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IMPULSIVENESS AS A CREATIVE AND PLAYFUL PROCESS OF DISCOVERY: A STUDY ON ITS RELATIONSHIP WITH TREASURE HUNTING, SERENDIPITY, AND BRICOLAGE IN SECOND-HAND MARKETS

Impulsividade como um processo criativo e lúdico de descoberta: Um estudo sobre sua relação com a caça ao tesouro, a serendipidade e a bricolagem em mercados de segunda mão

La impulsividad como proceso creativo y lúdico de descubrimiento: Un estudio sobre su relación con la búsqueda de tesoros, la serendipia y el bricolaje en los mercados de segunda mano

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ABSTRACT

The literature on buying impulsiveness has overlooked that impulsiveness can be part of a creative and playful process of discovery. This study addresses this gap by investigating the attitudes of shoppers who experience impulsiveness during the practice of bricolage in second-hand markets. With an online survey and structural equation modeling, we analyzed data from 775 shoppers and found that treasure hunting attitudes and serendipity awareness trigger impulsiveness in second-hand markets, both of which are antecedents of the creative processes involved in bricolage behavior. We contribute to the extant literature by offering a parsimonious explanatory model for how impulsiveness, treasure hunting, serendipity, and bricolage behavior can be part of a creative and playful process of consumption, calling for a positive view on impulsiveness rather than the mostly negative one.

Keywords: impulsive consumer, recreational activities, creativity, consumer behavior, second-hand markets.

RESUMO

A literatura sobre impulsividade de compra tem negligenciado que a impulsividade pode fazer parte de processos criativos e lúdicos de descoberta. Para preencher essa lacuna, este estudo investiga as atitudes de consumidores que vivenciam impulsividade durante a prática de bricolagem em mercados de segunda mão. Por meio de um levantamento on-line e modelagem por equações estruturais, foram analisados dados de 775 consumidores, descobrindo que a atitude de caça ao tesouro dispara a impulsividade nesses mercados e a consciência de serendipidade, ambas sendo antecedentes de processos criativos na prática da bricolagem. Este estudo contribui para a literatura ao oferecer um modelo explicativo parcimonioso sobre como a impulsividade, a caça ao tesouro, a serendipidade e a prática da bricolagem podem fazer parte de processos criativos e lúdicos de consumo, promovendo uma visão positiva sobre impulsividade, em contraste com a visão tradicional majoritariamente negativa. **Palavras-chave:** consumidor impulsivo, atividades recreativas, criatividade, comportamento do consumidor, mercados de segunda mão.

RESUMEN

La literatura sobre impulsividad en la compra ha ignorado que la impulsividad puede ser parte de procesos de descubrimiento creativos y lúdicos. Este estudio aborda esta brecha al investigar las actitudes de los compradores impulsivos mientras practican bricolaje en mercados de segunda mano. Utilizando una encuesta en línea y modelo de ecuaciones estructurales, se analizaron datos de 775 compradores y se descubrió que la actitud de búsqueda del tesoro desencadena la impulsividad en los mercados de segunda mano y la conciencia de serendipia, ambas antecedentes de los procesos creativos en la práctica de bricolaje. Contribuye a la literatura al ofrecer un modelo explicativo parcimonioso sobre cómo la impulsividad, la búsqueda de tesoros, la casualidad y la práctica de bricolaje pueden ser parte de procesos de consumo creativos y lúdicos, por lo que también exige una visión positiva de la impulsividad, en lugar de la visión tradicionalmente negativa. **Palabras clave:** consumidor impulsivo, actividades recreativas, creatividad, comportamiento del consumidor.

INTRODUCTION

Self-control is commonly considered a virtue, whereas giving in to impulses should be avoided. Such a perspective regards instantaneous, spontaneous decisions made in the spur of the moment as maladaptive and poorly conceived (Fenneman & Frankenhuys, 2020). In the consumer behavior field, buying impulsiveness, which is the propensity to buy something spontaneously and immediately (Rook & Fisher, 1995), is framed as dysfunctional since impulsiveness reflects a failure in self-control and a lack of reasoning about the consequences of one's actions. However, a few recent studies have identified positive consequences of impulsiveness on issues such as arousal, satisfaction, and enjoyment through self-expression (Chan et al., 2017; Nghia et al., 2022). Other recent work offers evidence that impulsive shoppers tend to be innovative (Lord et al., 2023), showing diverse interests, imaginative abilities, and openness to new ideas and sensations (Miao et al., 2019). Such factors have been identified as mental processes that favor creativity by allowing exposure to stimulating situations, flexible thinking, the interaction of ideas, and the willingness to take risks (Proyer et al., 2019).

Nevertheless, consumer behavior studies have mostly overlooked the positive aspects of impulsiveness, which is traditionally associated with negative outcomes, such as over-indebtedness (Frigerio et al., 2020). There is a dearth of research on the possible bright side of impulsiveness. Our study offers a perspective on the positive outcomes of impulsiveness in consumer behavior by examining its interplay with treasure hunting (i.e., the active exploration of in-store environments), serendipity, and creative processes. Creativity is here framed within the interests of bricolage, which consists of creatively combining heterogeneous resources for new purposes (Baker & Nelson, 2005). Creativity emerges through serendipity, i.e., the making of surprising and valuable discoveries during a search process (Busch, 2022). Therefore, we also draw upon the theory of serendipity (Dew, 2009) to examine the role of impulsiveness, treasure hunting attitudes, and serendipity awareness on bricolage behavior. We develop and test an original model with structural equation modeling and data collected from Brazilian second-hand shoppers.

The reason for focusing on second-hand shoppers, and Brazil in particular, is fourfold. First, second-hand shoppers have a predisposition for creativity (Campos et al., 2023). Second-hand markets, such as flea markets and thrift stores, allow shoppers to access more affordable items (Machado et al., 2019). Even if the items have defects or missing parts, second-hand shoppers use creativity to transform the objects to meet their needs (Roux & Guiot, 2008), either due to financial constraints (Campos et al., 2023) or a desire for uniqueness (Cervellon et al., 2012). As creativity is present in second-hand shopping (Guiot & Roux, 2010), second-hand markets are an appropriate research context. Second, creativity is a highly documented social and cultural phenomenon in Brazil, which stems from the influence of indigenous peoples' practices and vivid imagination (Alencar et al., 2016). Third, second-hand markets are growing in the country, as shown by a 123% increase in the number of Brazilian second-hand markets from 2019 to 2022 (Serviço Brasileiro de Apoio às Micro e Pequenas Empresas [Sebrae], 2023). The

fourth reason is that impulsiveness plays an important role in second-hand shopping (Parguel et al., 2017).

By examining the influence of impulsiveness in creative, playful processes in the realm of studies on bricolage and second-hand markets, we offer a series of academic and business contributions, particularly in understanding the cognitive processes of second-hand shoppers, the strategies to retain and enlarge the customer base, and how and why impulsiveness interacts with creativity, playfulness, and discovery. Moreover, by uncovering the underlying mechanisms of bricolage practices, our study contributes to the consolidation of bricolage within the interests of consumer culture and behavior.

LITERATURE REVIEW

Here, we define serendipity and buying impulsiveness, the theoretical foundation of our research.

Theory of serendipity

Dew (2009) proposed a theory of serendipity focused on how humans recognize opportune situations. Serendipity involves three components: sagacity (a prepared mind), search activity (purposeful actions), and contingencies (chance-based situations). An event is only characterized as serendipitous if one is able to recognize its meaning and relevance, i.e., it is strongly dependent on one's reasoning abilities (Rond, 2014). Therefore, serendipity awareness is a key issue, referring to the recognition of valued, unanticipated findings during an opportunity-seeking situation.

Certain environments facilitate serendipity by exposing an individual to the exploration of heterogeneous resources and to unexpected interactions (McCay-Peet et al., 2015). Novelty, discovery, socialization, and surprise also foster serendipity (Lowe et al., 2018). Such aspects are present in second-hand markets (Guiot & Roux, 2010), which leads us to assume that they favor serendipitous encounters. However, serendipity requires more than just the environment's characteristics. A person's psychological factors, such as impulsiveness, may also be important, as discussed next.

Buying impulsiveness

According to Stern (1962), in the 1940s, the DuPont Company championed the study of impulse buying as when a consumer buys items that exceed their original shopping intents. Later on, Weinberg and Gottwald (1982) proposed that impulse buying was related to a sudden change in the psychological state of the consumer toward an extraordinary excitement state. Researchers have consolidated impulse buying as one of the categories of unplanned purchases (e.g., Rook,

1987) and focused on analyzing the psychological aspects that led shoppers to engage in impulse buying, i.e., buying impulsiveness: “[a] consumer’s tendency to buy spontaneously, unreflectively, immediately, and kinetically” (Rook & Fisher, 1995, p. 306).

Although scholarly knowledge of the phenomenon has progressed, the perspective on impulsiveness remains mostly negative, including interpretations of a failure in self-control, self-indulgence, or imprudence (Sharma et al., 2014). Contrariwise, a recent study has shown that impulsiveness may promote shopping well-being (Nghia et al., 2022). Furthermore, impulsiveness can be advantageous when rapid decisions are required (Mandolfo & Lamberti, 2021). For instance, according to Fenneman and Frankenhuys (2020), impulsiveness facilitates swift actions to take advantage of fleeting opportunities. We join such a perspective to better understand if impulsiveness also plays a role in creative and discovery processes. Thus, we focus on the study of second-hand markets, where creativity and impulsiveness seem to coexist, as discussed next.

HYPOTHESES

Impulsiveness in second-hand markets

Second-hand markets (e.g., flea markets and thrift stores) are places where previously owned objects are available to new owners. Parguel et al. (2017) posit that impulsiveness in these markets manifests when shoppers perceive environmentally virtuous purchasing opportunities. Shoppers then experience self-indulgence and do not worry about the consequences of shopping. Thus, we see impulsiveness in second-hand markets as part of one’s complex repertoire of abilities and shopping opportunities, leading to serendipitous buying decisions. The abilities to benefit from chance-based events require intuition, prior experience (Busch, 2022), sagacity (McCay-Peet et al., 2015), and openness to experiences (Qin et al., 2022). Impulsiveness comes from intuition in context-specific situations (Jones et al., 2003), making shoppers recognize the usually overlooked items and feel pride and luck in discovering value in them (Guiot & Roux, 2010). Moreover, impulsive shoppers are open to new experiences, which reflects imaginative thinking, diversified interests, and enjoyment of novel ideas (Miao et al., 2019). Such an inclination for exploration and deviation from norms aligns with intellectual curiosity and creativity (Ashton & Lee, 2007) and contributes to sagacity in perceiving serendipity and recognizing valuable contingencies (Qin et al., 2022). Therefore, we hypothesize that:

H1: Impulsiveness in second-hand markets has a direct and positive impact on serendipity awareness.

Treasure hunting

Treasure hunting has emerged in academic discussions as a motivational factor for second-hand shopping (Guiot & Roux, 2010). Shoppers are not sure what they will find in those markets. Thus, they realize they are in a discovery process characterized by surprise and luck, much like treasure hunting (Hur, 2020). Second-hand shoppers cultivate positive attitudes toward treasure hunting—and it is such attitudes that we are interested in here. Treasure hunting attitudes may influence serendipity awareness in second-hand markets. As discussed before, serendipity is triggered by a combination of a chance-based event, sagacity, and active search (Dew, 2009). It involves the search for an opportunity that is not precisely anticipated; therefore, when the opportunity is perceived, it is framed as unusual (Mirvahedi & Morrish, 2017). Since serendipity can be triggered by the exploration of a place (Akram et al., 2018), it is reasonable to expect that treasure hunting can also result in serendipitous encounters (Guiot & Roux, 2010). Although the consumer is looking for a rare or precious item, it is not previously specified, and its appearance is not anticipated (Cervellon et al., 2012). Therefore, we hypothesize that:

H2: Treasure hunting attitudes have a direct and positive impact on serendipity awareness in second-hand markets.

The in-store atmosphere and the sensations that treasure hunting sparks may trigger impulsiveness. The first reason is that hedonic factors such as enjoyment and searching for new items lead to impulsiveness (Dey & Srivastava, 2017). Likewise, the time spent inside a store combined with the browsing activity (Beatty & Ferrell, 1998; Santini et al., 2019) also impacts impulsiveness. The rationale supporting the influence of time and browsing on impulsiveness is that the longer one is immersed in the store atmosphere and exposed to stimuli, the greater the probability of triggering impulsiveness. Therefore, we hypothesize that:

H3: Treasure hunting attitudes have a direct and positive impact on impulsiveness in second-hand markets.

The effect of treasure hunting attitudes on serendipity awareness may be mediated by impulsiveness. The favorable inclination toward treasure hunting serves as an initial underlying mechanism for serendipity awareness. However, recognizing a fortuitous event may not only require the search activity but also an open mind to new ideas—which is associated with impulsiveness (Miao et al., 2019). Therefore, we expect that treasure hunting attitudes and impulsiveness enable one to detect purchasing opportunities, feel lucky, and act quickly. Thus, we hypothesize that:

H4: Impulsiveness in second-hand markets mediates the relationship between treasure hunting attitudes and serendipity awareness.

Bricolage

The concept of bricolage emerged in the field of anthropology after the work of Lévi-Strauss (1962), in which bricolage is described as the combination of heterogeneous items collected by any means. Accordingly, a bricoleur is someone who finds solutions and performs tasks by using whatever materials they have at hand. The behavior of a bricoleur has a particular meaning in the field of entrepreneurship. One characteristic is the search for expanding the repertoire of materials in the most economical way possible and in alternative channels (Baker & Nelson, 2005). Therefore, it is reasonable to expect that second-hand markets are among the ideal shopping channels for bricoleurs, where one can find multiple items on offer with prices far below those in other retailers (Cervellon et al., 2012).

As bricoleurs can recognize the potential value of items for their projects (Baker & Nelson, 2005), they are likely to become more susceptible to perceiving fortunate opportunities in the context of second-hand markets. Considering that the collection process precedes bricolage (Duymedjian & Rüling, 2010), shoppers may perceive situations as fortuitous in second-hand markets when they find potentially ideal items for their projects. Therefore, it is reasonable to conceive that serendipity awareness has a role in bricolage behavior, as follows: by recognizing and valuing unexpected results, shoppers can enhance their discovery abilities and foster a mindset that permanently encourages the formation of insights and creative processes. Therefore, we hypothesize that:

H5: Serendipity awareness has a direct and positive impact on bricolage behavior.

Another conjecture is that treasure hunting attitudes explain bricolage behavior. Treasure hunting leads shoppers to reflect on the items they find and possibly regard some as treasures for potential use (Machado et al., 2019). Like treasure hunting, bricolage involves an exhaustive observation of the surroundings with an attentive and inventive mind (Duymedjian & Rüling, 2010). In fact, bricoleurs seek alternative ways to enrich their repertoire of materials and are open to challenging preconceptions and analyzing the materials they come across based on their potential for use (Baker & Nelson, 2005). They also explore the in-store environments to stimulate creativity and develop new ideas (Wolf & McQuitty, 2011). When treasure hunters discover useful items and develop new ideas in second-hand markets, they are more likely to engage in bricolage. Therefore, we hypothesize that:

H6: Treasure hunting attitudes have a direct and positive impact on bricolage behavior.

Moreover, bricoleurs sometimes have no structured plan on how to carry out certain projects and the materials they will use. Instead, they contemplate what items they already have at hand and start looking for additional ones (Senyard et al., 2009). The search is not isolated from their creative minds and the analysis of item value (Baker & Nelson, 2005). Upon finding a useful item, bricoleurs decide how to use it by making creative connections (Marion & Nairn, 2011). Therefore, when the search for items leads to a serendipitous discovery of a valuable one, that match increases the likelihood of bricolage behavior. Thus, we posit that engaging in bricolage behavior is not only triggered by treasure hunting attitudes but also by the recognition of serendipitous discoveries. Therefore, we hypothesize that:

H7: Serendipity awareness mediates the relationship between treasure hunting attitudes and bricolage behavior.

Finally, bricoleurs acquire items they unexpectedly come across because they believe the items may be useful at some point (Davidsson et al., 2017). Such acquisitions, which may lead to bricolage, seem to be preceded by impulsiveness. Impulsiveness is associated with the acquisition of items for later use (Lins et al., 2021) and with the openness to buying them unexpectedly (Iyer et al., 2020). Therefore, when bricoleurs serendipitously find a potentially useful item and have the impulse to acquire it, they are more likely to engage in bricolage. We thus posit that impulsiveness leads to bricolage behavior through the consciousness of discovering potentially useful items. Therefore, we hypothesize that:

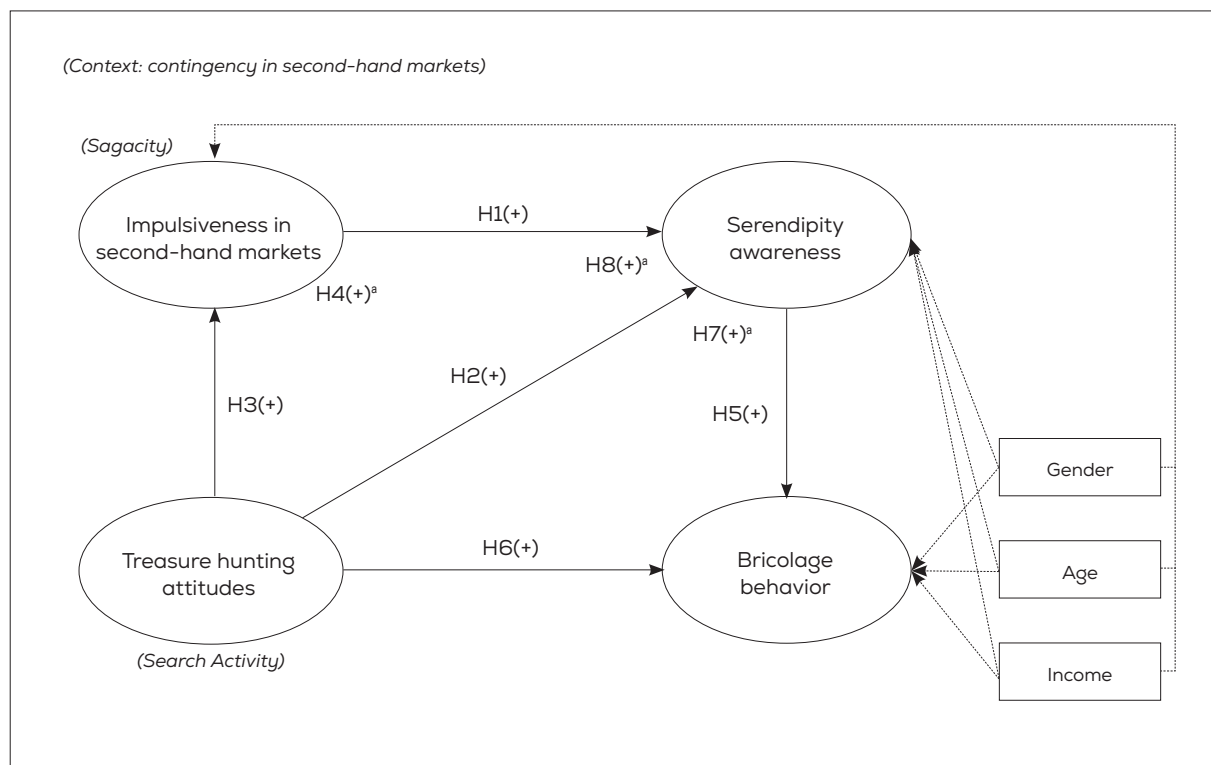
H8: Serendipity awareness mediates the relationship between impulsiveness in second-hand markets and bricolage behavior.

From the relationships hypothesized above, we developed a research model (Figure 1) grounded in the theory of serendipity (Dew, 2009), where sagacity is represented by impulsiveness, search activity is represented by treasure hunting, and, since contingency comes from the environment, we take the context of second-hand markets as favoring the unexpected, enlightening encounters. We propose that the interaction of these elements results in creative processes reflected in bricolage behavior. We do not predict that impulsiveness directly influences bricolage behavior because bricolage behavior is motivated by the efficient use of available resources (Baker & Nelson, 2005). In turn, impulsiveness favors buying new items rather than engaging in a meticulous project to create the items. However, we propose that impulsiveness indirectly influences bricolage behavior through serendipity since the fortunate discovery of items may foster bricolage behavior.

The model's logic is as follows: a consumer enters a second-hand store and begins treasure hunting, i.e., exploring the environment in search of valuable items. During treasure hunting, the consumer is exposed to the store's atmosphere, unique items, and affordable prices. These

elements then trigger consumer impulsiveness. The consumer reflects on the items and stimulates creativity, thus elaborating scenarios of use for those items and being more sensitive to serendipitous discoveries. Finally, by acquiring new items on the spur of the moment to implement the innovative ideas, the consumer engages in bricolage behavior.

Figure 1. Research model



Note: ^aindirect effect.

METHOD

We developed an online, cross-sectional survey to collect data from second-hand shoppers in Brazil. Besides Brazil representing a giant, globally relevant consumer base, second-hand markets have grown substantially in recent years in the country (Sebrae, 2023). The data collection instrument comes from previously validated scales (Table 1) adapted for the context of second-hand markets, especially for impulsiveness and serendipity awareness. Given the context-specific nature of buying impulsiveness (Jones et al., 2003; Parsad et al., 2019), adaptation was necessary. We did not include items on bricolage self-efficacy so as to focus solely on the perceptions of *effective* bricolage behavior. We used a seven-point agreement scale in all measures. Since the items were originally available in English, we performed translation and back-translation processes following Borsa et al.'s (2012) protocol.

Table 1. Scale

Item	Factorial loading
<i>Bricolage Behavior</i> (Senyard et al., 2009) ($\alpha=.853$; CR=.891; AVE=.578)	
I use whatever resources that seem useful to address a new problem or opportunity.	.75
I deal with new challenges by applying a combination of my existing resources and other available ones at a low price.	.80
When dealing with new problems or opportunities, I act immediately and assume that I will find a viable solution.	.67
When I undertake a new project, I come up with workable solutions using the resources I already have.	.80
I combine items to carry out new projects even if the items are not originally intended for that purpose.	.76
To carry out new projects, I look for resources with low or no costs and combine them with the existing ones.	.78
Item	Factorial loading
<i>Treasure Hunting Attitudes</i> (Guiot & Roux, 2010) ($\alpha=.914$; CR=.917; AVE=.796)	
I like wandering around second-hand markets because I hope I will come across a real find.	.89
I go to second-hand markets to rummage around and try to find something.	.88
I am often on the look-out for a find when I go to certain second-hand markets.	.91
In second-hand markets, I feel rather like a treasure hunter.	.89
Item	Factorial loading
<i>Serendipity Awareness</i> (Kwon & Lee, 2020) ($\alpha=.864$; CR=.899; AVE=.601)	
I experience something I had not experienced before when I visit second-hand markets.	.84
I experience something I had not thought of before when I visit second-hand markets.	.84
I experience something different when I visit second-hand markets.	.85
I experience a coincidence when I visit second-hand markets.	.75
I experience an unavoidable moment when I visit second-hand markets.	.73
I experience a lucky feeling when I visit second-hand markets.	.63
Item	Factorial loading
<i>Impulsiveness in Second-hand Markets</i> (Rook & Fisher, 1995) ($\alpha=.901$; CR=.917; AVE=.552)	
I often buy things spontaneously when I visit second-hand markets.	.75
"I just buy it" describes how I buy items when I visit second-hand markets.	.81
I often buy things without thinking when I visit second-hand markets.	.81
"When I see it, I buy it" describes me when I visit second-hand markets.	.79
Sometimes, I feel like buying things impulsively when I visit second-hand markets.	.71
"Buy now, think about it later" describes me when I visit second-hand markets.	.76
I buy things according to how I feel at the moment when I visit second-hand markets.	.65
I do not carefully plan most of my purchases when I visit second-hand markets.	.65
Sometimes, I am a bit reckless when I visit second-hand markets.	.71

Note: α = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted

The instrument was made available using the Google Forms platform. The first section of the instrument included all ethics-related issues required for human-based studies. In the second section, we included a screening question to restrict participation to second-hand shoppers, i.e., whether the respondent had ever made a purchase in second-hand markets. The other sections contained the scales for each construct. We collected the data in a snowball fashion. Initially, a pre-test of the questionnaire was conducted with 15 shoppers whose answers served to qualitatively calibrate the instrument and were not included in the final dataset. Prospective respondents were contacted via e-mail messages and in publications in other communication channels (Facebook, Instagram, and WhatsApp).

The minimum sample size was found using the G*Power software. As recommended by Ringle et al. (2015), the following parameters were considered: F tests, linear multiple regression (fixed model, R^2 deviation from zero), effect size $f^2=0.15$, $\alpha=0.05$, power=0.80, and number of predictors=3. The G*Power output estimated a minimum sample size of 77. However, considering that a larger sample yields greater statistical precision, the data collection resulted in 1,075 responses. Before proceeding to data analysis, we cleaned the dataset. We excluded the participants who had not shopped in physical second-hand markets ($n=194$) since our focus was on the adventurous and surprising experiences in second-hand shopping, which are stronger in offline stores (Turunen & Pöyry, 2019). We also excluded questionnaires with incorrect answers in the attention test ($n=85$), individuals younger than 18 years of age ($n=8$) as 18 is the adulthood age in Brazil, and questionnaires with over 75% of similar answers for the same respondent ($n=8$). This last criterion aligns with the parameter set by the European Social Survey (2021). Lastly, multivariate outliers ($n=5$) detected through Mahalanobis distance (D^2) were also excluded. No missing values were found nor univariate outliers, thus, we obtained a final valid sample of 775 self-reports from second-hand shoppers (Table 2).

We used SmartPLS 4 to analyze the data. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed because it is a suitable statistical technique for developing prediction-based models and does not require normal data distribution (Hair et al., 2017). Data analysis involved the examination of the measurement model with confirmatory factor analysis and the testing of the structural model. Scholars have argued that different demographic strata influence in-store browsing and impulsiveness (Fenton-O'Creevy & Furnham, 2020). In the structural analysis, we controlled for the effect of gender, age, and income since women, young people, and those with low income are more engaged in second-hand markets (Henninger et al., 2021). Young people are also more engaged in unusual experiences (Veiga et al., 2017), which may be the case of serendipity and bricolage behavior.

Table 2. Sample profile

Gender	<i>f</i>	%	Education	<i>f</i>	%
Female	584	75.4	Primary school	1	0.1
Male	191	24.6	High school	126	16.3
			Bachelor's degree or higher	197	25.4
Marital Status	<i>f</i>	%	Specialization	109	14.1
Single	435	56.1	Master's degree	226	29.2
Married/Common-law	302	39	Doctorate degree	116	15
Divorced/Separated	36	4.6			
Widowed	2	0.3			
	Mean		Standard deviation		
Age	32		10.05		
Household income per month*	6,836.89 BRL		7,708.66 BRL		

* 1 USD ~ 5 BRL

RESULTS

Before proceeding with factor analysis and model testing, we checked for potential common method variance (CMV) contamination in the data. To check for CMV, we conducted [Harman's \(1976\)](#) single factor test, setting the software to extract only one factor from the items. The total variance explained was 26.4%. Since the result was lower than 50%, CMV is not a problem in this study (Fuller et al., 2016).

Structural equation modeling

Measurement model

Based on [Hair et al. \(2010\)](#), we considered the statistical power to determine the minimum value required for factor loadings. Considering a statistical power of 0.8, a significance level of 0.05, and a sample size of 775, the value suggested by those authors for each factor loading to be

considered significant is 0.3. After processing the model, the factor loadings were higher than that threshold (Table 1) and no item had to be excluded.

Regarding reliability and validity (Table 1), the results for Cronbach's alpha and composite reliability were above 0.7, which indicates satisfactory internal consistency (Hair et al., 2010). Furthermore, the AVE was calculated to check for convergent validity. The values for all constructs were higher than 0.5, so convergent validity was also met (Fornell & Larcker, 1981). In Table 3, the means indicate that respondents scored low in impulsiveness in second-hand markets. Conversely, they scored high on bricolage behavior and treasure hunting attitudes, and moderately on serendipity awareness. The square root values of the AVE in the Fornell-Larcker matrix were higher than the Pearson correlations (Table 3), thus meeting discriminant validity (Fornell & Larcker, 1981).

Table 3. Fornell-Larcker matrix

	BB	THA	SA	ISM
Bricolage Behavior (BB)	.76			
Treasure Hunting Attitudes (THA)	.26***	.89		
Serendipity Awareness (SA)	.32***	.51***	.78	
Impulsiveness in Second-hand Markets (ISM)	.01	.35***	.31***	.74
Mean	5.35	5.37	4.39	2.85
Standard deviation	1.09	1.65	1.42	1.30

Note: The diagonal values represent the square roots of AVE, and the correlations are shown below the diagonal.

*** $p < .001$ (two-tailed)

Structural model

As per the hypotheses on direct effects, the structural results (Table 4) show, first, that impulsiveness in second-hand markets explains serendipity awareness ($\beta=0.143$; $p<0.001$). Therefore, hypothesis H1 is supported. Second, treasure hunting attitudes explain both serendipity awareness ($\beta=0.461$; $p<0.001$) and impulsiveness in second-hand markets ($\beta=0.332$; $p<0.001$). As such, hypotheses H2 and H3 are supported too. Third, serendipity awareness ($\beta=0.253$; $p<0.001$) and treasure hunting attitudes ($\beta=0.137$; $p<0.001$) explain bricolage behavior. Thus, H5 and H6 are also supported. As per the indirect effects, we identified partial mediation for H4 and H7 since the direct and indirect effects are significant and their valence is positive, and we observed full mediation (Zhao et al., 2010) of serendipity awareness on the relationship of impulsiveness in second-hand markets and bricolage behavior, thus supporting H8.

Table 4. Hypothesis testing

Model 1	f^2	β	SD	t-value
H1: Impulsiveness in Second-hand Markets → Serendipity Awareness	.025	.143***	.033	4.32
H2: Treasure Hunting Attitudes → Serendipity Awareness	.258	.461***	.032	14.45
H3: Treasure Hunting Attitudes → Impulsiveness in Second-hand Markets	.123	.332***	.030	11.07
H4: Treasure Hunting Attitudes → Impulsiveness in Second-hand Markets → Serendipity Awareness	.123	.047***	.011	4.147
H5: Serendipity Awareness → Bricolage Behavior	.053	.253***	.042	5.98
H6: Treasure Hunting Attitudes → Bricolage Behavior	.015	.137***	.043	3.18
H7: Treasure Hunting Attitudes → Serendipity Awareness → Bricolage Behavior	.015	.117***	.021	5.499
H8: Impulsiveness in Second-hand Markets → Serendipity Awareness → Bricolage Behavior	-	.036***	.011	3.412
Gender → Bricolage Behavior	.001	-.064ns	.084	0.77
Age → Bricolage Behavior	.006	.079**	.037	2.11
Income → Bricolage Behavior	.003	-.051ns	.040	1.26
Gender → Serendipity Awareness	.001	.054ns	.072	0.75
Age → Serendipity Awareness	.007	-.073**	.034	2.16
Income → Serendipity Awareness	.000	.020ns	.034	0.59
Gender → Impulsiveness in Second-hand Markets	.002	-.101ns	.076	1.32
Age → Impulsiveness in Second-hand Markets	.006	-.080**	.037	2.14
Income → Impulsiveness in Second-hand Markets	.002	.048ns	.034	1.42
		R ² adjusted	Q ²	
Impulsiveness in Second-hand Markets		12.3%	.117	
Serendipity Awareness		28.4%	.261	
Bricolage Behavior		11.5%	.059	

Note: SD=Standard Deviation; *** $p < .001$; ** $p < .01$; ^{ns} $p > .05$ (two-tailed)

We verified the f^2 to check the effect size of the relationships following the guidelines established by Cohen (1992): 0.02 (small), 0.15 (medium), and 0.35 (large). The effect of impulsiveness in second-hand markets on serendipity awareness is small. The effects of treasure hunting attitudes on serendipity awareness, impulsiveness in second-hand markets, and bricolage behavior are respectively medium, small, and small. Finally, the effect of serendipity awareness on bricolage behavior is also small. Regarding the predictive accuracy, we evaluated both R^2 adjusted and Q^2 values. Following Cohen (1992) and Hair et al. (2017), the explanatory power of impulsiveness in second-hand markets is small (R^2 adjusted=12.3%; Q^2 =0.117), the power of serendipity awareness is large (R^2 adjusted=28.4%; Q^2 =0.261), and the power of bricolage behavior is small (R^2 adjusted=11.5%; Q^2 =0.059), which supports the validity of our model and indicates that further research is needed to explore other explanatory variables for impulsiveness in second-hand markets and bricolage behavior.

Table 5 shows three rival models to further check the validity of our proposition (model 1). We consider model 1 to be the best model for several reasons. First, based on R^2 adjusted, model 2 explains only 8.06% of bricolage behavior and disregards the effect of impulsiveness in second-hand markets. Second, although model 3 explains 12.6% of bricolage behavior, it also disregards the effect of impulsiveness in second-hand markets, keeping only treasure hunting and serendipity awareness as explanatory variables. Third, model 4 explains only 0.50% of bricolage behavior and also disregards the direct and indirect effects of impulsiveness in second-hand markets. Therefore, model 1 is fully consistent with our thesis and previous literature in that impulsiveness conveys positive implications for consumer behavior both directly and indirectly. It is important to remember that impulsiveness represents sagacity in our model, which is a necessary characteristic in insightful perception (Dew, 2009).

Table 5. Rival models

Model 2	β	Standard error	Model 3	β	Standard error	Model 4	β	Standard error
H1: Impulsiveness in Second- hand Markets → Treasure Hunting Attitude	.270***	.055	H1: Treasure Hunting Attitudes → Bricolage Behavior	.120***	.028	H1: Impulsiveness in Second- hand Markets → Bricolage Behavior	-.144 ^{ns}	.151
H2: Impulsiveness in Second- hand Markets → Serendipity Awareness	.178***	.058	H2: Serendipity Awareness → Bricolage Behavior	.137***	.025	H2: Serendipity Awareness → Impulsiveness in Second- hand Markets	.175***	.041

Continue

Table 5. Rival models

Concludes

Model 2	β	Standard error	Model 3	β	Standard error	Model 4	β	Standard error
H3: Treasure Hunting Attitude → Bricolage Behavior	.157***	.026	H3: Treasure Hunting Attitudes * Impulsiveness in Second-hand Markets → Bricolage Behavior	.023ns	.040	H3: Treasure Hunting Attitudes → Impulsiveness in Second-hand Markets	.256***	.036
H4: Serendipity Awareness → Bricolage Behavior	.234***	.025	H3: Serendipity Awareness * Impulsiveness in Second-hand Markets → Bricolage Behavior	-.044ns	.040	H4: Serendipity Awareness → Impulsiveness in Second-hand Markets → Bricolage Behavior	-.025 ^{ns}	.027
						H5: Treasure Hunting Attitudes → Impulsiveness in Second-hand Markets → Bricolage Behavior	-.037 ^{ns}	.039
	R² adjusted			R² adjusted			R² adjusted	
Treasure Hunting Attitude	7.18%		Bricolage Behavior	12.6%		Bricolage Behavior	0.50%	
Serendipity Awareness	3.07%					Impulsiveness in Second-hand Markets	14.30%	
Bricolage Behavior	8.06%							

Note: SD=Standard Deviation; *** $p < .001$; ns $p > .05$ (two-tailed)

DISCUSSION

We found that impulsiveness in second-hand markets explains the serendipitous encounters (*H1*), i.e., impulsiveness is a personal characteristic that fosters the recognition of fortuitous and profitable situations. As previously mentioned, second-hand items are not always in optimal condition or aesthetically appealing (Hur, 2020). Thus, coming across a valuable object in those places elicits feelings of joy and pride precisely due to the unpredictable occurrence of such a situation (Machado et al., 2019). Considering that valuable items are usually unique and can be swiftly purchased by another consumer (Turunen & Pöyry, 2019), impulsive individuals tend to acknowledge fortunate events related to the purchase of a second-hand object, i.e., they are open to experiencing unpredictable events and to making swift decisions (Jones et al., 2003; Miao et al., 2019).

Serendipity awareness is explained by treasure hunting attitudes (*H2*), indicating that the playful and active exploration of a store's environment favors the occurrence of unusual experiences. Such a relationship acknowledges the findings of Akram et al. (2018) that experiencing a sense of adventure during shopping makes one more sensitive to serendipitous encounters. One's sensibility is awakened because treasure hunting is also enveloped by the feeling of adventure (Turunen & Pöyry, 2019). Therefore, we can conclude that the emotional sphere of treasure hunting favors cognitive processes related to attention and perception, especially in second-hand markets where an attentive mind is required to find valuable items.

Moreover, treasure hunting attitudes have proved to be relevant in explaining impulsiveness in second-hand markets (*H3*). This result expands knowledge that treasure hunting is not related to impulsiveness only as a dimension of recreational motivations but as an independent explanatory element directly impacting impulsiveness in second-hand markets. Furthermore, it advances certain conceptual framings on treasure hunting as being the passive exploration of the in-store environments (e.g., Beatty & Ferrell, 1998; Santini et al., 2019). On the contrary, our results confirm Hur's (2020) view on treasure hunting, which consists of the active and playful exploration of stores with a predetermined purchase intention (Hur, 2020). Finally, we propose that treasure hunting is meaningful beyond its relationship with the rarity of an item since an item is not only rare but precious to a specific consumer.

Another insightful finding of our study is that impulsiveness in second-hand markets mediates the relationship between treasure hunting attitudes and serendipity awareness (*H4*). This means that unusual discoveries are noticed in second-hand markets when there is a favorable attitude toward active browsing combined with a tendency of spontaneous behaviors and openness to new experiences and ideas, which are characteristics associated with impulsiveness (Miao et al., 2019). In second-hand markets, impulsiveness promotes quick decision-making when an item of potential value is found through treasure hunting, making it more likely that one experiences a feeling of luck, surprise, and joy. This finding reinforces the positive role of impulsiveness in discovery processes and reveals how sagacity and active search lead to serendipitous encounters.

Another supported hypothesis was that serendipity awareness positively influences bricolage behavior (*H5*). This means that an openness to unexpected, chance-based situations leads to the practice of bricolage. In second-hand markets, such a situation is reasonable, as second-hand shoppers are typically attentive and sensitive to unexpected discoveries and enjoy creatively combining items. Shoppers can acquire useful items for their projects if they recognize the potential for experiencing fortuitous findings. Moreover, when bricoleurs combine different items or use them in ways that are different from what the items were designed for (Davidsson et al., 2017), they already know that such a practice can lead them to unexpected discoveries, i.e., to a serendipitous encounter.

The hypothesis that treasure hunting attitudes positively influence bricolage behavior (*H6*) was also supported. In the case of shoppers who manifest treasure hunting attitudes, playfully exploring the environment of second-hand markets and observing the array of available items can favor the imagination on how to use them. Therefore, treasure hunting attitudes foster creativity. This finding makes us think that treasure hunting encompasses a pragmatic dimension beyond the recreational one acknowledged by Guiot and Roux (2010). Specifically, when considering the implications for bricolage, treasure hunting may help identify solutions and ideas from items with potential use for current or future projects. In this case, the scope of treasure hunting transcends its hedonic dimension and facilitates the generation of pragmatic, effective solutions.

The data also revealed that serendipity awareness mediates the relationship between treasure hunting attitudes and bricolage behavior (*H7*). This implies that bricolage behavior is likely triggered when shoppers have positive attitudes toward treasure hunting and are aware of the potential for serendipitous discoveries in second-hand markets. In a note of caution, our database consists of responses from Brazilian second-hand shoppers, i.e., people who are traditionally framed as naturally creative (Alencar et al., 2016). Therefore, Brazilians may be more inclined—or forced by economic reasons—to creatively think of new uses and combinations for items they come across through treasure hunting.

Finally, our findings show that impulsiveness in second-hand markets triggers bricolage behavior through serendipity awareness (*H8*), i.e., when impulsive shoppers identify serendipitous opportunities, they are likely to engage in bricolage behavior. The creative mindset of second-hand shoppers makes them feel lucky when they discover items that can serve new purposes. Their buying impulsiveness is particularly important in second-hand markets where decision-making time is likely more limited. Upon recognizing a fortunate event, buying impulsively allows shoppers to seize the opportunities promptly and incorporate the discovered items into their projects.

Implications for theory

This study makes several contributions from a theoretical perspective. First, it provides an exemplary, situation-based model for the role of buying impulsiveness in creative, playful processes of discovery. While research on buying impulsiveness has a long tradition in consumer

behavior, most scholars ignore the positive implications of buying impulsiveness for creativity. Second, the dominant research streams on second-hand markets discuss the motivations and barriers for shoppers engaging in that purchasing modality, i.e., they focus on the antecedent factors and not on the actual attitudes and behaviors of shoppers in those places—thus, our study contributes in this regard. Third, this study is among the few that examine the drivers of bricolage in the domain of consumer behavior. Fourth, we present several theoretical reasons to relate bricolage to second-hand markets as a preferred shopping channel. Fifth, we contribute with cumulative research on the theory of serendipity by demonstrating the explanatory relationships between its dimensions and their role in bricolage behavior.

Implications for practice

The implications of this study extend to the managerial, individual, and social domains. We identified impulsiveness in second-hand markets as a significant factor in a creative and playful process of discovery. Impulsive shoppers seek new experiences, sensations, and hedonic activities. Decision makers in second-hand markets should develop strategies to attract those shoppers. For instance, managers can use the available platforms to communicate the hedonic and unconventional experiences that second-hand environments offer. Since treasure hunting attitudes leverage impulsiveness, serendipity awareness, and bricolage behavior, opportunities for hunting goods should be considered as an in-store strategy to attract and entertain an important consumer base. This can be achieved by displaying diverse items in ways that motivate exploration of the environment.

Another issue refers to serendipity as a motivator for bricolage. Businesses can offer in-store spaces where shoppers can learn from others' ideas and share their own ideas on the originally designed or creatively imagined uses of products, or stores can actively demonstrate uses through social media and in-store technologies. Furthermore, workshops that encourage shoppers to combine and remodel goods are another option. Consequently, the shoppers may find themselves enchanted and attracted by the shopping environment. Also, promoting bricolage through the mechanisms revealed in this study can help reduce the waste of usable items. Bricoleurs are indeed expected to find new uses for items that might otherwise remain idle or end up in landfill. Moreover, bricolage can leverage consumer well-being, much like what happens with do-it-yourself practices (Collier et al., 2020). Finally, we see opportunities for marketing communication focusing on treasure hunting as an adventurous experience for shoppers in second-hand markets.

Limitations and future research

This study has limitations that call for caution and further research. The first limitation concerns the data being collected exclusively from Brazilian shoppers and with no screening about bricolage. While the Brazilian context offers rich insights into the impulsivity-creativity-

playfulness relationship, focusing only on that market poses obvious limits to generalization. Moreover, by not screening the personal or professional uses of bricolage, we could not discuss the importance of the measured constructs in specific situations. Future studies should thus test the model in different contexts, especially those with an intense culture of second-hand shopping, as well as situations where bricolage depends less on creativity and more on professional protocols.

Another limitation stems from the time elapsed since the respondents were physically present in second-hand markets. This fact is important due to the natural vanishing of memories about shopping experiences and sensations. At the time we collected the data, the world was going through the unprecedented times of the COVID-19 pandemic, a period when visits to stores and the time spent there were critically limited. Also, our data represents a cross-sectional survey. Researchers may want to develop longitudinal studies to investigate whether the model is stable and relevant through time.

Moreover, the low explanatory power of the model may result from the sample and the difficulty of capturing impulsiveness through self-report measures since shoppers may feel embarrassed to report their behavioral tendencies. Embarrassment may be strong among second-hand shoppers as they justify their purchases as a virtuous, sustainable, and conscious act (Campos et al., 2023). Impulsiveness goes against such a perspective, thus causing cognitive dissonance (Parguel et al., 2017). Therefore, new studies should develop new approaches to measure impulsiveness (e.g., experimental studies). Another aspect that must be considered is that bricolage is discussed in entrepreneurship and innovation studies. In the consumer behavior literature, research is mostly qualitative in analyzing bricolage through the concept of consumer tactics (e.g., in Marion & Nairn, 2011) and at a cultural level (e.g., in Russell & Tyler, 2005). For this reason, the current knowledge of predictors of bricolage is limited.

The focus here was on general consumer behavior. Therefore, the study was not restricted to specific second-hand market segments or item categories. Future research can take these aspects into account to verify if different item categories influence the model's relationships. Although we measured effective bricolage behavior, the other constructs in the model refer to attitudes. Given the attitude-behavior gap (Campos et al., 2023), we recommend that future research measures actual consumer behaviors. Finally, our structural model focused on impulsiveness, but other archetypical attitudes and behaviors can be likely explored in their relationship with treasure hunting, serendipity, and bricolage. Therefore, we see opportunities for future research to include other individual characteristics in the model, such as the need for uniqueness and fashion leadership.

CONCLUSION

This study was motivated by the lack of research that considers buying impulsiveness as a component of a creative and playful process of discovery. Much of the research on impulsiveness is limited to viewing it as maladaptive and leading to negative consequences. Conversely, our research takes a positive approach to the phenomenon. We show that treasure hunting attitudes explain impulsiveness in second-hand markets, serendipity awareness, and bricolage

behavior. Impulsiveness in second-hand markets explains serendipity awareness and mediates the relationship between treasure hunting attitudes and serendipity awareness. Furthermore, impulsiveness in second-hand markets explains bricolage behavior through serendipity awareness. Finally, serendipity awareness explains bricolage behavior and mediates the relationship between treasure hunting attitudes and bricolage behavior.

The primary contribution to theory is to offer a parsimonious, situation-based, explanatory model for the impulsivity-creativity-playfulness relationship in the realm of studies on bricolage and second-hand markets. The findings also expand our comprehension of the interplay of impulsiveness, second-hand shoppers, and creativity. For practice, we offer several insights about an ignored consumer base that may benefit from more attractive store designs, and about how businesses may increase revenues and promote positive social impact.

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NOTE

Data availability: Data will be made available upon request.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

AUTHORS' CONTRIBUTION

Patrícia de Oliveira Campos: Conceptualization; Data curation; Formal analysis; funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Writing – original draft; Writing – proofreading, and editing.

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