



## Exploring the Influence of Gender, Age, Education Level, and Income on Online Impulsive Purchasing Behavior among College Students

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### ABSTRACT

This paper investigates the impact of gender, age, education level, and income on online impulsive purchasing behavior specifically among college students using cross-tabulation and chi-square tests. With the rise of e-commerce and online shopping, understanding the factors that influence impulsive buying tendencies in this demographic group is crucial. Primary data was collected through a questionnaire. The findings indicate that gender and age do not have a significant influence on online impulsive purchasing behavior. However, education level shows a significant relationship, suggesting that higher education levels are associated with a higher likelihood of engaging in impulsive buying online. Monthly income, on the other hand, does not exhibit a significant relationship with impulsive purchasing behavior. The findings of this study have implications for promoting responsible online shopping habits, enhancing financial literacy, and tailoring digital marketing strategies to address impulsive buying tendencies among college students.

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## 1. INTRODUCTION

The decision to make a purchase can be influenced by factors such as symbolic motives, aesthetics, or the desire for self-entertainment. Impulsive buying behavior refers to the unplanned and spontaneous purchase of a product upon first encountering it, without any prior intention to buy that specific item (Rahanatha et al., 2022). The percentage of impulsive purchases ranges from 40 percent to 80 percent, depending on the nature and type of the product according to (Aragoncillo & Orús, 2018). This highlights the importance of understanding the underlying reasons behind impulsive buying behavior to capitalize on it as business owners.

In recent times, numerous retailers have made efforts to encourage impulsive buying behavior through various strategies, including extensive promotional campaigns. However, managing this process is challenging, as it is intricate, and even customers themselves may struggle to comprehend it (Chang et al., 2014). Impulsive purchasing behavior is a distinct and intricate concept that has been the subject of research for the past several decades, with attempts

made to understand and clarify its complexities (Atulkar & Kesari, 2018).

Understanding customers' behavior is essential to the marketing concept of business behavior. The study of customers' needs, wants preferences, and expectations that need to be met and delivered to them (Pelau et al., 2018). However, the impulsive purchasing behavior of online shopping is still unknown or unclear and not addressed probably by other research papers (Hamna Hashmi et al., 2019). Therefore, there are still limitations in the past research papers.

Furthermore, with the fast and increased development of E-commerce, information technology, and telecommunication, as well as the high-pitched growth of online shopping, online payment, and mobile (B. Chen et al., 2022). For innovations, impulsive purchasing behavior has increased rapidly. Because of the accessibility of online shopping retailers twenty-four hours, through the Internet, online shopping has increased as well as impulsive online (Shweta Choudhary, 2014). This

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indicates that customers' behaviors have changed over the last decade (Potashina et al., 2017).

Consequently, this study aimed to enhance both theoretical and practical knowledge in the field of marketing and business by examining the impact of demographic factors on impulsive buying behavior among college students in the online context. The goal was to gain a comprehensive understanding of the effectiveness of these factors in influencing impulsive purchasing behavior in the online marketplace. Because impulsive purchasing accounts for a significant portion of total purchases (Hatane Samuel, 2007). Gaining a deep understanding of this process is crucial to developing effective marketing strategies that can steer impulsive buying behavior toward increased frequency. By comprehensively grasping the dynamics behind impulsive purchasing, businesses can create impactful tools and techniques to influence and encourage such behavior (Khan et al., 2015).

The goal of this research is to explore the impact of gender, age, education level, and income on impulsive online purchasing behavior among college students. The study has the following specific objectives: to assess the prevalence and magnitude of impulsive online purchasing behavior among college students, to investigate the correlation between gender and impulsive online purchasing behavior among college students, to assess the impact of age on online impulsive buying tendencies among college students, to investigate the influence of education level on online impulsive purchases among college students, to explore the relationship between income and online impulsive purchasing behavior among college students, and last but not least, to provide insights and recommendations for marketers targeting college students to effectively address and leverage online impulsive buying tendencies.

The research questions of this study are; How does gender influence online impulsive purchasing behavior among college students? What is the impact of age on online impulsive buying tendencies among college students? How does education level affect online impulsive purchases among college students? How does income relate to the impulsive purchasing behavior of college students in online shopping?

Previous research has shown that consumers' impulsive buying behavior is influenced by a range of factors, including both internal and external elements, which can directly or indirectly impact their decision-making (Menoe & Barnard, 2020). However, there is a lack of understanding regarding the role of demographic factors and their effect on impulsive purchasing decisions in the online context. Consequently, the potential advantages associated with this behavior are not fully realized.

## 2. LITERATURE REVIEW

### 2.1 Impulsive Purchasing Behavior

Numerous authors and researchers have made attempts to define impulsive purchasing behavior. It can be described as the intention to make immediate purchases upon entering a store or buying goods without prior identification of a problem (Bayley & Nancarrow, 2006; Djafarova & Bowes, 2021). Impulsive purchases, both online and offline, are characterized

by spontaneous actions in acquiring products and services, which has led to extensive research (K. Z. K. Zhang et al., 2018). In simpler terms, it refers to sudden purchases made without any prior intention (Geetha, 2016).

Nevertheless, researchers have engaged in a discussion about the oversimplified nature of the definition of impulsive purchasing. According to some arguments, not all unplanned purchases can be categorized as impulsive, but all impulsive purchases can be seen as unplanned. Therefore, impulsive purchasing behavior can be described as an unplanned purchase made by a customer upon entering a store, influenced by persuasive sales promotions. However, it is crucial to acknowledge the limitations of this definition as well (Aragoncillo & Orús, 2018).

### 2.2 Online Impulsive Buying Behaviour

Impulsive online purchasing occurs when customers are motivated to make online purchases primarily due to the customer experience, without giving much consideration to the actual need for the product being purchased (C.-D. Chen et al., 2019). There are varieties of factors that affect online IPB and under each factor comes out different variables. Some of these factors are personal behavior, situational factors, promotion, ethical issues, and suggestive factors (Gao et al., 2022; Dithebe Menoe & Brian Barnard, 2020). The attractiveness of the design of the website, virtual layout, easy and convenient navigation of the website virtual experience, and trust stimulate the customer to buy impulsively online (Octavia, 2015).

Providing information, easy access content, and sharing content will trigger the use of the online mobile market (Ittaquallah et al., 2020). Mood and demographic factors such as age and gender have an impact on online IPB (C. Der Chen et al., 2019). One of the main stimuli for online IPB is personalization. Through personalization, the consumer receives related information to his or her preferences. In addition, this eliminates the waste of time and fastens impulsive purchases online (Mahek Iram & D. Y. Chacharkar, 2017).

The findings of Aragoncillo and Orús (2018) show impulsive purchasing occurs and is triggered in offline and physical stores more than in online stores. This is because online purchasing is more rational and planned due to the variety and richness of information and options (Aragoncillo & Orús, 2018). On the other hand, other studies show that the use of the internet and the advancement of technology have a significant role in increasing the impulsiveness purchasing of the consumer. The researchers indicate that impulsive buying could occur and increase more in online buying than offline buying (Parsad et al., 2021).

However, in traditional e-commerce, the possession of the product immediately after the purchase will lead to immediate satisfaction. Whereas in online shopping the delivery of the product to the customer will take, time such as hours or days. Yet it does not let the online impulsive less accruing than offline impulsive purchasing. The reason behind that is when the customer has done with the online transaction will satisfy his or her desire without the need for the product reach to him or her first. (Iram & Chacharkar, 2017)

## 2.3 Demographic Factors and Online Impulsive Buying Behaviour

### 2.3.1 Gender

Numerous studies have been conducted to investigate the impact of gender on impulsive purchasing behavior in both offline and online settings. For example, (Akçay & Özdemir, 2019) discovered that females have higher levels of impulsive purchasing tendencies than males, particularly when it comes to purchasing fashion and beauty products. Furthermore, studies have shown that when engaging in impulsive buying behavior, females are more motivated by emotional factors such as the desire for immediate gratification or the need for self-expression (Djafarova & Bowes, 2021). It is important to note, that gender differences in impulsive purchasing behavior are not universal, and cultural factors can also play a role. A study by (Kim et al., 2021) found that gender differences in impulsive buying tendencies were less pronounced in collectivist cultures such as Korea. Overall, these findings indicate that gender does play a significant role in shaping impulsive purchasing behavior, and more research is needed to understand the underlying mechanisms underlying these differences in the online context.

### 2.3.2 Age

Research focusing on the relationship between age and impulsive buying behavior has shown that age-related factors can influence online impulsive purchasing tendencies among college students. For instance, (H. S. Chen et al., 2020) found that younger college students exhibit higher levels of online impulsive buying behavior compared to older students. This could be attributed to factors such as higher levels of technological familiarity and greater exposure to online marketing stimuli among younger individuals (Khan et al., 2015). Moreover, studies have indicated that life stage and financial independence also play a role in shaping impulsive buying behavior. For example, college students who are financially dependent on their parents may engage in impulsive purchases as a means of asserting independence or seeking self-gratification (K. Z. K. Zhang et al., 2018). These findings suggest that age-related factors, including technological familiarity, life stage, and financial independence, should be considered when examining online impulsive purchasing behavior among college students.

### 2.3.3 Education Level

Studies investigating the influence of education level on impulsive buying behavior have shown mixed findings. Some research suggests that higher levels of educational attainment may lead to more informed and rational purchasing decisions, resulting in lower levels of impulsive buying behavior (C. C. Chen & Yao, 2018). For instance, individuals with higher education levels may possess better financial literacy skills, enabling them to make more deliberate purchase choices. However, other studies have found that education level does not have a significant impact on impulsive buying tendencies (Hamna Hashmi et al., 2019) It is important to consider the role of individual differences in consumer knowledge and decision-making skills when examining the relationship between education level and impulsive buying behavior (Akyuz, 2018) Further research is needed to explore the underlying mechanisms and potential mediating variables that may explain the influence of education level on online impulsive purchasing behavior among college students.

### 2.3.4 Income

Research examining the relationship between income and impulsive buying behavior has indicated that income-related factors can influence online impulsive purchasing tendencies among college students. For instance, studies have found that individuals with higher income levels tend to engage in more impulsive buying behavior, as they have greater disposable income available for unplanned purchases (Sandhu & Paim, 2016). Additionally, financial constraints can also impact impulsive buying tendencies. College students with limited financial resources may engage in impulsive purchases as a form of escapism or to compensate for other unmet needs (Davenport et al., 2012; Schofield, 2017). Therefore, researchers need to explore more about the effect of income on online impulsive purchasing behavior.

## 2.4 Empirical Studies

Chen, Kassas, and Gao (2021) conducted a study to examine how shopping companions influence impulsive buying choices, taking into account both external and internal factors. The researchers formulated several hypotheses to guide their investigation, including the impact of social distance, shoppers' impulsiveness, emotional susceptibility, demographic characteristics, and shopping-related traits on responses to purchase recommendations from various shopping companions. The study involved an online survey of 791 shoppers in the United States, collecting data on their demographic information, personal traits, and grocery shopping habits. The research findings revealed that spouses and parents were the predominant and influential shopping companions. The impact of various companions on impulsive purchasing decisions was found to vary based on the internal characteristics of the shoppers and the level of social distance between the shopper and the companion (Chen, Kassas, & Gao, 2021).

The objective of Badgaiyan and Verma's (2014) study was to investigate the impact of five intrinsic factors, including culture, personality, impulsive buying tendency, shopping enjoyment tendency, and materialism on impulsive buying behavior. They formulated a series of hypotheses to investigate the relationships between these factors and impulsive buying behavior. Through a questionnaire-based survey conducted in India's National Capital Region market, with a sample size of 508 participants, they collected data and analyzed it using structural equation modeling. The Findings indicated that shopping enjoyment tendency, materialism, and impulsive buying tendency had relationships with impulsive buying behavior significantly and positively. Additionally, the personality traits of extraversion and conscientiousness and the cultural trait of collectivism displayed significant relationships with impulsive buying behavior (Badgaiyan & Verma, 2014).

In their study, Tarka, Kukar-Kinney, and Harnish (2022) investigated the relationship between cardinal hedonistic consumption, personality traits as a central trait, and compulsive buying as a surface trait. They proposed several hypotheses related to the impacts of cardinal personality traits on compulsive buying, mediated through hedonistic shopping experiences. They conducted an empirical research study using a survey-based quantitative approach with a sample of 363 adults in the US market. The data collected supported their hierarchical model of personality, hedonistic shopping experiences confirm the role of a mediator between

compulsive buying and cardinal personality traits. The findings revealed that openness to experience extraversion, and neuroticism had a positive and indirect impact on compulsive buying, whereas agreeableness and conscientiousness had a negative and direct influence on both compulsive buying and hedonistic shopping experiences. Furthermore, the researchers observed that the effects of personality traits on compulsive buying varied depending on gender. Specifically, extraversion, neuroticism, and openness to experience were found to be stronger predictors of compulsive buying behavior among women compared to men, whereas agreeableness and conscientiousness had a greater inhibitory effect on compulsive buying for women (Tarka et al., 2022).

### 3. METHODOLOGY

The research approach for this study will be quantitative, aiming to collect numerical data and analyze it statistically. This approach will allow for a systematic examination of the relationships between online impulsive purchasing behavior, gender, age, education level, and income. The research aims to explore the relationships between online impulsive purchasing behavior and various demographic variables, specifically gender, age, education level, and income among Malaysian college students. The goal is to gain insights into the factors influencing online impulsive buying behavior among this specific population.

The primary data collection method was a questionnaire or online survey administered to Malaysian college students. The questionnaire will include items related to online impulsive purchasing behavior, demographic information (such as age, gender, income, and education level), and other relevant variables. The survey was distributed through online platforms, and social media depending on the feasibility and convenience for the target population.

Statistical analysis techniques were used to analyze the collected data. Specifically, the data can be imported and analyzed using statistical software such as IBM SPSS. Demographic variables and impulsive purchasing behavior can be summarized using the Frequencies Test. We perform cross-tabulations and chi-square tests between gender and impulsive purchasing behavior, age groups and impulsive purchasing behavior, education level and impulsive purchasing behavior, as well as monthly income and impulsive purchasing behavior. This will help to understand the distribution of impulsive purchasing behavior across different categories of each variable and identify any potential patterns or associations.

The measurement we used in the survey for the independent variables was Nominal for gender, and education level (Parsad et al., 2019). Moreover, ordinal for age and monthly income (Kakhki et al., 2019). For the dependent variable, IPB we develop nine statements describing the IPB with a five-point Likert measurement (Rodrigues et al., 2021), (Thürmer et al., 2020), (Kumar & Kaur, 2018).

The chosen quantitative approach, involving the collection of primary data through a questionnaire or online survey, along with statistical analysis using SPSS, aligns with the research goals of exploring the relationships between online impulsive purchasing behavior and demographic

variables among Malaysian college students. This approach allows for the systematic examination of these relationships, providing empirical evidence to support or refute the relationship and contribute to the existing body of knowledge in this area. The use of quantitative methods also facilitates the generalizability of findings and enables comparisons with previous research.

## 4. RESULTS AND DISCUSSIONS

### 4.1 Frequencies Test

The section presents the results of an important part of the demographic section of the survey questionnaire to our research's objectives. Which includes gender, age, education level, and monthly income.

**Table 1.** Profile of Responses

		Frequency	%	Cumulative %
Gender	Male	88	42.9	42.9
	Female	117	57.1	100.0
Age	17 – 20 years	30	14.6	14.6
	21 – 24 years	137	66.8	81.5
	25 – 28 years	25	12.2	93.7
	29 and above years	13	6.3	100.0
Education Level	High school / Intermediate	7	3.4	3.4
	Diploma	23	11.2	14.6
	Bachelor	158	77.1	91.7
	Master	9	4.4	96.1
	PhD/Doctoral	5	2.4	98.5
	Foundation	2	1.0	99.5
	Learn English	1	.5	100.0
Monthly Income	Below RM 800 (below \$173.42)	86	42.0	42.2
	RM 801 - RM 1300 (\$ 173.63 - \$ 281.80)	38	18.5	60.8
	RM 1301 - RM 1800 (\$282.02 - \$ 390.19)	28	13.7	74.5
	RM 1801 - RM 2300 (\$390.41- \$ 498.58)	32	15.6	90.2
	above RM 2301 (above \$498.79)	20	9.8	100.0

Based on the provided frequency table, we can observe the demographic characteristics of the respondents, including gender, age, education level, and monthly income. These characteristics are relevant to exploring the influence of these variables on online impulsive purchasing behavior among college students.

First regarding gender, the majority of the respondents were female (57.1%), while males accounted for 42.9% of the

sample. This suggests a relatively balanced representation of both genders in the study. All the respondents specify their gender. These results were helpful to measure the factors in both genders. Because both women and men have desires to buy impulsively (Ghafoor et al., 2015).

In terms of age, the largest age group among the respondents was 21-24 years old (66.8%), followed by 17-20 years old (14.6%), 25-28 years old (12.2%), and 29 years and above (6.3%). This indicates that the majority of the participants were within the typical college student age range. Also, this is beneficial to our research because the youth is the most common category of people who are triggered by online impulsive purchasing (Khan et al., 2015).

Regarding education level, the majority of respondents had a Bachelor's degree (77.1%), followed by a Diploma (11.2%), Master's degree (4.4%), High school/Intermediate (3.4%), Ph.D./Doctoral (2.4%), Foundation (1.0%), and Learn English (.5%). This indicates that the sample predominantly consisted of undergraduate students. It is relevant to have a significant representation of undergraduate students in the sample. As they are college students, they are likely to be actively engaged in online shopping and exhibit impulsive purchasing behaviors (M. Zhang & Shi, 2022)

In terms of monthly income, the highest frequency was in the "Below RM 800" category (42.0%), followed by "RM 801 - RM 1300" (18.5%), "RM 1301 - RM 1800" (13.7%), "RM 1801 - RM 2300" (15.6%), and "Above RM 2301" (9.8%). These income categories provide insight into the income distribution among college students in the sample. Therefore, it is obvious that most of these study respondents earned below RM800 because they were students and mostly they were unemployed (Dey & Srivastava, 2017). These income categories provide insights into the income distribution among college students in the sample and align with the understanding that college students typically have limited financial resources (Lee, 2009). It is essential to consider this income distribution when examining the influence of income on online impulsive purchasing behavior among college students.

#### 4.2 Cross-Tabulation & Chi-Square Tests

Cross tabulation will show the results of two of the demographic characteristics of the respondents and online IPB and present the relationship between both of them. This will allow us to do a comparison. Thus, it will help us understand the distribution of impulsive purchasing behavior across different categories of each variable and identify any potential patterns or associations. Also, it will support giving further suggestions to improve or explore more about these relationships.

**Table 2.** Cases Processing Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
IPB * Gender	205	100.0%	0	0.0%	205	100.0%
IPB * Age	205	100.0%	0	0.0%	205	100.0%
IPB * Education level	205	100.0%	0	0.0%	205	100.0%
IPB * Monthly Income	204	99.5%	1	0.5%	205	100.0%

The cases processing summary indicates that there are no missing cases in the cross-tabulations between online IPB and

gender, age, and education level. However, there is one missing case in the cross-tabulation between IPB and monthly income. This information confirms that all the available data for these cross-tabulations are valid and can be used for further analysis. It sets the foundation for examining the relationships between impulsive purchasing behavior and these demographic characteristics.

**Table 3.** IPB & Gender Crosstabulation

IPB Likert	Gender		Total
	Male	Female	
1	8	13	21
2	17	25	42
3	30	41	71
4	23	29	52
5	10	9	19
<b>Total</b>	<b>88</b>	<b>117</b>	<b>205</b>

**Table 4.** Chi-Square Tests - Gender

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.083a	4	.897
Likelihood Ratio	1.077	4	.898
Linear-by-Linear Association	.882	1	.348
N of Valid Cases	205		

a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 8.16.

The crosstabulation table presents the distribution of online impulsive purchasing behavior (IPB) based on gender. Table 3. shows the counts for each combination of IPB (ranging from 1 to 5) and gender (male or female). Based on the crosstabulation, we can analyze the relationship between IPB and gender. It appears that there is a variation in impulsive purchasing behavior between males and females. For example, in the highest IPB category (IPB = 5), there are slightly more males (10) than females (9). In contrast, for IPB = 3, there are more females (41) than males (30). However, these differences are not substantial.

The chi-square tests assess whether there is a significant association between IPB and gender. In this case, none of the tests reveal a statistically significant association. This suggests that there is no strong evidence to conclude that impulsive purchasing behavior differs significantly between males and females among college students. The p-values associated with the chi-square tests are all greater than the conventional significance level of 0.05 (2-sided). This indicates that the observed distribution of IPB across gender categories could reasonably occur by chance alone. It is important to note that the number of cases in each cell of the crosstabulation should meet certain criteria for the chi-square test to be valid. In this case, all cells have an expected count of at least 5, and none have an expected count below 5. Therefore, the chi-square test results can be considered reliable.

Overall, based on the chi-square test results, we do not find strong evidence to suggest a significant association between online impulsive purchasing behavior and gender among college students in the given sample. These results confirm the findings of (Kim et al., 2021), but they are against and (Djafarova & Bowes, 2021) findings. Gender alone may not be the sole determinant of IPB. There could be other

factors such as individual personality traits, socioeconomic status, cultural influences, or psychological factors that have a stronger influence on impulsive purchasing behavior among college students. Failing to consider or control for these additional factors in the analysis may diminish the apparent association between IPB and gender.

**Table 5. IPB & Age Crosstabulation**

IPB Likert	Age				Total
	17 - 20 years	21 - 24 years	25 - 28 years	29 years and above	
1	3	12	4	2	21
2	7	27	6	2	42
3	6	50	7	8	71
4	12	34	5	1	52
5	2	14	3	0	19
<b>Total</b>	30	137	25	13	205

**Table 6. Chi-Square Tests - Age**

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.135a	12	.359
Likelihood Ratio	14.286	12	.283
Linear-by-Linear Association	2.116	1	.146
N of Valid Cases	205		

a. 9 cells (45.0%) have an expected count of less than 5. The minimum expected count is 1.20.

Based on the cross-tabulation of online impulsive purchasing behavior (IPB) and age among college students, the following patterns can be observed. Looking at the distribution of IPB across different age groups, there doesn't appear to be a consistent pattern. The frequency of IPB varies across different age groups for each IPB category. For example, IPB category 1: The highest frequency is observed in the 21-24 years group (27), followed by the 17-20 years group (12). IPB category 2: The highest frequency is observed in the 21-24 years group (50), followed by the 17-20 years group (7). IPB category 3: The highest frequency is observed in the 21-24 years group (34), followed by the 17-20 years group (6). IPB category 4: The highest frequency is observed in the 21-24 years group (14), followed by the 17-20 years group (12). IPB category 5: The highest frequency is observed in the 21-24 years group (8), followed by the 17-20 years group (2).

Table 6. displays Pearson Chi-Square test results for the relationship between online IPB and age, with a p-value of 0.359. There is no significant relationship between online impulsive purchasing behavior and age among college students in the given sample, according to the test results. As a result, differences in IPB frequencies across age groups may be the result of chance rather than a meaningful relationship. It's worth noting that in this analysis, where the lowest expected count is 1.20, 45% of the cells have expected counts lower than 5. This suggests that some of the cell counts are low, which could affect the reliability of the chi-square test results.

In summary, based on the provided data, there is no strong evidence to suggest a significant association between online impulsive purchasing behavior and age among college students in the given sample. These findings disagree with (H. S. Chen et al., 2020) and (Khan et al., 2015). Impulsive purchasing behavior is influenced by various factors,

including personal characteristics, socio-economic factors, and individual preferences. Age alone may not be a strong predictor of IPB among college students. Other factors such as income, lifestyle, social influences, and psychological factors could have a more significant impact on impulsive purchasing behavior than age.

**Table 7. IPB & Education level Crosstabulation**

IPB Likert	Education level							Total
	High school/Intermediate	Diploma	Bachelor	Master	PhD/Doctoral	Foundation	Learn English	
1	2	3	12	1	1	2	0	21
2	1	3	35	3	0	0	0	42
3	3	6	53	5	4	0	0	71
4	1	8	42	0	0	0	1	52
5	0	3	16	0	0	0	0	19
<b>Total</b>	7	23	158	9	5	2	1	205

**Table 8. Chi-Square Tests - Education level**

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	39.204a	24	.026
Likelihood Ratio	35.319	24	.064
Linear-by-Linear Association	1.340	1	.247
N of Valid Cases	205		

a. 28 cells (80.0%) have an expected count of less than 5. The minimum expected count is .09.

The crosstabulation Table 7. illustrates the relationship between online impulsive purchasing behavior (IPB) and education level among college students. Analyzing the data, we can observe how IPB is distributed across various levels of education. Among students with a high school/intermediate education level, the majority did not exhibit significant impulsive purchasing behavior, with only a small number falling into IPB category 1. Similarly, for students with a diploma, the incidence of impulsive purchasing behavior was relatively low, with the majority falling into categories 2, 3, and 4. In contrast, students with a bachelor's degree showed a more diverse range of impulsive purchasing behavior, with a considerable number falling into categories 2, 3, 4, and 5. The highest proportion of impulsive behavior was observed in category 4 among students with a bachelor's degree. Among students with a master's degree, the incidence of impulsive purchasing behavior was relatively low, mainly falling into categories 1, 3, and 4. The same pattern was observed for students with a Ph.D./Doctoral degree, with the majority falling into categories 1 and 3. Notably, the foundation education level showed no significant presence of impulsive purchasing behavior, while the "Learn English" category had no respondents exhibiting impulsive behavior.

To examine the relationship between the level of education and online impulsive purchasing behavior (IPB) in college students, a chi-square test in Table 8. was employed. The results indicate a statistically significant association between these two variables, with a p-value of .026. These p-values from the tests provide evidence supporting a noteworthy connection between the level of education and online IPB among college students. However, it is worth noting that 28 cells have an expected count of less than 5, with

the lowest expected count being .09. Consequently, caution should be exercised when interpreting these findings due to the potentially small sample sizes in certain education level categories.

Overall, the chi-square test suggests a significant relationship between education level and online IPB among college students. These findings support the results of (C. C. Chen & Yao, 2018) and, at the same time disagree with (Hamna Hashmi et al., 2019). This relationship can be attributed to factors such as increased knowledge and awareness, financial stability, critical thinking skills, exposure to research and information, and personal growth and maturity (Ali & Zubairi, 2020). However, it is important to consider individual differences and contextual factors that may also influence impulsive purchasing behavior.

**Table 9.** IPB & Monthly Income Crosstabulation

IPB Likert	Monthly Income					Total
	Below RM 800	RM 801 - RM 1300	RM 1301 - RM 1800	RM 1801 - RM 2300	above RM 2301	
1	5	7	1	4	3	20
2	21	9	3	5	4	42
3	27	13	12	12	7	71
4	29	5	9	6	3	52
5	4	4	3	5	3	19
<b>Total</b>	86	38	28	32	20	204

**Table 10.** Chi-Square Tests - Monthly Income

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.216a	16	.211
Likelihood Ratio	20.933	16	.181
Linear-by-Linear Association	.039	1	.842
N of Valid Cases	204		

a. 9 cells (36.0%) have an expected count of less than 5. The minimum expected count is 1.86.

Based on the cross-tabulation between online impulsive purchasing behavior (IPB) and monthly income, we can observe the distribution of IPB across different income categories among college students. The majority of respondents with an IPB score of 3 (indicating moderate impulsive buying behavior) fall under the monthly income range of "Below RM 800" and "RM 801 - RM 1300." This suggests that students with lower incomes are more likely to engage in impulsive purchasing. On the other hand, respondents with higher IPB scores (4 and 5) are more evenly distributed across different income categories, indicating that impulsive buying behavior is not solely determined by income level.

Based on the chi-square test results for the cross-tabulation between monthly income and online impulsive purchasing behavior (IPB), we do not find strong evidence to suggest a significant association between these variables among college students in the given sample. The p-values obtained from the Pearson Chi-Square and Likelihood Ratio tests are .211 and .181, respectively, which are greater than the conventional significance level of .05. This indicates that the observed distribution of IPB across different income

categories could be due to random chance rather than a meaningful relationship. It's important to note that 9 cells (36.0%) have an expected count of less than 5, with the minimum expected count being 1.86. This suggests that the sample size may not be large enough to detect significant associations between monthly income and IPB accurately.

Therefore, based on these findings, we cannot conclude that there is a significant relationship between monthly income and online impulsive purchasing behavior among college students in this sample. The findings disagree with (Sandhu & Paim, 2016), (Davenport et al., 2012), and (Schofield, 2017) who found contract results. Impulsive buying behavior is a complex phenomenon influenced by various psychological, social, and personal factors (Lina et al., 2022). Monthly income alone may not be a strong predictor of impulsive purchasing behavior among college students. Other variables such as personal preferences, lifestyle, social influence, and individual characteristics might play a more significant role in driving impulsive buying decisions.

**5. CONCLUSION**

In this study, we explored the influence of gender, age, education level, and income on online impulsive purchasing behavior among college students. The findings provide insights into the complex nature of impulsive buying behavior and its relationship with demographic variables. Overall, this study highlights the complexity of online impulsive purchasing behavior among college students and emphasizes the need to consider multiple factors when examining its determinants. Future research should explore additional variables and contextual factors that could influence impulsive buying behavior to gain a more comprehensive understanding of this phenomenon.

Regarding gender, our analysis did not reveal a significant association between gender and online impulsive purchasing behavior among college students. Similarly, the results did not provide strong evidence to suggest a significant relationship between age and online impulsive purchasing behavior among college students. Age alone may not be a strong predictor of impulsive buying behavior. On the other hand, there was a significant relationship observed between education level and online impulsive purchasing behavior. In contrast, the analysis did not provide sufficient evidence to conclude a significant relationship between monthly income and online impulsive purchasing behavior among college students.

The findings of this study have practical implications for college students, educators, and digital marketers. To address online impulsive purchasing behavior among college students, it is important to promote responsible online shopping habits and enhance financial literacy. Educators can play a role in integrating financial literacy programs and raising awareness about the influence of persuasive advertising techniques. Digital marketers can develop tailored strategies that target specific consumer segments while mitigating the negative consequences of impulsive buying. Collaboration between educational institutions and marketers can lead to innovative initiatives that promote responsible online shopping habits. Continuous monitoring and evaluation of interventions are essential to ensure their effectiveness. By working together, stakeholders can empower college students to make informed and mindful purchasing decisions in the digital era.

This paper contributes to the theoretical area of marketing especially customers' behavior in online shopping. However, it is important to acknowledge the limitations of this study. The findings are based on a specific sample of college students, and generalizability to other populations may be limited. The study also focused on a limited set of demographic variables, and other unexplored factors that could influence impulsive buying behavior. Future research should address these limitations and further investigate the topic to provide a more comprehensive understanding of online impulsive purchasing behavior among college students.

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