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Mapping the Antecedents of Women's Unplanned Purchases of Home Electronic Devices and Their Impact on Sustainable Consumption: A DEMATEL Analysis

Deepika Bandil
Institute of Business Management and Commerce, Mangalayatan University, Aligarh-202146, Uttar Pradesh, India
deepikabhardwaj@live.com
https://orcid.org/0000-0002-5167-5468

Abstract
The easy availability and strong promotion of home electronic devices have increased unplanned purchases among women in India. These appliances are promoted as time-saving solutions for daily tasks. While they offer convenience, repeated and sudden purchases reduce their effective usage period and add to the problem of electronic waste. This raises important concerns related to sustainable consumption. This study explores how behavioural, social, and digital factors jointly shape women's unplanned buying of home electronic devices. It also examines the sustainability implications of such behaviour. The Decision Making Trial and Evaluation Laboratory (DEMATEL) method is used to analyse expert opinions and map cause–effect relationships among seven antecedents. The findings show that social media engagement, peer influence, impulse tendency, and pleasure-driven shopping act as important drivers whereas unplanned buying behaviour, low self-control, and materialistic values are outcome factors. This study shows that unplanned purchases result from emotional and social influences combinedly but are not isolated decisions. These insights support more responsible consumption practices.

Keywords: *Unplanned buying, Women consumers, Home electronic devices, Sustainable consumption, DEMATEL, Social media influence, Impulse purchase behavior*

Introduction

In today's India women are increasingly purchase home electronic tools such as mixers, blenders, food processors and small smart appliances. These products promise consumers ease, convenience and better management of time in everyday tasks. This is one the reasons these small appliances have become essential part of modern households. In present times, the shops and online stores promote and sell these devices in many noble and innovative ways. Stores, e-commerce platforms, and social media channels present a wide range of choices, frequent discounts regular promotions to demonstrate the features of the products to the consumers (Bell et al., 2011; Wang etal., 2020). Sustainability has become an important concern in this regard as frequent replacement of electronic devices lead to increasing electronic waste in India (Babu et al., 2007). When consumers make frequent purchases of electronic devices, it exerts more pressure on recycling systems and household energy consumption.

In this segment, many people are buying these products even without planning. When customers come across attractive deals, new models or persuasive product displays, they might skip a research process and can end up purchasing the product suddenly. It has been explained in several researches that unplanned buying often increases when consumers come across appealing shopping environments and emotionally targeted messages (Bell et al., 2011). This effect can become stronger for the women who feel tired after work or managing both job as well as house-chores simultaneously. Unplanned purchases of electronic devices lead to the collection of multiple devices at home. Various of these appliances are not used considerably without being discarded. This pattern creates avoidable waste and reduces the possibility of sustainable consumption in the households.

Digitalisation has increased the impact of this trend. Online reviews, content generated by influencers, and personalised advertising affect consumers within seconds. It makes higher chances of quick purchase (Arief et al., 2023).

Women play a very crucial yet important involvement in buying home electronics appliances. Their product choices depend on their likes, preferences and ease of use. It is very important to understand what pushes them to buy a specific product without getting involved in researching more about the product. This may help women in making better and planned choices. It will also help companies in creating clear and responsible marketing messages. When we try to understand the triggers for such purchases, it helps us in promoting more thoughtful and sustainable purchasing habits. A precise understanding of these factors can help in reducing unnecessary consumption and can encourage use of devices for a longer duration of time.

The DEMATEL approach is very useful technique in the studies where multiple factors affect each other at the same time in the same system. This method helps in identifying cause and effect relationship among the antecedents in the

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given system (Fontela & Gabus, 1976). The DEMATEL method helps in understanding the way different factors affect women's buying behaviour for electronic household devices. It also helps in explaining which factors play significant role in making unplanned purchases.

This study aims to find how these factors are connected and to understand why women in India make unplanned purchases of home electronics devices. This study also aims to connect these behavioural factors with sustainability concerns.

Conceptual Background

The literature of consumer behaviour explains that unplanned buying happens when shoppers make sudden purchase decisions without earlier or relevant intentions. These emotions are briefly shaped by shopping settings, personal traits and external stimulus like promotions and display pattern of products (Beatty & Ferrell, 1998; Stern, 1962). Consumers demonstrates unplanned buying mostly when they come across attractive discounts, persuasive features of products and appealing placement of products in the market place at the time of shopping. The purchases of electronic devices without planning also creates sustainability concerns because unplanned and sudden purchases lead to quicker product replacement and results in more short-term use of electronic devices that lead to more electronic waste.

There are various antecedents that cause unplanned shopping. An important feature is materialistic value that increases the desire to own new and appealing products without realising its actual need (Richins & Dawson, 1992). High materialistic beliefs let people feel motivated to buy products which enhance their lifestyle, image or comfort. Another important key factor is self-regulation. The consumers which has low control over their desires to purchase new products, generally respond quickly to emotional triggers or instantaneous temptations that result in unplanned purchases (Baumeister, 2002). It has been studied in various studies that impulse purchase tendency is a type of personal trait that lead customers to make spontaneous purchases (Verplanken & Herabadi, 2001). These patterns reduce sustainability buying behavior as consumer may purchase devices that they don't need. These practise can lead to early disposal of old electronic devices.

Hedonic shopping motivation is also an important antecedent of unplanned buying behavior. They are mainly driven by pleasure in which consumers make purchases to experience enjoyment, relax and temporary escape from real world troubles. Social antecedents also affect consumer's purchase decisions. People follow their friends' opinions and suggestions and prefer to purchase what their peer group approve (Bearden et al., 1989). Now a days social media is also a strong driver of buying behaviour. Consumers make spontaneous decisions facilitated by availability of positive online reviews, informative content generated by influencers, Promotional reviews and posts (Vidani & Das, 2021). Such emotional and social triggers can weaken thoughtful consumption of the electronic devices in households and can also push people for buying more new devices with extra features and better looks.

The responses shown by women consumers varies as of different responsibilities and job roles. It has been revealed in various studies that working women who tries to balance work life and house-chores have limited time to evaluate various options (Lakshmi & Prasanth, 2018; Rawat, 2025). This condition makes favourable room for unplanned buying, especially when the advertisement of the product makes promises convenience and time-saving benefits. These products are considered to help the women by reducing their efforts and simplifying their daily routines. When the purchases are done under hurry or stress, the primary focus of women may be on immediate convenience. The concept of long-term use, environmental impact of extra devices at home may get ignored here.

It has also been studied in the previous research related to Stimulus- Organism- Response theory that unplanned buying results from external cues and internal feelings (Russell & Mehrabian, 1974). Here the 'stimulus' represents the product displays, offers and the online content and the 'organism' represents emotions, needs or mental fatigue while 'response' refers to an unplanned purchase. This framework also helps in explaining the way impulsive decisions can lead to unsustainable buying habits especially when external cues encourage frequent upgrades of electronic devices. This study highlights the way unplanned purchases can lead to increase in electronic waste and less responsible consumption by connecting the select behavioural antecedents (table 1).

In the current study, DEMATEL is used to provide a strong base for understanding how the identified antecedents influence each other in order to explain women's unplanned buying of home electronic devices. This method also helps in understanding how these behaviours may lead to less sustainable consumption when purchases are frequent, sudden and the electronic products are replaced more often.

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Table 1: Selected antecedents of women's unplanned purchases of home electronic tools

Antecedent Name	Abbreviation	Definition
Materialistic Value Orientation	MVO	Materialistic Value Orientation refers to the desire of more or newer electronic appliances because they make a person feel comfortable, updated, or improve lifestyle image. This desire can lead to the purchase of more devices than needed.
Low Self-Regulation	LSR	Low Self-regulation refers to the feeling to find it hard to resist buying devices when they look attractive or are on discount, even if it was not planned. This behaviour can reduce sustainable choices because people may buy the items, they do not use for long.
Unplanned Purchase Behaviour	UPB	Unplanned Purchase Behaviour refers to the purchase of electronic appliances suddenly without planning, usually due to offers or new models. Such quick purchases generally result in unused and underused devices which do later add to household waste.
Pleasure-Driven Shopping Motivation	PSM	Pleasure-Driven Shopping Motivation refers to the search for gadgets because exploring new devices feels enjoyable or exciting. When enjoyment becomes the sole reason of purchasing, people may ignore the long-term use of the electronic devices which affects sustainable consumption.
Peer Pressure	PP	Peer Pressure means buying certain devices or brands because friends or family encourage or influence the decision. This influence can push people toward unnecessary purchases that increases electronic waste and decrease thoughtful and sustainable choices
Social Media Engagement Level	SMEL	Social Media Engagement Level refers to spending a lot of time in watching gadget-related posts, reviews, or ads on social media. Regular exposure generally encourage people to upgrade frequently that lead them to buy new devices sooner and reduces the sustainable use of the products they already have.
Impulse-Purchase Tendency	IPT	Impulse purchase tendency means to quickly purchase a device when it looks appealing, without giving much thought or comparison. This behaviour may lead to short-term or repeat purchases which is harmful for sustainable consumption.

Previous research have examined unplanned buying behaviour, impulse purchasing, and social or digital influences separately (Beatty & Ferrell, 1998, Stern, 1962; Verplanken & Herabadi, 2001; Vidani & Das, 2021). However, limited research explains the way behavioural and social antecedents interact with each-other in order to influence unplanned purchases of home electronic devices by women and their implications for sustainable consumption, particularly using a causal mapping approach such as DEMATEL (Babu et al., 2007; Fontela & Gabus, 1976).

Research Methodology

The technique used in this study is Decision Making Trial and Evaluation Laboratory (DEMATEL) to understand the influence of unplanned buying of home electronic appliances among women. DEMATEL helps in finding the factors that cause strongest effect in a system and the factors that are highly affected by other factors in the same system. It is useful when many antecedents are connected to each other in some way. This method was developed by Battelle Memorial Institute in Geneva during 1970. It was created to study complex problems by the nature of relationship among the variables in a system.

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Research Design

This study follows a quantitative research design in which responses are collected from experts from academics and industry. A total of seven experts were initially approached for the study but only five experts provided complete and usable responses. Although the final number of the experts is limited, the five selected experts possessed substantial experience and domain knowledge in consumer behaviour and electronic appliance market. DEMATEL studies often rely on a smaller panel of experts with the strong familiarity with the variables, which are kept under investigation. Therefore, the inclusion of five qualified experts is considered adequate and appropriate for establishing and finding inter-relationships among the variables in the system (Nechita et al., 2025; Estiri et al., 2021).

Data Collection Method

A structured questionnaire is used. It asked the experts to rate how strongly one factor affects another on a simple scale i.e. 0 = no influence, 1= low influence, 2= medium influence, 3= high influence and 4= very high influence. This scale facilitated the measurement of direct relationships among the factors (Bandil et al., 2023).

Steps of DEMATEL

Step 1: Creating the Direct- Relation Matrix

In the first step, the experts gives ratings for how much one factor influence another on the basis of the above explanation. All the scores are arranged in a table by taking the average of responses given by all the experts. This matrix explain direct effect between the antecedents.

Step 2: Normalising the matrix

In the next step, the matrix values are then converted into smaller values by dividing the values present in all the cells by the highest sum or rows or columns, whichever is the highest, in order to normalize the matrix.

Step 3: Forming Total- Relation Matrix

The total relation matrix calculated both direct and indirect effects. Direct effect explain the direct effect of antecedent 'A' on antecedent 'B' whereas the indirect effect explains the influence of antecedent 'A' on antecedent 'B' through other factors. The total relation matrix combines both the effects direct as well as indirect.

Step 4: Calculating D and R values

D (r_i) – Dispatching Power means how much a factor influences other factors.

R (c_j) – Receiving Power means how much a factor is influenced by other factors.

Step 5: Identifying Cause and Effect Groups

The value of (D-R) shows whether the factor is a cause factor or an effect factor. The positive value of D-R represents a cause factor and negative values of D-R represents effect factor. The total value of (D+R) shows the importance of the factor in the whole system.

Step 6: Drawing the Cause-Effect Diagram

There is a prominence causal diagram made with the help of (D+R) and (D-R) values. It helps to understand which factors the main drivers and which factors are the outcomes in the system. It also signifies how strongly the factors are interconnected to each other.

Data Analysis Tools

The analysis and calculations were done by using MS Excel and MATLAB.

Ethical Considerations

The purpose of the study was informed to the participants and their responses were voluntarily taken and kept confidential.

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Data Analysis

The data collected from the experts was examined through DEMATEL technique to understand the way selected factors influence each other in shaping women's unplanned buying of home electronic devices. The expert's score were first arranged into a direct relation matrix (Table 2). It gives picture how strongly each factor affects other.

Table 2: Average Direct Matrix

	MVO	LSR	UPB	PSM	PP	SMEL	IPT	Sum of Rows
MVO	0	18	19	4	2	2	3	48
LSR	12	0	18	9	1	1	2	43
UPB	2	1	0	2	3	2	1	11
PSM	15	18	20	0	1	1	2	57
PP	8	11	12	9	0	5	1	46
SMEL	12	13	13	8	3	0	3	52
IPT	9	11	14	7	2	3	0	46
Sum of Columns	58	72	96	39	12	14	12	

The matrix was later normalised to set all values to comparable scale. When further solved with Identity Matrix (Table 4), Total Relation Matrix (Table 7) is achieved.

Table 3: Normalised Initial Direct Relationship Matrix (D)

	MVO	LSR	UPB	PSM	PP	SMEL	IPT
MVO	0	0.1875	0.1979	0.0416	0.0208	0.0208	0.0312
LSR	0.125	0	0.1875	0.0937	0.0104	0.0104	0.0208
UPB	0.02083	0.010	0	0.0208	0.0312	0.0208	0.0104
PSM	0.15625	0.1875	0.2083	0	0.0104	0.0104	0.0208
PP	0.08333	0.1146	0.125	0.0937	0	0.0520	0.0104
SMEL	0.125	0.1354	0.1354	0.0833	0.0312	0	0.03125
IPT	0.0937	0.1145	0.1458	0.0729	0.0208	0.0312	0

Table 4: Identity Matrix

	MVO	LSR	UPB	PSM	PP	SMEL	IPT
MVO	1	0	0	0	0	0	0
LSR	0	1	0	0	0	0	0
UPB	0	0	1	0	0	0	0
PSM	0	0	0	1	0	0	0
PP	0	0	0	0	1	0	0
SMEL	0	0	0	0	0	1	0
IPT	0	0	0	0	0	0	1

Table 5: (I-D) Matrix

	MVO	LSR	UPB	PSM	PP	SMEL	IPT
MVO	1	-0.1875	-0.1979	-0.0416	-0.0208	-0.0208	-0.0312
LSR	-0.1250	1	-0.1875	-0.0937	-0.0104	-0.0104	-0.0208
UPB	-0.0208	-0.0104	1	-0.0208	-0.0312	-0.0208	-0.0104
PSM	-0.15625	-0.1875	-0.2083	1	-0.0104	-0.0104	-0.0208
PP	-0.0833	-0.1145	-0.125	-0.0937	1	-0.0520	-0.0104
SMEL	-0.1250	-0.1354	-0.1354	-0.0833	-0.0312	1	-0.0312
IPT	-0.0937	-0.1145	-0.1458	-0.0729	-0.0208	-0.0312	1

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Table 6: $(I - D)^{-1}$							
	MVO	**LSR**	**UPB**	**PSM**	**PP**	**SMEL**	**IPT**
MVO	1.0589	0.2306	0.2853	0.0811	0.0362	0.0345	0.0440
LSR	0.1658	1.0662	0.2689	0.1193	0.0256	0.0237	0.0336
UPB	0.0380	0.0330	1.0303	0.0325	0.0347	0.0252	0.0144
PSM	0.2109	0.2506	0.3197	1.0467	0.0295	0.0273	0.0381
PP	0.1430	0.1817	0.2290	0.1303	1.0159	0.0647	0.0259
SMEL	0.1866	0.2097	0.2530	0.1254	0.0480	1.0166	0.0477
IPT	0.1480	0.1772	0.2438	0.1089	0.0362	0.0447	1.0149

Table 7: Total Relation Matrix [T = D∗ $(I - D)^{-1}$]								
	MVO	**LSR**	**UPB**	**PSM**	**PP**	**SMEL**	**IPT**	r_i
MVO	0.0589	0.2306	0.2853	0.0812	0.0362	0.0345	0.0440	0.7707
LSR	0.1658	0.0662	0.2689	0.1193	0.0256	0.0237	0.0337	0.7034
UPB	0.0380	0.0330	0.0303	0.0325	0.0347	0.0252	0.0144	0.2084
PSM	0.2109	0.2506	0.3197	0.0468	0.0295	0.0273	0.0381	0.9231
PP	0.1430	0.1818	0.2291	0.1303	0.0159	0.0647	0.0259	0.7908
SMEL	0.1866	0.2098	0.2530	0.1254	0.0480	0.0166	0.0477	0.8873
IPT	0.1480	0.1772	0.2438	0.1089	0.0362	0.0447	0.0149	0.7739
(c_j)	0.9515	1.1493	1.6304	0.644	0.2264	0.2369	0.2188	

A Total Relation Matrix shows both direct and indirect influences among the antecedents. From these results, the prominence values (Ri +Cj) and relation values (Ri-Cj) were calculated to identify which factors are the cause factors and which factors are the effect factors in the system.

Table 8: Causal Effect Classification of Antecedents Based on Prominence Values and Relation Values						
	Ri	**Ci**	**Ri + Ci**	**Ri-Ci**	**Identify**	**Rank**
MVO	0.7707	0.9515	1.7222	-0.1807	Effect	3
LSR	0.7034	1.1493	1.8528	-0.4458	Effect	2
UPB	0.2084	1.6304	1.8388	-1.4219	Effect	1
PSM	0.9231	0.6445	1.5676	0.2785	Cause	4
PP	0.7908	0.2264	1.0173	0.5644	Cause	6
SMEL	0.8873	0.2369	1.1242	0.6503	Cause	7
IPT	0.7739	0.2188	0.9928	0.5551	Cause	5

These values helped in classifying each variable according to its strength, influence and role in the overall behaviour pattern. With the help of prominence and relation values, a causal diagram (Figure 1) was prepared to give a clear visual of how the different antecedents interact and which factors drive unplanned buying behaviour the most. This analysis provides a structured understanding of the relationships among the antecedents and which has stronger influence within the system.

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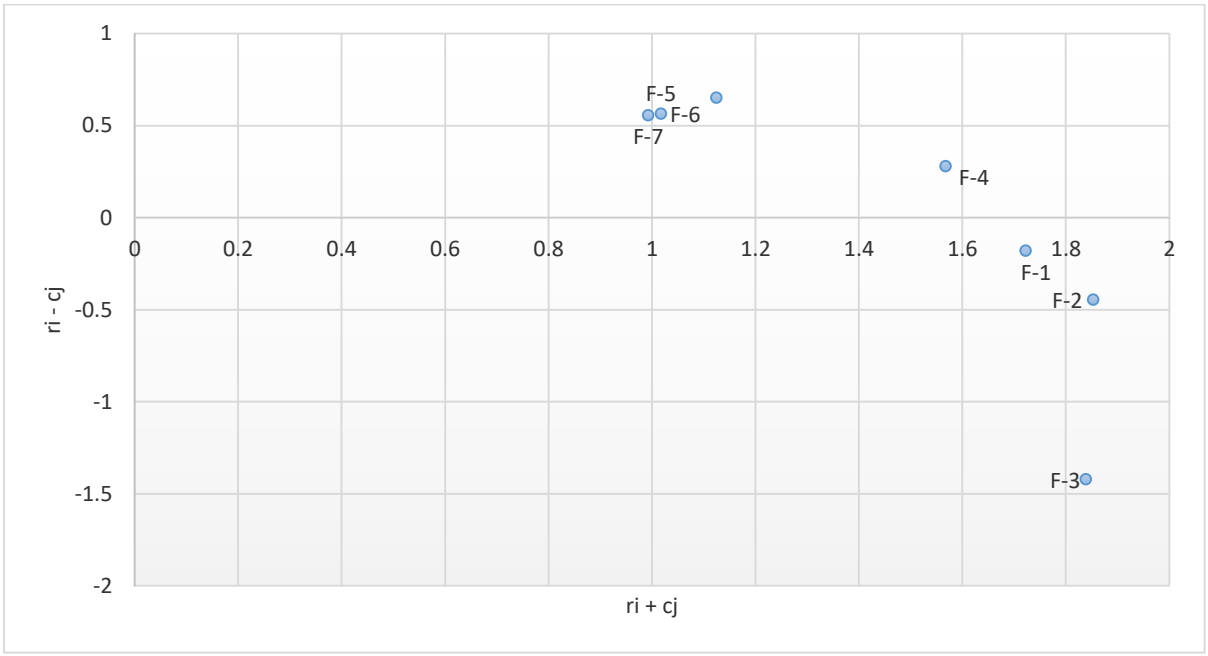

Figure 1: Causal Diagram of Women's Unplanned Buying of Home Electronic Tools

Findings and Discussions

The results shown in Table 8 show a clear difference between the factors that fall under the cause group and effect group. Antecedents such as PSM, PP, SMEL, IPT fall into the cause group, it means they actively influence other antecedents in the system. Among these, SMEL is the strongest driver followed by PP, IPT and PSM. This refers as the frequent exposure to social media content, pressure from peer group and impulsive tendency acts as starting point that push consumers to make unplanned buying decisions. PSM also contribute by making consumers more emotionally engaged with new gadgets which causes interest in frequent purchasing.

On the other hand, UPB, LSR and MVO fall in to the group of effect group which means these antecedents receive influence from the causal group factors. UPB is found to be the strongest effect variable. It demonstrates that the unplanned buying behaviour is the final outcome of all the influences and motivations. LSR which has a high prominence value indicates how difficulties in controlling feelings increase the engagement of consumer with social media content and marketing cues. MVO also demonstrate that materialistic desires to own new or innovative products grows when consumers get regularly exposed to trends, peer comparisons and impulse- trigging situations.

Overall, the current pattern shows that unplanned purchase decisions is not a standalone factor rather it is shaped by emotional factors, social influence and constant exposure to digital content. This behaviour strengthens the materialistic values and weakens self-control in sustainable buying contexts.

SMEL, PP, IPT, and PSM as causal factors are supported by previous literature of consumer behaviour. It has been studied in the previous research that social media exposure strongly affect the intentions of consumers to purchase upgraded devices. In a study on impulse purchases in fashion industry, Djafarova and Bowes (2021) found that regular engagement Generation Z with social media content like influencer posts increases the chances of unplanned purchases and faster decisions about product replacement.

Similarly, peer influence has been found as a significant driver of technology adoption. Wang et al. (2012) found in their study that peer pressure often shapes perceptions of what is new and 'up-to-date'. This push individuals towards unnecessary purchases. This also supports the causal position of PP and its role in promoting less sustainable buying practices.

The strong causal effect exerted by impulse purchase tendency is also supported by existing literature. It has been studied in the previous studies that impulsive purchase tendency generally reduces deliberate thinking which lead to wasteful consumption and shorter usage of products (Verplanken and Herabadi, 2001). This practice raises the concern for sustainable consumption of the products.

In the same line, it has been found by Hausman (2000) that various consumers buy items simply because they find

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shopping enjoyable. It goes in line with the findings of the current study in which PSM is found as a causal factor.
In the current study, UPB is found as a strongest effect factor which aligns with the studies that show that unplanned buying is a behavioural outcome of various psychological, emotional and environmental influences. Amos et al. (2014) concluded that unplanned buying behaviour is formed by impulse tendencies, social environment and marketing cues. This explains the most affected nature of UPB in the results of this study. According to previous researches, reduced self-control makes consumers more vulnerable to external cues like discounts, peer influence and social media trends (Baumeister and Heatherton 1996; Doyle, 2021). This goes in line with the outcomes found in the current study where LSR is being shaped by causal factors in the system.
Similarly, MVO is an effect variable in the study which also goes in line with the previous researches. It has been observed by Richins (2004) that materialistic attitudes generally strengthen in the environment where advertisements are in abundance and there is a social comparison. In the context of electronic appliances, exposure to social media advertisements, group behaviour can easily arise the desire of upgrading and accumulating more products.
In general, DEMATEL results give a clear structural explanation of how social and emotional cues act as starting point of the influences and unplanned purchases, reduced self-control and high materialistic values emerge as outcomes of the current study. Together these parameters lead to frequent and unplanned purchases of home electronic devices among women, resulting in less sustainable consumption of such products.

Conclusion

This study helps in understanding why various women end up buying home electronic gadgets without making planned and deliberate decisions. The DEMATEL results show that social influence, enjoyable shopping experiences, and frequent exposure to online content can lead to quick buying decisions. These cues can affect personal factors like self-control and materialistic values. When these habits grow, they also lead to reduce thoughtful and sustainable use of electronic devices at home. This study gives a clear picture of the way unplanned purchases develops by understanding the inter-connected of these antecedents. It also provides the reason why it grows stronger in today's social media-driven and fast moving market. These insights can help both consumers and companies in encouraging more responsible consumption and purchasing of electronic devices at household level.

Implications

Theoretical Implications

This study adds to the existing understanding of unplanned buying by showing how social, emotional and personal factors interact with each other rather than working alone. This explains the cause-effect structures among the identified variables by using DEMATEL method. These inter-connectedness gives a clear picture how social media exposure, peer influence and pleasure driven shopping act as major cues that driver unplanned purchase behavior. This study also connects these drivers to reduced self-control and higher materialistic values. These findings enriches existing theories on consumer behaviour and supports models like S-O-R framework. It also brings sustainability into the picture by showing how these behaviours reduce mindful and long-term use of home electronic devices.

Managerial Implications

The findings of the current study make helpful suggestions for the companies which sell home electronic devices. Brands ought to design marketing message that promote informed and responsible purchases rather than encouraging unnecessary consumption. This doesn't mean the marketer should discourage sales rather it mean they should focus on building trust and long-term customer loyalty. Marketers can create advertisement drives which focus on durability, better repair options, energy efficiency and long product life in the form of warranties. This enhances the value and reliability of the brand among the consumers. Stores can also reduce impulse triggers by providing comparison tools and clear product labelling. Retailers may introduce "need-based recommendation system" which tells customers to evaluate whether the new device can replace the existing one. Companies can also give simple reminders at the time of buying that can help consumers in making informed decisions. For example, an online store can show a small pop-up message that inform consumer the product life, energy the product consumes, and it's compatibility with other devices. When marketers acknowledge that tired schedules and emotional stress can lead to unplanned purchases, they can create communication that respects customers' time and helps them in taking confident and calm decisions. This approach strengthens brand credibility and encourage repeat and planned purchases rather the impulsive one time buying.

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Social Implications

This study makes implications that how everyday social and social media pressures shape the buying habits of women. This study confirms that regular exposure to social media content, influencers, product posts and peer influences can lead to unplanned purchases that result in increasing household electronic waste. The results from the current study can support awareness programmes that can encourage women and households to think before buying, reuse of devices and selecting products with longer life or lower energy use. This study also strives to address the need for digital literacy so that people can identify persuasive marketing and avoid unnecessary purchases.

Limitations and Future Research Scope

This study has a few limitations that need to be noted. The findings are based on responses only from five experts, which means the opinions used in the DEMATEL analysis are limited. The study focuses only on women who purchase home electronic devices, so the results cannot be applicable to other product categories across different groups of consumers. This study also includes a specific set of antecedents including social and behavioural factors. Some other factors like income-level, environment concern or product knowledge were not included in the study. Future researches can be done by adopting these variables also in the system. In MCDM technique like DEMATEL, there is always a chance of personal bias, as the input factors are determined by experts. Future studies can include a larger or more diverse group of experts to understand the influence of variables on each-other. Future works can also be done by using mixed methods like, DEMATEL combined with surveys, interviews or experiments to provide deeper insights. Future studies may further explore how sustainable marketing tools like, repair services, eco-labels or buy-back programmes influence unplanned purchase of electronic devices.

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