



Fear of Missing Out as motivation to process information: How differences in Instagram use affect attitude formation online

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Abstract

Marketing on social media has become ubiquitous. Consequently, social media platforms are increasing the level of advertising content that users may later encounter when navigating online shopping websites. It is unclear how this amplification of exposure to marketing messages through social media affects consumers' attitudes to products online. Furthermore, the roles of social media participation and proneness to experience Fear of Missing Out on product attitude remain largely unexplored. In this research ($N = 1002$), we employed an online survey of US Instagram users. These data were submitted to three-way moderation regression analyses with attitude toward the product as the dependent variable. Consumers who are more active on social media and had high (vs low) Fear of Missing Out expressed more favorable attitudes toward online products after being exposed to Instagram content (vs not exposed). The theoretical and practical implications for cognitive processing research and advertising strategy and study limitations are discussed.

Keywords

Attitude formation, fear of missing out, information processing, Instagram participation, priming effects

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Instagram is a popular mobile application that was developed in 2010. The platform allows users to post and interact with image and video content through an individual news and story feed. More than 35% of US adults use Instagram today; over 60% of those use the platform daily (Pew Research Center, 2019). Currently, Instagram serves as a popular source of information about products, brands, and trends (Lamberton and Stephen, 2016). With more than 500 million daily users of Instagram Stories, Instagram, which is owned by Facebook, contributes heavily to Facebook's overall success and is seen as an essential driver for the company's growth strategy (Amin, 2019). Users' ability to share information, such as pictures, helps marketers in their online communication efforts about products (Shao, 2009), which can lead to increased purchase intention (Alhabash et al., 2016).

Social media content that is posted by firms and users alike has the potential to increase users' product awareness and familiarity by providing repeated exposure to these products. This increase in perceived awareness and familiarity with the product might be rooted in mere exposure effects (Humphrey, 2017), which have been found to be powerful drivers of consumer behavior in early marketing research (Zajonc, 1968). It is crucial for firms to understand when social media content affects the activation of accessible positive attitudes as consumers are more likely to buy products about which they have favorable (vs unfavorable) attitudes (Kim and Lennon, 2008). One relationship that has largely been ignored in prior research on social media content and processing thereof is users' proneness to experience Fear of Missing Out (FOMO) and its association with their attitude formation.

Initial research on FOMO has defined the experience as "pervasive apprehension that others might be having rewarding experiences" (Przybylski et al., 2013: 1841) and situated the concept within Self-Determination Theory (SDT; Ryan and Deci, 2017). SDT posits that individuals strive to satisfy their basic human needs for autonomy, competence, and relatedness by proactively engaging in behavioral regulation. For example, Alt (2018) found that students who experience higher levels of FOMO also use social media more during lectures, possibly to alleviate threats to their basic human needs. Although there are many research studies that focus on the relationship between FOMO and problematic smartphone (Elhai et al., 2016) and social media use (Oberst et al., 2017), there is a lack of understanding of how content delivered through social platforms may differentially affect the attitude formation process of users based on their proneness to experience FOMO.

There are differences in how passive and active social media users perceive information they obtain through social media. Verduyn et al. (2017), for example, in their critical review of social networking sites and subjective well-being described that there is evidence that passive social media users are more likely to compare themselves unfavorably to others and, therefore, experience more envy as compared to active social media users. In the same study, the authors described that active social media use was associated with higher social capital. The relationship between FOMO and active (vs passive) use of social media has not been investigated previously, although there is ample research on problematic social media use and engagement overall. Specifically, no research has addressed how the proneness to experience FOMO and the degree of active social media use interactively affect the attitude formation process of attitude objects encountered online.

Fear of Missing Out in marketing and consumer behavior

FOMO literature examining outcomes relevant to marketing and consumer behavior is scarce. However, there are studies describing possible threats of the FOMO experience on customer loyalty by decreasing willingness to repeat current experiences. For example, Hayran et al. (2020) showed in a field study that visitors of a museum were less likely to attend another museum event in the future when receiving information about other attractive events during their initial visit compared with visitors who received neutral information. Other work, however, reports possible positive associations of FOMO and, for instance, brand evaluation (Kang et al., 2019). Connecting the FOMO experience more closely to an affective, as opposed to a cognitive, experience Good and Hyman (2020) found that the FOMO experience may act as a mediating factor between anticipated envy of others and anticipated elation and purchase likelihood. That is, when consumers anticipate others to be envious of their purchase and/or anticipate elation as a result of the purchase, they experience higher levels of FOMO and, consequently, are more likely to buy in the context of hedonic experiential products and services (e.g. concerts, festivals, etc.). Hodgkinson (2019) extended the idea of the affective character of FOMO when he proposed the FOMO Response Model, which suggests that the FOMO experience has not only an affective factor, but also induces a high cognitive load on social media users and consumers. FOMO, therefore, potentially interferes with people's ability to cognitively process information they receive. The importance of cognition, in addition to affect, was further proposed by Neumann (2020). Other findings suggest that the FOMO experience leads to social media fatigue (Bright and Logan, 2018), which was defined as becoming overwhelmed with the amount of information received through social media. Consumers' fatigue with information received through social media is in line with research by Jupowicz-Ginalska (2019) who defined FOMO-marketing as a marketing strategy that plays on consumers' emotional reactions to positively affect sales. Using a sample representative of Polish Internet users, Jupowicz-Ginalska (2019) showed that participants high in trait-FOMO were more engaged with marketing content on social media. Thus, it is possible that there are differences in the attitude formation process for users who are more (vs less) prone to experience FOMO.

The current research

In this study, we propose the following research question: how do FOMO and the degree of active participation on Instagram interact to affect the attitude formation process of products online after exposure to these products on Instagram? We address this gap in prior research: to understand how individual differences and content delivered through social media platforms (e.g. Instagram) interact to affect consumers' product attitudes. We employ a theory of attitude accessibility (i.e. MODE model) to investigate how individuals' proneness to experience FOMO may motivate them to more deliberately process available information. We are further interested in the impact of the degree of participation on Instagram on the attitude formation process for individuals high (vs low) in proneness to experience FOMO. Thus, we identify important boundary conditions that explain under what circumstances FOMO proneness and degree of participation on Instagram interact to motivate consumers to more carefully process information. We

have chosen the context of Instagram because this platform has gained popularity as an image-based advertising tool (Erkan and Evans, 2016).

Attitude accessibility

We examine attitudes toward products and the attitude formation process in online shopping contexts as central outcomes of interest. *Attitudes* are defined as evaluative mental representations of an attitude object that range from negative to positive (Petty et al., 1997). Although theories such as the Theory of Reasoned Action or the Theory of Planned Behavior (Madden et al., 1992) posit a strong relationship between attitudes and behavior, early research in cognition and behavior resulted in mixed findings regarding this relationship. That is, the attitude-behavior relationship was found to be unstable; more favorable attitudes did not always lead to consequent behavior (Wicker, 1969). However, because attitudes are represented on a continuum of not accessible at all to highly accessible (Rhodes and Ewoldsen, 2009), these differences in the attitude-behavior relationship might be dependent on attitude accessibility (Fazio and Roskos-Ewoldsen, 2005). Attitude accessibility is defined as the ease of activation of attitudes. As accessibility increases, the likelihood of attitude activation increases. Behavior is more likely to be affected by highly accessible attitudes than attitudes low in accessibility. Attitudes low in accessibility require more cognitive effort and controlled thoughts to be activated, while attitudes high in accessibility require less cognitive effort to be activated (Ewoldsen et al., 2015). It is important to closely examine attitude formation, because attitude accessibility has been associated with product choice. Specifically, Hütter and Sweldens (2018) showed in a series of experiments that visual affective stimuli (i.e. marketing messages) can affect consumers' attitudes and consequent behavior. Berger and Mitchell (1989) found evidence that attitude accessibility mediates the effect of marketing message repetition on attitude-behavior consistency. Consequently, from a marketer's perspective, understanding what affects the formation of positive attitudes is important, as strong (i.e. more accessible) and positive attitudes are closely tied to consumption behavior (Kim and Lennon, 2008).

Social media as opportunities to process

To examine our research question of how individual differences, such as proneness to experience FOMO and the degree of active participation on Instagram affect attitude formation in light of attitude accessibility, we consulted the Motivation and Opportunity as DEterminants (MODE) model. The MODE model provides a theoretical framework for differentiating the means by which individuals process information: deliberately versus spontaneous (Fazio, 1990). The MODE model proposes that motivation and opportunity to process information are two key determinants of whether accessible attitudes affect consequent behaviors (Fazio, 1990). Here, we equate incidental exposure to Instagram content before viewing an online shop as giving social media users the opportunity to process heuristic information (i.e. social media as heuristic) about the product.

Research on the effects of content on social media found that said content positively affects consequent judgments of brands and products (Schivinski and Dabrowski, 2016). These positive judgments might be an effect rooted in priming and exposure effects (Tulving and Schacter, 1990; Zajonc, 1968). When bringing to mind heuristic popularity cues (i.e. seeing a product posted on Instagram), the concept of “popularity” becomes more salient to the consumer (Mrkva and Van Boven, 2020) and consequent stimuli are processed with this concept activated (Lee and Labroo, 2004). This process is called *conceptual priming*, which is defined as actively evoking a conceptually related thought prior to exposure to the attitude object of interest (Tulving and Schacter, 1990). By exposing potential customers to a heuristic cue, that is, seeing an object on a social platform like Instagram, favorable attitudes about the object in a consequent online shopping encounter will be more accessible and product evaluations become more favorable. However, not all stimuli are processed heuristically or spontaneously. According to the MODE model, more deliberate processing of available information occurs when individuals are motivated to process (Fazio, 1990). Although there is evidence for positive effects of priming procedures on ease of processing (Lee and Labroo, 2004; Mrkva and Van Boven, 2020), in this study, we pinpoint an important boundary condition of social media as a heuristic cue. We suggest that heuristic processing of social media cues depends on individual differences. Individuals’ proneness to experience FOMO might motivate more deliberate processing after they have been primed and the degree of active participation might affect whether more or less positive attitudes will be activated.

Proneness to experience FOMO as motivation to process

As suggested by the MODE model, when individuals are highly motivated to process information, they put more cognitive effort into information retrieval relevant to the judgment of the attitude object and will deliberate more carefully. For high-motivation-to-process consumers, accessible attitudes have decreased influence on consequent behaviors, because these individuals not only use these highly salient cues to form judgments, but additionally consult carefully curated memories and experiences. When individuals are low in motivation to process information, accessible attitudes significantly influence consequent behavior, since individuals will make judgments based on strong, easy-to-retrieve attitudes without deliberating on them too much (Fazio and Olson, 2014).

In prior research, Bright and Logan (2018) found that the proneness to experience FOMO leads to positive attitudes toward following brands on social media, but simultaneously to higher experienced fatigue with social media. Individuals who receive information through social media process this information more deliberately and put more cognitive effort into processing it, especially when they are more prone to experience FOMO. In line with FOMO’s theoretical conceptualization within SDT, one reason for why individuals who are more prone to experience FOMO are more inclined to process available social information more deliberately might be grounded in their need to maintain their inclusionary status in important social groups. For example, using electroencephalogram (EEG) measures, Lai et al. (2016) showed that when individuals who were high (vs low) in proneness to experience FOMO observed groups of people standing

together laughing and having fun (social inclusion cue), they experienced a feeling similar to social pain. But when they observed a person outside their peer group, they did not. Lai et al. (2016) reasoned these findings with individuals actually perceive themselves to be excluded and psychologically distant when observing these social inclusion cues. This explanation is not only in line with the need to belong (Lai et al., 2016), but also with premises of SDT, as they speak to a drive for need satisfaction of relatedness. This finding indicated the importance of social monitoring of the FOMO experience and gives reason to believe that the impact of proneness to experience FOMO on attitude formation might be affected by other variables, such as the individual's degree of participation on social media, since there are differences in motives for active and passive use (Verduyn et al., 2017).

Individuals participate in social media platforms, such as Instagram, in diverse ways. For example, users can choose to actively or passively interact with Instagram content. Active users engage on social media platforms by posting and sharing content and information, and commenting on other users' postings. Passive users, however, consume content and information rather than posting and sharing it by reading, scrolling through, and silently observing other users' activities (Burke et al., 2011). It is important to note that these differences in usage of social media have been found to lead to differences in subjective well-being (Verduyn et al., 2017). That is, although active social media users reported higher social capital (Burke et al., 2010) and connectedness (Matook et al., 2015), passive users experience, for example, more envy and upward social comparison (Krasnova et al., 2015). These differences imply that active and passive users are motivated to process available information delivered through a social media platform, but possible outcomes of the deliberate processing may be different.

We propose that proneness to experience FOMO is a strong driver for individuals to process available information, for example, social media content prior to generating judgments about online products. This motivational drive to process, however, might pan out differently for different users. For active social media users who are likely to hold more social capital and feel more connected, favorable attitudes will be more accessible. The effects of ease of processing (Schwarz, 2004) and feelings-as-information theory (Schwarz, 2011) suggest that individuals who associate positive experiences and positive effects on subjective well-being with social media content (i.e. active users) will be more likely to have more accessible positive (vs negative) attitudes toward the attitude object. On the contrary, individuals who associate negative experiences with the priming stimulus (i.e. passive users) will have more accessible negative than positive attitudes toward the attitude object. We, therefore, formulate the following hypotheses:

Hypothesis 1 (H1). There will be an interactive effect of proneness to experience FOMO and degree of active participation on social media on attitudes toward products after individuals have been exposed (vs not) to social media content about the product, such that (a) social media users who are high in proneness to experience FOMO and who are active on social media will form more favorable attitudes toward products after seeing them on social media and (b) social media users who are higher in proneness to experience FOMO and who are passive on social media will form less favorable attitudes toward products after seeing them on social media.

Methods and materials

Open science statement

All stimuli, full survey instrument, script of analysis, and supplemental information (e.g. factor loadings of constructs and detailed sample composition) can be found online on our Open Science Framework (OSF) website: <http://www.doi.org/10.17605/OSF.IO/ZJCF7>.

Procedure

We employed the online survey method using a 4 (product: “artsy wall clock” vs “basic wall clock” vs “monstera plant” vs “basil plant”) by 2 (store: IKEA vs The Home Depot) by 2 (context: control vs Instagram content priming) between-subject factorial design, where participants were randomly assigned to one of 16 conditions. Two different kinds of house plants were chosen as the product stimuli because of their popularity among millennial shoppers (Boone, 2018) and their hedonic character. Two different wall clocks were included based on their relative low popularity on Instagram and their utilitarian character. By including two house plant and wall clock types in this study, we aimed to address possible product biases. Similarly, we addressed potential channel (store) biases by including IKEA and The Home Depot in the study as potential stores. We decided to use IKEA and The Home Depot based on their hedonic (IKEA) vs utilitarian (The Home Depot) characteristics, while still offering all products used as stimuli. Thus, we aimed to minimize effects of previous experience or attitude toward the stores.

After being provided informed consent and indicating adherence to quality expectations of the researchers, participants answered questions about their previous online shopping experience, attitudes toward popular products, and attitude toward Instagram. Following that, participants in the Instagram content priming condition were exposed to an Instagram mock-up post (Figure 1) of one of the products displayed in the online shop (Figure 2). In the control condition, participants were not exposed to any additional stimuli before viewing the online shop stimuli. The online shop mock-up did not include price information.

Next, participants reported on attitude toward the product and store familiarity. Finally, participants answered questions about FOMO, their degree of participation within Instagram, and a series of demographic questions. This study was reviewed and approved by the Institutional Review Board at Michigan State University, MI, the United States.

Data collection, sample, and cleaning

Data were collected in a two-step process: First, we collected data for an initial study in May 2017, which included the “house plants”-conditions ($N=872$) using the Qualtrics (www.qualtrics.com) participant pool. Then, we decided to add a second product category to control for possible confounds. Data ($N=420$) for the second product category (“wall clocks”) were collected using the Dynata participant pool (www.dynata.com) in September 2018. We employed probability sampling and screened participants for being between 18 and 35 years old users of Instagram. We decided on young adults, because

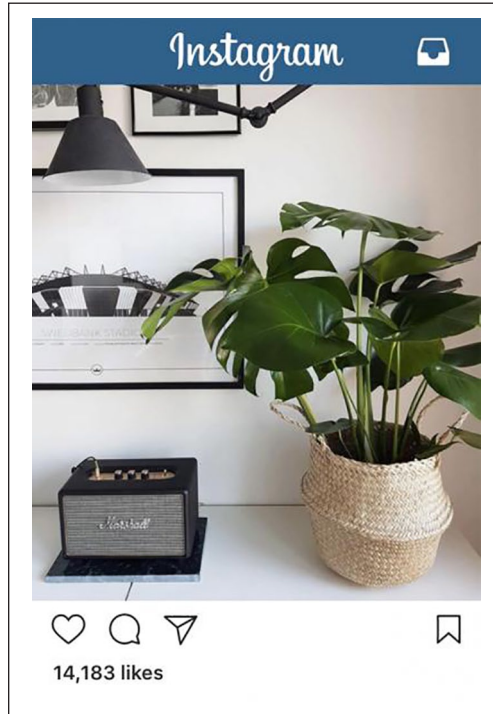


Figure 1. Example of an Instagram stimulus in the Instagram content priming condition.

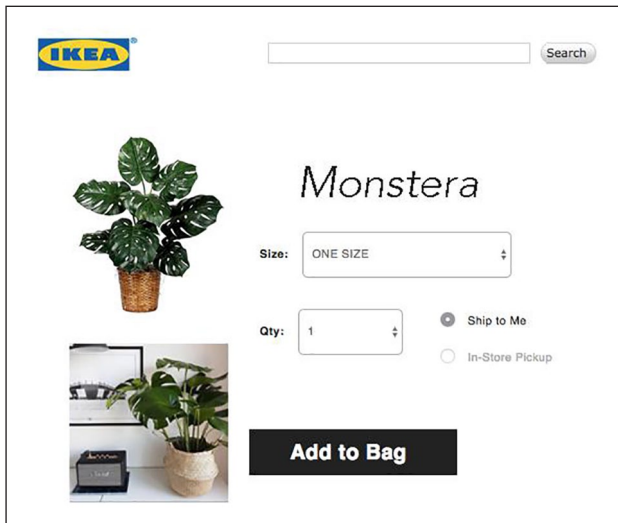


Figure 2. Example of an online shop mock-up stimulus.

they make up more than 55% of Instagram users in the United States (Clement, 2020). Participants were compensated based on their respective panel memberships. However, the first sample (“house plants”) included three conditions (control, “Instagram content priming with 14 likes,” and “Instagram content priming with 14,183 likes”), whereas the second sample (“wall clocks”) only contained two priming conditions (“no priming with Instagram content” and “Instagram content priming with 14,183 likes”). Based on a full between-subjects design, we dropped the Instagram content condition with only 14 likes from the first sample, to match the initial surveys’ designs. This step was not considered to be problematic, because there were negligible differences in perception of popularity between the low-number-of-likes and the high-number-of-like conditions, $M_{\text{high}} = 5.19$, $M_{\text{low}} = 4.98$, $t(571) = 2.05$, $p = .04$, $d = 0.17$. (This assessment was based on a four-item, seven-point semantic differential that included items such as “unpopular” to “popular” and “bad reputation” to “good reputation.”) More comparisons between samples can be found in online Supplemental material. Thus, the final sample was composed of $N = 1002$ US participants.

Measures

Attitude toward the product ($\alpha = .94$) was assessed using a nine-item, seven-point semantic differential scale (e.g. “not worth having” = 1 to “worth having” = 7) based on Benedek and Miner (2002). We manipulated *Instagram content priming condition* by showing participants in the Instagram content priming condition a screenshot of the object embedded in an Instagram frame prior to viewing the online shop stimulus. Participants in the control condition were not exposed to this additional Instagram stimulus. *Degree of participation within Instagram* ($\alpha = .87$) was assessed using a six-item, six-point semantic differential scale (e.g. “passive” = 1 to “active” = 6) based on prior research (Bolton, 2013; Schlosser, 2005). Based on validity-issues in pre-testing data with the original scales, *proneness to experience FOMO* ($\alpha = .84$) was assessed using an eight-item, seven-point Likert-type scale (e.g. “I get anxious when I don’t know what my friends are up to”), based on Abel et al. (2016) and Przybylski et al. (2013). We assessed several control variables to account for possible confounds. We assessed *prior experience with online shopping* ($\alpha = .89$) using a three-item, seven-point Likert-type scale (e.g. “I shop online frequently,” “strongly disagree” = 1 to “strongly agree” = 7) (Khalifa and Liu, 2007). *Attitude toward popular products* ($\alpha = .92$) was assessed using a six-item seven-point Likert-type scale (e.g. “Buying a popular product makes me feel good,” “strongly disagree” = 1 to “strongly agree” = 7) based on prior research (Burton et al., 1998). We included *store familiarity* ($\alpha = .92$) using a three-item, seven-point semantic differential scale (e.g. “unfamiliar” = 1 to “familiar” = 7; Kent and Allen, 1994).

Plan of analysis

Data were analyzed using the R (version 4.0.3) software. We were interested in the effects of prior exposure to objects on Instagram and its interactive effects with degree of participation within Instagram, and FOMO on product judgments (H1a and H1b). We submitted the data to regression analyses and included context condition (control vs Instagram content priming)

as categorical, and degree of active Instagram participation and FOMO as continuous independent variables, including their interactions and a three-way interaction. We included product type (monstera, basil, and artsy wall clocks) as dummy coded control variables since significant correlations between products and attitude toward the product might affect findings (basic wall clocks as baseline condition). We included attitude toward popular products, prior online shopping experience, and store familiarity as control variables in our model, because differences between participants might affect consequent results. Because constructs were assessed differently (e.g. attitude toward the product on seven-point semantic differential, degree of active participation on six-point semantic differential, and FOMO on seven-point Likert-type scale), all variables were standardized before submitting them to analyses. Then, in a second step, we submitted data for conditions separately to two linear regression analyses with product attitudes as the dependent and FOMO and degree of active participation as independent variables, including their interactions. We inspected intervals of significance for each condition using the Johnson–Neyman Technique (Krishna, 2016).

Results

Descriptive statistics

Participants were predominantly female (69%). Most participants identified as Caucasian (71%), had completed some college with no degree (29%), and had an annual household income between US\$10,000 and US\$49,999 (44%). The median age was 26 years. Participants' characteristics stratified by condition and product type as well as means, standard deviations, construct reliabilities, square roots of average variance extracted (\sqrt{AVE}), and intercorrelations of all variables in the model can be found in the online Supplemental material. \sqrt{AVE} of all constructs exceeded their correlations with other constructs, which indicates good discriminant validity of measures (Fornell and Larcker, 1981). Variance Inflation Factors ($VIF < 5$) indicated no multicollinearity. Information about factor structure and findings of confirmatory factor analysis for constructs of interest in online Supplemental material.

Three-way interaction

Results for regression analysis with three-way interaction are summarized in Table 1. We found a significant and positive main effect of Instagram content priming versus control condition on attitudes toward the product ($p = .02$). Thus, Instagram content as a heuristic cue was positively associated with the attitude formation process. We found significant main effects of degree of active Instagram participation ($p < .01$), attitude toward popular products ($p < .01$), store familiarity ($p < .01$), basil ($p < .01$), and artsy wall clocks ($p = .03$, both vs basic wall clocks). That is, participants who reported more active participation on Instagram, who had more favorable attitudes toward popular products, and who were more familiar with the store brand formed more favorable attitudes toward the product. Basil plants were perceived as more favorably and artsy wall clocks as less favorably than basic wall clocks. We did not find interaction effects of degree of active participation and conditions ($p = \text{n.s.}$). However, we did find a marginally significant three-way interaction

Table 1. Regression analysis including three-way interaction term.

| Predictors | Attitude toward the product | | | |
|---|-----------------------------|----------------|---------|------|
| | Estimates | CI | p-value | VIF |
| (Intercept) | −0.10 | [−0.24, −0.03] | .12 | |
| Main effects | | | | |
| Condition | 0.14 | [0.02, −0.25] | .02 | 1.03 |
| Proneness to experience FOMO | 0.07 | [−0.01, −0.15] | .09 | 2.18 |
| Active Instagram participation | 0.14 | [0.06, −0.22] | <.01 | 2.10 |
| Control variables | | | | |
| Attitude popular products | 0.13 | [0.07, −0.20] | <.01 | 1.28 |
| Online shopping experience | −0.03 | [−0.09, −0.03] | .28 | 1.18 |
| Store familiarity | 0.27 | [0.21, −0.33] | <.01 | 1.11 |
| Product dummy variables | | | | |
| Monstera | −0.01 | [−0.17, −0.15] | .86 | 1.70 |
| Basil | 0.22 | [0.07, −0.38] | <.01 | 1.68 |
| Artsy wall clock | −0.19 | [−0.36, −0.02] | .03 | 1.55 |
| Interaction effects | | | | |
| Condition × proneness FOMO | 0.01 | [−0.10, −0.13] | .83 | 2.16 |
| Condition × active participation | 0.02 | [−0.09, −0.14] | .67 | 2.09 |
| Proneness FOMO × active participation | −0.01 | [−0.09, −0.07] | .76 | 2.27 |
| Condition × proneness FOMO × active participation | 0.09 | [−0.01, −0.20] | .09 | 2.32 |
| Observations | 995 | | | |
| R ² /R ² adjusted | .21/.20 | | | |

CI: confidence interval; FOMO: Fear of Missing Out; VIF: Variance Inflation Factors.

All independent variables were centered around the mean and standardized before submitting data to regression analyses; product dummy variables have “basic wall clocks” as baseline comparison.

effect between degree of active participation, proneness to experience FOMO and the conditions ($p = .09$, Figure 3). We further assessed intervals of significance for the degree of active participation as moderator of the proneness to experience FOMO association with the exposure-attitudes relationship within each condition separately.

Intervals of significance

Control condition

In the control condition (Table 2), we found significant positive main effects of degree of active participation ($p < .01$), attitude toward popular products ($p < .01$), store familiarity ($p < .01$), and negative main effects of artsy wall clocks ($p = .02$, vs basic wall clocks) on product attitude. There was no significant interaction effect between proneness to experience FOMO and degree of active participation on Instagram ($p = \text{n.s.}$). According to Johnson–Neyman Technique findings, the slope for degree of active participation on Instagram was never significant ($p < .05$) for standardized values of proneness to experience FOMO. There

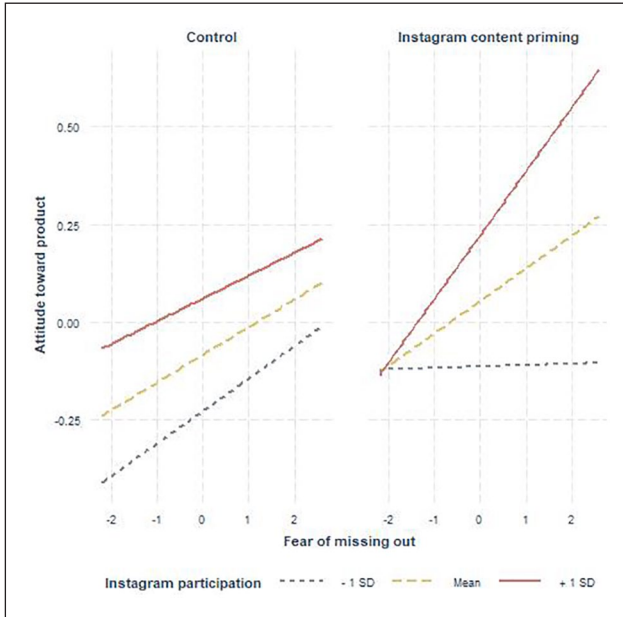


Figure 3. Three-way interaction effect of FOMO and degree of active participation dependent on condition.

was no significant effect of FOMO on attitudes irrespective of participants' degree of active participation for participants who were not exposed to Instagram content (Figure 4).

Instagram content priming condition. Findings in the Instagram content priming condition differed from findings in the control condition. Like in the control condition, we found significant positive main effects for store familiarity ($p < .01$). However, results indicated a positive main effect of active Instagram participation ($p < .01$), proneness to experience FOMO ($p = .02$), of basil house plants ($p < .01$), and a statistically significant interaction effect between FOMO and degree of active participation ($p = .02$, Table 2). That is, highly active Instagram users expressed the most favorable attitudes toward the product as they reported higher levels of proneness to experience FOMO (H1a). In contrast, as passive Instagram users reported higher levels of proneness to experience FOMO, they expressed the least favorable attitudes toward the product (H1b). This finding was also reflected by results of Johnson–Neyman Technique, which indicated that the slope for proneness to experience FOMO was significant ($p < .05$) only for standardized values of degree of active participation between $[0.32, 2.16]$, and thus higher levels of proneness to experience FOMO (Figure 5).

Discussion

In summary, this study provides findings that are important for consumer research and theory and for marketing practice. In the following, we will discuss findings that

Table 2. Regression analyses with attitude toward the product as dependent variable stratified by condition.

| Predictors | Control | | | | Instagram content priming | | | |
|---|-----------|----------------|----------|------|---------------------------|----------------|----------|------|
| | Estimates | CI | p-values | VIF | Estimates | CI | p-values | VIF |
| (Intercept) | 0.03 | [-0.16, -0.21] | .78 | | -0.09 | [-0.25, -0.07] | .29 | |
| Main effects | | | | | | | | |
| Proneness to experience FOMO | 0.05 | [-0.04, -0.14] | .25 | 1.11 | 0.09 | [0.01, -0.17] | .02 | 1.18 |
| Active Instagram participation | 0.14 | [0.06, -0.23] | <.01 | 1.08 | 0.17 | [0.09, -0.25] | <.01 | 1.12 |
| Control variables | | | | | | | | |
| Attitude popular products | 0.21 | [0.11, -0.30] | <.01 | 1.27 | 0.07 | [-0.01, -0.15] | .11 | 1.29 |
| Online shopping experience | -0.06 | [-0.16, -0.03] | .18 | 1.19 | -0.01 | [-0.09, -0.07] | .78 | 1.19 |
| Store familiarity | 0.26 | [0.18, -0.35] | <.01 | 1.12 | 0.29 | [0.21, -0.37] | <.01 | 1.11 |
| Product dummy variables | | | | | | | | |
| Monstera | -0.22 | [-0.46, -0.02] | .08 | 1.70 | 0.16 | [-0.05, -0.38] | .13 | 1.72 |
| Basil | 0.07 | [-0.17, -0.31] | .55 | 1.68 | 0.36 | [0.15, -0.57] | <.01 | 1.69 |
| Artsy wall clock | -0.33 | [-0.60, -0.07] | .02 | 1.49 | -0.06 | [-0.28, -0.16] | .60 | 1.61 |
| Interaction effects | | | | | | | | |
| Proneness FOMO × active participation | -0.01 | [-0.10, -0.07] | .77 | 1.02 | 0.08 | [0.01, -0.15] | .02 | 1.04 |
| Observations | 487 | | | | 508 | | | |
| R ² /R ² adjusted | .19/.17 | | | | .24/.22 | | | |

CI: confidence interval; FOMO: Fear of Missing Out; VIF: Variance Inflation Factors.

All independent variables were centered around the mean and standardized before submitting data to regression analyses; product dummy variables have “basic wall clocks” as baseline comparison.

addressed our research question of how FOMO and the degree of active participation on Instagram interact to affect the attitude formation process of products online after exposure to these products on Instagram. First, we provide additional evidence that exposure to social media content seems to act like a heuristic cue, which results in differences in product evaluations; we, thereby, replicate early findings in the mere exposure literature. Second, we extend research in FOMO literature by providing support for the notion that proneness to experience FOMO and the degree of active Instagram participation interact to differently influence product evaluations (H1a and H1b). The connection between FOMO and social media has received wide attention in prior literature, specifically with respect to user well-being and life satisfaction (e.g. Reer et al., 2019). However, although some prior research (Hodkinson, 2019) suggested high cognitive demand of the FOMO experience in a marketing context, no prior research to date has investigated the link

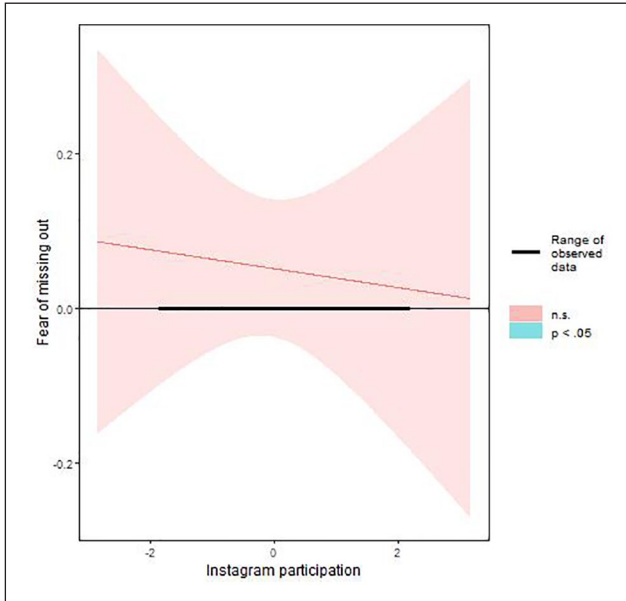


Figure 4. Results of Johnson–Neyman technique for participants in control condition.

between proneness to experience FOMO, social media content, and the attitude formation process. In this study, we address this gap and provide first evidence that consumers' proneness to experience FOMO and the degree of active participation on a respective social media platform interactively affect outcomes important to evaluative judgments.

Content on social media

We found that consumers who were exposed to social media content prior to evaluating products in online shops evaluated these products more favorably than consumers who were not exposed. Thus, our findings confirm prior studies, which indicated that social media content might act as a priming mechanism and might affect outcomes that are relevant to consumer behavior, such as brand choice (Humphrey, 2017). The mere exposure effect found in our study is also in line with information processing literature which states that consumers who are more often exposed to products have an easier and more positive information processing experience; so-called processing fluency (Schwarz, 2004). This ultimately leads to more positive product evaluations (Zajonc, 1968). These findings have important implications for theory and practice. For consumer research theory, our findings show that mere exposure enables consumers to process information more spontaneously and favorably. When evaluating products online, consumers rely on heuristic cues (e.g. seeing the product on Instagram) and the pleasantness of their processing experience, as proposed by literature in processing fluency (Buechel and Townsend, 2018). This is further demonstrated by the positive effect store familiarity, as an additional heuristic cue, had on the attitude formation process. Prior research found

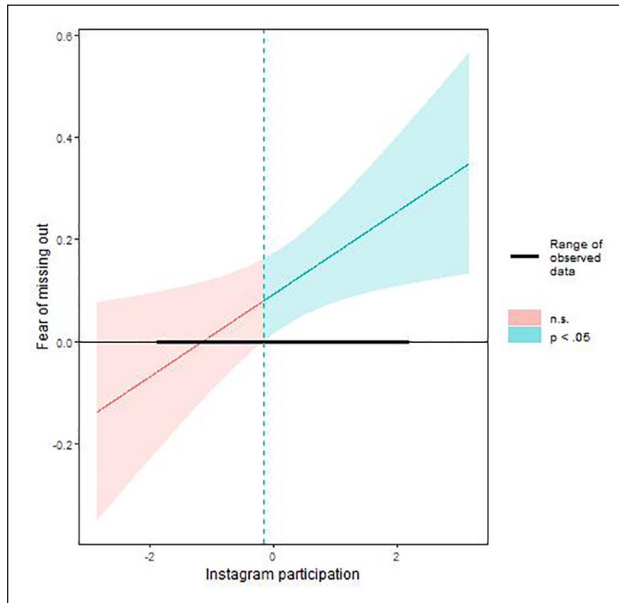


Figure 5. Results of Johnson–Neyman technique for participants in Instagram condition.

that stimuli that are perceived as familiar are easier to process and, therefore, liked more (Whittlesea, 1993). However, recent research that proposed a Salience Theory of Mere Exposure argues for salience of stimuli (instead of perceived familiarity) that actually drives the processing experience and consequent effects on the attitude formation process (Mrkva and Van Boven, 2020). Findings of this research call for caution in using social media marketing, because we find important boundary conditions under which users process available information heuristically versus more deliberately.

FOMO, Instagram participation, and the exposure-attitude relationship

In this study, we replicated prior research on exposure. We also extended findings by providing evidence for important boundary conditions, showing that product evaluations depend on individual differences, such as proneness to experience FOMO and degree of participation within the social media platform. That is, although it appears that social media content might be used as heuristic cue leading to more favorable product evaluations, consumers proneness to experience FOMO might cause users to process available information more carefully. Users who are more prone to experience FOMO might be more motivated to more deliberately process available information. Our findings indicate that when they do so, favorability of accessible attitudes is dependent on whether these users are highly active (versus passive) users of the platform. According to prior research, highly active (vs highly passive) users make different decisions online and with respect to social media content (Ruggiero, 2000; Sundar, 1998). In this study, we provide evidence that the degree of active participation on

social media also affects the attitude formation process differentially when users are motivated to process available information. The perceptual differences help cluster individuals in two consumer groups. Specifically, when accounting for their proneness to experience FOMO, we show that active Instagram users who are more (vs less) prone to experience FOMO have more favorable attitudes toward the product after being exposed to social media content. The opposite was found for passive Instagram users who were more (vs less) prone to experience FOMO.

These differences might be explained by mental connections individuals form during the processing experience. Additional post hoc linear regression analyses showed that higher (vs lower) levels of active Instagram participation were associated with more positive attitudes toward the platform ($\beta = .38, p < .01$) and more favorable attitudes toward popular products ($\beta = .08, p = .02$). We argue that these differences in perceptions about the platform and general popularity cues might be underlying drivers for our findings pertaining to FOMO. That is, higher levels of proneness to experience FOMO lead to more deliberate judgments and the retrieval of more information when evaluating products. However, passive Instagram users hold less favorable attitudes about social media (as compared to active users). Thus, these more deliberate judgments of the attitude object are more negative because passive users might misattribute these less favorable attitudes toward Instagram to the product (Ewoldsen et al., 2015). By contrast, highly active users, who have a more favorable attitude toward Instagram, will engage in more deliberate judgments when they are more prone to experience FOMO. Positive attitudes toward the platform might aid the formation of accessible positive attitudes toward the product after mere exposure by providing a positive heuristic cue during evaluation (Roskos-Ewoldsen and Fazio, 1997; Schwarz, 2004). These findings also align with feelings-as-information theory (Schwarz, 2011), which states that the feelings individuals experience in the moment of processing information have an informative effect on attitude formation. This research addressed a gap by showing that users' proneness to experience FOMO can be a factor motivating individuals to process available information more deliberately.

Product type effects on attitudes

Our findings indicate product type effects on attitude, such that there were significant differences between basic (vs artsy) wall clocks and basil plants. Basil plants were perceived more favorably, and artsy wall clocks were perceived less favorably. House plants (i.e. basil house plants) could be processed more easily because they are generally perceived as more hedonic (based on the product type "house plant" vs "wall clock") and familiar. Because basil house plants might be used for cooking as well as decoration, individuals could have been exposed more often to them prior to the experiment and therefore process more familiar stimuli more fluently than less familiar stimuli; this results in a more hedonic processing experience and ultimately more liking of the attitude object (Reber et al., 2004). However, while we speculate that these findings might be explained by processing fluency, we did not measure product familiarity or fluency.

Managerial and theoretical implications

This research contributes to theory and practice by suggesting that users' proneness to experience FOMO differentially affects product perceptions, depending on consumers' degree of active social media (i.e. Instagram) participation. Our findings were in line with the basic premises of the MODE model. That is, we showed that the opportunity to account for heuristic cues (i.e. Instagram content) led to differences in product judgments and consequently to more favorable attitudes. In line with H1a, we showed more favorable product attitudes for users who made more favorable connections (active users) to the context (social media) in which they saw the product prior to its evaluation. Specifically, as the users had more motivation to process information (i.e. higher proneness to experience FOMO). In line with H1b, we showed that users who made more negative connections to the exposure-context (passive users) evaluated the product less favorably with high (vs low) motivation to process (i.e. higher proneness to experience FOMO). All these findings are in line with the MODE model, which suggests that users will judge attitude objects more deliberately when having the opportunity (being primed) as well as motivation (proneness to experience FOMO as motivation) to do so.

This is of importance when developing marketing strategies that utilize FOMO appeals and defining target audiences for online marketing strategies. FOMO appeals have become more prominent in recent years as exemplified by the failed FYRE music festival (Talbot, 2019). That is, the FYRE festival used aggressive social media marketing strategies to promote an exclusive music festival, which ultimately was a miserable failure due to poor management and deceptive messages. However, up until the festival, these strategies of suggesting an exclusive and once-in-a-lifetime experience were based on FOMO appeals. Other brands like Supreme or Anti-Social Social Club utilize FOMO appeals by restricting their product supply and heavily advertising new product launches on social media. Our research shows that these strategies might lead to negative product and brand evaluations for passive social media users. When targeting social media users, our results suggest that marketers need to be mindful of their audience. In that, passive users might form negative product attitudes if they encounter these products on Instagram before shopping. If prior exposure leads to negative product attitudes for passive social media users, then social media platforms like Instagram might find that this exposure has a negative impact on sales. This is particularly problematic considering that more users of social media platforms participate passively as compared to actively (Gerson et al., 2017). We conclude that standardized marketing strategies that do not differentiate between target audiences are not advisable. Marketers need to be cognizant of the audience's social media participation habits when designing social media content and marketing campaigns. For example, for active users, social media marketing strategies that are interactive in nature might be more suitable when marketing products through Instagram. Some brands navigate their online presence in a sphere with highly engaged and vocal social media users (e.g. Gen Z). Our findings imply that these highly active consumers are more likely to form positive product attitudes under situations with more aggressive brand strategies. These strategies would allow for active users to engage with the brand and product, which ultimately provides product exposure and therefore fosters more positive attitudes toward the product.

Limitations and future research

There are several limitations that need to be addressed by future research to gain a more nuanced understanding of the effects of Instagram content on product and brand attitudes and purchase intention. First, in this study, we focused on 18- to 35-year-old Instagram users. Although this age cohort is the largest using the platform to date, future research should examine possible differences in younger and older users. In addition, a majority of participants in our sample was female and future studies should aim for a gender-balanced sample. Furthermore, Instagram is not the only medium or social media platform that allows for repeated product exposure to consumers. Future research should investigate whether our results are Instagram specific or whether we would find similar results across other social media platforms. Our online survey design might lack ecological validity. We only exposed participants to a screenshot of an anonymized picture on Instagram; however, results might be different when individuals see these pictures on their own Instagram feed or when holding their own smartphone device. Future research should design studies that allow for more ecological validity and manipulate the source of the Instagram content. This research only provides preliminary findings of possible effects. In this study, we might have been overpowered to detect the proposed three-way interaction, which could have led to overestimation of small effects. Therefore, future pre-registered studies should further manipulate users' state-FOMO instead of merely measuring their proneness to experience FOMO to gain a more detailed understanding of the processes that affect users' motivation to process available information. In addition, our study did not use markers or heuristics of the source of the Instagram content. That is, by blinding the source (e.g. user- vs firm-generated content), we examined main effects of exposure. However, future research should investigate whether there are differences in product perception when posts are created by close friends, general users, product mavens, influencers, and general firm-generated content. Although we did not account for salience of the product and therefore cannot confirm the Salience Theory of Mere Exposure (Mrkva and Van Boven, 2020), our results are in line with the familiarity hypothesis. Future research could employ eye-tracking methods to account for the familiar (or more salient) product picture in the online shop. Therefore, our study findings open possibilities of future research, which should further explore the differences in modes of processing (deliberate vs spontaneous) for different product types to fully understand how consumers process online information and what role social media is playing.

Conclusion

This research investigated attitude activation and judgments of online products. Specifically, using a large sample we replicated prior studies in mere exposure research and extended these findings by suggesting boundary conditions and examining the importance of individual differences in consumers' degree of active social media (i.e. Instagram) participation and their proneness to experience FOMO. We investigated these questions by consulting literature in attitude accessibility and activation. The current research provided evidence for positive effects of social media content on

product evaluations in online shops. However, these positive associations were qualified by consumers' proneness to experience FOMO and the degree of their active participation within the social media platform of interest (i.e. Instagram). Therefore, we not only provide additional evidence that exposure to social media content seems to act like a heuristic cue, but also extends research in FOMO literature by providing support for the notion that proneness to experience FOMO acts as a motivational driver to process available information.

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Supplemental material

Supplemental material of this article including stimuli, participant retention, and additional tables and figures can be found in OSF: <http://www.doi.org/10.17605/OSF.IO/ZJCF7>.

References

- Abel JP, Buff CL and Burr SA (2016) Social media and the fear of missing out: scale development and assessment. *Journal of Business & Economics Research* 14(1): 33–34.
- Alhabash S, McAlister AR, Kim W, et al. (2016) Saw It on Facebook, Drank It at the Bar! Effects of exposure to Facebook alcohol ads on alcohol-related behaviors. *Journal of Interactive Advertising* 16(1): 44–58.
- Alt D (2018) Students' wellbeing, fear of missing out, and social media engagement for leisure in higher education learning environments. *Current Psychology* 37(1): 128–138.
- Amin S (2019) *Instagram's Ad Revenue More Than Doubled in 2018*. Available at: <https://articles2.marketrealist.com/2019/01/instagrams-ad-revenue-more-than-doubled-in-2018/#> (accessed 23 February 2021).
- Benedek J and Miner T (2002) Measuring desirability: new methods for evaluating desirability in a usability lab setting. Usability Professionals' Association Conference. Available at: https://elearn.uni-sofia.bg/pluginfile.php/55103/mod_resource/content/0/Resources/Systems_Evaluation/DesirabilityToolkit.doc (accessed 23 February 2021).
- Berger IE and Mitchell AA (1989) The effect of advertising on attitude accessibility, attitude confidence, and the attitude-behavior relationship. *Journal of Consumer Research* 16(3): 269–279. Available at: <https://www.jstor.org/stable/2489508> (accessed 23 February 2021).
- Bolton RN (2013) Understanding generation Y and their use of social media: a review and research agenda. *Journal of Service Management* 24(3): 245–267.

- Boone L (2018) Must Reads: They don't own homes. They don't have kids. Why millennials are plant addicts. *Los Angeles Times*, 24 July 24. Available at: <https://www.latimes.com/home/la-hm-millennials-plant-parents-20180724-story.html> (accessed 23 February, 2021).
- Bright LF and Logan K (2018) Is my fear of missing out (FOMO) causing fatigue? Advertising, social media fatigue, and the implications for consumers and brands. *Internet Research* 28(5): 1213–1227.
- Buechel EC and Townsend C (2018) Buying beauty for the long run: (Mis)predicting liking of product aesthetics. *Journal of Consumer Research* 45(2): 275–297.
- Burke M, Kraut R and Marlow C (2011) Social capital on Facebook: differentiating uses and users. In: *Proceedings of the SIGCHI Conference on human factors in computing systems, Vancouver, BC, Canada, 7–12 May*, pp. 571–580. New York: Association for Computing Machinery.
- Burke M, Marlow C and Lento T (2010) Social network activity and social well-being. In: *Proceedings of the SIGCHI conference on human factors in computing systems, Atlanta, GA, 10–15 April*, pp. 1909–1912. New York: Association for Computing Machinery.
- Burton S, Lichtenstein DR, Netemeyer RG, et al. (1998) A scale for measuring attitude toward private label products and an examination of its psychological and behavioral correlates. *Journal of the Academy of Marketing Science* 26(4): 293.
- Clement J (2020) *Distribution of Instagram Users in the United States as of November 2020*, by Age Group. Available at: <https://www.statista.com/statistics/398166/us-instagram-user-age-distribution/> (accessed 23 February 2021).
- Elhai JD, Levine JC, Dvorak RD, et al. (2016) Fear of missing out, need for touch, anxiety and depression are related to problematic smartphone use. *Computers in Human Behavior* 63: 509–516.
- Erkan I and Evans C (2016) The influence of eWOM in social media on consumers' purchase intentions: An extended approach to information adoption. *Computers in Human Behavior* 61: 47–55.
- Ewoldsen DR, Rhodes N and Fazio RH (2015) The MODE model and its implications for studying the media. *Media Psychology* 18(3): 312–337.
- Fazio RH (1990) Multiple processes by which attitudes guide behavior: the mode model as an integrative framework. In: Zanna MP (ed.) *Advances in Experimental Social Psychology*. Cambridge, MA: Academic Press, pp. 75–109.
- Fazio RH and Olson MA (2014) The MODE model: attitude-behavior processes as a function of motivation and opportunity. In: Sherman JW, Gawronski B and Trope Y (eds) *Dual-process theories of the social mind*. New York: The Guilford Press, pp. 155–171.
- Fazio RH and Roskos-Ewoldsen DR (2005) Acting as we feel: when and how attitudes guide behavior. In: Brock TC and Green MC (eds) *Persuasion: Psychological Insights and Perspectives*. 2nd ed. Thousand Oaks, CA: SAGE, pp. 41–62.
- Fornell C and Larcker DF (1981) Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18(1): 39–50.
- Gerson J, Plagnol AC and Corr PJ (2017) Passive and active Facebook use measure (PAUM): validation and relationship to the reinforcement sensitivity theory. *Personality and Individual Differences* 117: 81–90.
- Good MC and Hyman MR (2020) “Fear of missing out”: antecedents and influence on purchase likelihood. *Journal of Marketing Theory and Practice* 28(3): 330–341.
- Hayran C, Anik L and 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.

- Humphrey WF (2017) Brand choice via incidental social media exposure. *Journal of Research in Interactive Marketing* 11(2): 110–130.
- Hütter M and Sweldens S (2018) Dissociating controllable and uncontrollable effects of affective stimuli on attitudes and consumption. *Journal of Consumer Research* 45(2): 320–349.
- Jupowicz-Ginalska A (2019) FOMO, brands, and consumers—about the reactions of polish internet users to the activities of brands in social media (Based on CAWI Representative Research). *Social Communication* 2: 69–84.
- Kang I, Son J and Koo J (2019) Evaluation of culturally symbolic brand: the role of “fear of missing out” phenomenon. *Journal of International Consumer Marketing* 31(3): 270–286.
- Kent RJ and Allen CT (1994) Competitive interference effects in consumer memory for advertising: the role of brand familiarity. *Journal of Marketing* 58(3): 97–105.
- Khalifa M and Liu V (2007) Online consumer retention: contingent effects of online shopping habit and online shopping experience. *European Journal of Information Systems* 16(6): 780–792.
- Kim M and Lennon S (2008) The effects of visual and verbal information on attitudes and purchase intentions in internet shopping. *Psychology & Marketing* 25(2): 146–178.
- Krasnova H, Widjaja T, Buxmann P, et al. (2015) Research note—why following friends can hurt you: an exploratory investigation of the effects of envy on social networking sites among college-age users. *Information Systems Research* 26(3): 585–605.
- Krishna A (2016) A clearer spotlight on spotlight: Understanding, conducting and reporting. *Journal of Consumer Psychology* 26(3): 315–324.
- Lai C, Altavilla D, Ronconi A, et al. (2016) Fear of missing out (FOMO) is associated with activation of the right middle temporal gyrus during inclusion social cue. *Computers in Human Behavior* 61: 516–521.
- Lamberton C and Stephen AT (2016) A Thematic exploration of digital, social media, and mobile marketing: research evolution from 2000 to 2015 and an agenda for future inquiry. *Journal of Marketing* 80(6): 146–172.
- Lee AY and Labroo AA (2004) The effect of conceptual and perceptual fluency on brand evaluation. *Journal of Marketing Research* 41(2): 151–165.
- Madden TJ, Ellen PS and Ajzen I (1992) A comparison of the theory of planned behavior and the theory of reasoned action. *Personality and Social Psychology Bulletin* 18(1): 3–9.
- Matook S, Cummings J and Bala H (2015) Are You Feeling Lonely? The Impact of Relationship Characteristics and Online Social Network Features on Loneliness. *Journal of Management Information Systems* 31(4): 278–310.
- Mrkva K and Van Boven L (2020) Salience theory of mere exposure: Relative exposure increases liking, extremity, and emotional intensity. *Journal of Personality and Social Psychology* 118(6): 1118–1145.
- Neumann D (2020) Fear of missing out. In: van den Bulck J (ed.) *The International Encyclopedia of Media Psychology*. New York: Wiley-Blackwell.
- Oberst U, Wegmann E, Stodt B, et al. (2017) Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out. *Journal of Adolescence* 55: 51–60.
- Petty RE, Wegener DT and Fabrigar LR (1997) Attitudes and attitude change. *Annual Review of Psychology* 48: 609–647.
- Pew Research Center (2019) *Social Media Fact Sheet*. Available at: <https://www.pewresearch.org/internet/fact-sheet/social-media/> (accessed 23 February 2021).
- Przybylski AK, Murayama K, DeHaan CR, et al. (2013) Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior* 29(4): 1841–1848.
- Reber R, Schwarz N and Winkielman P (2004) Processing fluency and aesthetic pleasure: Is beauty in the perceiver’s processing experience? *Personality & Social Psychology Review (Lawrence Erlbaum Associates)* 8(4): 364–382.

- Reer F, Tang WY and Quandt T (2019) Psychosocial well-being and social media engagement: The mediating roles of social comparison orientation and fear of missing out. *New Media & Society* 21(7): 1486–1505.
- Rhodes N and Ewoldsen DR (2009) Attitude and norm accessibility and cigarette smoking. *Journal of Applied Social Psychology* 39(10): 2355–2372.
- Roskos-Ewoldsen DR and Fazio RH (1997) The role of belief accessibility in attitude formation. *The Southern Communication Journal* 62(2): 107–116.
- Ruggiero TE (2000) Uses and gratifications theory in the 21st century. *Mass Communication and Society* 3(1): 3–37.
- Ryan RM and Deci EL (2017) *Self-determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*. New York: Guilford Press.
- Schivinski B and Dabrowski D (2016) The effect of social media communication on consumer perceptions of brands. *Journal of Marketing Communications* 22(2): 189–214.
- Schlosser AE (2005) Posting versus lurking: communicating in a multiple audience context. *Journal of Consumer Research* 32(2): 260–265.
- Schwarz N (2004) Metacognitive experiences in consumer judgment and decision making. *Journal of Consumer Psychology* 14(4): 332–348.
- Schwarz N (2011) *Feelings-as-information Theory*. Thousand Oaks, CA: SAGE.
- Shao G (2009) Understanding the appeal of user-generated media: a uses and gratification perspective. *Internet Research* 19(1): 7–25.
- Sundar SS (1998) Effect of source attribution on perception of online news stories. *Journalism and Mass Communication Quarterly* 75(1): 55–68.
- Talbot K (2019) *What the Fyre Festival Documentaries Reveal about Millennials*. Available at: <https://www.forbes.com/sites/katetalbot/2019/01/21/what-the-fyre-festival-documentaries-revealed-about-millennials/> (accessed 23 February 2021).
- Tulving E and Schacter DL (1990) Priming and human memory systems. *Science* 247(4940): 301–306.
- Verduyn P, Ybarra O, Résibois M, et al. (2017) Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues and Policy Review* 11(1): 274–302.
- Whittlesea BWA (1993) Illusions of familiarity. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 19(6): 1235–1253.
- Wicker AW (1969) Attitudes versus actions: the relationship of verbal and overt behavioral responses to attitude objects. *Journal of Social Issues* 25(4): 41–78.
- Zajonc RB (1968) Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology* 9(2 Pt. 2): 1–27.

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