



The dark side of brands: Exploring fear of missing out, obsessive brand passion, and compulsive buying

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ARTICLE INFO

Keywords:

Fear of missing out
Dual theory of brand passion
Harmonious passion
Obsessive passion
Impulsive buying
Obsessive-compulsive buying

ABSTRACT

Understanding the roots of compulsive buying is critical because it often leads to negative outcomes like depression, social anxiety, and debt. The aim of this study is to investigate the influence of the fear of missing out and brand passion on compulsive brand buying. We collect data from 511 consumers and use partial least squares for the data analysis. The study supports the dual theory of passion, which delineates brand passion into harmonious and obsessive forms, with the latter representing a negative aspect. The findings strongly affirm the relationship between the fear of missing out and both types of brand passion. Obsessive passion emerges as a more significant predictor of compulsive buying. Moreover, the study unveils that consumers' age moderates the relationship between the fear of missing out and obsessive passion. We recommend marketing strategies to facilitate consumers' passions driven by the fear of missing out, to encourage and nurture harmonious passion, to foster obsessive passion in a more responsible manner, and to focus on brand-passion-driven marketing towards younger consumers.

1. Introduction

Firms exploit the fear of missing out, a sensation of exclusion from enjoyable activities, as a marketing strategy through limited-time discounts. Social media platforms like Instagram and TikTok exacerbate the fear of missing out by showcasing idealised customer experiences and time-limited purchasing (Milewich, 2023; Hussain et al., 2023). For example, the demand for concert tickets, particularly for Taylor Swift's and Beyonce's 2023 tours, generated intense fear of missing out, further amplified by fans' social media posts featuring outfits and anticipated songs (Milewich, 2023). In recent years, the literature has also paid significant attention to the fear of missing out due to its influence on addictive social media behaviours (Brailovskaia et al., 2023; Rozgonjuk et al., 2020; Zhang et al., 2020). Hence, understanding the fear of missing out is crucial for mitigating consumers' anxiety, vulnerability, and uncontrollable behaviour that stem from the desire to conform to trends (Hayran & Anik, 2021; Zhang et al., 2020; Abel et al., 2016).

Using social comparison theory as a framework (Festinger, 1954), this study explores the role of the fear of missing out as a precursor to brand passion and compulsive brand buying. Previous research

demonstrates that the fear of missing out plays a central role in driving impulsive and compulsive buying behaviours (e.g., Chetoui & El Bouzidi, 2023; Maccarrone-Eaglen & Schofield, 2023; Cengiz & Şenel, 2024). The fear of missing out can have detrimental effects on an individual's psychological well-being, social relationships, and financial stability (Elhai et al., 2018). Therefore, understanding the mechanisms through which the fear of missing out leads to compulsive buying is essential for developing effective strategies to mitigate these effects. Brand passion, on the other hand, refers to an individual's deep emotional connection with a brand, encompassing elements such as valuation, identity integration, and the allocation of resources over time (Swimberghe et al., 2014). Social comparison theory is particularly well-suited for explaining the relationship between the fear of missing out and brand passion, as the fear of missing out often arises from a perceived sense of deficiency through social comparison (Hussain et al., 2023; Abel et al., 2016). The dual theory of passion also distinguishes between harmonious and obsessive passion, both of which are significant motivators (Vallerand et al., 2003). However, they differ in their social identity integration (Mageau et al., 2009; Lam et al., 2010; Mageau et al., 2011; Schellenberg et al., 2016). Despite their

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<https://doi.org/10.1016/j.jbusres.2024.114990>

Received 10 January 2024; Received in revised form 11 September 2024; Accepted 22 September 2024

Available online 28 September 2024

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importance, research on the dual nature of brand passion is scarce (Swimberghe et al., 2014), with previous studies overlooking this aspect (Japutra et al., 2022). Hence, this research addresses this gap by exploring brand passion as a dual construct, responding to the need to understand the factors that strengthen or weaken it (Gilal et al., 2023).

Existing research suggests that both the fear of missing out and brand passion can lead to various favourable outcomes. Studies show that these factors can enhance well-being (Oropesa, 1995; Roberts and David, 2020), providing a strong rationale for examining them together in this research. Research finds that the fear of missing out, in particular, fosters greater social connection (Roberts and David, 2020) and motivates individuals to seek information, social inclusion, and provide alumni donations (Harrison-Walker & Mead, 2024). Research also links brand passion to intrinsic motivation (Wang & Tsai, 2017) and engagement in brand communities (Santos et al., 2022). However, recent findings suggest that brand passion may also lead to adverse consequences (Japutra et al., 2022), such as compulsive buying and trash talking, without clarifying which type of brand passion drives these negative behaviours, overlooking its dual nature. The literature describes this dichotomy as a ‘bittersweet’ relationship within branding, as it can lead to both favourable outcomes and detrimental effects (Honora, Memar Zadeh & Haggerty, 2024); a concept particularly relevant to brand passion. The fear of missing out and brand passion can intensify compulsive buying, which is a significant societal concern (Okazaki et al., 2021). Research indicates that consumers experiencing the fear of missing out tend to be highly brand-loyal and engage actively with brands, often through following, sharing, and commenting on social media platforms (Globalwebindex, 2018). This increased interaction, exposure, and interest in brands can lead to the development of brand passion. This can pose risks to consumers, as it has the potential to escalate consumer debt in more extreme cases. A US study supports this, revealing that nearly half of millennials incur debt to keep up with their peers, mostly due to the fear of missing out on unique experiences or to feeling like an outsider (Ward, 2019). Such social pressures contribute significantly to compulsive buying (Japutra & Song, 2020; Kyrios et al., 2020; Japutra et al., 2022), warranting further investigation into its implications in order to help protect consumers by regulating their purchasing. Consequently, this study aims to explore how the dual theory of brand passion influences compulsive buying, as well as how both types of passion mediate the relationship between the fear of missing out and compulsive buying. Unlike previous research focusing on positive mediators, this study emphasises the negative aspects, which responds to the call by Japutra et al. (2018) by shedding light on the dark side of brand passion. Furthermore, it examines their impact on impulsive and obsessive-compulsive buying, expanding the scope of inquiry beyond that of previous studies (Bai et al., 2021; Hussain et al., 2023).

The current study also investigates the moderating influence of age on the associations between the fear of missing out and brand passion. Previous research underscores the significance of age in understanding various consumer behaviours (Rather & Hollebeek, 2021). Loureiro and Roschk (2014) highlight age as a critical moderator in the relationship between positive emotions and loyalty, indicating that emotions guide loyalty among young individuals. While understanding the direct impact of the fear of missing out on brand passion is crucial, it is equally important to explore age-related differences among consumers (Japutra et al., 2022). Previous research indicates that age influences brand passion (e.g., Wang & Yang, 2008; Gilal et al., 2020; Japutra et al., 2022), but these studies do not examine brand passion through the lens of the dual theory of passion, as this research intends to do. Hence, we posit that age plays a pivotal role in shaping the connections between the fear of missing out and both types of brand passion. Accordingly, this paper commences with a review of the existing literature on the fear of missing out, brand passion, and compulsive buying, followed by an explanation of the survey methodology. Subsequently, the results are presented and discussed in light of the existing literature.

2. Theoretical background

2.1. Social comparison theory

Social comparison theory explains the motivations behind compulsive buying, as individuals frequently engage in comparisons with others. According to social comparison theory, individuals evaluate themselves by comparing their possessions and purchases with those of others (Festinger, 1954). By acquiring new and desirable possessions, individuals can experience a sense of accomplishment and an enhancement of their self-esteem, especially when they perceive themselves as superior to their peers. When individuals cannot rely on objective or non-social criteria for self-assessment, they turn to social comparisons to evaluate their opinions and abilities. This process, which involves self-reflection and comparative thought, contributes to the acquisition of self-knowledge (Csikszentmihalyi & Figurski, 1982; Mussweiler & Ruter, 2003). Naturally, individuals tend to compare themselves with significant others and peers who share similar outlooks and values (Lee & Watkins, 2016). However, they can also engage in upward social comparisons with their idols, such as politicians, movie stars, and singers, or make downward social comparisons with individuals they perceive as slightly less fortunate or accomplished than themselves (Schiffman & Kanuk, 2004). This may result in them purchasing items compulsively (i.e. brands) to help raise their social status and make them feel closer to their idols, or even to make them feel superior to those less fortunate than them.

2.2. Fear of missing out

Przybylski et al. (2013, p. 1841) define the fear of missing out as “a pervasive apprehension that others might be having rewarding experiences from which one is absent”. The underlying premise is that consumers feel psychological anxiety when separated from or excluded by other members of society. Hence, they feel a strong impulse to imitate and follow the behaviour of others to resolve that anxiety (Elhai et al., 2016) and fit in. This helps them to remain connected to others. The fear of missing out is related to two psychological traits: consumers’ desire to belong (i.e. motivated by their need for interpersonal attachments) (Beyens et al., 2016); and anxiety about isolation (i.e. the fear of being isolated from the mainstream group) (Przybylski et al., 2013; Alt, 2015). This partly explains why marketers use different strategies linked to perceived scarcity or perceptions of uniqueness (e.g. exclusivity, ‘never to be repeated prices’) to elicit feelings of missing out (Hodkinson, 2019).

2.3. Brand passion

Vallerand et al. (2003, p. 757) define passion as “a strong inclination toward an activity that people like, find important and in which they spend time and energy on a regular basis”. The dual theory of passion delineates two forms: harmonious and obsessive (Mageau et al., 2009). While both types are esteemed and drive individuals to invest time and energy, they differ in their impact on self-related processes (Mageau et al., 2011; Schellenberg et al., 2016). Harmonious passion fosters self-compassion, whereas obsessive passion triggers self-critical responses (Schellenberg et al., 2016). Moreover, they vary in how they integrate into one’s identity (Lam et al., 2010; Vallerand et al., 2003).

Harmonious passion motivates individuals to engage in controllable activities aligned with their values and life aspects, driven by purposefulness, pleasure, and enjoyment (Vallerand, 2010, 2015). In a brand context, it reflects consumers’ independent internalization of the brand into their identity, without external pressure (Swimberghe et al., 2014). Conversely, obsessive passion compels individuals to engage in uncontrollable activities due to external or internal pressures (Vallerand, 2010, 2015). In the brand context, it manifests as a desire that social acceptance, self-esteem, or uncontrolled excitement drives, and it

dominates an individual's identity and diverts resources from other life domains (Swimberghe et al., 2014; Séguin-Levesque et al., 2003).

2.4. Compulsive buying

Compulsive buying entails repetitive, uncontrollable purchasing behaviours (Christenson et al., 1994; Ridgway et al., 2008), often leading to distress and various repercussions (McElroy et al., 1994; Kyrios et al., 2018; Müller et al., 2019). Arousal and goal-oriented behaviour drive compulsive buying (Roberts & Priog, 2004), which provides temporary relief from negative emotions, though these emotions resurface post-purchase (Darrat et al., 2016; Miltenberger et al., 2003). Compulsive buyers exhibit excessive attachment to possessions, seeking security through purchases (Frost et al., 2007; Kyrios et al., 2020), often acquiring unnecessary items and returning items more often (Horváth & Adigüzel, 2018; Müller et al., 2019).

Feelings of anxiety, guilt, and sadness drive compulsive buying, and are temporarily assuaged by purchases (Christenson et al., 1994; O'Guinn & Faber, 1989), with buyers often experiencing low self-esteem and well-being pre-purchase (Faber & Christenson, 1996; Dittmar et al., 2014; Harnish et al., 2018). Compulsive buying manifests in two forms: impulsive buying and obsessive-compulsive buying (Ridgway et al., 2008; Maccarrone-Eaglen & Schofield, 2017; Japutra et al., 2019). Impulsive buying occurs spontaneously, with irresistible motivations driving it (McElroy et al., 1994; Ridgway et al., 2008), while obsessive-compulsive buying involves obsessive thoughts leading to repetitive purchases to alleviate anxiety (Müller et al., 2015; Ridgway et al., 2008). Both impulsive buying and obsessive-compulsive buying are positively associated with brand attachment components: passion, prominence, and anxiety (Japutra et al., 2022).

3. Research model and hypotheses

3.1. Effects of the fear of missing out on brand passion

Based on the extant literature in the research areas of social comparison theory, the fear of missing out, and brand passion, we hold that consumers with harmonious brand passion will selectively notice the positive aspects of the lives and possessions of others that are aligned with their personal values and outlooks (Vallerand, 2010, 2015). This type of passion involves engaging in an activity because it is intrinsically enjoyable and aligned with one's values and identity. When the fear of missing out comes into play, it can sometimes act as a positive motivator or a gentle reminder for individuals driven by harmonious brand passion to stay connected with their passions and the communities that surround them. It may also prompt them to seek out opportunities for growth and development without overwhelming their sense of well-being. Hence, the fear of missing out will enable the consumers to restore their harmony by satisfying their personal desires (Miao & Mattila, 2013).

In contrast, obsessive brand passion is characterised by an uncontrollable urge to engage in an activity to validate one's self-esteem or social status. When the fear of missing out intersects with obsessive brand passion, it can exacerbate feelings of anxiety, depression, and compulsive behaviour (Elhai et al., 2016). It might influence those whom obsessive passion drives to constantly seek validation and reassurance through their activities. Their behaviour can take the form of upward social comparison, as they strive to attain the perceived standards their peers set, even if those standards do not align with their own interests or values. They feel compelled to follow the purchasing behaviours of others to enhance their self-esteem and help them overcome any internal, external, and social pressures (Swimberghe et al., 2014; Schellenberg et al., 2016). This serves as a means to help them feel less distressed (Schellenberg et al., 2013; Stoeber et al., 2011), and to gain a feeling of acceptance or self-worth (Deci & Ryan, 1987). However, this can lead to unhealthy behaviours such as overcommitting and compulsive buying. Thus, we hypothesise:

Hypothesis 1. *The fear of missing out has a positive influence on harmonious brand passion.*

Hypothesis 2. *The fear of missing out has a positive influence on obsessive brand passion.*

3.2. Effects of brand passion on impulsive buying

According to social comparison theory, compulsive buyers may believe that owning specific items will lead to increased social acceptance and visibility. Consequently, they engage in purchasing to secure greater forms of social approval (Dittmar et al., 1995; Dittmar, 2005a, 2005b; Festinger, 1954). Harmonious passion motivates consumers to freely engage in an activity without being pressured to do so. Harmonious passion drives consumers to engage in well-developed interests and talent-related activities, such as playing football or a musical instrument, that align harmoniously with other aspects of their lives (Vallerand et al., 2003; Vallerand, 2008). Harmonious brand passion may encourage consumers to make quick decisions and to engage in immediate purchases to satisfy their personal desires (Miao & Mattila, 2013). Therefore, harmonious brand passion is likely to result in impulsive buying.

Consumers with obsessive brand passion might engage in brand shopping because of the comparisons they make to the possessions and purchases of others. This external trigger is irresistible to them and beyond their control (McElroy et al., 1994; Ridgway et al., 2008). This pressure can lead to impulsive buying behaviours, with the fulfilment of their need for compulsion instead of enjoyment motivating them. Additionally, impulsive buying will help to alleviate the negative emotions associated with obsessive passion. However, this will only be temporary and will last only for the duration of the shopping activity. Consumers will be motivated to continuously engage in impulsive buying to try to overcome this cycle of negative emotions (Dittmar et al., 1995; Dittmar, 2005a, 2005b; Festinger, 1954).

Hypothesis 3a. *Harmonious brand passion has a positive influence on impulsive buying.*

Hypothesis 4a. *Obsessive brand passion has a positive influence on impulsive buying.*

3.3. Effects of brand passion on obsessive-compulsive buying

Passion is related to compulsive buying behaviour (Wang & Yang, 2008). More specifically, harmonious brand passion may have a positive influence on obsessive-compulsive buying because individuals will selectively notice the positive aspects of the lives and possessions of others and this will motivate them to engage in repeat purchases, but in a mindful and purposeful way, to help restore their harmony. Consumers may perceive this as being pleasurable and enjoyable (Vallerand, 2010, 2015), especially if it is in balance with other aspects of their lives (Vallerand, 2008). However, for an individual with obsessive brand passion, their obsessive-compulsive buying is driven by uncontrollable motivations (i.e. obsessive passion, the fear of missing out), the aim being to achieve the perceived standards set by others. They are concerned with social acceptance (Swimberghe et al., 2014) and they will have obsessive thoughts about this. They will struggle to control their overwhelming urge to shop, due to their lack of autonomy over their shopping behaviour (Dittmar et al., 1995; Dittmar, 2005a; Dittmar, 2005b; Festinger, 1954). Obsessive-compulsive buying is uncontrollable for them and will enable them to improve their self (Kasser, 2016), enhance their self-esteem, and express their identity (Japutra and Song, 2020). Thus, we hypothesise:

Hypothesis 3b. *Harmonious brand passion has a positive influence on obsessive-compulsive buying.*

Hypothesis 4b. *Obsessive brand passion has a positive influence on*

obsessive–compulsive buying.

3.4. Age as moderator

Tarka et al. (2022) find a link between age and obsessive–compulsive buying. This aligns with earlier studies suggesting that younger consumers tend to exhibit more compulsive buying behaviour (Dittmar, 2005a, 2005b; Adamczyk et al., 2020; Koran et al., 2006; Kyrios et al., 2020). Moreover, Japutra et al. (2022) and Gilal et al. (2020) discover connections between age and brand passion, as well as impulsive buying and obsessive–compulsive buying. They attribute this to the heightened passion younger consumer groups exhibit (Japutra et al., 2022). Younger consumers with strong brand passion often form deep attachments and show compulsive tendencies towards those brands, likely due to the significant time they invest in engaging with them (Wang & Yang, 2008). Curran et al. (2015) support this observation, finding a link between age and obsessive passion.

In their systematic review on brand passion, Gilal et al. (2023) suggest that certain factors, like consumer age, may influence the relationship between the marketing environment and brand passion. We propose that the fear of missing out falls within the scope of the marketing environment. Likewise, Okazaki et al. (2021), in their discussion on the dark side of brand engagement, differentiate between harmonious passion and obsessive passion, with personality as the moderator and technostress as the mediator. They note that the fear of missing out can influence technostress, which is more prevalent among young people. Younger individuals, who experience a greater fear of missing out, are more likely to engage intensely with brands to alleviate their fear of anxiety or the apprehension they experience when feeling left out of social events or experiences, whereas older individuals experience the fear of missing out to a lesser extent and engage with brands differently. Thus, we argue that age plays a crucial role in determining the strength of the relationship between the fear of missing out and brand passion.

Hypothesis 5a. Consumer age moderates the relationship between the fear of missing out and harmonious brand passion.

Hypothesis 5b. Consumer age moderates the relationship between the fear of missing out and obsessive brand passion.

3.5. Conceptual framework

We develop a conceptual framework, as illustrated in Fig. 1, based on social comparison theory, the fear of missing out, and brand passion. Previous research consistently highlights the connection between the

fear of missing out and compulsive buying. However, we contend that this relationship is more intricate than previously understood, and is rooted in complex psychological factors. People often experience the fear of missing out when trying to maintain a superior social standing within their peer group, which invokes the concept of social comparison. When individuals lack possessions that their peers possess, they may perceive themselves as falling behind and not fitting in, which can fuel their desire for certain brands. Initially, this passion may be harmonious, but because materialism and anxiety underpin it, it can evolve into an obsessive passion, ultimately leading to impulsive buying and obsessive–compulsive buying.

Therefore, our model suggests that the fear of missing out gives rise to harmonious (Hypothesis 1) and obsessive (Hypothesis 2) brand passion. Both types of passion predict impulsive buying (Hypothesis 3a and Hypothesis 4a) and obsessive–compulsive buying (Hypothesis 3b and Hypothesis 4b). Additionally, we argue that the connections between the fear of missing out, harmonious brand passion, and obsessive brand passion are moderated by age (Hypothesis 5a and Hypothesis 5b). Finally, we include gender, education, and income as the control variables.

4. Method

4.1. Measurement

We source all of the measures we employ in this study from prior research, as Table 1 details. We evaluate the fear of missing out through eight items based on the framework Good and Hyman (2020) establish. We gauge harmonious and obsessive brand passion using a total of 14 items we adopt from Vallerand et al. (2003). Furthermore, we assess impulsive buying and obsessive–compulsive buying based on three items each, following the approach Ridgway et al. (2008) outline. We capture respondents' perspectives using a seven-point Likert-type scale, ranging from 1 (strongly disagree) to 7 (strongly agree). These selected scales are well-established metrics that both earlier and contemporary studies widely utilise, owing to their demonstrated reliability and validity across diverse samples and contexts.

4.2. Sampling and data collection

We develop an online questionnaire to gather data. Before proceeding with the scaled questions, we introduce introductory warm-up questions to gauge respondents' familiarity with brands, specifically focusing on fashion brands. We choose fashion brands due to their

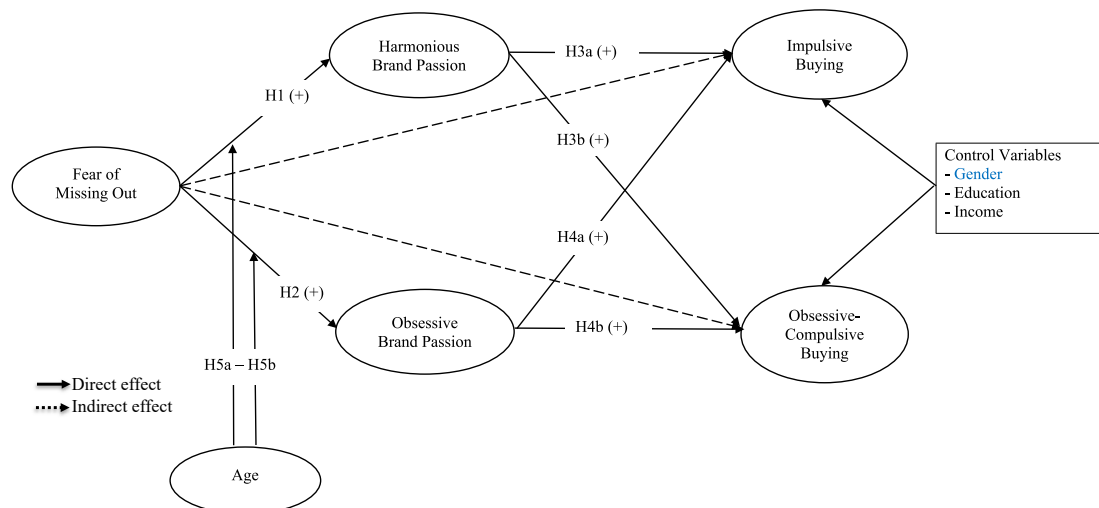


Fig. 1. Research model.

Table 1
Constructs and items.

Variable	Item	Factor Loading	Cronbach's Alpha	AVE
Fear of Missing Out	I will feel sorry later if I do not buy any items from the fashion brand.	0.78	0.93	0.67
	I will worry if I am missing items from the fashion brand.	0.80		
	I will worry if other people are having more rewarding things than me by wearing items from the fashion brand.	0.81		
	I feel concerned that other people are having more fun with items from the fashion brand while I am not.	0.78		
	I will feel left out of the trends if I do not have items from the fashion brand.	0.83		
	I will feel sorry that I did not experience items from the fashion brand.	0.87		
	I will feel anxious about not owning items from the fashion brand.	0.82		
	I will feel bothered that I missed an opportunity to wear those items from the fashion brand.	0.87		
	Fashion brand shopping allows me to live a variety of experiences.	0.86		
	The new things that I discover with fashion brand shopping allow me to appreciate it even more.	0.83		
Harmonious Brand Passion	Fashion brand shopping allows me to live memorable experiences.	0.86	0.92	0.64
	Fashion brand shopping reflects the qualities I like about myself.	0.82		
	Fashion brand shopping is in harmony with the other activities in my life.	0.78		
	Fashion brand shopping is a passion for me, that I still manage to control.	0.75		
	I am completely taken with fashion brand shopping.	0.79		
	I cannot live without fashion brand shopping.	0.69		
	The urge is so strong. I cannot stop myself from shopping fashion brands.	0.90		
	I have difficulty imagining my life without fashion brand shopping.	0.79		
	I am emotionally dependent on fashion brand shopping.	0.90		
	I have a tough time controlling my need to shop fashion brands.	0.92		
Obsessive Brand Passion	I have almost an obsessive feeling for fashion brand shopping.	0.91	0.93	0.76

Table 1 (continued)

Variable	Item	Factor Loading	Cronbach's Alpha	AVE
Impulsive Buying	My mood depends on me being able to shop fashion brands.	0.79	0.86	0.78
	I buy things I do not need.	0.84		
	I buy things I did not plan to buy.	0.90		
	I consider myself an impulse purchaser.	0.91		
Obsessive-Compulsive Buying	My wardrobe has unopened shopping bags in it.	0.68	0.79	0.70
	Others might consider me a 'shopaholic'.	0.91		
	Much of my life centres around buying things.	0.89		
Gender	1 = Male, 2 = Female			
Age	1 = 16–24, 2 = 25–34, 3 = 35–44, 4 = 45–54, 5 = 55–64, 6 = 65 and over			
Income	No income Less than £5,000 £5,000 – £10,000 £10,000 – £20,000 £20,000 – £40,000 £40,000 – £60,000 £60,000 – £80,000 £80,000 – £100,000 £100,000+			
Education	1 = GCSE/CSEs, 2 = A-Levels, 3 = Undergraduate Degree, 4 = Postgraduate/Masters, 5 = PhD			

widespread popularity in consumer life. Subsequently, the respondents answer demographic inquiries. We test the questionnaire with 13 participants before distributing it.

We distribute the survey to 511 UK participants via the online platform Prolific. After filtering out those who answer the attention check question incorrectly, incomplete responses, and missing values, we deem a total of 437 questionnaires suitable for data analysis. Of the respondents, 48.5 % identify as women. Regarding age distribution, 16.5 % fall within the 16–24 age group, 35.2 % the 25–34 age group, 24.9 % the 35–44 age group, 14.2 % the 45–54 age group, and the remaining participants are aged 55 or over. In terms of income, 19.2 % of the participants report having an income of between £10,000 and £19,999, 50.5 % fall within the £20,000 to £59,999 bracket, and 4.3 % report having an income of £60,000 or above.

5. Results

5.1. Reliability and validity

To assess the reliability and validity of the measures, we run the PLS (partial least squares) algorithm in SmartPLS. Nevertheless, before assessing the reliability and validity of the measures, we look at the factor loading of each item (see Table 1). The factor loadings are above the threshold (0.70) except for one item for harmonious passion (0.69) and one item for obsessive–compulsive buying (0.68). Since both items' factor loadings are close to the threshold, we choose to keep these two items. Following this, we continue to assess the reliability of the scales. The Cronbach's alpha scores (also see Table 1) of the constructs are greater than the threshold (0.60), which indicates that the scales are reliable (Bagozzi & Yi, 1988). However, Hair et al. (2020) recommend assessing construct reliability using composite reliability since it is better than Cronbach's alpha. The composite reliability scores (see Table 2) range from 0.87 to 0.95, which is above the threshold (0.70).

Table 2

Descriptive statistics, reliabilities, correlations, and validities.

	Mean	SD	CR	1	2	3	4	5	6	7	8	9
1. Fear of Missing Out	2.44	1.21	0.94	0.82								
2. Harmonious Brand Passion	3.18	1.34	0.93	0.52	0.80							
3. Obsessive Brand Passion	2.15	1.31	0.95	0.48	0.66	0.87						
4. Impulsive Buying	3.83	1.55	0.92	0.22	0.46	0.51	0.89					
5. Obsessive-Compulsive Buying	2.25	1.37	0.87	0.38	0.63	0.71	0.56	0.84				
6. Gender	1.52	0.55	1.00	0.04	0.14	0.14	0.24	0.25	1.00			
7. Age	2.67	1.25	1.00	0.01	−0.12	−0.04	−0.11	−0.08	0.01	1.00		
8. Education	2.77	1.10	1.00	0.01	−0.01	0.05	0.00	0.07	−0.05	0.04	1.00	
9. Income	3.40	1.36	1.00	0.05	0.01	0.01	−0.03	0.02	−0.13	0.21	0.23	1.00

Note: The diagonal values indicate the square root of the average variance extracted; SD = standard deviation; CR = composite reliability.

(Hair et al., 2020). Thus, it is safe to assume that all of the scales are reliable.

To assess the convergent validity of the measures, we look at the average variance extracted of the variables. The average variance extracted scores (see Table 1) are above the threshold (0.50) (Hair et al., 2020), which indicates we achieve convergent validity. Next, we assess the discriminant validity of the measures. According to Fornell and Larcker (1981), we can infer discriminant validity if the square root of the average variance extracted is greater than the inter-construct correlation scores (see Table 2). Thus, we have discriminant validity.

Previous studies recommend also checking the heterotrait-monotrait ratio to further assess the discriminant validity (Henseler et al., 2015). Since the heterotrait-monotrait ratio scores (see Table 3) are below the threshold (0.90), we infer discriminant validity.

5.2. Hypothesis testing

Before testing the hypotheses, we check for common-method variance issues through Harman's one-factor test (Podsakoff et al., 2003). The one-factor solution explains 42.56 % of the variance, falling short of the majority threshold of 50 %. Hence, the initial results show that common-method variance does not pose a threat. Kock (2015) advocates using a full collinearity test to assess common-method variance when using partial least squares structural equation modelling. Based on the results, the variance inflation factor values are in the range of 1.00 to 1.96 for the inner model. All of the variance inflation factor values are under the threshold (3.30), implying that common-method variance is not an issue.

We continue with the analysis, checking the research model and the research hypotheses. The model explains 27 %, 31 %, 23 %, and 57 % of the variance in harmonious brand passion, obsessive brand passion, impulsive buying, and obsessive-compulsive buying, respectively. After including the interaction effects, the predictive power of the model in explaining harmonious brand passion and impulsive buying increases to 29 % and 24 %, respectively. The results support both Hypothesis 1 ($\beta = 0.52$, $t = 13.47$, $p < 0.001$) and Hypothesis 2 ($\beta = 0.47$, $t = 10.44$, $p < 0.001$). This means that the fear of missing out positively influences both types of brand passion (harmonious and obsessive). The results also support Hypothesis 3a ($\beta = 0.22$, $t = 3.83$, $p < 0.001$) and Hypothesis 3b

($\beta = 0.34$, $t = 6.20$, $p < 0.001$). Harmonious and obsessive brand passion positively influence impulsive buying. The results show that obsessive brand passion is a stronger predictor of impulsive buying than harmonious passion is. Similarly, the results support Hypothesis 4a ($\beta = 0.27$, $t = 5.57$, $p < 0.001$) and Hypothesis 4b ($\beta = 0.51$, $t = 9.55$, $p < 0.001$). Harmonious and obsessive brand passion positively influence obsessive-compulsive buying. Obsessive brand passion is also a stronger predictor of obsessive-compulsive buying than harmonious brand passion is (Table 4).

Next, we check the moderating effect of age in the relationship between the fear of missing out and harmonious brand passion, as well as that between the fear of missing out and obsessive brand passion. The results show that age only moderates the relationship between the fear of missing out and obsessive brand passion (Hypothesis 5b: $\beta = 0.07$, $t = 1.83$, $p < 0.05$). This indicates that the relationship between the fear of missing out and obsessive passion is stronger for older people (see Fig. 2).

The results do not support the proposition that age moderates the relationship between the fear of missing out and harmonious brand passion (Hypothesis 5a: $\beta = 0.05$, $t = 1.46$, $p > 0.05$). Interestingly, the results show a negative correlation between age and harmonious brand passion ($\beta = -0.13$, $t = -3.52$, $p < 0.001$). Younger people tend to show higher harmonious brand passion.

5.3. Further analysis

As we also hypothesise as to the mediating effect of brand passion on the relationship between the fear of missing out and compulsive buying, we conduct an additional analysis to check these mediating effects. We draw direct paths from the fear of missing out to impulsive buying and obsessive-compulsive buying. The results of the mediation analysis can be seen in Table 5.

The results show that harmonious brand passion partially mediates the relationship between the fear of missing out and impulsive buying ($\beta = 0.13$, 95 % confidence interval: 0.08 to 0.18), whereas harmonious brand passion fully mediates the relationship between the fear of missing out and obsessive-compulsive buying ($\beta = 0.15$, 95 % confidence interval: 0.10 to 0.19). Similarly, obsessive brand passion partially mediates the relationship between the fear of missing out and

Table 3

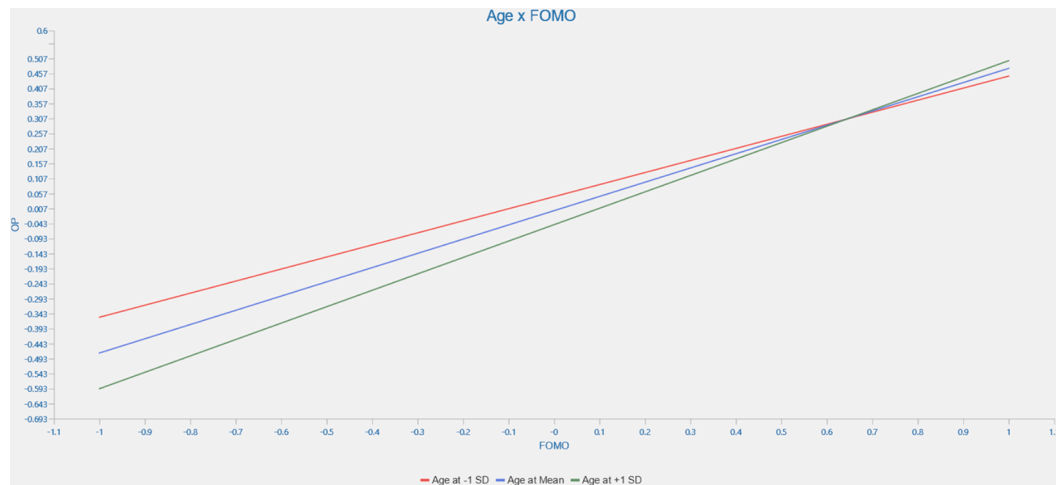
Heterotrait-monotrait ratio.

	1	2	3	4	5	6	7	8	9
1. Fear of Missing Out									
2. Harmonious Brand Passion	0.56								
3. Obsessive Brand Passion	0.51	0.69							
4. Impulsive Buying	0.25	0.50	0.56						
5. Obsessive-Compulsive Buying	0.44	0.70	0.79	0.67					
6. Gender	0.05	0.15	0.15	0.25	0.27				
7. Age	0.06	0.13	0.04	0.12	0.09	0.01			
8. Education	0.03	0.02	0.05	0.05	0.09	0.05	0.04		
9. Income	0.05	0.02	0.04	0.05	0.03	0.13	0.21	0.23	

Table 4

Results of structural equation analyses.

Hypothesis	Relationship	Main Effects Only			Main Effects and Interaction		
		β	f^2	t-value	β	f^2	t-value
H1	Fear of Missing Out → Harmonious Passion	0.52	0.37	13.57***	0.52	0.38	13.47***
H2	Fear of Missing Out → Obsessive Passion	0.48	0.30	10.63***	0.47	0.29	10.44***
H3a	Harmonious Passion → Impulsive Buying	0.22	0.04	3.83***	0.22	0.04	3.83***
H3b	Obsessive Passion → Impulsive Buying	0.34	0.10	6.19***	0.34	0.10	6.20***
H4a	Harmonious Passion → Obsessive-Compulsive Buying	0.27	0.10	5.57***	0.27	0.10	5.57***
H4b	Obsessive Passion → Obsessive-Compulsive Buying	0.51	0.35	9.53***	0.51	0.35	9.55***
H5a	Age → Harmonious Passion	—	—	—	−0.13	0.02	−3.52***
	Age*Fear of Missing Out → Harmonious Passion	—	—	—	0.05	0.00	1.46 ^{ns}
H5b	Age → Obsessive Passion	—	—	—	−0.05	0.00	−1.23 ^{ns}
	Age*Fear of Missing Out → Obsessive Passion	—	—	—	0.07	0.01	1.83*
	Gender → Impulsive Buying	0.16		3.56***	0.16	0.03	3.56***
	Gender → Obsessive-Compulsive Buying	0.14		4.38***	0.14	0.04	4.38***
	Education → Impulsive Buying	−0.00		−0.01 ^{ns}	−0.00	0.00	−0.01 ^{ns}
	Education → Obsessive-Compulsive Buying	0.05		1.47 ^{ns}	0.05	0.01	1.47 ^{ns}
	Income → Impulsive Buying	−0.02		0.42 ^{ns}	−0.02	0.00	0.42 ^{ns}
	Income → Obsessive-Compulsive Buying	0.02		0.62 ^{ns}	0.02	0.00	0.62 ^{ns}
	Variance Explained (R^2)						
	Harmonious Passion			0.27		0.29	
	Obsessive Passion			0.31		0.31	
	Impulsive Buying			0.23		0.24	
	Obsessive-Compulsive Buying			0.57		0.57	
Model Fit							
	SRMR			0.07		0.07	
	NFI			0.82		0.82	

Note: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.**Fig. 2.** Interaction effect of the fear of missing out and age on obsessive passion.

impulsive buying ($\beta = 0.17$, 95 % confidence interval: 0.13 to 0.23), whereas obsessive brand passion fully mediates the relationship between the fear of missing out and obsessive-compulsive buying ($\beta = 0.25$, 95 % confidence interval: 0.19 to 0.31).

6. Discussion and implications

This research investigates the effects of the fear of missing out as the driver of brand passion and compulsive buying, along with age as a moderator. The results of this research provide strong support for the proposed hypotheses, shedding light on the complex relationships between the fear of missing out, brand passion, and compulsive buying behaviour. The findings also offer valuable insights for both marketers and researchers, enabling them to better comprehend and predict consumer behaviour in the context of today's fast-paced consumer culture.

Hypotheses 1 and 2 reveal the varying impacts of the fear of missing out on different types of brand passion. To the best of the authors' knowledge, this is the first research to date that has looked at this. The

fear of missing out positively influences harmonious brand passion, as such passion provides a source of enjoyment and a means to satisfy personal desires (Vallerand et al., 2003). Individuals also have more control over this type of passion as they can withdraw from engaging in the fear of missing out and move to another activity (Wang & Yang, 2008). Although the fear of missing out positively affects obsessive brand passion, this type differs from harmonious brand passion since it helps individuals overcome external, internal, and social pressures (Swimberghe et al., 2014) and boosts their self-worth (Deci & Ryan, 1987).

Surprisingly, the fear of missing out is a stronger predictor of harmonious brand passion than of obsessive brand passion. This is because the fear of missing out pertains to a psychological occurrence wherein individuals experience feelings of anxiety or fear concerning their exclusion from experiences or matters that their cohorts are presently enjoying (Elhai et al., 2016). As we argue above, not only do internal factors drive obsessive brand passion, but so do external ones, through social pressure. This implies that the two types of brand passion

Table 5
Mediating effects.

Relationships	Indirect Effect	Bias-Corrected Confidence Interval 95 %		Direct Effect	Mediation Result
		Lower Bound	Upper Bound		
Fear of Missing Out → Harmonious Brand Passion → Impulsive Buying	0.13	0.08	0.18	−0.09*	Partial mediation (competitive)
Fear of Missing Out → Harmonious Brand Passion → Obsessive-Compulsive Buying	0.15	0.10	0.19	−0.02 ^{ns}	Full mediation (indirect only)
Fear of Missing Out → Obsessive Brand Passion → Impulsive Buying	0.17	0.13	0.23	−0.09*	Partial mediation (competitive)
Fear of Missing Out → Obsessive Brand Passion → Obsessive-Compulsive Buying	0.25	0.19	0.31	−0.02 ^{ns}	Full mediation (indirect only)

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; the types of mediation in brackets are based on Zhao et al. (2010).

involve different amounts of pressure, which the literature has not looked at to date. We assumed that both had the same levels of internal pressure but that obsessive passion had slightly more overall pressure due to the additional external pressure. However, the findings suggest that the fear of missing out has a stronger influence on harmonious passion through internal drive alone, which is based on the stronger desire for individuals to reach harmony with their personal values and aspects of life (Vallerand, 2010, Vallerand, 2015). Another explanation for this may be an issue with the measurement of harmonious and obsessive brand passion. In this study, we utilise a passion scale that we derive from prior research of Vallerand et al. (2003). Examining the measures of obsessive passion clearly evidences that these metrics do not encompass social elements such as peer comparison or peer pressure.

Moving on to brand passion, the results are novel as they show that both harmonious and obsessive passion have a positive influence on impulsive buying and obsessive–compulsive buying. Harmonious passion motivates individuals to engage in purchasing as a pleasurable and enjoyable activity, while the need to enhance one's self-esteem and express one's identity drives obsessive passion (Vallerand et al., 2003). These findings underscore the importance of understanding the role of brand passion in impulsive buying and obsessive–compulsive buying. Hence, the present study offers support for the dual theory of passion and sheds light on the dark side of passion. In particular, the results show that obsessive brand passion is the stronger predictor of impulsive buying and obsessive–compulsive buying. Hence, among the two categories of brand passion, obsessive passion emerges as the detrimental variant. This conclusion aligns with the sentiments of Japutra et al. (2022), who advocate for further investigation into the influence of obsessive passion on compulsive buying behaviour.

Furthermore, consumer age moderates the relationship between the fear of missing out and obsessive brand passion, with older consumers being more prone to obsessive brand passion when they exhibit a high fear of missing out. This finding helps to overcome the limitations of previous research (for example, Okazaki et al., 2021) that excludes

consumers over 50 years old. Previous studies suggest that older consumers typically have higher harmonious passion (for example, Curran et al., 2015). Philippe et al. (2009) show that there is no difference between harmonious and obsessive brand passion across younger or older people, suggesting that passion is relatively stable across the lifespan. This finding also extends the dual theory of passion by showing that the fear of missing out can enhance malicious passion (that is, obsessive passion) for older people.

Lastly, the present study unveils the mediating role of harmonious and obsessive brand passion. To investigate this mediating effect, we examine the direct effects of the fear of missing out on impulsive buying and obsessive–compulsive buying. By doing this, we extend Hussain et al.'s (2023) study, which investigates the direct effect of the fear of missing out on compulsive buying only. The results show that the fear of missing out directly influences impulsive buying but not obsessive–compulsive buying. Our results show that harmonious brand passion partially mediates the relationships between the fear of missing out, impulsive buying, and obsessive–compulsive buying. Additionally, the present study extends their study by proposing a positive type of mediator (that is, brand passion) rather than negative mediators (that is, depression, social anxiety, and materialism). The results show that obsessive brand passion fully mediates the relationships between the fear of missing out, impulsive buying, and obsessive–compulsive buying. Again, this finding shows support for the dual theory and the dark side of brand passion in which obsessive passion is a malevolent type of passion.

6.1. Managerial implications

The research findings highlight the pivotal role of marketing strategies tailored to resonate with consumers' fear of missing out. Recognising the varying levels of brand passion among consumers is imperative. Segmenting consumers based on the degree of their passion, whether it is harmonious or obsessive, allows for tailored marketing campaigns that aim to maximise fulfilment.

Harnessing passions driven by the fear of missing out can serve as a potent tool for marketers looking to enhance consumer engagement, foster loyalty, and boost sales. However, it is imperative to navigate these strategies with a keen eye on ethical considerations, ensuring that consumers' well-being and satisfaction remain a priority. The appeal of passion driven by the fear of missing out often prompts consumers to share their brand or product experiences on social media platforms, thereby generating valuable user-generated content. Marketers can seize this opportunity by crafting campaigns that incentivise and reward consumers for sharing their experiences, thereby amplifying brand visibility and bolstering credibility. Moreover, brands could potentially cultivate a sense of community among consumers who share a mutual passion for their offerings. Establishing forums, hosting events, or curating online groups where consumers can connect and exchange their experiences can profoundly deepen consumer engagement and fortify brand affinity. Furthermore, delving into consumers' passions driven by the fear of missing out can yield invaluable insights for product innovation. By discerning the triggers of the fear of missing out, and leveraging them to craft distinctive and sought-after products, brands can maintain a competitive edge, consistently meeting consumers' needs and aspirations. Customers with a fear of missing out crave up-to-the-minute information. Brands can leverage social media to provide real-time updates on product launches, events, or limited-time promotions. By keeping customers informed and engaged, brands can instil a sense of urgency and drive immediate action so that customers can avoid missing out.

Managers could cater to individuals with harmonious brand passion by triggering the internal drivers that provide them with more purposefulness and enjoyment through their consumption of certain brands. This would help them satisfy their personal desires by finding harmony with the personal aspects of their lives. A brand could focus on different aspects to help them to achieve this, such as its uniqueness, authenticity,

sustainability (both environmental and social), and ethical credentials. Thus, encouraging and nurturing harmonious passion could yield advantages for businesses by providing them with a more targeted and compelling content strategy. Promoting harmonious passion through marketing efforts could contribute to enhancing consumers' psychological well-being, by encouraging them to find enjoyment and balance in their consumption habits and, consequently, improve their overall quality of life.

Caution is necessary to ensure that the message promotes balance and moderation as benefits, so as to prevent individuals from developing obsessive brand passion. Due to obsessive brand passion being more uncontrollable, and fully mediating the relationships between the fear of missing out, and impulsive and obsessive-compulsive buying, it would be irresponsible to use this to benefit more mainstream brands that tend to be more harmful by nature (for example, fast fashion, fast food, gambling, loans, and credit cards). Hence, more responsibly, the results of this research could demonstrate how brands might use obsessive brand passion to communicate the benefits of purchasing more responsible and ethical brands (for example, organic, sustainable, charity, rental, second-hand) that would help consumers to overcome any external, internal, or social pressures by making them feel like they fit in with others. This would help boost their self-esteem and self-worth. Brands need to position promotions (for example, bargains, multiple deals, and reductions for a limited period) so that they draw in consumers and imply they will help them gain social acceptance. Brands need to motivate customers to make quick decisions and purchase items immediately, or to make repeat purchases to help relieve any anxiety. Highlighting consumers who have embraced responsible consumption and obsessive passion could motivate others to follow suit, contributing to the creation of a more sustainable consumer culture.

Recognising the moderating effect of age in the relationship between brand passion and compulsive buying behaviour, we would recommend a focus on brand-passion-driven marketing for younger consumers. This is important in industries such as catering, fashion, and travel, in which research shows millennials get into debt due to a fear of missing out (Ward, 2019). Brands need to create content that aligns with consumers' passion and values, along with engaging them through campaigns that reflect their unique perspectives and preferences.

6.2. Limitations and further research

This study focuses on a UK sample, prompting curiosity about potential variations in other nations, concerning how brand passion influences compulsive buying, given the distinct relationships with brands in different countries. Future research could use a different sampling method, such as stratified sampling, to ensure the sample is more representative. It could also extend its scope by conducting cross-cultural comparisons to unravel any cultural nuances in the impact of brand passion on compulsive buying. Employing experiments would further enhance the exploration of effective communication strategies tailored to different types of passion.

Additionally, an avenue for further investigation lies in exploring the interplay between sustainability and the dual theory of passion. This could involve incorporating more ethical and socially responsible brands into the data collection or delving into sustainable drivers that might influence brand consumption, such as green consumer values (Haws et al., 2010). By expanding the research focus to encompass sustainability, research could achieve a more comprehensive understanding of the factors shaping brand passion and compulsive buying.

CRediT authorship contribution statement

Arnold Japutra: Writing – review & editing, Writing – original draft, Validation, Formal analysis, Data curation, Conceptualization. **Sianne Gordon-Wilson:** Writing – review & editing, Writing – original draft, Project administration, Investigation, Funding acquisition, Data

curation, Conceptualization. **Yuksel Ekinci:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Investigation, Data curation, Conceptualization. **Elisa Dorothee Adam:** Resources.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Acknowledgements

We would like to thank Faculty of Business and Law's Research Project Fund (University of Portsmouth) for awarding an internal grant for this research.

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