimuli such as #Posts (e.g., Twitter), videos (e.g., YouTube), or print ads (e.g., Seeking Alpha) to induce FOMO. Further, this research (except Study 1B) considered investment intentions equivalent to the behavior finally executed by consumers. Regarding the intention-behavior gap, future research should consider using a proxy for spending real money. To this end, researchers could attempt to collaborate with crypto trading platforms (i.e., Binance, Deepcoin, or TOKENCAN) to add external validity to the results obtained.

Second, in crypto crises, future studies could turn the idea of FOMO around to the fear of holding on (i.e., rash selling). This might have similar effects to consumers succumbing to fear of holding on appeals and, on the contrary, do not hold on to the assets until the crisis is over.

Third, other mediators should be considered in the context of FOMO and implying consumer behavior. For the sake of illustration, FOMO appeals on social networks and online platforms might enhance consumers' situational envy of others' potential monetary gains. Specifically, envy was found to induce impulsive behaviors when consumers want what others possess and hence might play a critical role in forming consumers' decision-making. In particular, more objective neuro-marketing measures like emotional arousal or brain activity might help to enhance the understanding of the phenomenon.

Fourth, future studies should explore other counter-messages that potentially lower the effect of FOMO appeals. In this study we show that there are opportunities to counter FOMO appeals with messages, but there are probably many more and better options to do so. For example, besides affective messages (e.g., fear), cognitive

messages such as rumination or doubting appeals might reduce FOMO effects in the crypto context. Future studies should deepen the theoretical lens on how to combat FOMO, to enhance and optimize the reductive effects.

### CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

### ORCID

Felix Friederich  <http://orcid.org/0000-0002-1113-574X>

Jan-Hinrich Meyer  <http://orcid.org/0000-0001-6818-0683>

Jorge Matute  <http://orcid.org/0000-0002-2402-327X>

### REFERENCES

- Alba, J. W., & Williams, E. F. (2013). Pleasure principles: A review of research on hedonic consumption. *Journal of Consumer Psychology, 23*(1), 2–18.
- Almeida, J., & Gonçalves, T. C. (2023). A systematic literature review of investor behavior in the cryptocurrency markets. *Journal of Behavioral and Experimental Finance, 37*, 100785.
- Aydin, D., Selvi, Y., Kandeger, A., & Boysan, M. (2021). The relationship of consumers' compulsive buying behavior with biological rhythm, impulsivity, and fear of missing out. *Biological Rhythm Research, 52*(10), 1514–1522.
- Balcilar, M., & Ozdemir, H. (2023). On the risk spillover from bitcoin to altcoins: The fear of missing out and pump-and-dump scheme effects. *Journal of Risk and Financial Management, 16*(1), 41.
- Baumeister, R. F., & Tice, D. M. (1990). Point-counterpoints: Anxiety and social exclusion. *Journal of Social and Clinical Psychology, 9*(2), 165–195.
- Baumgartner, H., Pieters, R., & Bagozzi, R. P. (2008). Future-oriented emotions: Conceptualization and behavioral effects. *European Journal of Social Psychology, 38*(4), 685–696.
- De Best, R. (2023). *Share of respondents who indicated they either owned or used cryptocurrencies in 56 countries and territories worldwide from 2019 to 2023*. Retrieved September 2, 2023. <https://www.statista.com/statistics/1202468/global-cryptocurrency-ownership/>
- Bouri, E., Gupta, R., & Roubaud, D. (2019). Herding behaviour in cryptocurrencies. *Finance Research Letters, 29*, 216–221.
- Van Boven, L., & Ashworth, L. (2007). Looking forward, looking back: Anticipation is more evocative than retrospection. *Journal of Experimental Psychology: General, 136*(2), 289–300.
- Brandstätter, E., & Kriz, W. C. (2001). Hedonic intensity of disappointment and elation. *The Journal of Psychology, 135*(4), 368–380.
- Breidbach, C. F., & Tana, S. (2021). Betting on bitcoin: How social collectives shape cryptocurrency markets. *Journal of Business Research, 122*, 311–320.
- Bui, M., Krishen, A. S., Anlamier, E., & Berezan, O. (2022). Fear of missing out in the digital age: The role of social media satisfaction and advertising engagement. *Psychology & Marketing, 39*, 683–693.
- Çelik, I. K., Eru, O., & Cop, R. (2019). The effects of consumers' FoMo tendencies on impulse buying and the effects of impulse buying on post-purchase regret: An investigation on retail stores. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 10*(3), 124–138.
- Chan, S. S., Van Solt, M., Cruz, R. E., Philp, M., Bahl, S., Serin, N., Amaral, N. B., Schindler, R., Bartosiak, A., Kumar, S., & Canbulut, M. (2022). Social media and mindfulness: From the fear of missing out (FOMO) to the joy of missing out (JOMO). *Journal of Consumer Affairs, 56*(3), 1312–1331.
- Chen, S. K., Lo, M. T., & Lin, S. S. J. (2015). Impulsivity as a precedent factor for problematic Internet use: How can we be sure? *International Journal of Psychology, 52*(5), 389–397.
- Cheng, P. Y. K. (2014). Decision utility and anticipated discrete emotions: An investment decision model. *Journal of Behavioral Finance, 15*, 99–108.
- Delfabbro, P., King, D. L., & Williams, J. (2021). The psychology of cryptocurrency trading: Risk and protective factors. *Journal of Behavioral Addictions, 10*(2), 201–207.
- Duman, H., & Ozkara, B. Y. (2021). The impact of social identity on online game addiction: The mediating role of the fear of missing out (FoMo) and the moderating role of the need to belong. *Current Psychology, 40*, 4571–4580.
- Dutot, V. (2020). A social identity perspective of social media's impact on satisfaction with life. *Psychology & Marketing, 37*(6), 759–772.
- Elhai, J. D., Gallinari, E. F., Rozgonjuk, D., & Yang, H. (2020). Depression, anxiety and fear of missing out as correlates of social, non-social and problematic smartphone use. *Addictive Behaviors, 105*, 106335.
- Fang, J., Wang, X., Wen, Z., & Zhou, J. (2020). Fear of missing out and problematic social media use as mediators between emotional support from social media and phubbing behavior. *Addictive Behaviors, 107*, 106430.
- Fenton-O'Creevy, M., Dibb, S., & Furnham, A. (2018). Antecedents and consequences of chronic impulsive buying: Can impulsive buying be understood as dysfunctional self-regulation? *Psychology & Marketing, 35*(3), 175–188.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*(2), 117–140.
- Fotsing, N. (2021). How To: Do Your Own Research (DYOR) in Crypto. Retrieved June 28, 2023. <https://www.linkedin.com/pulse/how-do-your-own-research-dyor-crypto-nzonda-fotsing/>
- Fronczek, L. P., Mende, M., Scott, M. L., Nenkov, G. Y., & Gustafsson, A. (2022). Friend or foe? Can anthropomorphizing self-tracking devices backfire on marketers and consumers? *Journal of the Academy of Marketing Science, 51*, 1075–1097.
- Gerber, J. P., Wheeler, L., & Suls, J. (2018). A social comparison theory meta-analysis 60+ years on. *Psychological Bulletin, 144*(2), 177–197.
- Good, M. C. (2019). *Fear of missing out appeals: You can't always get what you want [Unpublished doctoral dissertation]*. New Mexico State University. Reference not found in Pubmed/Crossref.
- 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.
- Google (2023). Why Google Ads Clicks and Analytics Sessions don't match in your reports. Retrieved July 5, 2023. <https://support.google.com/analytics/answer/4588315>
- Hayes, A. F. (2017). Introduction to mediation, moderation, and conditional process analysis, A regression based approach (2nd ed.). The Guilford Press.
- 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.
- Hodkinson, C. (2019). 'Fear of missing out' (FOMO) marketing appeals: A conceptual model. *Journal of Marketing Communications, 25*(1), 65–88.
- Holte, A. J., & Ferraro, F. R. (2020). Anxious, bored, and (maybe) missing out: Evaluation of anxiety attachment, boredom proneness, and fear of missing out (FoMo). *Computers in Human Behavior, 112*, 106465.
- Hui, S. K., Huang, Y., Suher, J., & Inman, J. J. (2013). Deconstructing the "first moment of truth": Understanding unplanned consideration and

- purchase conversion using in-store video tracking. *Journal of Marketing Research*, 50(4), 445–462.
- Ivanic, A. S. (2016). To choose (not) to eat healthy: Social norms, self-affirmation, and food choice. *Psychology & Marketing*, 33(8), 595–607.
- Iyer, G. R., Blut, M., Xiao, S. H., & Grewal, D. (2020). Impulse buying: A meta-analytic review. *Journal of the Academy of Marketing Science*, 48, 384–404.
- Janssen, A. P., Tardif, R. R., Landry, S. R., & Warner, J. E. (2006). "Why tell me now?" the public and healthcare providers weigh in on pandemic influenza messages. *Journal of Public Health Management and Practice*, 12(4), 388–394.
- Jia, J. S., Khan, U., & Litt, A. (2015). The effect of self-control on the construction of risk perceptions. *Management Science*, 61(9), 2259–2280.
- Kim, H. J., Hong, J. S., Hwang, H. C., Kim, S. M., & Han, D. H. (2020). Comparison of psychological status and investment style between bitcoin investors and share investors. *Frontiers in Psychology*, 11, 502295.
- Kirby, J., & Smith, H. (2023). *Is a bitcoin crash coming?* Retrieved September 2, 2023. <https://www.thetimes.co.uk/money-mentor/article/is-bitcoin-crash-coming/>
- Koinig, I. (2022). On the influence of message/audience specifics and message appeal type on message empowerment: The Austrian case of COVID-19 health risk messages. *Health Communication*, 37(13), 1682–1693.
- Koinig, I., Diehl, S., & Mueller, B. (2017). Are pharmaceutical ads affording consumers a greater say in their health care? The evaluation and self empowerment effects of different ad appeals in Brazil. *International Journal of Advertising*, 36(6), 945–974.
- Krugman, P. (2022). *How Crypto Became the New Subprime*. Retrieved September 5, 2023. <https://www.nytimes.com/2022/01/27/opinion/cryptocurrency-subprime-vulnerable.html?smtp=cur&smid=tw-nytime>
- Lewis, C., & Morga, A. (2023). *People are losing more money to scammers than ever before. Here's how to keep yourself safe*. Retrieved September 6, 2023 <https://apnews.com/article/scams-phishing-robocalls-facebook-marketplace>
- Li, Y. X., Zhang, Y. H., Yang, R., Lian, S. H., Yan, L., & Zhu, X. M. (2021). Relationship between perceived social norms and phubbing: Individual control and fear of missing out as mediators. *International Journal of Mental Health and Addiction*, 21, 1898–1913.
- Martin, B. A. S., Chrysochou, P., Strong, C., Wang, D., & Yao, J. (2022). Dark personalities and Bitcoin®: The influence of the dark tetrad on cryptocurrency attitude and buying intention. *Personality and Individual Differences*, 188, 111453.
- McConnell, A. R., Niedermeier, K. E., Leibold, J. M., El-Alayli, A. G., Chin, P. P., & Kuiper, N. M. (2000). What if I find it cheaper someplace else?: Role of prefactual thinking and anticipated regret in consumer behavior. *Psychology & Marketing*, 17(4), 281–298.
- Mellers, B., Schwartz, A., & Ritov, I. (1999). Emotion-based choice. *Journal of Experimental Psychology: General*, 128(3), 332–345.
- Mills, D. J., & Nower, L. (2019). Preliminary findings on cryptocurrency trading among regular gamblers: A new risk for problem gambling? *Addictive Behaviors*, 92, 136–140.
- Moeller, F. G., Barratt, E. S., Dougherty, D. M., Schmitz, J. M., & Swann, A. C. (2001). Psychiatric aspects of impulsivity. *American Journal of Psychiatry*, 158, 1783–1793.
- Moore, D. J. (2013). Interrupted anticipation after a service failure: The role of olfactory sensation on expected pleasure, taste enjoyment, consumption, and repatronage intentions. *Marketing Letters*, 24, 399–408.
- Moore, D. J. (2014). Is anticipation delicious? Visceral factors as mediators of the effect of olfactory cues on purchase intentions. *Journal of Business Research*, 67, 2045–2051.
- Mundollikkalam, A. (2022). *New research explores negative impacts faced by the financially vulnerable*. Retrieved September 1, 2023. <https://newseventsinsights.wearepay.com/latest-updates/new-research-explores-negative-impacts-faced-by-the-financially-vulnerable/>
- Niforos, M. (2017). *Blockchain in Development: Part I - A New Mechanism of Trust?*. The World Bank.
- Passanisi, A., & Pace, U. (2017). The unique and common contributions of impulsivity and decision-making strategies among young adult Italian regular gamblers. *Personality and Individual Differences*, 105, 24–29.
- Perrin, A. (2022). *16% of Americans say they have ever invested in, traded or used cryptocurrency*. Retrieved January 11, 2023. <https://www.pewresearch.org/fact-tank/2021/11/11/16-of-americans-say-they-have-ever-invested-in-traded-or-used-cryptocurrency/>
- Poshakwale, S., & Mandal, A. (2014). Investor behaviour and herding: Evidence from the national stock exchange in India. *Journal of Emerging Market Finance*, 13(2), 197–216.
- 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.
- Shih, E., & Schau, H. J. (2011). To justify or not to justify: The role of anticipated regret on consumers' decisions to upgrade technological innovations. *Journal of Retailing*, 87(2), 242–251.
- Sierra, J. J., & Hyman, M. R. (2011). Outlet mall shoppers' intentions to purchase apparel: A dual-process perspective. *Journal of Retailing and Consumer Services*, 18(4), 341–347.
- Spiller, S. A., Fitzsimons, G. J., Lynch, Jr., J. G., & McClelland, G. H. (2013). Spotlights, floodlights, and the magic number zero: Simple effects tests in moderated regression. *Journal of Marketing Research*, 50(2), 277–288.
- Van Steenburg, E., & Naderi, I. (2019). Unplanned purchase decision making under simultaneous financial and time pressure. *Journal of Marketing Theory and Practice*, 28(1), 98–116.
- Steinberg, L., Sharp, C., Stanford, M. S., & Tharp, A. T. (2013). New tricks for an old measure: The development of the Barratt Impulsiveness Scale-19 (BIS-Brief). *Psychological Assessment*, 25(1), 216–226.
- Strahan, R., & Gerbasi, K. C. (1972). Short, homogeneous versions of the Marlow-Crowne Social Desirability Scale. *Journal of Clinical Psychology*, 28(2), 191–193.
- Suher, J., & Hoyer, W. D. (2020). The moderating effect of buying impulsivity on the dynamics of unplanned purchasing motivations. *Journal of Marketing Research*, 57(3), 548–564.
- Suri, R., Kohli, C., & Monroe, K. B. (2007). The effects of perceived scarcity on consumers' processing of price information. *Journal of the Academy of Marketing Science*, 35, 89–100.
- Tannenbaum, M. B., Hepler, J., Zimmerman, R. S., Saul, L., Jacobs, S., Wilson, K., & Albarracín, D. (2015). Appealing to fear: A meta-analysis of fear appeal effectiveness and theories. *Psychological Bulletin*, 141(6), 1178–1204.
- Tedeschi, J. T. (1986). Private and public: Experiences and the self. In R. F. Baumeister (Ed.), *Public and private self* (pp. 1–20). Springer-Verlag.
- Tsiros, M., & Mittal, V. (2000). Regret: A model of its antecedents and consequences in consumer decision making. *Journal of Consumer Research*, 26(4), 401–417.
- Verkijika, S. F. (2019). "If you know what to do, will you take action to avoid mobile phishing attacks": Self-efficacy, anticipated regret, and gender. *Computers in Human Behavior*, 101, 286–296.
- Vermeir, I., De Bock, T., & Van Kenhove, P. (2017). The effectiveness of fear appeals featuring fines versus social disapproval in preventing shoplifting among adolescents. *Psychology & Marketing*, 34(3), 264–274.
- Wen, B., & Chang, E. C. (2022). Will winning always encourage risk-taking? The effects of winning-losing perception on consumers' risk preference. *Journal of Contemporary Marketing Science*, 5(2), 140–157.

- Wong, K. F. E., & Kwong, J. Y. Y. (2007). The role of anticipated regret in escalation of commitment. *Journal of Applied Psychology, 92*(2), 545–554.
- Xu, X., Alexander, Jr., R. L., Simpson, S. A., Goates, S., Nonnemaker, J. M., Davis, K. C., & McAfee, T. (2015). A cost-effectiveness analysis of the first federally funded antismoking campaign. *American Journal of Preventive Medicine, 48*, 318–325.
- Youn, S., & Faber, R. J. (2000). Impulse buying: Its relation to personality traits and cues. In S. J. Hoch & R. J. Meyer Eds., *Advances in consumer research* (27, pp. 179–185). Association for Consumer Research.
- Zhang, J., Jiang, N., Turner, J. J., & Pahlevan-Sharif, S. (2022). The impact of scarcity on consumers' impulse buying based on the SOR theory. *Frontiers in Psychology, 13*, 792419.
- Zhang, Z., Jiménez, F. R., & Cicala, J. E. (2020). Fear of missing out scale: A self-concept perspective. *Psychology & Marketing, 37*(11), 1619–1634.

## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

**How to cite this article:** Friederich, F., Meyer, J.-H., Matute, J., & Palau-Saumell, R. (2024). CRYPTO-MANIA: How fear-of-missing-out drives consumers' (risky) investment decisions. *Psychology & Marketing, 41*, 102–117.  
<https://doi.org/10.1002/mar.21906>