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Original Article

From Trends to Triggers: Impulse Buying Drivers

[1]Srinivas Rao K, [2]Sunil Kumar Pradhan, [3]Tushar Ranjan Sahoo, [4]Yadav Devi Prasad Behera
[1]*Research Scholar, Department of Business Administration, Berhampur University, Odisha, India.*
[2]*Department of Business Administration, Berhampur University, Odisha, India.*
[3]*Department of Management Studies, Amity Business School, Amity University, Raipur, India.*
[4]*Department of Commerce, Laxminarayan College, Jharsuguda, Odisha, India.*

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Abstract: *Impulse Acquiring Trends [IAT] form a prevalent and intricate layer of today's shopping culture, affected by numerous economic, advertising, mental, and situational elements. This investigation formulates a comprehensive, multi-tiered framework employing Interpretive Structural Modelling[ISM] to illuminate the hierarchical interrelations among determinants affecting IBB. Through rigorous literature review and expert consultations, 19 pivotal factors have been discerned and systematically organized into five hierarchical strata. The macro-level factors are what will be considered "drivers" in this model. These include things like cultural paradigms, economic stability, technological advances, ecological conditions, globalization and governmental regulations. They have an indirect effect on Impulse Buying Behavior (IBB) through the marketing and operational environment; which includes products designed for consumers to buy on impulse, promotional methods that encourage impulsive purchases, online shopping features that allow consumers to make purchases without thinking too much about them, and the atmosphere in retail stores. At the psychological level, consumers' perceptions of the macro-variables are influenced by their personality characteristics, cognitive distortions, and hedonic motivations. Social pressure and time limitations are immediate situational/emotional triggers that lead to impulsive purchases. MICMAC analysis has identified each of the macro-variables as being either a driver, linkage, dependent, or autonomous variable depending upon whether they affect or depend upon other variables. This confirms the systemic nature of IBB. The ISM model developed in this research provides a visual representation of how each macro-variable affects each micro-variable, as well as providing strategic points of leverage for marketers and policy makers. This research provides a powerful tool for developing interventions to either promote or control impulse buying behavior in rapidly changing retail environments. This research ultimately improves our understanding of consumer behavior and supports decision making across the disciplines of consumer behavior, marketing, and public policy.*

Keywords: *Impulse Buying Behaviour, Consumer Psychology, Emotional Triggers, Social Influence.*

I. INTRODUCTION

Impulse Buying Behavior (IBB) has become a major area of study within consumer psychology and marketing. As more people engage in impulsive buying through various physical and digital channels, businesses, consumers, and policymakers face challenges related to managing the impacts of IBB (1,2). Although there has been extensive research examining what factors lead to IBB, there is still limited knowledge regarding the hierarchical relationship between these factors (3). Previous research on IBB has focused primarily on individual influences such as emotional triggers, marketing tactics or macroeconomic conditions; however, no studies have attempted to create a comprehensive model illustrating how each factor relates to the others (3). To address this gap in the literature, it is necessary to provide a complete understanding of how the various components of IBB relate to each other in order to develop effective marketing strategies and consumer protection policies. Impulse buying is defined as an unplanned decision to purchase something immediately following exposure to some type of stimulus, which may include psychological, social or environmental stimuli. Consumers usually make these types of decisions based on immediate gratification versus logical reasoning. There are many factors that contribute to IBB, including emotional state (mood, stress relief) (4), marketing stimuli (discounts, advertisements) (5), and macroeconomic conditions (inflation, financial security) (6). Furthermore, technological innovations such as artificial intelligence-driven product recommendations (7) and one-click buying capabilities (8) have increased the likelihood that individuals will exhibit impulsive buying tendencies when shopping online (9). Several models have attempted to explain IBB; however, there is currently no structured methodology available to systematically determine the relationships between the various factors contributing to IBB. The Interpretive Structural Modeling (ISM) method is a structured methodology that can help researchers understand the hierarchical relationships between the factors that affect impulse buying behavior (10). ISM allows researchers to categorize the various factors affecting impulse buying into several levels based on how each factor depends on other factors and how each factor ultimately affects consumer decision-making processes. At the highest level of ISM, external factors such as cultural values, economic conditions, technological developments, government regulations, globalization, and environmental

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concerns affect consumers' likelihood of engaging in impulse buying behaviors (11,12). Marketing and external stimuli, including pricing strategies (13), advertising campaigns, product characteristics (14), store ambiance, online shopping features (15–17), and payment options (15), directly affect whether consumers are exposed to the various stimuli that trigger impulse buying behaviors (18). Factors such as psychological and personal factors, including personality traits (impulsivity, materialism, self-control) (15,18), cognitive biases (loss aversion, anchoring effect) (15,18), and hedonic motivations (shopping enjoyment) (19,20), contribute significantly to an individual's susceptibility to engage in impulse buying behaviors. Factors that occur immediately prior to an individual purchasing impulsively include emotional triggers (mood, excitement, stress relief), social influences (peer pressure, social media recommendations), and time constraints (21–23). Ultimately, all of these factors collectively influence consumers' decisions to engage in impulse buying behaviors. ISM allows researchers to categorize these factors in such a way as to demonstrate how macro-level social and economic conditions affect micro-level consumer behaviors and therefore provide researchers with insight into developing more targeted strategies for controlling trends in impulse buying behaviors (24). Although there have been numerous studies identifying multiple factors contributing to IBB, there has been limited research on the structured relationships between these factors. Traditional statistical models are generally unable to demonstrate how macro-level factors affect micro-level consumer behaviors. ISM provides researchers with a structured approach to solving this problem by allowing researchers to create a multi-level framework demonstrating how multiple factors combine to influence an individual's tendency to engage in impulse buying behaviors (25). Additionally, ISM enables researchers to identify those factors that exert the greatest influence on an individual's tendency to engage in impulse buying behaviors as well as those factors that depend on other factors in order to exert an influence on an individual's tendency to engage in impulse buying behaviors (26). By utilizing ISM in this study, the authors aim to develop a structured methodology for mapping the complexities associated with impulse buying behaviors and increasing both theoretical and practical knowledge regarding impulse buying behaviors (27). The primary purpose of this study is to develop an ISM-based hierarchical framework representing multi-level influences on impulse buying behaviors. More specifically, this study seeks to identify and classify the key factors contributing to impulse buying behaviors, establish a structured hierarchy representing relationships between these factors using ISM, and offer actionable suggestions for marketers, policymakers, and consumer behavior researchers regarding intervention strategies that either promote or discourage impulse buying behaviors. By meeting these goals, this study contributes to both academic and practical domains. This study contributes academically by establishing a structured framework representing impulse buying behaviors; this framework has been virtually non-existent in previous studies examining impulse buying behaviors. This study also contributes practically by providing businesses with insight into designing effective marketing strategies and policymakers with insight into designing consumer protection regulations. This study's findings will be particularly useful given current advances in digital commerce technologies and dynamic market environments that continually affect consumer impulse buying behaviors.

II. LITERATURE REVIEW

A) Macro-Level Influences

In addition to these micro-level factors, many macro-level variables also influence impulse purchasing behaviors. These include societal norms, cultural influences, economic variables, technological advancements, government regulation, globalization, and environmental issues. Cultural and societal norms have a significant impact on shaping consumer behavior; they define what is acceptable or desirable in each society. Societal norms may encourage pro-environmental behaviors or promote consumption, depending on the dominant cultural values and the omnipresent influence of advertising that often overrides social norms through psychological channels (28, 29). Economic factors, such as income level and financial security, influence impulse buying through various mechanisms. For example, BNPL (Buy-Now-Pay-Later) programs provide an avenue for impulsive purchases, especially among young people shopping online (30). Technological innovations such as AI-based recommendation systems and single-click checkout have made the purchasing experience easier, allowing consumers to purchase products impulsively without considering the long-term consequences (30). Government regulations, including consumer protection laws and advertising restrictions, may limit or unintentionally encourage impulse buying depending on how they affect corporate marketing practices (31). As globalization continues to expand the market for multinational brands and cross-border e-commerce availability of products increases, the likelihood of impulse purchases increases (32). Finally, environmental issues and increasing interest in sustainable and ethical consumption are beginning to change consumer behaviors. There is evidence that societal norms support transition to more sustainable consumption patterns such as acceptance of alternative protein sources (33, 34). However, the effectiveness of these norms is usually limited due to the strong influence of advertising and the established culture of consumption (35). Overall, all of these macro-level factors interact in complex ways to affect impulse purchasing behavior and highlight the need for a better understanding of how social factors relate to individual consumer decisions.

B) Marketing & External Stimuli

Impulse buying behaviors are strongly influenced by a multitude of marketing strategies and environmental stimuli. These include the pricing models utilized, promotional activities undertaken, branding initiatives pursued, characteristics of

products offered, atmosphere of the store or retail environment, digital shopping features available, and payment options provided. Pricing strategies such as limited-time offers or discounted prices create a sense of urgency that encourages shoppers to purchase items on impulse. This effect is especially prevalent in highly competitive retail markets where dynamic pricing models are used to maximize profits and customer engagement (36, 37). Promotional campaigns and branding initiatives that use emotional connections and celebrity endorsements can greatly increase positive brand perceptions and connections with customers. This positive relationship can lead to spontaneous purchase decisions. Studies have shown that emotional marketing creates positive attitudes and behaviors toward brands, regardless of the challenges faced (i.e., the COVID-19 pandemic) (38). Product characteristics that appeal to shoppers' desires for newness and higher-quality products, such as cutting-edge design and high-quality perceptions, can encourage impulse purchases by providing shoppers with opportunities to satisfy their desire for unique and premium products (39). Store environments that provide a pleasing atmosphere for shoppers through factors such as lighting, sound, and layout of space can evoke positive emotional responses in shoppers. These positive emotions can enhance the shopping experience and potentially contribute to impulse purchases. Studies show that when shoppers enjoy being in a store, they are more likely to make spontaneous purchases based upon environmental factors. Shoppers who are driven by the pleasure of shopping tend to be more susceptible to making spontaneous purchases when they feel good about the store environment (40). Online shopping platforms that offer convenient shopping experiences through features like streamlined checkout processes and personalized product recommendations can facilitate the shopping process and promote impulse purchases by reducing friction in the shopping experience and increasing shopper convenience (41). Lastly, flexible payment methods such as "buy now, pay later" plans can reduce perceived financial barriers for shoppers and therefore encourage shoppers to make unplanned purchases (42). In combination, these various stimuli work together to create an environment that promotes impulse buying through appealing to shoppers' emotions, reducing decision-making barriers, and enhancing the shopping experience.

C) Psychological & Personal Factors

Individual and psychological factors influencing impulse buying behavior include personality characteristics, cognitive distortion, and hedonic incentives; these three categories of factors also interact with emotional cues, situational variables, and social influences. Personality characteristics such as impulsivity, desire for products, and self-control are major contributors to how consumers behave. For example, individuals with higher levels of neuroticism combined with lower levels of conscientiousness have been shown to experience more frequent lapses in judgment, which may lead to rapid decision-making (43). Similarly, hedonic motivations, including the enjoyment of shopping and the search for novelty, are primary determinants of impulse buying behaviors, especially within young adult demographics using social commerce sites, as peer interactions and normative perceptions further enhance this behavior (44). Thinking errors, such as fear of loss and the effects of anchors, are moderated by other personality traits, including thoroughness and sociability; depending on whether an individual chooses to take risks or avoid them, these traits can increase or decrease the tendency to make impulsive purchases (45). Emotions are affected by many factors, including mood and stimulation; emotions can either encourage or discourage spontaneous purchases, depending on the emotional state of the consumer (46). Environmental cues, such as the atmosphere of the store, time limitations, and advertising techniques, provide external triggers that can promote impulsive purchasing behaviors by creating feelings of urgency or scarcity, often artificially created in online retail settings (47). Social influences, such as peer pressure and social media endorsements, also contribute to the complexity of impulse buying behaviors by providing social norms and expectations that encourage impulsive purchases (48).

D) Influence of Emotional, Situational, and Social Factors on Impulse Buying Behavior

Impulse buying behavior is formed through the complex interaction of emotional triggers, contextual factors, and socio-cultural factors, as evidenced by a body of academic research. Emotional triggers (mood) have a strong impact on the likelihood of making an impulsive purchase. Positive emotions (affect) increase the probability of making an impulsive purchase, especially in digital shopping channels and when purchasing utilitarian items (49). Contextual triggers (retail environment/promotional strategies) are also important in shaping this dynamic. A well-designed retail environment can enhance the consumer's pleasure and satisfaction with the shopping experience and therefore lead to more impulsive purchases, especially if the consumer is shopping for hedonic reasons (40). Promotional strategies and the convenience offered by omni-channel retailing further encourage impulsive purchases by increasing the consumer's perception of value and providing them with greater control (15,19). Sociocultural triggers (peer influence/social media interaction) are strong drivers of impulsive purchasing behavior. Social commerce platforms, via social capital and excessive information, provide both positive and negative influences on impulsive purchasing behavior, thus illustrating the duality of social interaction in consumer behavior (50). Live-streaming shopping environments use interactive features and playfulness to enhance the consumer's perception of enjoyment and therefore drive intentions to make an impulsive purchase (51). There was evidence during the COVID-19 pandemic that increased use of credit cards led to increased impulsive purchasing behavior in fast-fashion retailers due to a desire for enjoyment and newness (52). Finally, individual personality characteristics and regulatory focus provide significant variance in susceptibility to impulsive purchasing behavior. Certain personality characteristics make individuals more

vulnerable to marketing stimuli such as perceived scarcity and high demand (53,54). Thus, impulsive purchasing behavior is portrayed as a complicated form of behavior that results from a combination of emotional, situational, and cultural forces that influence consumer decision-making processes in unique ways (14).

III. METHODOLOGY

The current study employs the Interpretive Structural Modeling (ISM) technique to create an organized structure for evaluating the factors contributing to Impulse Buying Behavior (IBB). ISM is a rigorous methodology that provides insight into complex interdependencies among numerous variables; therefore, it is appropriate for understanding the multi-faceted nature of IBB. Macro-level, marketing, psychological, and situational variables all play a role in shaping impulse buying behavior; therefore, a systematic approach is necessary to define and order the hierarchical relationships among these variables. The ISM process includes three primary stages: factor identification, expert panel involvement, and application of ISM. The first stage of the ISM process involved conducting a comprehensive literature review to identify and categorize the primary factors influencing IBB. The literature review included influential academic journals, conference proceedings, and industry reports related to consumer behavior, marketing, and digital commerce. The factors identified were systematically categorized into four main categories: (i) Macro-Level Variables, which include cultural expectations, economic conditions, technological advancement, government regulation, and global connectivity; (ii) Marketing/External Stimuli Variables, which include pricing models, marketing campaigns, product characteristics, physical environment where shopping occurs, and online shopping alternatives; (iii) Psychological/Personal Variables, which include impulsive tendencies, materialistic values, cognitive biases, and hedonistic motivation; and (iv) Situational/Social Variables, which include emotional responses, social groups influence, word-of-mouth online, and time constraints. In the second stage of the ISM process, a group of 12 subject-matter experts convened to validate the identified variables and describe how they interact with one another. The expert panel consisted of academic researchers, marketing professionals, and behavioral psychologists, each having an average of 10 years of professional experience. The Delphi Method was used to obtain and refine the expert panel's opinions throughout multiple rounds, ensuring that there would be consensus regarding the relationships among the variables. The expert panel members offered insight regarding the context of the variables and how they relate to one another. Their input was utilized to develop a Structural Self-Interaction Matrix (SSIM), which was then used as the foundation for applying the ISM technique. In the third stage of the ISM process, ISM was applied to create a hierarchical model illustrating the interrelationships among the identified variables. A Structural Self-Interaction Matrix (SSIM) was developed to represent the pairwise interactions among the variables. Panel members assessed the degree to which one variable affected another variable using predefined notation. After developing the SSIM, it was converted into a Reachability Matrix, which was further refined by adding transitive relationships to ensure completeness and consistency. Level Partitioning was performed to determine the hierarchical position of each variable based on its reachability and antecedent set. This allowed for the categorization of variables into a hierarchy with macro-level variables at the top and situational variables at the bottom. As a result of this process, the ISM-based model created clearly illustrates the hierarchical relationships among macro, marketing, psychological, and situational variables that lead to Impulse Buying Behavior.

To enhance the ISM framework, a MICMAC [Matrice d'ImpactsCroisés Multiplication Appliquée à un Classement (Cross-Impact Matrix Multiplication Applied to Classification)] analysis was carried out. MICMAC categorizes variables into four categories based on their driving power and dependence: Autonomous, Dependent, Linkage and Driving Variables. This classification aids in understanding the most influential variables and the relationships among variables in IBB, thus enhancing the explanatory ability of the ISM model. Expert review and validation checks were carried out to assess the reliability and accuracy of the ISM model. Face and content validation were carried out to evaluate the completeness and logical flow of the model. Additionally, ISM-generated relationships were verified against existing consumer behaviour theories, validating the model. To conclude, this approach offers a structured methodology to analyze the complex interrelationships in IBB. Through the use of expert knowledge, hierarchical modelling and MICMAC analysis, the research has developed a comprehensive model that reflects the dynamic nature of IBB. This methodology has important implications for marketers, policy makers and researchers, allowing for the development of targeted strategies to address IBB.

The codes generated by assessing Impulse Buying Behavior (IBB) via Interpretive Structural Modeling (ISM) represent the key influencing factors of IBB: Technological Advancement (TA), Situational Factor (SF), Social Influence (SI), Product Characteristic (PC), Advertising & Branding (AB), Government Regulation (GR), Cognitive Bias (CB), Environmental Concern (ECN), Payment Flexibility (PF), Hedonic Motivation (HM), Pricing Strategy (PS), Online Shopping Feature (OSF), Personality Trait (PT), Emotional Trigger (ET), Store Atmosphere (SA), Globalization (GL), Economic Condition (EC), and Cultural & Social Norm (CSN). The purpose of these codes is to explain the hierarchical relationships among the determinants of IBB in the context of the ISM methodology.

IV. RESULT AND DISCUSSION

The structural self-interaction matrix (SSIM) presented in Table 1 illustrates the pairwise interactions among the various components (CSN, EC, GL, SA, etc.) of a structural system using interpretive structural modeling (ISM) methodology. The matrix cells indicate if an element i [row] exerts influence on an element j [column], denoted as 'V' [element i influences element j]; if element j influences element i, denoted as 'A' [element j influences element i]; if there exists a reciprocal influence between the two elements, denoted as 'X' [elements i and j reciprocally influence each other]; or if there are no influences between the two elements, denoted as 'O' [no influences between elements i and j]. The top row of the matrix shows that IBB exerts unidirectional influence on several of the other elements [marked 'A']. Therefore, it can be inferred that IBB may serve as a dependent or outcome variable within the structural configuration. On the other hand, CSN does not have any entries in its corresponding column. Therefore, CSN can be considered a foundational or driving element that is unaffected by any of the other elements. The matrix identifies groups of variables that exhibit high degrees of mutual influence [e.g., IBB-TA, IBB-PC, SF-SI] and other variables that exhibit low degrees of interaction [e.g., GL, EC]. These directional relationships are crucial for determining the hierarchical order or flow of influence among elements. This flow of influence is necessary for developing an ISM-based model. Some elements [e.g., PC, AB, GR] are seen to simultaneously experience influence from other elements and exert influence on other elements. The upper-triangular configuration of the matrix supports the ISM process by allowing all dependencies to be listed above the diagonal. This enables the formation of the reachability matrix, level partitioning, and model construction. In conclusion, this SSIM is an important intermediate representation for identifying structural relationships and laying the foundation for constructing a hierarchical model of the complex system.

Table 1: Structural Self-Interaction Matrix

i/j	CSN	EC	GL	SA	ET	PT	OSF	PS	HM	PF	ECN	CB	GR	AB	PC	SI	SF	TA	IBB
IBB	A	A	A	A	A	A	A	A	A	A	O	A	O	A	A	A	A	A	
TA	X	X	X	V	V	V	V	V	V	V	X	V	X	V	V	V	V		
SF	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	X			
SI	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A				
PC	A	A	A	X	V	V	X	X	V	X	A	V	A	X					
AB	A	A	A	X	V	V	X	X	V	X	A	V	A						
GR	X	X	X	V	V	O	V	V	O	V	X	V							
CB	A	A	A	A	V	X	A	A	X	A	A								
ECN	X	X	X	V	V	V	V	V	O	V									
PF	O	O	V	X	V	V	X	X	V										
HM	A	A	A	A	V	X	A	A											
PS	A	A	A	X	V	V	X												
OSF	A	A	A	X	V	V													
PT	A	A	A	A	V														
ET	A	A	A	A															
SA	A	A	A																
GL	A	X																	
EC	X																		
CSN																			

A) Initial Reachability Matrix

The preliminary reachability matrix delineated in Table 2 encapsulates the direct interrelationships among 19 components [denoted by acronyms such as IBB, TA, SF, etc.], constituting a fundamental phase in Interpretive Structural Modeling[ISM]. Within the framework of ISM, this matrix facilitates the identification of which components exert influence over others and the degree of such influence. Each row denotes an element's potency to modify its peers [i.e., its control over others], while every column clarifies the extent to which it is molded by its peers. The elements on the main diagonal of the reachability matrix have been assigned the value '1' as an indication of each element's ability to reach itself. The matrix clearly shows that the elements 'TA' (Training/Technical Assistance) and 'GL' (Governance/General Leadership) can influence almost all other elements in the matrix since there are many '1s' in the rows associated with those two elements. On the other hand, the element 'IBB' (Input/Beginning Factor) can only influence itself; therefore, it may be a very low-level element, or perhaps even a terminal element in the hierarchy. Similarly, the elements 'ET' and 'PT' can only influence a few other elements in the matrix but can be influenced by many other elements; thus, they appear to be dependent upon other elements in the system. The elements 'ECN' and 'EC' both have a high number of elements that can be reached from them and a high number of elements that can influence them; thus, they appear to be intermediate or central elements in the system. After establishing the reachability matrix, we will use it in ISM to determine hierarchical levels by dividing into partitions (i.e., reachability and antecedent sets), which will ultimately allow us to construct a digraph/model that illustrates the structural relationships between

the various elements. Decision-makers/researchers who wish to understand the complex interrelationships between factors in organizations, technology, or policy-related areas must use systematic methods of organization like this one.

Table 2: Initial Reachability Matrix

i/j	IBB	TA	SF	SI	PC	AB	GR	CB	ECN	PF	HM	PS	OSF	PT	ET	SA	GL	EC	CSN
IBB	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SF	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
SI	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
PC	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0
AB	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0
GR	0	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1
CB	1	0	1	1	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0
ECN	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
PF	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0
HM	1	0	1	1	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0
PS	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0
OSF	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0
PT	1	0	1	1	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0
ET	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
SA	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0
GL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
EC	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
CSN	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1

B) Final Reachability Matrix

The Final Reachability Matrix provides a comprehensive view of the contextually based interactions between the 19 elements selected for evaluation via the Interpretive Structural Modeling [ISM] process. The Final Reachability Matrix contains both direct and indirect (transitive) relationships. Transitive relationships are identified with an asterisk [*] to indicate that they represent indirect influences through intermediary elements. Elements such as TA [Technology Adoption], GR [Government Regulations], ECN [Economic Condition], GL [Globalization], EC [Environmental Concern] and CSN [Customer Needs] have the highest driving power; i.e., each has a value of 19. Therefore, these elements greatly affect many other elements in the system and are consequently considered fundamental in the ISM hierarchy. Conversely, IBB [Increase Brand Building] has the least driving power; i.e., it affects only itself. Therefore, IBB may be considered an outcome rather than a cause and would probably be at the top of the ISM hierarchy. Elements such as SF [Social Factors], SI [Societal Impacts] and ET [Emerging Technologies] also have less driving power than other elements in the system. Therefore, these elements are more dependent on other elements than influential. The presence of transitive relationships ensures that the model is logically consistent and complete. It demonstrates how complex relationships can evolve through many paths. Together, the Final Reachability Matrix serves as the base for constructing the ISM model and conducting the MICMAC analysis. MICMAC enables researchers to classify elements into four categories: drivers, dependents, linkages, and autonomous. Such classification will allow organizations to improve their strategic planning and decision-making processes by identifying those elements that will act as the key levers for changing the system.

Table 3: Final Reachability Matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
	i/j	**IBB**	**TA**	**SF**	**SI**	**PC**	**AB**	**GR**	**CB**	**ECN**	**PF**	**HM**	**PS**	**OSF**	**PT**	**ET**	**SA**	**GL**	**EC**	**CSN**	**Driving**
1	IBB	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2	TA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19
3	SF	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4
4	SI	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4
5	PC	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0	13
6	AB	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0	13
7	GR	1*	1	1	1	1	1	1	1	1	1	1*	1	1	1*	1	1	1	1	1	19
8	CB	1	0	1	1	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	7
9	ECN	1*	1	1	1	1	1	1	1	1	1	1*	1	1	1	1	1	1	1	1	19
10	PF	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0	13
11	HM	1	0	1	1	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	7
12	PS	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0	13

13	OSF	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0	13
14	PT	1	0	1	1	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	7
15	ET	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4
16	SA	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	0	13
17	GL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1*	19
18	EC	1	1	1	1	1	1	1	1	1	1*	1	1	1	1	1	1	1	1	1	19
19	CSN	1	1	1	1*	1	1	1	1	1	1*	1	1	1	1	1	1	1	1	1	19
Dependency		19	6	18	18	12	12	6	15	6	12	15	12	12	15	18	12	6	6	6	

C) Level Partition

The ISM analysis systematically categorises 19 barriers, denoted by their abbreviations, into five hierarchical tiers to illustrate their interconnections and systemic ramifications. At Level V, the foundational tier of the hierarchy, barriers such as TA, GR, ECN, GL, EC, and CSN demonstrate the most substantial driving power. These factors act as primary determinants whose presence or absence can profoundly affect the entire system. They encompass essential structural and contextual elements, including governance, economic systems, environmental issues, and socio-cultural standards. Decision makers must make resolving the basic barriers identified in the model a priority because they will either help or hinder progress in every other area. Level IV contains the supportive but substantial barriers of PC, AB, PF, PS, OSF, and SA. These barriers represent an organization's readiness, the clarity of its policies, and the organization's ability to align its resources and stakeholders and therefore provide continuous support to improvements developed at Level V. Level III includes the barriers of CB, HM, and PT, which illustrate community-level perceptions and trust and emphasize the role that societal attitudes and motivation play in successfully implementing change. While these barriers are affected by larger systemic changes, they are essential for obtaining grassroots support and behavioral change. Level II contains the barriers of SF, SI, and ET and focuses on technical capabilities, infrastructure, and training. All of these barriers depend on policy and funding structures and directly contribute to achieving operational efficiency. Finally, Level I includes only the barrier of IBB, the most dependent of the barriers, which is composed of the sum total of all of the previous barriers. IBB represents individual-level behavioral limitations that can only be altered if all of the preceding levels are addressed. To achieve effective decision-making, a bottom-up strategy should be employed. This means that first the barriers found at Level V should be addressed to create the base for systemic change. Then, sequentially through Levels IV through II, changes can be made to ultimately lead to positive changes in IBB. This tiered methodology ensures enduring change through structural, organizational, and behavioral pathways.

Table 4: Level Partition

Barriers	Reachability Set	Antecedent Set	Interaction Set	Level
1	1	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19	1	I
2	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19	2,7,9,17,18,19	2,7,9,17,18,19	V
3	1,3,4,15	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19	3,4,15	II
4	1,3,4,15	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19	3,4,15	II
5	1,3,4,5,6,8,10,11,12,13,14,15,16	2,5,6,7,9,10,12,13,16,17,18,19	5,6,10,12,13,16	IV
6	1,3,4,5,6,8,10,11,12,13,14,15,16	2,5,6,7,9,10,12,13,16,17,18,19	5,6,10,12,13,16	IV
7	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19	2,7,9,17,18,19	2,7,9,17,18,19	V
8	1,3,4,8,11,14,15	2,5,6,7,8,9,10,11,12,13,14,16,17,18,19	8,11,14	III
9	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19	2,7,9,17,18,19	2,7,9,17,18,19	V
10	1,3,4,5,6,8,10,11,12,13,14,15,16	2,5,6,7,9,10,12,13,16,17,18,19	5,6,10,12,13,16	IV
11	1,3,4,8,11,14,15	2,5,6,7,8,9,10,11,12,13,14,16,17,18,19	8,11,14	III
12	1,3,4,5,6,8,10,11,12,13,14,15,16	2,5,6,7,9,10,12,13,16,17,18,19	5,6,10,12,13,16	IV
13	1,3,4,5,6,8,10,11,12,13,14,15,16	2,5,6,7,9,10,12,13,16,17,18,19	5,6,10,12,13,16	IV
14	1,3,4,8,11,14,15	2,5,6,7,8,9,10,11,12,13,14,16,17,18,19	8,11,14	III
15	1,3,4,15	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19	3,4,15	II
16	1,3,4,5,6,8,10,11,12,13,14,15,16	2,5,6,7,9,10,12,13,16,17,18,19	5,6,10,12,13,16	IV
17	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19	2,7,9,17,18,19	2,7,9,17,18,19	V
18	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19	2,7,9,17,18,19	2,7,9,17,18,19	V
19	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19	2,7,9,17,18,19	2,7,9,17,18,19	V

D) Digraph

The ISM-based directed graph delineates a complex, multi-layered framework that clarifies the hierarchical arrangement of factors influencing Impulse IBB. Situated at Level I, IBB emerges as the ultimate outcome shaped by Level II factors- SF, SI, and ET, which embody immediate, superficial influences on consumer impulses. These influences are propelled by Level III variables: CB, HM, and PT, which signify more profound psychological predispositions. Level IV incorporates functional

and market-oriented elements such as PC, AB, PF, PS, OSF, and SA, all of which interact to mould consumer perception and experience. At the lowest level of the hierarchy, Level V, structural elements of TA, GR, ECN, GL, EC and CSN serve as contextual factors which can either facilitate or constrain actions within the overall system. Due to the hierarchical nature of the system, it is recommended that strategic interventions take place first at the lowest level of the hierarchy (Level V) and then move up. Policy decisions should focus on utilizing technology, understanding social/cultural trends, and maintaining both economic and environmental sustainability. Operational and tactical decisions such as enhancing online shopping options, using personalized pricing techniques, and conducting targeted marketing campaigns — must be coordinated so that they create positive psychological and/or situational reactions. The use of a bottom-up strategic planning process will help ensure a firm basis upon which to develop positive consumer behaviors. Therefore, the ISM framework supports the development of a comprehensive decision-making model because it recognizes that short-term consumer responses are linked to long-term structural characteristics and allows organizations/policymakers to design multi-tiered sustainable engagement strategies.

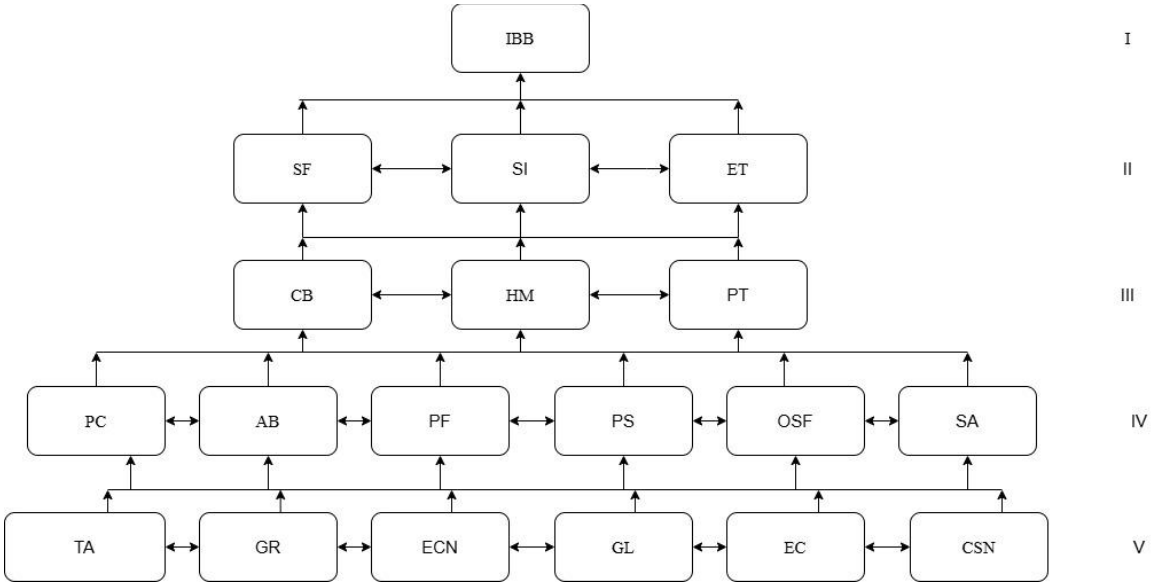


Figure 1. Digraph

E) Micmac Analysis

MICMAC analysis clearly illustrates how the various factors affecting IBB are related in terms of the driving force (the factor's influence on other factors) and dependent force (the factor's susceptibility to being influenced by other factors). MICMAC analysis divides the factors into four categories based on the degree to which they drive the system and/or are dependent upon the system. The factors located in the top-left quadrant [high driving, low dependency] are foundational forces such as TA, GR, ECN, GL, EC, and CSN. These factors represent the most significant sources of influence [driving force = 19] over the rest of the system, yet they do not experience any degree of dependence on the system. Therefore, the factors within the top-left quadrant provide the best opportunity for strategic planning at the policy level. Factors in the top-right quadrant [high driving, high dependency] include PC, AB, PF, PS, OSF, and SA. These factors represent linkages – i.e., they are both affected by and affect many other components of the system. Due to the fact that these factors can both be influenced by and influence so many other aspects of the system, any change made to these factors may produce significant ramifications throughout the entire system. Consequently, the factors in the top-right quadrant represent operational levers which can be used to affect change in the system, but which must be approached carefully as they can also be greatly affected by other aspects of the system. Factors in the bottom-right quadrant [low driving, high dependency] include SF, SI, and ET. These factors generally serve as outcomes of the system i.e., they reflect changes that occur upstream in the system and cannot directly impact other components of the system. IBB, with the highest dependency score (19) and lowest driving score (1), is clearly the ultimate outcome or effect of the entire system. Finally, factors in the bottom-left quadrant [low driving, low dependency] include CB, HM, and PT. These factors function as intermediates – i.e., they are somewhat affected by and affect, to a small extent, the psychological aspects of the system. Overall, this MICMAC analysis confirms that to manage IBB effectively, actions should start with high-driving factors at the base and cascade upward through intermediate and surface-level variables.

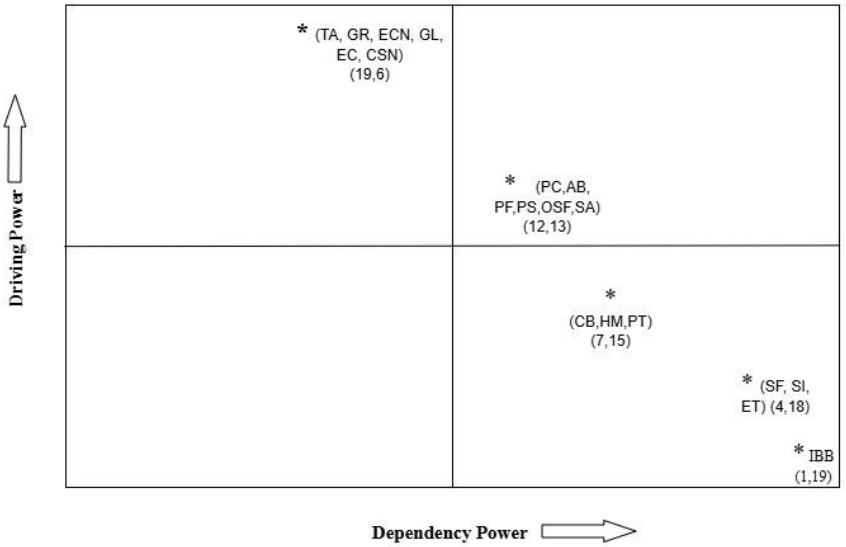


Figure 2. MICMAC Map

V. CONCLUSION

The current investigation delivers a detailed and organized exploration of IBB via the use of the ISM method, thus contributing a systematic and hierarchical framework that illustrates the complex interdependencies among macro-level influences, marketing drivers, psychological traits, and situational factors. Conceptualized as a Level 1 outcome, IBB is framed as the behavioral manifestation arising from a cascading series of influences that stem from deeply entrenched structural factors and unfold through a variety of intermediary stages. On top of the hierarchical model, Level 5 determinants cultural or societal norms, economic factors, globalization, environmental issues, technological developments, government regulations provide a context-based foundation for how consumers make decisions. Macro-level drivers influence the system at large in both direct and indirect ways; they can alter consumer perceptions (values) and what consumers anticipate (expectations), as well as provide the business environment in which companies operate and the legal/regulatory structure. One example of a macro-level driver is technology. Technology has led to the development of digital commerce and AI-driven recommendations. Both allow marketers to create very specific/personalized and time-sensitive promotions that utilize consumers' previous behaviors.

The macro-level factors discussed above are what form the basis for Level 4 marketing and other external factors, including pricing strategies, product features, physical retail store design and functionality, and online shopping capabilities. These are the means through which macro-level structural trends have direct, real-time effects on how consumers experience products/services. Level 3 is focused on the individual's psychology and personality traits; i.e., personality characteristics, cognitive distortions (errors), and hedonic needs/desires. These aspects determine how external marketing stimuli will affect an individual's internal processing of and reaction to those marketing stimuli. Level 3 illustrates that an individual's susceptibility to impulse purchasing is not only dependent upon environmental/situational variables, but rather is influenced by long-term personal characteristics and motivational forces. Finally, Level 2 includes immediate/short-term variables that act as final determinants leading up to the purchase of an item on impulse. Examples of Level 2 variables include emotional states, situational variables, and social variables. Level 2 variables are especially powerful in high-stimulation environments (such as flash sales, social media, or immersive retail stores) where urgency and social validation may override rational decision-making processes.

The ISM model illustrates the importance of transitive relationships in understanding how fundamental elements such as government regulation and/or environment can influence Impulse Buying Behavior (IBB) via their effect on other factors that act as mediators, i.e., hedonic motivation and/or emotional stimuli. As an example, if there were changes made to a regulatory system that promoted ethics in advertising practices, these would likely decrease the ability of advertisers to create emotionally resonant advertising messages; this would also decrease the likelihood that consumers would be stimulated emotionally by those messages and thus experience the emotional triggers necessary to engage in impulse buying. Another example is the increasing emphasis being placed upon environmental sustainability by society. If this trend continues, it is possible that consumers will alter their motivations for consuming products. Instead of being motivated primarily by personal gratification, they will begin to make purchases based on ethical considerations. By providing insight into the ways that different levels of the hierarchy interact with each other, the ISM model allows organizations to find opportunities to intervene in the hierarchy to develop better policies, marketing programs, and/or public educational campaigns.

The ISM model demonstrates how the phenomenon of impulsive buying behavior (IBB) is an emergent system-wide issue as opposed to an individual action. It arises from the interactions of several factors, including deeply ingrained socioeconomic conditions, marketing strategies, and individuals' psychological characteristics. This model allows for systematic analysis of how each factor influences the other, and ultimately influences the formation of the larger systemic issue of IBB. The development of such a model has both theoretical value, as it contributes to our understanding of the causes and mechanisms of IBB, and practical application, as it serves as a tool for businesses to predict, influence, and manage impulsive consumer behavior. Businesses may use this model to align their operations with larger trends in the marketplace, as well as with knowledge of the psychology of consumers. Doing so will allow businesses to create more focused and ethical marketing campaigns. Additionally, policymakers may use this model to develop policies that protect the welfare of consumers while encouraging innovation. Overall, this research provides a strong foundation for future studies in behavioral economics, consumer psychology, and digital marketing. It provides a comprehensive view of impulse buying behavior in the current commercial landscape.

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Conflict of Interest

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Author Contributions

The first author took the lead in developing the research concept, performing a thorough review of the pertinent literature, and establishing the research aims. The second author was instrumental in creating the study's methodology and gathering the essential data. The third author directed the data analysis, employing suitable methods and techniques, and made substantial contributions to interpreting the results. The fourth author participated in integrating the findings, discussing their implications, and drafting and revising the manuscript. All authors engaged in the critical evaluation of the content, offered intellectual contributions, and sanctioned the final draft of the paper.

Ethics approval

This research did not engage any human subjects, personal interviews, surveys that entailed sensitive information, or experiments involving animals. The data employed in this study were sourced from secondary references and expert opinions acquired exclusively for scholarly purposes. No confidential or personally identifiable information was gathered during the course of the research.

Since the study was predicated entirely on publicly accessible data and non-invasive expert insights, there arose no necessity for formal ethical approval from an institutional review board or ethics committee. The research adheres to the established ethical standards pertinent to academic inquiries of this kind, and it was concluded that ethics approval was unwarranted.

Data availability

This study is based on a qualitative analysis of publicly available research and expert opinions. All data used were obtained from existing literature and sources that are in the public domain. No new datasets were generated or analysed during the current study, and therefore, no data repository link is provided. Further information supporting the findings of this study is available from the corresponding author upon reasonable request.

Abbreviation

Abbreviation	Full Form
IAT	Impulse Acquiring Trends
ISM	Interpretive Structural Modelling
IBB	Impulse Buying Behaviour

MICMAC	Matrice d'Impacts Croisés Multiplication Appliquée à un Classement (Cross-Impact Matrix Multiplication Applied to Classification)
BNPL	Buy Now Pay Later
TA	Technological Advancements
SF	Situational Factors
SI	Social Influence
PC	Product Characteristics
AB	Advertising & Branding
GR	Government Regulations
CB	Cognitive Biases
ECN	Environmental Concerns
PF	Payment Flexibility
HM	Hedonic Motivation
PS	Pricing Strategies
OSF	Online Shopping Features
PT	Personality Traits
ET	Emotional Triggers
SA	Store Atmosphere
GL	Globalization
EC	Economic Conditions
CSN	Cultural & Social Norms

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