Online Impulsive Buying Behavior: The Mediating Effect of Browsing on Egyptian Consumers

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Abstract   This paper aims to investigate the joint effects of three types of external stimuli (social networking, marketing, and website cues) on consumers' browsing type and online impulsive buying behavior in the Egyptian retailing industry. As will be mentioned in detail, it is observed that the scant preceding research on online impulse purchases emphasizes the critical function of social influence in Egypt. The proposed objectives were achieved using a quantitative research approach using an online questionnaire. The study's 384 sample cases included 18-40-year-old old Egyptian online buyers living in Cairo. That was calculated utilizing formulas covered in chapters one and three (Population and sampling). Shoppers who exhibit utilitarian browsing have a bigger impact on the temptation to make impulsive purchases. Recommender agents, sales promotions, and customer reviews positively impact consumers' browsing types, which ultimately influence their impulse buying behavior. According to this study's findings, consumers are greatly influenced by recommendation agents while browsing, whether it's utilitarian or hedonic browsing value, more than other independent variables. Comparing the two types of browsing, recommendation place a greater emphasis on the hedonic value of browsing. Consumers who consider customer reviews place a greater emphasis on hedonic browsing, while those with sales promotions place a greater emphasis on utilitarian value.

Keywords: online impulsive buying behavior, utilitarian browsing, hedonic browsing, customer reviews, sales promotion, and recommendation agents

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1. Introduction

Consumer behavior is rapidly changing. Consumers are significantly shifting their ways of consuming and their lifestyles. Activities that were usually done in the physical world shifted to a new digital platform. In traditional stores, consumers can easily experience the product and service in person. However, consumers in online shopping can easily access any kind of information and data that can describe the product or service to them. Consequently, this kind of data enables the space for more impulsive buying. There has been a recent trend of more people making purchases online. Electronic trading platforms and pricing aggregates (marketplaces), which provide clients with enormous potential to suit consumer needs, are also replacing traditional internet retailers [1]. Despite the possible difficulties associated with online shopping, this concept has started to gain popularity among consumers as an alternative to visiting stores and wasting time. The number of digital users keeps increasing year after year [2]. From 2020 to 2023, the Statista Research Department predicted global retail e-commerce sales. It was estimated

to be 4.20 trillion US dollars in 2020. Estimates indicate that through 2023, revenues will continue to rise, reaching 6.54 trillion US dollars. Due to intense competition, e-commerce businesses must adopt an impulsive buying approach to attract customers. By altering numerous marketing stimuli, online impulse purchasing behavior is crucial to support e-commerce and draw customers to their website. The fact that online customers are more impulsive than traditional ones shows that online impulsive buying behavior occurs in e-commerce environments [3,4].

In the face of fierce rivalry among online marketers, aims to keep their current clients while also attracting new ones [5]. This can only be accomplished by ensuring that customers are happy with and appreciate the product being promoted [6]. This study aims to test a model that analyzes the relationship between external cues (Recommender agent, Customer review, and Sales promotion) that could stimulate online impulsive buying behavior, taking into consideration that the type of browsing could affect the strength of this relationship. Although this topic has been covered in earlier studies, more literacy is still needed in this area because those studies tended to concentrate on online apparel, and the

fashion industry, or did not explicitly do their research on online websites.

1.1. Purpose of the Study

Due to the intense competition among e-commerce businesses, online impulse buying behavior is a crucial component of e-commerce. With rapid online exposure, the stimulators to impulsive buying behavior have been increasing. So, a better knowledge of online impulsive buying is becoming increasingly important. This study explains external stimuli in terms of marketer-generated stimuli and social networking and website stimuli in its model.

As some consumers have a harder time resisting stimulus than others, the main purpose of this study is to investigate the online impulsive buying behavior of Egyptian customers through retail websites and how browsing types can mediate this relationship.

1.2. Research Gap

All previous research related to impulsive buying behavior was done in different areas, developed nations like the United States, Canada, and England, and developing nations like China, Korea, and India [7]. A lot of the studies that have dealt with online impulse purchases in S-commerce were popular throughout Asia, particularly in China [8]. There was no research demonstrating this conceptual model of online impulsive buying behavior created in this study in Egypt.

In prior studies, numerous product categories were evaluated, with clothes being the most popular [9], followed by restaurant vouchers [10]. Research papers investigated the effect of impulse buying behavior on the Tourism sector, [11] and apparel sector [12] purchases. The online retailing industry was not specified in much research. Thus, there is substantial empirical evidence that online impulse buying occurs regardless of product type, which will be discovered where study participants were driven to buy impulsively after being exposed to internal and external cues.

Few researchers examined the effect of recommendation agents, created through the brand's website on unplanned buying behavior and did not explain the importance of the tools generated by the customer. There is uncertainty regarding recommendation agents' and customers' review and their distinct effects on consumers' behavior in e-commerce transactions [13,14].

1.3. Research Objectives

A specific study will be conducted to address the research objectives posed in this research:

Identifying the type of relationship between Sales Promotion in retailing websites with Online Impulsive Buying Behavior.

Determining the impact of the Recommender agents in online retailing websites on Consumer impulsive buying behavior.

Identifying the rising influence of social networking stimulus as customer reviews on online impulsive buying behavior.

Identifying the mediating effect of browsing type on impulsive purchase behavior.

1.4. Research questions

This study seeks to answer the following research questions in the context of online retailing websites:

RQ1: What is the relationship between Sales Promotion and Online Impulsive Buying behavior on Egyptian retail websites?

RQ2: What is the relationship between Customer Reviews and Online Impulsive Buying behavior on Egyptian retail websites?

RQ3: What is the relationship between Recommender agents and Online Impulsive Buying behavior on Egyptian retail websites?

RQ4: How does Utilitarian Browsing mediate the relationship between Sales Promotion and Online Impulsive Buying Behavior?

RQ5: How does Utilitarian Browsing mediate the relationship between Customer Reviews and Online Impulsive Buying Behavior?

RQ6: How does Utilitarian Browsing mediate the relationship between Recommender Agents and Online Impulsive Buying Behavior?

RQ7: How does Hedonic Browsing mediate the relationship between Sales Promotion and Online Impulsive Buying Behavior?

RQ8: How does Hedonic Browsing mediate the relationship between Customer Reviews and Online Impulsive Buying Behavior?

RQ9: How does Hedonic Browsing mediate the relationship between Recommender Agents and Online Impulsive Buying Behavior?

2. Literature Review

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2.1. Sales Promotion

2.1.1. Sales Promotion Definition

A key element influencing consumer purchasing decisions is sales promotion [15,16,17,18]. Sales promotion is a short-term activity with varied stimulant tools used to drive customers or business units to buy various products or services or stimulate faster responses [19]. Sales promotion is a communication tool designed to convey the brand's message to customers stimulating their interest in purchasing goods and services [20].

2.1.2. Sales Promotion Aspects

Reward timing and incentive value are two crucial aspects of sales promotion. The timing of a promotion,

such as instant versus delayed rewards, might influence purchasing decisions. Techniques for sales promotion with immediate rewards include discounts, premiums, point-of-purchase incentives, coupons, refunds, or free samples. Sales promotion timing delayed reward consists of consumer contests and advertisements. Numerous research has revealed that consumers favor the instant-reward sales promotion technique, which supplies businesses with short-term revenue while the delayed sales promotion technique yields long-term revenue [21,22].

Successful sales promotions provide supplementary consumer benefits, such as monetary (price discounts, discount coupons, and rebates) or non-monetary awards (immediate or post-purchase tangible or intangible goods), while encouraging consumers to buy new products. While non-monetary incentives can produce long-term advantages for utilitarian items, monetary incentives give consumers short-term economic motives [22,23]. Hedonic and utilitarian benefits were further explored in more recent studies [24], which led to the conclusion that both advantages can now be used to influence purchasing decisions.

2.1.3. Importance of Sales Promotion

In previous research papers, authors demonstrated the importance of sales promotion in competitive markets, operating as inducements that can increase purchases to attract new customers and maintain current ones who are considering switching brands [25,26,27]. Marketers push sales promotions to draw consumers to their brands, which causes consumers to switch brands [28,29]. Moreover, Sales promotion tools play a vital role in increasing consumers' awareness, recognition, recall, and product trials [30]. Customers' views of the brand become more positive and favorable the more they interact with promotional information and events [31]. When consumers see price reductions, rational thought usually sets in because they have to figure out how much they can save [32]. Price-based promotions appeared to be luring customers to the e-commerce site where the promoted goods were offered and then convince them to make a purchase [33]. People with a low need for cognitive are also more receptive to sales incentives than people with a high demand for cognition [34]. Additionally, it was discovered that customers' rational thinking style affected the relative efficacy of various promotions [32]. The main driver of consumer interest in e-commerce platforms for products that prompt a purchase transaction is price-based sales promotion [33]. Due to the buyer's elevated emotion and the customers' willingness to stimulate their purchase through price awareness, the sales promotion can prompt a customer to buy right away [35].

2.2. Customer Reviews

2.2.1. Customer Reviews Definition

Online review is defined as the comments posted by consumers, whether positive or negative, sharing their experience with a product they used or heard of [36]. Consumer behavior is evolving as a result of customers' ongoing influence over others through sharing photographs of their purchases and recommendations [37].

Customer reviews are considered to be e-WOM. E-WOM is described as user-generated product reviews that are published on the retailer's website to aid in other consumer decision-making processes linked to purchases [38]. User-generated content was used more for shopping advice because it was more reliable than Brand-generated content material, particularly brand posts and sponsored content [39,40].

2.2.2. Customer Reviews Value

Reviews and images of purchases made by other customers had the greatest impact on consumer behavior [41,42]. Consumers are starting to have a tendency to rely more heavily on and treat online product reviews with more respect than other information sources (e.g. friends or relatives). This is due to the perception that internet reviewers are more knowledgeable and experienced in this subject, which influences consumer sentiments about particular media [43]. Consumers have more faith in the evaluation (such as pictures and videos) left by users who've already used and assessed a product [44].

The increase in online shopping, the use of digital channels, and the posting of evaluations have become the norm for customers [45]. The value of online consumer reviews for businesses is determined by two factors. Firstly, e-WOM, or electronic word-of-mouth, can be used to influence future consumer demand. The second benefit is that they can assist organizations in understanding a consumer's experiences and happiness [46]. Previous research has shown that positive reviews influence prospective buyers' inclination to make a purchase [36,47,48,49,50], highlighting the fact that review-based shopping websites contain feedback from numerous customers who have made purchases. Potential customers are more likely to trust these past purchasing experiences when reviews are credible.

A customer's opinion, evaluation, or comment can be used as a helpful benchmark or quality indicator, and it may have an impact on how confident and likely they are to make purchases [51]. A positive or negative reputation for a product in the internet market can be influenced by comments, critiques, and/or remarks made by online consumers, according to Ampadu [52]. As a result, there are a huge number of consumer reviews available in the online marketing environment. However, not all of these reviews can be relied upon to help consumers make informed decisions about which products to buy. Some academics also contend that knowledgeable consumers make reviews, comments, and product quality assessments should be an accurate, truthful, precise, and reliable reflection of the market and the consumers' experiences [53].

2.3. Recommender Agents

2.3.1. Recommender Agents' Definition

To improve product purchases based on consumers' needs, interests, and preferences, personalized recommendation (PR) has been developed [54]. A personalized recommendation refers to a system where products, services, and information are personalized and proposed to a shopper. Online personalization systems make

assumptions about an individual's preferences, activities, and expectations, to modify interaction and information, so as to give the most appropriate online shopping experience [55]. According to the literature [56,57], perceived personalization refers to the degree to which a consumer believes that personalization embodies personal preferences. Making things that excite consumers' attention prominent and accessible frequently results in hedonic motives, which might result in unintended purchases [58,59].

2.3.2. Recommendation System Approach

Recommendation systems hold different methods that e-retailers can apply. Through both collaboration and content-based filtering methods, the recommendation system often gives a list of suggestions [60]. In a content-based filtering technique, a customer's past purchases are utilized to build a model, which is then used to show things the customer might be interested in later. Additionally, the personalized recommendation is acknowledged as a useful aid for enhancing the caliber of decision-making based on the preferences, purchasing patterns, or preferences of other customers [61]. Furthermore, regardless of the availability of product content, collaborative filtering systems are based on product reviews and ratings from customers. Collaborative filtering finds similarities across user-generated products and suggests the most popular ones from comparable people [62].

Collaborative filtering systems have been built using two strategies. The first strategy is the User-based collaborative filtering systems [63,64], which recommend goods that have been most frequently picked by customers who are similar to them in the past. The resemblance between any two consumers is determined using the ratings they both gave to the same products. Contrarily, item-based collaborative filtering systems examine product similarities and suggest products that are equivalent to those that the consumer has already chosen [65]. Cosine similarity and conditional probability-based similarity are two examples of functions that can be used to determine how similar two goods are [66]. The benefit of this strategy is that it may anticipate product similarities and offer them when a customer clicks on or purchases an item. Furthermore, Hybrid RS combines described two strategies that try to choose the optimal algorithms for obtaining increased efficiency.

2.3.3. Recommendation System Benefits

Personalized recommendation systems provide advantages to businesses and clients alike: On one hand, recommender systems can greatly benefit businesses by increasing customer acquisition and retention, which in turn increases online traffic. They are used in email campaigns in addition to being utilized on websites and in online stores to give product recommendations [67]. To create a simple online shopping experience, the Recommendation System helps companies to give their target clients comprehensible and clear classifications of pertinent product information [68]. Not only this, but it facilitates cross-selling, upselling opportunities, and

growing consumer loyalty which can help to enhance product sales [69,70]. Online recommendation systems are known to be effective in engaging consumers [71,72,73]. On the other hand, recommender systems can enhance the efficiency of consumers' e-commerce decision-making and lower search costs and information overload [72]. This can occur on the website through the usage of recommendation agents that assist customers in sorting through and weighing their options when shopping online [73].

2.4. Browsing

2.4.1. Browsing Definition

Consumers are accustomed to making online purchases using digital gadgets [74]. The method by which customers find information in an online environment is by browsing the website. Browsing is a vital way for customers to obtain the information or entertainment they desire from a website.

Originally, Bloch and Richins [75] defined browsing as the in-store evaluation of a retailer's goods for informational and/or recreational purposes without an immediate intent to buy. Browsing and searching for products, which was the first stage of information searching and choosing [76], has been easy due to the variety of products that online websites offer. Even if browsing is unintentional, it provides information about the goods and fosters desire. Additionally, the customer does a post-purchase evaluation, just like throughout the general purchasing process [77]. However, some internet vendors put their customers under time pressure to place orders, and this practice undoubtedly encourages spontaneous spending.

2.4.2. Browsing Types

Researchers have separated browsing into two categories: utilitarian browsing and hedonistic browsing [78, 74].

2.4.2.1. Utilitarian Browsing

Utilitarian browsing mainly revolves around the value that consumers receive from their product purchases. Utilitarian browsing is more focused on achieving specific goals, involves looking for information about the product, and seeks to improve the results of future purchases [79]. Customers that browse for utilitarian purposes look for the information they need in a deliberate and conscientious way [80].

2.4.2.2. Hedonic Browsing

While the second one defines the pleasure that shoppers experience through their purchases while scanning the website [74]. Hedonistic motivation to browse refers to the experiential buyers who are more likely to participate in the activity or adopt the technology when they have already felt an immediate sense of pleasure or enjoyment from it. Impulsive buyers in the case of Hedonic browsing exhibit more sophisticated, abrupt, and hedonistic conduct that disregards careful review [81].

2.5. Impulsive Buying Behavior

2.5.1. Impulsive Buying Behavior Definition

With more individuals spending time online for various activities like online communication, gaming, and web surfing, online shopping has become the norm across the globe. Online impulse buying has increased because of the enormous expansion of e-commerce and other crucial technological developments [77]. Recent research has found that impulsive behavior has had increasingly noticeable outcomes over time and that there is an increase in the number of impulsive internet purchases [48,82]. The development of e-commerce and information technology activities is to blame for this rise [77]. The term "impulsive buying" refers to a quick and hedonistically complicated purchasing activity in which the urge that triggers the purchase omits any careful, intentional consideration of alternatives or potential consequences [77,83,84].

3. Research Model and Hypothesis

3.1. Research Model

There is a set of variables that influence online impulsive buying behavior at online retail shopping websites. The following variables are based on the literature review.

3.1.1. Independent Variable

The independent variable for this study consists of the constructs of external stimuli in terms of the following:
- Sales promotion
- Recommender agents
- Customer reviews

3.1.2. Mediator Variables

The mediating variable for this study consists of the constructs of browsing in terms of the following:
- Utilitarian browsing
- Hedonic browsing

3.1.3. Dependent Variable

- Online impulsive buying behavior

3.2. Hypothesis

The following precise hypotheses were established.

H1: There is a significant relationship between Sales promotion and online impulsive buying behavior.

H2: There is a significant relationship between Recommender agents and online impulsive buying behavior.

H3: There is a significant relationship between consumer reviews and online impulsive buying behavior.

H4: Utilitarian browsing significantly mediates the relationship between sales promotion and online impulsive buying behavior.

H5: Utilitarian browsing significantly mediates the relationship between the Recommender agent and online impulsive buying behavior.

H6: Utilitarian browsing significantly mediates the relationship between Customer reviews and online impulsive buying behavior.

H7: Hedonic browsing significantly mediates the relationship between Sales promotion and online impulsive buying behavior.

H8: Hedonic browsing significantly mediates the relationship between Recommender agents and online impulsive buying behavior.

H9: Hedonic browsing significantly mediates the relationship between Customer reviews and online impulsive buying behavior.

4. Research Methodology

4.1. Population

The characteristics of the study's target population include respondents living in Cairo, being older than 18 years old, and having experience making purchases through online marketplaces. Online users in 2020 as stated by cia.gov [85] are 73,680,770 Egyptians which represents 72% of the total population, making Egypt the second country in Africa after Nigeria.

4.2. Sample Size

According to Keller G and Warrak B [86] if the targeted population exceeds 1 million, then the sample is calculated through the following formula:

$$n_0 = \frac{z_\alpha^2 * p(1-p)}{e^2}$$

"Zα" is the normal distribution's critical value (for example, for a 95% confidence level at α 0.05, the critical value is 1.96). "P" is the proportion of Specific events and is set to be 0.5 as it delivers the maximum result for sample size, while "e" is the marginal error and is selected to be 0.06. As a result, Krejcie and Morgan [87] advised the sample size for the population and provided a table for calculating the sample size. The sampling scale can be seen in the table with the number n = 384 for a finite population (1970), therefore the researchers chose to use 400 samples to reduce potential errors and boost accuracy. Consequently, the sample size is 384 Egyptian online user respondents in Cairo. The survey was distributed online through a link sent by email and on different social media groups. This is the sampling frame by other researchers investigating impulsive buying behavior by Sritanakorn and Nuangjamnong [88].

4.3. Sampling Technique

Convenience sampling, a non-probability sample approach, was used to choose the customers who would later become the study's respondents. Convenience sampling, where respondents are picked based on their availability, ease of access, and proximity to the researcher, is the best sampling strategy since the researcher will manually send the questionnaire to the respondent [89].
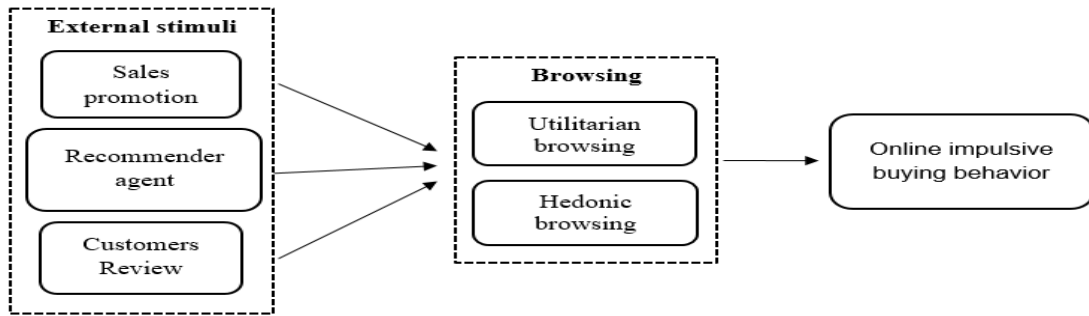
Figure 1. Proposed research theoretical model

4.4. Research Tools

4.4.1. Questionnaire Design

Surveys have been utilized for gathering data for a significant duration. The chosen group of participants is provided a predetermined questionnaire with either closed- or open-ended questions. Surveys are useful in exploratory, explanatory, and descriptive research [90]. The survey has 40 closed-ended questions to gather primary data, which will then be processed to meet the study's objectives. The survey was uncomplicated, written in English, and simple to grasp.

The questionnaire undertakes a test to guarantee its reliability and validity. A pilot survey was conducted, and the questionnaire was sent through social media pages to frequent internet buyers to get their input. A total of 17 respondents provided insightful advice in their responses. The questionnaire was further improved and finished in response to their comments.

In the questionnaire, for section A, the respondents must answer several general questions related to website preference while buying impulsively and how often they buy. Independent Variables were asked in the second section (Sales Promotion, Customer Reviews, and Recommendation Agent). While in Sections C, mediating variables were included (Hedonic and Utilitarian browsing). Section D includes dependent variables (Online impulsive buying behavior). Section E is concerning demographic information of respondents such as gender, age, monthly salary, and classification in education degree. The respondent will answer the questions by using a five-point Likert scale ranging from 1- strongly disagree to 5-strongly agree.

5. Data Analysis, Results (Findings) & Discussion

In this part, the researcher used Descriptive statistical techniques, Pearson correlation matrix, and path analysis to analyze the data collected. Descriptive statistical techniques that include (frequencies, percentages, means, standard deviation, and coefficient of variation.). Pearson correlation matrix is used in this research to measure a significant linear relationship between the constructs of external stimuli and online impulsive buying behavior, with the type of browsing as a mediator construct.

5.1. Reliability Test

In order to determine the internal consistency of the scales used to measure each construct or if items were homogeneous and had the same quality as the constructs, the reliability scores were calculated using Cronbach's alpha.

Table 1. Reliability and intrinsic validity

No	constructs	no. of items	Reliability coefficient	intrinsic validity
1	SP	3	0.768	0.876
2	CR	4	0.872	0.932
3	RA	10	0.886	0.941
4	HB	4	0.858	0.926
5	UB	5	0.912	0.954
6	OIBB	5	0.861	0.927
	Total	30	0.927	0.962

Table 2. Descriptive statistics for the variables

No.	Construct	Mean	CV	SD	Rank
1	Sales Promotion	3.4358	25.53	0.87707	4
2	Customer Reviews	3.7326	18.51	0.69087	1
3	Recommender agents	3.3083	20.07	0.66405	2
4	Hedonic Browsing	3.3030	27.08	0.89459	5
5	Utilitarian Browsing	3.7628	24.24	0.91224	3
6	Online Impulsive Buying Behavior	2.8238	32.62	0.92117	6

According to Descriptive statistics in table (2), it can be concluded that:

The five most homogeneous constructs are Customer Reviews, Recommender agents, Utilitarian Browsing, and Sales Promotion with a coefficient of variation of (18.51%), (20.07%), (24.24%), and (25.53%) respectively. On the other hand, the three most heterogeneous constructs are Hedonic Browsing, and Online Impulsive Buying Behavior with a coefficient of variation of (27,08%), and (32.62%) respectively.

5.3. Correlation Matrix

According to Table 2, it is concluded that:
- There are significant positive linear relationships between the construct of Sales promotion, Customer reviews, Recommender agents, and Utilitarian browsing at a level less than (0.001).

- There are significant positive linear relationships between the construct of Sales promotion, Customer reviews, and Recommender agent with the construct of Hedonic Browsing, at a level less than (0.001).
- There are significant positive linear relationships between the construct of Sales promotion, Customer reviews, and Recommender agents, and

Hedonic Browsing with the construct of Online Impulsive Buying Behavior, at a level less than (0.001).

There are significant positive linear relationships between the mediators in terms of Sales promotion, Customer reviews, Recommender agents, and Utilitarian Browsing with the construct of Online Impulsive Buying Behavior, at a level less than (0.001)
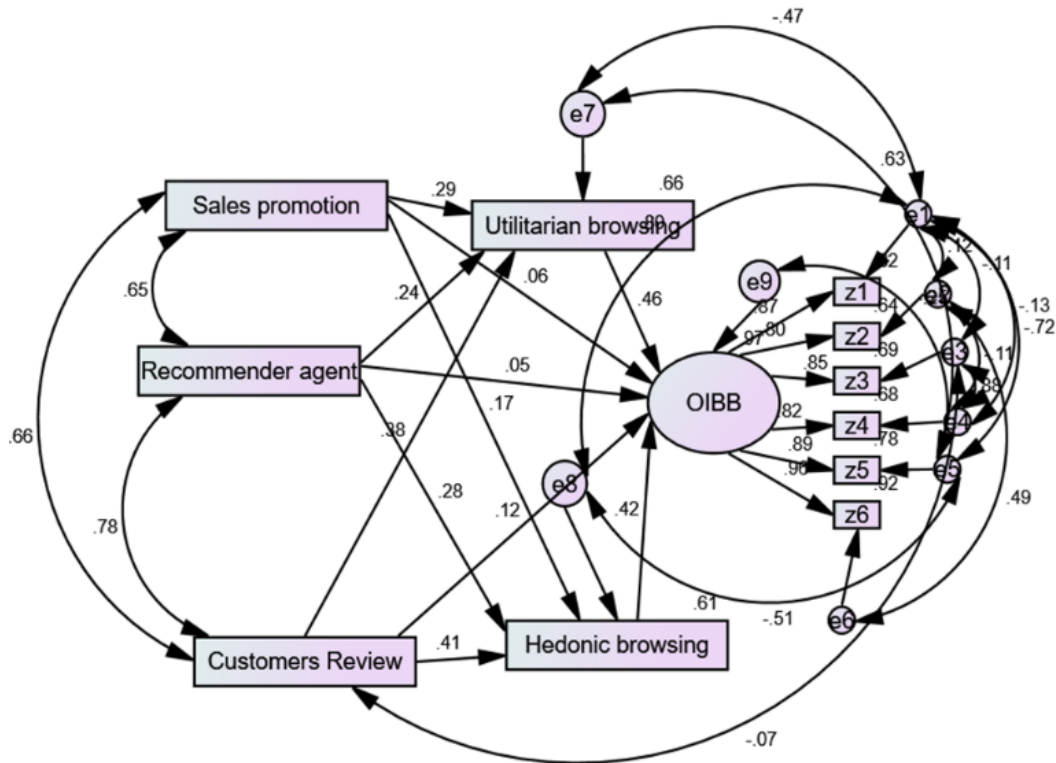

Figure 2. Pearson correlation matrix (linear relationship between variables)

Table 3. Pearson Correlation matrix

Constructs	Sales promotion	Customer Review	Recommender Agents	Utilitarian Browsing	Hedonic Browsing	Online impulsive buying behavior
Sales promotion	1					
Customer Review	0.647***	1				
Recommender Agents	0.661***	0.782***	1			
Utilitarian Browsing	0.683***	0.724***	0.760***	1		
Hedonic Browsing	0.634***	0.711***	0.740***	0.720***	1	
Online impulsive buying behavior	0.728***	0.788***	0.824***	0.895***	0.874***	1

Table 4. Path analysis of the proposed model

Path			Standardized estimate	S.E	C.R	SIG.
Utilitarian Browsing	<---	Sales Promotion	.287	.033	8.691	***0.001
Hedonic Browsing	<---	Sales Promotion	.174	.041	5.670	***0.001
Hedonic Browsing	<---	Customer Review	.279	.047	7.610	***0.001
Hedonic Browsing	<---	Recommender Agent	.409	.044	10.616	***0.001
Utilitarian Browsing	<---	Recommender Agent	.379	.034	9.244	***0.001
Utilitarian Browsing	<---	Customer Review	.241	.038	6.081	***0.001
Online Impulsive Buying Behavior	<---	Hedonic Browsing	.423	.023	14.639	***0.001
Online Impulsive Buying Behavior	<---	Utilitarian Browsing	.455	.034	14.684	***0.001
Online Impulsive Buying Behavior	<---	Sales Promotion	.061	.017	3.838	***0.001
Online Impulsive Buying Behavior	<---	Customer Review	.053	.019	2.867	***0.004
Online Impulsive Buying Behavior	<---	Recommender Agent	.122	.020	5.462	***0.001

5.4. Path Model Analysis

According to Table 4:
There is a significant positive effect of the constructs of Sales promotion, Customer reviews, and Recommender agent and the construct of Utilitarian Browsing, at Significant at a level less than (0.001). This validates the first research hypothesis; constructs Sales promotion, Customer reviews, and Recommender agents have a significant effect on Utilitarian Browsing, with regression model as the following:

Utilitarian Browsing= 0.287 Sales Promotion+ 0.241 Customer Reviews+ 0.379 Recommender Agent

The exogenous variables were accepted, Sales promotion, Customer reviews, and Recommender agent in SEM explain (66%) from the total variation of the mediator variable; Utilitarian Browsing, the rest percent due to either the random error in the regression model or other Independent Variables excluded from the regression model.

There is a significant positive effect of the construct of Sales promotion, Customer Reviews, and Recommender agents with Hedonic Browsing at a significant level less than (0.001). This validates the second research hypothesis; Sales promotion, Customer reviews, and Recommender agents with Hedonic Browsing, with regression models as the following:

Hedonic Browsing= 0.174 Sales Promotion+ 0.279 Customer Reviews+0.409 Recommender Agent

The exogenous variable was accepted, Sales promotion, Customer reviews, and Recommender agent, in SEM explain (60.9%) from the total variation of Mediating variable; Hedonic Browsing, the rest percent due to either the random error in the regression model or other Independent Variables excluded from the regression model.

There is a significant positive effect of the construct of Sales promotion, Customer reviews, Recommender agents, Utilitarian Browsing, and Hedonic Browsing with Online Impulsive Buying Behavior at a significant level less than (0.001). This validates the second research hypothesis; Sales promotion, Customer reviews, Recommender agent, Utilitarian Browsing, and Hedonic Browsing with the construct of Online Impulsive Buying Behavior with regression models as the following:

Online Impulsive Buying Behavior= 0.061 Sales Promotion + 0.053 Customer Reviews + 0.122 Recommender Agent + 0.455 Utilitarian Browsing + 0.423 Hedonic Browsing

The exogenous variable was accepted, Sales promotion, Customer reviews, Recommender agent, Utilitarian Browsing, and Hedonic Browsing, in SEM explain (97.4%) from the total variation of Mediating variable; Hedonic Browsing, the rest percent due to either the random error in the regression model or other Independent Variables excluded from the regression model.

5.5. Standardized Effect

- The most important exogenous observed constructs that directly affect Hedonic browsing are Sales promotion, Customer reviews, and Recommendation agents by Standardized direct coefficients from (0.241 to 0.379).
- The exogenous observed construct of Utilitarian browsing directly affects Sales promotion, Customer reviews, and Recommendation agents by Standardized direct coefficients from (0.174 to 0.409).
- The exogenous observed construct of Utilitarian browsing and Hedonic browsing, Sales promotion, Customer reviews, and Recommendation agents directly affect the coefficient constructs of Online impulsive buying behavior by Standardized direct coefficients from (0.061 to 0.455).
- The exogenous observed construct of indirect effect of the constructs of Sales promotion, Customer reviews, and Recommendation agents on Online impulsive buying behavior by Standardized direct coefficients from (0.204 to 0.345).
- It revealed that there is a significant indirect standardized effect of the Brand Resonance Model on Online impulsive buying behavior through Utilitarian browsing and Hedonic browsing as mediator variables at a significant level less than (0.05), by using the possible sampling method for (200) Number of Bootstrap Samples. This validates the following research hypothesis mediator.

Table 5. Standardized direct and indirect effect of the model

Constructs	Recommender agent	Customer reviews	Sales promotion	Hedonic browsing	Utilitarian Browsing	Online Impulsive Buying Behavior
Utilitarian browsing	0.409[d]	0.279[d]	0.174[d]	0.000	0.000	0.000
Hedonic browsing	0.379[d]	0.241[d]	0.287[d]	0.000	0.000	0.000
Online Impulsive Buying Behavior	0.122[d]	0.053[d]	0.061[d]	.423[d]	.455[d]	0.000
Online Impulsive Buying Behavior	0.345[ind]	0.227[ind]	0.204[ind]	0.000	0.000	0.000
Utilitarian browsing	0.172445	0.109655	0.130585	0.000	0.000	0.000
Hedonic browsing	0.173007	0.118017	0.073602	0.000	0.000	0.000

ind: Standardized Indirect Effect, d: Standardized Direct Effect.

6. Conclusion and Discussion

Based on the tools used in this study to determine the effect of the variables on online impulsive buying behavior, it was clear that marketing stimuli such as Sales promotion, Social Networking stimuli as online reviews, and website stimuli as recommendation agents are the three external stimuli that influence online impulsive buying behavior. It was important to examine the mediating factor by understanding what type of browsing consumers inhabit.

Based on the correlation analysis findings, the factors that were examined in relation to impulsive internet shopping are significant influencers that cause customers to make impulsive purchases, which helps academics better assess impulsive online shopping behavior and gives online retailers information they may use to enhance the marketing tactics. The correlation matrix findings supported all the research hypotheses. Meaning that all independent variables have a significant positive relationship with online impulsive buying behavior in Egypt. Additionally, applying SEM to test the theoretical model allows a greater understanding of the variables influencing impulsive online purchasing. The regression analysis results showed that utilitarian browsing has the highest influence on online impulsive buying behavior with an estimated coefficient of (14.684) followed by hedonic browsing (14.639). While the greatest influence of the independent variables mentioned in the model is recommender agents with a coefficient of (5.462), followed by sales promotion with a coefficient of (3.838) and customer reviews with a coefficient of (2.867), which have the least impact on impulsive buying behavior.

The data analysis of the descriptive statistics allows one to draw the conclusion that internet purchasing is expanding rapidly. Several factors influence why people make impulsive purchases. For example, the total weighted mean of sales promotion was (3.4358), with a coefficient of variation of (25.53%), indicating a general trend in finding the best offer for the customer to take advantage of. The findings of this study are in accordance with the framework of developing hypotheses in the results of previous studies such as [91,92]. Sales promotion is proven to be able to play a positive role in influencing online impulsive buying behavior among users of retail websites in Egypt. This indicates that respondents value the offer offered by brands' websites leading to impulsive buying behavior. Brands have to indicate the source of information and channels that consumers are most alerted to, as to announce their offers on these channels.

Social networking can play a relevant role in motivating impulse buying behavior. The descriptive results of this research reveal that customer reviews have a great degree of penetration (C.V=18.51%.); moreover, the participants acknowledged that these social networks had triggered some impulse buying and showed a notable intention to use them to make purchases. This research shows that hedonic browsing has a positive direct impact on browsers' inclination to make impulsive purchases. In other words, while exploring shopping websites, these customers are more inclined to concentrate on the enjoyable aspects of online evaluations and are more likely to experience the need to make an impulse purchase. Data also demonstrate that customer reviews do have a bigger influence on hedonic browsing than utilitarian browsing. Accordingly, consumers' browsing and impulse purchase behavior are more heavily influenced by the affective component of online reviews.

As utilitarian browsers tend to reduce risks in their purchase decision as stated by the author Park et al. [93], which complement the research results of regression analysis that recommendation agents are relatively more important than other studied independent variables on utilitarian browsing. Recommended products presented on the website act as a source for showing alternatives and information about other brands' offerings which can affect browsers with an acknowledged product category and aware of what is missing in their closet. Not only this but recommended products trigger hedonic browsers, those who browse for fun, eager to check the recommended products, giving them inspiration for an impulse purchase. As recommender agents are relatively important for both types of browsing, however, it has a relatively higher influence on Hedonic browsing, proving that recommending agents enhance the online impulsive purchase environment.

These findings have implications for online retailers, web developers, and marketers who should concentrate on enhancing the functionality, responsiveness, and informational value of the recommended products offered to the customer in their purchase experience in order to encourage impulsive online purchasing.

The information on the website should also be helpful and informative to encourage utilitarian browsers to seek information, for their chosen criteria.

7. Implication of the Study

Online producers and retailers can better understand how to encourage consumer impulse buying. So based on the research findings, the recommendations are as follows:

- As consumers are having the ability to accept the online shopping environment. Offline Retailers should focus their strategies on adapting smart tech that will enable them to focus more on technical means while also lowering operating expenses and increasing profitability.

- In response to the growing consumer impulsive shopping behavior, it was conveyed that consumers tend to consider recommended products in mobile apps, as to give them inspiration about what to buy. Companies should focus more on enhancing their recommender agents on Websites. Web designers should design a highly responsive interactive website so that when customers search for a product, the website suggests a group of similar recommended products and complementary ones to improve online impulsive buying behavior.

- Looking into pertinent social networking stimuli, such as customer reviews in the online store, may also assist this company's management in better organizing their website structures and logistics to maximize their use. Retail websites can start announcing special gifts and future discount codes to prospective purchasers if they show reviews on

the item purchased on the website. This may be used to effectively intensify these social networking factors to inspire more impulse buying behavior.

- Customer reviews help consumers to gain more information on the product reviewed, giving them more trust to buy a product impulsively. If negative reviews are shown, firms have to be strategically aware that this could affect consumers' purchase behavior. Accordingly, firms should respond actively to consumers' comments to determine their negative concerns, offer a solution, and turn those negative reviews into positive ones. Showing a responsive attitude to customers' concerns can enhance customers' behavior toward the online retail websites

- In order to grow sales of the firm's websites, marketing managers can boost digital ads and post them on social media. As the customer browses social media, he can find an Ad with "Buy one get one on selected items" "Don't miss this offer" or other attractive sales promotions. For Utilitarian browsers, an Ad with this limited information attracts them more to discover and compare the promotion of this online store. Consumers are directed to the installed application or website by clicking on the link to begin their shopping experience. This will help firms to gain more sales as digital ads linked to the application boosts more impulse purchases in Egypt.

8. Limitation and Future Research

Although the results of questionnaires were used to examine the model, a larger sample might show better results. Due to time constraints, the study's sample was limited to the Cairo governorate; if it had been conducted elsewhere, the findings might have been different. Regarding customer reviews construct, Positive and negative online reviews may have distinct characteristics concerning their content, and these may have different consequences. Future Researchers should enhance this concept, as there are different types of online reviews that were not tested. Not only this, but consumers may behave differently when buying a product impulsively than a service. Impulsive buying of services may need distinctive characteristics.

The researcher suggests that future researchers study the influence of types of recommender agents on impulsive buying behavior to specify which type has greater influence. To determine whether the results of this study can be applied in a variety of contexts, future researchers may investigate this issue using alternative techniques like experiments or shopping simulators. Third, manipulating the flow of web browsing and estimating how browsers are converted into buyers (impulse vs. planned) during online shopping is advised for future studies. Focusing on the variables that can affect hedonic browsing would help business owners to increase positive impulsive buying behavior, generating higher profits. Having this insight will enable researchers to learn more about the information processing model for cross-cultural marketing. Further qualitative research can be done to

investigate the different effect of Positive and negative online reviews that may have distinct characteristics about their substance, and these may have different consequences. Finally, it is advised to explore deeply the relationship between impulsive purchase behavior and customer loyalty, taking into account various characteristics of both.

References

[1] Ivanova, I., Tatiana, T., Rudenko, A., & Zalozna, T. (2020). Black Friday tool for Sales Promotion. Marketing and Digital Technologies, 4(4), 52-61.

[2] Statista Research Department. (2020a). E-commerce Worldwide - Statistics & Facts. Retrieved from https://www.statista.com/topics/871/onlineshopping/#dossierSummary__chapter1.

[3] Liu, Y., Li, H., & Hu, F. (2013). Website attributes in urging online impulse purchase: An empirical investigation on consumer perceptions. Decision Support Systems, 55(3), 829-837.

[4] Wiranata, A. T., & Hananto, A. (2020). Do website quality, fashion consciousness, and sales promotion increase impulse buying behavior of e-commerce buyers? Indonesian Journal of Business and Entrepreneurship.

[5] Akram, U., Hui, P., Kaleem Khan, M., Tanveer, Y., Mehmood, K., & Ahmad, W. (2018). How website quality affects online impulse buying. *Asia Pacific Journal of Marketing and Logistics*, *30*(1), 235-256.

[6] Espinosa, J. A., Ortinau, D. J., Krey, N., & Monahan, L. (2018). I'll have the usual: How restaurant brand image, Loyalty, and satisfaction keep customers coming back. Journal of Product & Brand Management, 27(6), 599-614.

[7] Pradhan, D., Israel, D., & Jena, A. K. (2018). Materialism and compulsive buying behaviour: The role of consumer credit card use and impulse buying. Asia Pacific Journal of Marketing and Logistics.

[8] Xi, H., Hong, Z., Sun, J., Li, X., Wei, J., & Davison, R. (2016, June). Impulsive purchase behaviour in social commerce: The role of social influence. In 20th Pacific Asia Conference on Information Systems (PACIS 2016) (p. 364). Association for Information Systems.

[9] Arviansyah, Dhaneswara, A. P., Hidayanto, A. N., & Zhu, Y. Q. (2018). Vlogging: Trigger to Impulse Buying Behaviors. *PACIS*, *249*.

[10] Chung, N., Song, H. G., & Lee, H. (2017). Consumers' impulsive buying behavior of restaurant products in Social Commerce. International Journal of Contemporary Hospitality Management, 29(2), 709-731.

[11] Karimi Alavijeh, M., Golestani, M. (2022). Investigating the effect of Scarcity Messages on Impulsive Buying Motivation and Impulsive Buying Behavior of Tourists when Booking Online (Moderating Role of Travel Experience). Tourism Management Studies, 17(57), 9-45.

[12] Kim, J. (2003). College students' apparel impulse buying behaviors in relation to visual merchandising (Doctoral dissertation, University of Georgia).

[13] Benlian, A., Titah, R., & Hess, T. (2012). Differential effects of provider recommendations and consumer reviews in e-commerce transactions: An experimental study. Journal of Management Information Systems, 29(1), 237-272.

[14] Lin, Z. (2014). An empirical investigation of user and system recommendations in e-commerce. Decision Support Systems, 68(4), 111-124.

[15] Agbi, B. D., Lawal, K. A. A., & Ajibola, A. B. (2019). Sales Promotion and Consumers Purchase Decision in the Beverage Industry in Nigeria. Humanities, Management, Arts, Education & the Social Sciences Journal, 7(2), 1-11.

[16] Akbar, M. I. U. D., Ahmad, B., Asif, M. H., & Siddiqui, S. A. (2020). Linking Emotional Brand Attachment and Sales Promotion to Post-Purchase Cognitive Dissonance: The Mediating Role of Impulse Buying Behavior. Journal of Asian Finance, Economics, and Business, 7(11), 367-379.

[17] Hanaysha, J. R. (2018). An examination of the factors affecting consumers' purchase decisions in the Malaysian retail market. PSU Research Review, 2(1), 7-23.

[18] Said, Y. Ben, Bragazzi, N. L., & Pyatigorskaya, N. V. (2019). Influence of Sales Promotion Techniques on Consumers Purchasing Decisions at. Pharmacy, 7(4), 1-12.

[19] Rojuee, H., & Rojuee, M. (2017). The impact of advertising and sales promotion methods on brand loyalty through brand equity (case study: Chitoz Brand). *International Journal of Basic Sciences & Applied Research*, 6(1), 11-18.

[20] Kotler, P. (2018). Kotler & Armstrong, Principles of Marketing| Pearson.

[21] Santini, F.D.O., Vieira, V.A., Sampaio, C.H. and Perin, M.G. (2016), "Meta-analysis of the long- and short-term effects of sales promotions on consumer behavior", Journal of Promotion Management, Vol. 22 No. 3, pp. 425-442.

[22] Fam, K.-S., Brito, P.Q., Gadekar, M., Richard, J.E., Jargal, U. and Liu, W. (2019), Consumer attitude towards sales promotion techniques: a multi-country study, Asia Pacific Journal of Marketing and Logistics, Vol. 31 No. 2, pp. 437-463.

[23] Iranmanesh, M., Jayaraman, K., Zailani, S. and Ghadiri, S.M. (2017), "The effects of consumer perception of volume discount benefits on intention to purchase grocery products: deal proneness as a moderator", Asia Pacific Journal of Marketing and Logistics, Vol. 29 No. 5, pp. 1017-1035.

[24] Jee, T.W. (2021). The perception of discount sales promotions: A utilitarian and hedonic perspective. Journal of Retailing and Consumer Services, 63, 102745.

[25] Antunes, Inês & Martinez, Luisa & Martinez, Luis. (2022). The effectiveness of sales promotion techniques on the millennial consumers' buying behavior. ReMark - Revista Brasileira de Marketing. 21. 784-836. 10.5585/remark.v21i3.19997.

[26] Bogomolova S., Szabo, M., & Kennedy, R. (2017). Retailers' and manufacturers' price promotion decisions: Intuitive or evidence-based? Journal of Business Research, 76, 189-200.

[27] Wong, K.H., Chang, H.H., & Yeh, C.H. (2019). The effects of consumption values and relational benefits on smartphone brand switching behavior. Information Technology & People, 22(4), 217-243.

[28] Apriliani, H., K. & Hudrasyah. (2018). The effect of conventional customer habit: Touch, sight, smell on online written batik fabric. International Journal of Business and Economic Affairs, 3(5), 195-206.

[29] Memon, R. H., Kazi, A. G., Zubedi, M. Y., & Ansari, A. (2019). Factors affecting impulse purchase behavior in hyderabad marketing perspective. International Journal of Entrepreneurial Research, 2(1), 20-24.

[30] Farrag, D. A. (2016). Impact of shari'ah on consumers' behavior toward sales promotion tools: Focus on Egyptian convenience products. Journal of Food Products Marketing, 23(5), 533-552.

[31] Hilman, H., Hanaysha, J.R.M. and Ghani, N.H.A. (2017), Analyzing the relationship between advertising and sales promotion with brand equity, Asian International Journal of Social Sciences, Vol. 17 No. 2, pp. 88 -103.

[32] Yang, B., & Mattila, A. S. (2020). How rational thinking style affects sales promotion effectiveness. International Journal of Hospitality Management, 84, 102335.

[33] Sundström, M., Hjelm-Lidholm, S., & Radon, A. (2019). Clicking the boredom away - exploring impulse fashion buying behavior online. Journal of Retailing and Consumer Services, 47, 150-156.

[34] Jones, J. M (2019). Non-price sales promotion impact and moderator role. Journal of Promotion Management, 25(6), 861-889.

[35] Chen, C. C., & Yao, J. Y. (2018). What drives impulse buying behaviors in a mobile auction? The perspective of the Stimulus-Organism-Response model. Telematics and Informatics, 35(5), 1249-1262.

[36] Mumuni, A.G., Lancendorfer, K.M., O'Reilly, K.A., Macmillan, A., 2019. Antecedents of consumers' reliance on online product reviews. J. Res. Indian Med.

[37] Aragoncillo, L., & Orus, C. (2018). Impulse buying behaviour: An online-offline comparative and the impact of Social Media. Spanish Journal of Marketing - ESIC, 22(1), 42-62.

[38] Mudambi, S. M., & Schuff, D. (2010). Research note: What makes a helpful online review? A study of customer reviews on Amazon.com. MIS Quarterly, 34(1), 185.

[39] Nash, J. (2019). Exploring how social media platforms influence fashion consumer decisions in the UK retail sector. Journal of Fashion Marketing and Management: An International Journal, 23(1), 82-103.

[40] Dover, S. (2019). Purchasing journey for fashion - UK - june 2019. (n.d.). Retrieved September 7, 2022, from https://reports.mintel.com/sinatra/oxygen/brochure/id=919600.

[41] Mayrhofer, M., Matthes, J., Einwiller, S., & Naderer, B. (2020). User generated content presenting brands on social media increases young adults' purchase intention. International Journal of Advertising, 39(1), 166-186.

[42] Xiang, L., Zheng, X., Lee, M. K. O., & Zhao, D. (2016). Exploring consumers' impulse buying behavior on Social Commerce Platform: The role of parasocial interaction. International Journal of Information Management, 36(3), 333-347.

[43] Mumuni, A. G., O'Reilly, K., MacMillan, A., Cowley, S., & Kelley, B. (2019). Online product review impact: The relative effects of review credibility and review relevance. *Journal of Internet Commerce, 19*(2), 153-191.

[44] Oliveira, T., Araujo, B., & Tam, C. (2020). Why do people share their travel experiences on social media?. Tourism Management, 78, 104041.

[45] Dann, D., Teubner, T., Adam, M. T., & Weinhardt, C. (2020). Where the host is part of the deal: Social and economic value in the platform economy. Electronic Commerce Research and Applications, 40, 100923.

[46] Biswas, B., Sengupta, P., & Chatterjee, D. (2020). Examining the determinants of the count of customer reviews in peer-to-peer home-sharing platforms using clustering and count regression techniques. Decision Support Systems, 135, 113324.

[47] Changchit, C., & Klaus, T. (2019). Determinants and impact of online reviews on product satisfaction. Journal of Internet Commerce, 19(1), 82-102.

[48] Iyer, G. R., Blut, M., Xiao, S. H., & Grewal, D. (2019). Impulse buying: A meta-analytic review. Journal of the Academy of Marketing Science, 48(3), 384-404.

[49] Nazlan, N. H., Tanford, S., & Montgomery, R. (2018). The effect of availability heuristics in online consumer reviews. Journal of Consumer Behaviour, 17(5), 449-460.

[50] Wu, I., Chiu, M., & Chen, K. (2020). Defining the determinants of online impulse buying through a shopping process of integrating perceived risk, expectation-confirmation model, and flow theory issues. International Journal of Information Management, 52, 102099.

[51] Kim, S. J., Maslowska, E., & Malthouse, E. C. (2020). Understanding the effects of different review features on purchase probability. Electronic Word of Mouth as a Promotional Technique, 29-53.

[52] Ampadu, S., Jiang, Y., Debrah, E., Antwi, C., Amankwa, E., Gyamfi, S. and Amoako, R., 2022. Online personalized recommended product quality and e-impulse buying: A conditional mediation analysis. Journal of Retailing and Consumer Services, 64, p.102789.

[53] Moon, S., Kim, M., Bergey, P.K., College, B., 2019. Estimating deception in consumer reviews based on extreme terms: comparison analysis of open vs. closed hotel reservation platforms. May J. Bus. Res. 102, 83-96.

[54] Schreiner, T., Rese, A., & Baier, D. (2019). Multichannel personalization: Identifying consumer preferences for product recommendations in advertisements across different media channels. Journal of Retailing and Consumer Services, 48, 87-99.

[55] Zanker, M., Rook, L., & Jannach, D. (2019). Measuring the impact of online personalisation: Past, present and future. International Journal of Human-Computer Studies, 131, 160-168.

[56] Komiak, S. Y., & Benbasat, I. (2006). The effects of personalization and familiarity on trust and adoption of recommendation agents. MIS quarterly, 941-960.

[57] Xiao, B., & Benbasat, I. (2018). An empirical examination of the influence of biased personalized product recommendations on consumers' decision making outcomes. Decision Support Systems, 110, 46-57.

[58] Kimiagari, S., Asadi Malafe, N.S., (2021). The role of cognitive and affective responses in the relationship between internal and external stimuli on online impulse buying behavior. April J. Retailing Consum. Serv. 61, 102567.

[59] Wu, Y., Xin, L., Li, D., Yu, J., Guo, J., 2021. How does scarcity promotion lead to impulse purchase in the online market? A field experiment. Inf. Manag. 58 (1)

[60] Jafarkarimi H., Sim A., Saadatdoost R. (2012). A Naive Recommendation Model for Large Databases. International

Journal of Information and Education Technology. 2(3): 216-219.

[61] Wang, X., Wei, K.-K.,Teo, H.-H. (2007). The acceptance of product recommendations from web-basedword-of-mouth systems: Effects of information, informant, and system characteristics. ICIS 2007 Proceedings - Twenty Eighth International Conference on Information Systems. ScholarBank@NUS Repository.

[62] Isinkaye, F. O., Folajimi, Y. O., & Ojokoh, B. A. (2015). Recommendation systems: Principles, methods and evaluation. Egyptian informatics journal, 16(3), 261-273.

[63] Breese, J. S., Heckerman, D., & Kadie, C. (2013). Empirical analysis of predictive algorithms for collaborative filtering. arXiv preprint arXiv:1301.7363.

[64] Herlocker, J. L., Konstan, J. A., Terveen, L. G., & Riedl, J. T. (2004). Evaluating collaborative filtering recommender systems. ACM Transactions on Information Systems (TOIS), 22(1), 5-53.

[65] Shardanand, U., & Maes, P. (1995, May). Social information filtering: Algorithms for automating "word of mouth". In Proceedings of the SIGCHI conference on Human factors in computing systems (pp. 210-217).

[66] Karypis, G. (2001, October). Evaluation of item-based top-n recommendation algorithms. In Proceedings of the tenth international conference on Information and knowledge management (pp. 247-254).

[67] Linden G, Smith B, York J. (2003). Amazon.com Recommendations: Item-to-Item Collaborative Filtering. IEEE Internet Computing 7(1): 76-80.

[68] Pu P., Chen L., Hu R. (2011). A User-centric Evaluation Framework for Recommender Systems. In Proceedings of the fifth ACM conference on Recommender systems, 157-164, ACM.

[69] Aggarwal CC (2016) Recommender Systems: The Textbook. Springer, Cham (Switzerland). ISBN: 978-3-319296-57-9.

[70] Srivastava, A., Bala, P. K., & Kumar, B. (2020). New perspectives on gray sheep behavior in E-commerce recommendations. Journal of Retailing and Consumer Services, 53, 101764.

[71] Senecal, S., & Nantel, J. (2004). The influence of online product recommendations on consumers' online choices. Journal of Retailing, 80(2), 159-169.

[72] Xiao, B., & Benbasat, I. (2007). E-commerce product recommendation agents: Use, characteristics, and impact. MIS Quarterly, 31(1), 137-209.

[73] Häubl, G., & Trifts, V. (2000). Consumer decision making in online shopping environments: The effects of interactive decision aids. Marketing science, 19(1), 4-21.

[74] Chen, Wen-Kuo, et al. (2020). Research on Online Impulsive Buying and Post-Purchase Dissonance. IEEE 21st International Conference on Information Reuse and Integration for Data Science (IRI).

[75] Bloch P.H., & Richins M.L.,(1983). Shopping without purchase: An investigation of consumer browsing behavior. ACR North American Advances, 10(1), 389-393.

[76] Rowley, J. (2002). 'window' shopping and browsing opportunities in Cyberspace. Journal of Consumer Behaviour, 1(4), 369-378.

[77] Chan, T. K. H., Cheung, C. M. K., & Lee, Z. W. Y. (2017). The state of online impulse-buying research: A literature analysis. Information & Management, 54(2), 204-217.

[78] Bloch, P. H., Ridgway, N. M., & Sherrell, D. L. (1989). Extending the concept of shopping: An investigation of browsing activity. Journal of the Academy of Marketing Science, 17(1), 13-21.

[79] Zhang, K. Z., Xu, H., Zhao, S., & Yu, Y. (2018). Online reviews and impulse buying behavior: The role of browsing and impulsiveness. Internet Research, 28(3), 522-543.

[80] Faqih, K. M., & Jaradat, M. I. R. M. (2015). Assessing the moderating effect of gender differences and individualism-collectivism at individual-level on the adoption of mobile commerce technology: TAM3 perspective. Journal of Retailing and Consumer Services, 22, 37-52.

[81] Beatty, S. E., & Ferrell, M. E. (1998). Impulse buying: Modeling its precursors. Journal of retailing, 74(2), 169-191.

[82] Yeboah, A., & Owusu-Prempeh, V. (2017). Exploring the consumer impulse buying behaviour from a range of consumer and product related factors. International Journal of Marketing Studies, 9(2), 146.

[83] Lucas, M., & Koff, E. (2017). Body image, impulse buying, and the mediating role of negative affect. Personality and Individual Differences, 105, 330-334.

[84] Park, H. J., & Dhandra, T. K. (2017). Relation between dispositional mindfulness and impulsive buying tendency: Role of Trait Emotional Intelligence. Personality and Individual Differences, 105, 208-212.

[85] Individuals using the internet (% of population) - egypt, Arab rep. Data. (n.d.). Retrieved December 24, 2022, from https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations= EG

[86] Keller, G. & Warrack, B. (2000). Statistics for Management and Economics. 5th edition. Duxbury press. Thomson Learning. Pacific Grove, CA, USA.

[87] Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Actvities. Educational and Psychological Measurement, 30, 607-610.

[88] Sritanakorn, M., & Nuangjamnong, C. (2021). The Factors Affecting Consumer Traits, Online Marketing Tools in Impulsive Buying Behavior of Online Fashion Stores, Bangkok, Thailand. AU-GSB e-Journal, 14(1).

[89] Creswell, J. w., Ebersohn, L., Eloff, I., Ferreira, R., Ivankova, N. v., Jansen, J. d., Nieuwenhuis, J., Pietersen, J., Plano Clark, Vl. & Van De Westhuizen, C. (2012). 11th ed. First Steps in Research. Van ShaikPublisher: Pretoria.

[90] Cote, C. (2021). 7 Data Collection Methods in Business Analytics. Business Insights Blog. Retrieved 2 July 2022, from https://online.hbs.edu/blog/post/data-collection-methods

[91] Ali, S. F. S., Aziz, Y. A., Yusuf, R. R., & Imm, N. S. (2019). Evaluation the role of sales promotion in influencing impulse buying behavior: A Comparison between international and local tourist at premium outlet in Malaysia. Journal of Tourism, 4(15), 32-43.

[92] Xu, Y., & Huang, J. S. (2014). Effects of price discounts and bonus packs on online impulse buying. Social Behavior and Personality: an international journal, 42(8), 1293-1302.

[93] Park, E. J., Kim, E. Y., Funches, V. M., & Foxx, W. (2012). Apparel product attributes, web browsing, and e-impulse buying on shopping websites. Journal of Business Research, 65(11), 1583-1589.