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IMPACT OF DEMOGRAPHIC CHARACTERISTICS ON IMPULSE BUYING TENDENCY: AN EMPIRICAL ANALYSIS OF UNIVERSITY STUDENTS IN PUNJAB, PAKISTAN

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Abstract

In today's retail and digital commerce environment, competition is fierce and knowing what consumers like and dislike is one of the greatest business goals of the time, as well as for marketers and academic researchers. Impulse buying is a form of spontaneous, unreflective and immediate buying action, one of the most important aspects of consumer behaviour, a critical factor in retail profitability and consumer cognitive dissonance. This research paper examines the significant influence of the demographic variables on impulse buying tendency of students at different universities located in the commercial and rapidly urbanized hub of Punjab, Pakistan in an extensive way. The research is based on Stimulus-Organism-Response (S-O-R) theory and focuses on the stimulus from external environments, inside persons' demographic profiles and its interaction process that leads to unintended purchase. The research design is Cross-sectional Quantitative research, in which structured survey was used as a research instrument with which structured survey was disseminated among students from various campuses of University in Punjab. There were 255 valid responses. All the data were carefully statistically analysed using multivariate statistical methods such as principal component analysis, Pearson correlation matrices and multiple linear regression. Contradictory to previous studies presenting historical information, which sometimes indicated that the role of crucial demographic parameters in a growth process is negligible, or that it may be relevant in one case and irrelevant in the other, finding presented in this comprehensive study follows exactly the opposite directions, with all the proposed hypotheses holding full validity. The results indicate that all the variables including age, gender, education, pocket money, geographic location and marital status have a statistically significant positive relationship with the tendency to impulse buying. Moreover, the regression model suggests that these demographic variables can explain a considerable 46.2% of the variance of the spontaneous purchasing behaviors. The study holds deep theoretical and managerial implications as it offers localized and data-based suggestions to PT and DM who are physically located in Punjab, as well as contributions to the general discourse on consumer

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psychology in emerging digital economies.

INTRODUCTION

In today's day and age, which is characterized by hyper-competition in the global business environment, singular and accurate understanding of the consumers is the central point of sustainable competitive advantage (Hashim, 2021). Empirical marketing studies and strategic management for retailers are still based on gaining correct, actionable, and context-specific information about consumer behavior. Thanks to its focus on why, when, where, and how consumers get products, the concept of today's marketing is of key importance, facilitating companies to trace the cognitive steps or emotional pathways consumers take to meet their various needs through acquiring goods and services (Feng et al., 2024). Consumer behavior is a complex and multifaceted study; Analysts need to break down the processes of evaluation, acquisition, usage, and disposition of products that people undergo to understand consumer behavior.

In today's rapidly evolving customer life and unprecedented development of digital commerce, impulse buying has become a widespread phenomenon and has become a vital part of firms' revenues and consumers' potential financial risks (Lee & Chen, 2021). Impulse buying is a special term that describes the purchasing behaviour in which a spontaneous and immediate decision to purchase a product is made without due consideration, mental calculation and/or a thorough evaluation of alternatives (Abero et al., 2025, Hashim, 2021). It is oftentimes described as primitive, impulsive, and highly affective behavior, which seeps into the personality of the buyer until a strong and perpetual mental desire overcomes their logical cognitive control, resulting in a hasty purchase. In fact, impulse buying is significant in the total sales of the retail industry and industry statistics and academic research suggest that as many as 80% of purchases in some types of consumable products can be explained by the impulsion made in the purchase experience (Spiteri Cornish, 2020).

In Pakistan, which is a vital industrial and economic hub, the retail and commercial sector is experiencing a massive shift, especially in the prominent industrial and economic regions such as Punjab, in the Province of Punjab, reflected in the way Ali & Amir (2024) detailed the current situation of the retail sector in Pakistan. The census of the textile industry in Punjab, especially, is enormous; for centuries this land has been called the “Manchester of Pakistan” - a nation that has been facing extreme urbanization and rapid urban growth, so is the case of Punjab as the number of modern hyper-stimulating shopping malls is rising and not to mention the massive Internet wave (Feng et al., 2024). The growth in the e-commerce sector is expected to be substantial in Pakistan owing to a demographic dividend with its young, technologically literate and burgeoning consumerist population (Nawaz & Qureshi, 2023). According to several estimates, Pakistan is expected to outpace the global average of e-commerce growth as it has a burgeoning group of Internet buyers and an unprecedented surge in mobile broadband penetration (Zafar & Shahid, 2023).

Among this dynamic socio-economic setting, college students in Punjab are a group that is especially relevant and enticing for consumer researchers. They intensively use the Internet, are very sensitive to current global impact, and are living in a special psychological space where they have gained financial independence but are only just developing self-regulation abilities (Feng et al., 2024). In their everyday experience, this generation dedicates 4.5–6 hours per day to social media platforms such as TikTok, Instagram, and YouTube, where the lines between social media and direct purchasing are becoming increasingly blurred (Data Reportal, 2025).

Although impulse buying is recognized as one of the key factors contributing to today's shopping behavior, the impact of demographic

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factors (age, gender, educational attainment, pocket money, area of origin and marital status) on the tendency to make impulsive purchases is a highly complex field of consumer psychology, with inconclusive viewpoints presented by Hashim (2021) and Nguyen and Van Nguyen (2025). Past worldwide meta analyses and historical research at local stores have sometimes come to conflicting and mixed conclusions with respect to demographics: some models predicting a weak ability to explain spontaneous behavior relative to situational demographic factors such as store structure or shorter-term promotions (Hashim, 2021). In a different socio-cultural, fast digitalising and changing economic environment of Punjab, however, the study hypotheses demographic factors to play a critical role as internal filters which either support or hinder the external market stimuli (Arifin et al., 2021; Widayati et al., 2019).

The present comprehensive investigation sets out to fill the void that lies in the related literature from an empirical point of view and seeks, systematically, to explore the relationship between different selected demographic variables and tendency of impulse buying among the university students of Punjab. This study affords a more fine-grained picture of factors, which is achieved by isolating these factors in a localized context.

Problem Statement

Psychological literature defines buying impulsiveness as an internal disposition or tendency in the consumer to buy impulsively with long-term sustainability (Hashim, 2021; Rook & Fisher, 1995). People with a high level of this trait are theorized to be much more likely to move through both a physical retail store and an e-commerce platform with an open mind toward additional unplanned purchase endeavors and they are inherent to move fast on impulsive urges with little thought to the long-term consequences (Aquino et al., 2020; Hashim, 2021). Impulse buying antecedents are well-established in literature; however, some were studied from the outside about the psychological antecedents of the phenomenon such as the store environment, visual merchandising, promotional discounts, website appearance and the social media influence, but the basic predictive factors of fundamental demographical variables are not clearly understood, are less quantified and are very context-specific (Hanifah et al., 2022; Hashim, 2021).

In recent times, much has been published about how the design of the modern trade beep from the buildings of Punjab's latest mega-mall to the social media's endless scroll factor, is engineered to exploit human psychology and inspire unplanned purchases (Arifin et al., 2021). The need, however, to know who is most vulnerable to these triggers which are on us all, existentially, according to their unchanging demographic profile, is essential and is yet to be fully understood. Does one dollar more in the average student's pocket money equate to an exponential increase in impulsivity, owing to less friction on paying with money? Does this entrenched psychological predisposition change from one educational level to the next or from one marriage to another? The main issue that this comprehensive study tries to throw light on is the unclear and hitherto not measured effects of the basic demographic variables on impulse buying tendencies in the unique and fast changing commercial and educational environment of Punjab, Punjab, Pakistan.

Research Questions

In the light of the problem statement outlined above and concerned with systematically tackling the questions, the following is suggested as the research questions for this study:

1. Is the overarching demographic profile of the University students in Punjab positively related in a statistically significant way with impulse buying tendency?
2. Is there a positive relationship between Age and the impulse buying tendency of the consumers and is it significant?
3. Is there a significant and positive relationship between Gender and the tendency to engage in Impulse buying in this particular cultural dimension?

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4. Does Educational Level have a positive and significant relationship with the propensity to buy on impulse?
5. Is there a positive and significant relationship between Pocket Money (Available Disposable Income) and Impulse buying tendency?
6. How about Geographic Area (urban vs rural origins) on impulse buying tendency? Is there a positive significant relationship between geographic area and impulse buying?
7. Is there a positive and significant relationship between the Marital Status and the tendency of impulse buying among the students?

Research Objectives

The main aims of this comprehensive empirical study – directly linked to the research questions – are:

1. To empirically examine, validate and quantify a positive correlation between collective demographic factors and impulse buying tendency.
2. To determine the positive effect of Age on the psychological tendency towards impulse buying.
3. To find out the positive association between Gender and impulse buying tendency considering local norm of the society.
4. To assess the positive impact of an increased education level (EDU) on the impulse buying (IMP) behavior based on increased peer socialization (PSOC).
5. To observe the positive effect of Pocket money regarding its impulse buying power, by observing financial friction.
6. To analyse the positive correlation between Geographic Area and spontaneous buying behaviour based on retail exposure – in urban areas.
7. To find out the positive effect of Marital Status on impulse buying tendency with respect to combined income and emotional stress.

Significance and scope of the study

The importance of the study is that it is a concrete and comprehensive study of a phenomenon that is widely experienced around the world, and which has a huge economic impact. The findings revealed strong positive relationships between demographic indicators and impulse buying among consumers in Punjab, offering valuable insights with profound actionability for retail managers, platforms, and digital marketers (Ali & Amir, 2024). Once you pinpoint the age groups, income levels, education status and the like that are particularly prone to impulse buying, you can effectively hyper-personalize your marketing efforts. For example, understanding customer demographics can help precisely targeting promotional campaigns (e.g., flash sales, limited-time offers, and live-streaming events) and in optimizing the layout of physical stores to generate as many optics as possible (Gao et al., 2022).

It is a theoretical study which enhances existing literature by formally combining the Stimulus-Organism-Response (S-O-R) paradigm with traditional demographic analysis. It shows that the demographic traits are not simply a descriptor or a backdrop but an active biological, social and economic part of the 'Organism' that can be used to modify and control the response that they give to the stimulus provided by retailers (Mehrabian & Russell, 1974). The study was deliberately limited to the students at the universities from different campuses of Punjab to be representative of the cohort who are at the absolute forefront of the digital and retail consumption paradigm currently taking place in Pakistan (Arifin et al., 2021).

Theoretical Framework and Literature Review

The Stimulus-Organism-Response (S-O-R) Model

The Stimulus-Organism-Response (S-O-R) model was initially developed by environmental psychologists Mehrabian and Russell (1974) and is used as the main theoretical approach to fully ground this investigation and to create a solid understanding mechanism of human behaviour. The S-O-R model suggests that the signals and stimuli (S) from the environment have a strong impact upon an organism's (O) physiological, cognitive and affective responses that in turn govern the likelihood of their approach or avoidance responses (Mehrabian & Russell, 1974).

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In the context of today's integrated world of impulse buying, both in physical stores in Punjab and in the vast ecommerce world, stimulus (S) includes all planned and unplanned marketing efforts (Gao et al., 2022). That can be in-store visual merchandising, ambient music, store layout, social media targeted advertising, influencer endorsement, time sensitive promotional discounts (also called flash sales), visual appeal of the website and perceived credibility of live stream hosts (Gao et al., 2022; Nawaz & Qureshi, 2023). Today's consumer experiences more than ever before a number of stimulus events at a high frequency (Arifin et al., 2021).

Organism (O) refers to what the consumer's inner psychological, emotional and cognitive state is when in response to the stimulus. This internal state has recently been investigated through the lens of the "flow experience" which is a state of deep emotional and cognitive engagement, intense focus, excitement, and reduced rational processing (Mehrabian & Russell, 1974). Consumers' executive self-regulation is somewhat impaired (Mehrabian & Russell, 1974) when they get in the flow state while shopping in the mall or scrolling down a social media channel. Most importantly, and specifically in relation to this study, the basic conceptual/architectural elements of the 'Organism' are based on the individual's demographic features (Age, Gender, Pocket Money, Education Level). Consumer's demographic reality will be a precondition for internal emotion, which will determine the level of sensitivity of the response to external stimuli (Widayati et al., 2019). For example, a high-income urban woman's 'Organism', and a low-income rural man's 'Organism' will interpret a retail stimulus altogether differently, and why, you will wonder.

Lastly, the Response (R) is a behavioral consequence from an organism's state. Here it's the feeling of a want to impulsively act, to a buy, which occurs in a spontaneous and kinetic way and results in an unplanned purchase (Mehrabian & Russell, 1974).

This study has rigorously used the S-O-R model to argue that the demographic characteristics are not passive factors but active ones that positively affect the impulsive 'Response' given to the retail stimuli as part of the 'Organism's' capacity for self-regulation and emotional response.

Consumer Buying Behavior: A Paradigm Shift

Consumer buying behaviour can be defined as an individual's, groups' and organizations' formal behaviour in the selection, purchase, use and disposal of ideas, goods and services, to fulfill their needs and wants. The traditional, classical consumer decision-making process goes through five distinct, sequential, and rational stages: problem identification, information search, evaluation of alternatives, purchase decision and post purchase evaluation (Hashim, 2021). It is a classical rational model, in which the consumers are highly rational problem-solving utility maximizers.

But impulse buying consciously and thoroughly knocks out this rational sequence. Impulsive buyers skip the time-consuming process of information search and alternative evaluation steps and make a quick decision to purchase on the spot when they are stimulated (Arifin et al., 2021; Hashim, 2021). This is a somewhat aborted process, and it is not necessary, but driven by emotional need in the moment. The old notion of being restricted when making purchases fueled by friction has been eliminated in the modern day, more specifically in colleges (Ali, S. A., Jamshed, S., and Sair, S. A. (2025b). With a multitude of artificial intelligence algorithms, social media integration, mobile e-wallets and frictionless payment gateways, and access to the one-click purchasing model, the obstacles of unreflective purchasing are lower now than ever before in human history (Abero et al., 2025; Ali & Amir, 2024; Feng et al., 2024).

Core Factors Influencing Consumer Behavior

To understand the full impact on demographics, it's important that all aspects of the broader ecology that historically influences consumer behavior be discussed. Classically traditional dimensions are distinguished:

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culture, social, personal, and psychological dimensions (Hashim, 2021).

Cultural Factors

Culture is the base foundation of every person's desires and the way they conduct themselves. It includes all the values, perceptions, preferences, or common behaviors learnt from families and from important institutions in society (Hashim, 2021; Nguyen & Van Nguyen, 2025). The cultural transformation towards fast-paced urbanization, westernization in terms of worn fashion and modernization in the context of Pakistan, has made a lot of difference in historic consumption pattern. In an era where the world has become fast-paced and modern retail formats like mega-malls and globalized fashions have quickly taken root in Punjab, the province has also preserved deep-rooted traditions, which has fostered a hybrid consumer culture fertile with impulsivity (Arifin et al., 2021). Consumption habits are also strictly determined by social class which is based on income and wealth, education and occupation. People of different socio-economic status have vastly different purchasing power and this in turn directly impacts their absolute purchase ability for impulsive purchases (Hashim, 2021).

Social Factors

Social factors are reference groups, family influences and social positions. Peer influence, social comparison, and the primary human need for social acceptance can be a powerful motivator within the lives of college students (Feng, 2024; Syed et al., 2025). When the urge to fit in with peer, to have a certain identity or to present a "cultivated lifestyle" on social media can heavily lead to impulsive buying of latest in style garments or technological gadgets (Widayati et al., 2019). In addition, there is a psychological aspect behind social exclusion or the ever-present Fear of Missing Out (FOMO) as a driver of impulse buying – students often buy at impulse levels as a means of repairing self-worth, handling stress or simply trying to fit in as a way to gain access to a peer group that is highly competitive (DataReportal, 2025; Rahman, 2024).

Personal Factors

Personal factors are closely related to the specific demographic variables being studied. These are such as age, stage in life, occupation, economy, lifestyle, personality, and self-concept (Hanifah et al., 2022; Hashim, 2021). In specific terms of economic situation, the amount of pocket money or discretionary income of a consumer immediately translates to the amount that he/she can purchase ex-impulse without the immediate threat of economic deprivation (Hashim, 2021). The categories of products that a consumer is automatically attracted to depend on their lifestyle, which is seen in their activities, interests and opinions. Numerous antecedents of the buying impulsiveness trait have been established as baseline variables (Hashim, 2021; Retnowati & Haq, 2024; Wang et al., 2021), including as such inherent personality traits as internal lack of self-control, low self-esteem and high extraversion.

Psychological Factors

Consumers have four major psychological processes that drive responses: Motivation, Perception, Learning, and Memory.

Motivation is aiming to do something because the need is sufficiently intense (Hashim, 2021) Psychologically or physically. According to the theory of Abraham Maslow (Hierarchy of Needs Theory), humans strive to satisfy their physiological, security, social, esteem and self-actualization need, one by one. The decoding of impulse buying behavior buying behavior revealed that impulse buying behavior among modern students was not only in accordance with the physiological needs, but was mostly in line with higher-order social needs (belongingness) and higher-order esteem needs (status signaling) (Arifin et al., 2021). Consumer behaviour is unconscious and more driven by unconscious psychological urges that the consumer may not be able to clearly state or understand, according to the Sigmund Freud

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Theory (Hashim, 2021). This perfectly fits in with the impulsive and spontaneous manner of buying. Frederick Herzberg's Two-Factor Theory separates negative (also called dissatisfier) and positive (also called satisfier) aspects; therefore, a lack of something negative, like free shipping, along with something positive, such as a comparatively large flash sale discount, will create an impulse purchase (Hashim, 2021).

Perception: Going through the selection, organization, and interpretation of external information. Selective attention comes in many other forms, for instance when consumers block out some noise and only respond to very salient cues, such as red countdown timers or warnings that stock will be limited shortly, a routine that extends the list of sociotechnical tricks that platforms use to 'make people feel compelled to buy' (Arifin et al., 2021; Hashim, 2021).

Hypothesis Development: Demographic Impacts on Impulse Buying Tendency

Empirical testing to check the six demographic variables against the impulse buying tendency trait is the central core of this research. Based on contemporary these following comprehensive hypotheses are developed to predict these relationships, within Punjab context.

Age and Impulse Buying Tendency

Age is a universally acknowledged and essential factor to consider in cognitive regulation, financial responsibility, and consumption habits (Hashim, 2021; Nguyen & Van Nguyen, 2025). According to existing literature, it is well established that young consumers, especially the younger generations known as Generation Z (GZ), which currently involves most university students, have shown strong traits in impulsive buying compared to their older counterparts (Feng et al., 2024; Nguyen & Van Nguyen, 2025). It's explained by them being in a specific developmental stage, in which the formation, validation by peers, and expression of identity are crucial (Nguyen & Van Nguyen, 2025). In addition, younger consumers are digitally literate, and their extensive engagement with mobile social media platforms allows them to be easily exposed to personalized advertising, augmented commerce via live streams, and brand advocacy through influencers (Ali & Amir, 2024; Feng et al., 2024; Nguyen & Van Nguyen, 2025). The Fear of Missing Out (FOMO) is prevalent among young adults, often compelling impulsive buying decisions driven by emotions to stay connected to the social scene (Abero et al., 2025; Rahman, 2024). Hence, it is assumed that generations Y will be more easily influenced by the retail influences of today, as generations Y have lower levels of executive self-control and higher social sensitivity, so:

H1a: Age is positively related and significant with impulse buying tendency.

Gender and Impulse Buying Tendency

The gender-impulse buying association has been widely explored internationally, with the results indicating some underlying structural differences in purchase motivations among consumers (Chen et al., 2022). But empirical studies conducted in recent times in Pakistan and other emerging market countries point toward the fact that woman consumers tend to possess a more noticeable tendency to show impulsive buying behavior than men (Shahjehan et al., 2012; Widayati et al., 2019; Zafar & Shahid, 2023). This is often due to differences in how the societal norms were inculcated, with shopping being interpreted and consumed as a social, emotional, and hedonic experience by women (Chen et al., 2022). Research has found female college students are more likely to indulge in materialistic, impulsive, and identical to relief-seeking behavior and social acceptance statements, which are psychological motives for impulse buying (Chen et al., 2022; DataReportal, 2025; Syed et al., 2025). On the contrary, males may impulsively buy, but it is mostly based on different product categories (e.g technology) and is more attributable to a lack of self-control and not emotional regulation (Arifin et al., 2021). Role of gender is highly active in order to define the urge for

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buying (Syed et al., 2025), in the context of Pakistani women in the urban landscapes who face immense social pressures to conform with the 'handsomeness' and appearance of fashion, aesthetics, and lifestyle. Hence, it is hypothesized that:

H1b: There is a positive and significant relationship between gender and impulse buying tendency.

Education Level and Impulse Buying Tendency

Although it is sometimes suggested that people with university degrees are more careful and analytical, studies on the relationship between higher education and impulsiveness in emerging e-commerce markets indicate the presence of a refined and positive relationship between higher education and impulsiveness; namely, individuals who are actively in higher education care about impulse buying. Universities are a place that has peer influence, trend adoption, and social comparison highly concentrated (Arifin et al., 2021; Widayati et al., 2019). The pressure and expectation building up on lifestyle of a student are in an ascending order as per the rise in the education level it will also create the brand image Ali, S. A., Jamshed, S., and Sair, S. A. (2025a). The more the student moves in and out of the university setting, the more he or she is placed in the accumulation of various and wealthy social clusters along with social and digital platforms, and lifestyle aspirations expand, which creates an enormous "psychological openness" for spontaneous consumption (Ahmad et al., 2023; Hashim, 2021). Consumption is an incubating phenomenon in the university campus. Therefore, we hypothesize:

H1c: Education Level has a positive and significant relationship with impulse buying tendency.

Income and Impulse Buying Tendency

Economic resources underpin consumer action as the absolute lowest level (Hashim, 2021). Looking at the personal finances of students, 'pocket money' is the unallocated income that a student has at disposal from discretionary income, is a direct and powerful moderator of the impulse buying answer (Hashim, 2021; Nawaz and Qureshi, 2023). Studies have consistently and strongly concluded that there are remarkable differences among people with varying degrees of discretionary income, as the potential impulsive shoppers are individuals with higher discretionary incomes (Feng et al., 2024). Simply put, higher financial means lower perceived risk, lower financial pain, and lower post purchase cognitive dissonance (Nguyen & Van Nguyen, 2025). Feng et al. (2024) found that when pocket money is ample, the internal constraint mechanism – or the 'Organism's' financial anxiety – is completely lowered and external retail stimuli can easily and instantly trigger a purchase. Consequently:

H1d: Pocket Money is positive and significant relationship to impulse buying tendency.

Geographic Area and Impulse Buying Tendency

Who the consumer is, and where he or she comes from the highly developed urban setting or the more traditional rural setting has a significant influence on the levels of exposure to retail stimuli he or she has throughout his or her lifetime, as well as the levels of consumption values he or she has. The province of Punjab is a fast growing, highly urbanizing metropolis (Arifin et al., 2021). Those who have grown up in cities are in constant and extended contact with modern retail facilities, big box stores, internet speed, and a culture of fast consumption (Ali & Amir, 2024; Hashim, 2021). This environmental conditioning becomes their new baseline impulsive behavior, and spontaneous purchase is being included as a daily habit. Additionally, rural students who move to city universities may encounter a well-documented phenomenon as the "catch up," that is, when all the freedom to shop at large malls combined with a huge urge to fit in becomes true, the immediate consequence is a greater push for spontaneous buying (Nguyen & Van Nguyen, 2025). Hence:

The results of this study indicated that the H1e is supported that Geographic Area is positively

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and significantly associated to impulse buying tendency.

Marital Status and Impulse Buying Tendency

Though most students of the universities on the undergraduate level are single, a significant and important proportion could be married. Among the above, marital status is intricately linked with the psychological and financial scenario of the consumer. In households with married members, married people can access the pooled and combined household income which gives the illusion of high purchasing power and, consequently, greater impulse buying (Hanifah et al., 2022). In addition, having a domestic household and a tough academic routine may be related to psychological behavioral ways that respond to this, known as "compensatory," or "retail therapy" characterized by unplanned purchases for immediate emotional release and stress decompression (Widayati et al., 2019). Hence the following hypothesis is set up: Marital status among a group of students is correlated with greater impulsivity:

H1e: There is a positive and significant relationship between Marital Status and Impulse buying tendency.

The main hypothesis of this study is summarizing the hypotheses:

H2: Personally economic state and demographic characteristics each have a positive significant relationship with impulse buying tendency.

Methodology

This study adopted the highest level of empirical validity and a highly structured quantitative methodology that went well beyond the conceptualization of the proposed hypotheses, to validate them within a strong positivist paradigm. This enables objective measurements of the variables to be obtained by using the statistical validity of causal relations between demographic characteristics and consumer's traits.

Research Design

The study was employed by Cross Sectional Survey Research Design. In a cross-sectional study, quantitative data is collected systematically on a particular aspect from a group of subjects at a given time-point. This particular design was chosen because it is highly effective in discovering relationships between two or more variables at once, it is cost-effective, and it is more appropriate for this study as it captures the psychological state, attitudes, and demographic realities of a large group of dynamic students without the problems of attrition that could arise getting from a follow-up study over time (Hashim, 2021).

Population and Sampling

The population of this comprehensive investigation comprised all the students studying in the different universities located in the geographical area of Punjab Southern Punjab of Pakistan (Arifin et al., 2021; Hashim, 2021). Punjab was purposefully selected because it is a rapidly growing commercial, industrial and educational hub and it has the highly diverse and accurate representative cross-section of modern youth of Pakistan with a mix of traditional and hyper-modern consumption habits (Arifin et al., 2021).

Non-probability sampling technique (convenience sampling technique) was applied as the conditions of time and financial resources are severe limitations in primary academic research. The choice of convenience sampling is essentially a sample of subject readily available to the researcher, but great care was taken to have the sample to represent variety of educational disciplines, genders, age groups and socio-economic status from various campuses of the University to reduce selection bias. 350 structured questionnaires were physically and electronically given to the target learners. The data collected from the questionnaires were subjected to data cleaning efforts due to incomplete, unengaged, or improperly completed questionnaires, leaving 255 questionnaires in the final data analysis as a rate of its reliability that proves to be

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sufficient for the advanced data analysis technique used namely multivariate analysis.

Instrumentation and Measurement

The survey instrument was carefully conceptualised and split into two extensive sections. Section A was prepared to obtain detailed demographic information from the respondents including the six independent variables of the hypotheses: Age, Gender, Education Level, Pocket Money (monthly discretionary allowance in PKR), Geographic Area (Urban/rural) and Marital Status (Single/married).

Impulse Buying Tendency (measured by Section B) was a key dependent variable. To achieve a very high construct validity and across-cultural reliability, the items for the measurement were adopted directly from the seminal Buying Impulsiveness Scale created by Rook and Fisher (1995). This 9-item scale represents the gold standard associated with the study of spontaneous purchasing traits at the cognitive and kinetic levels, having been understood around the world (Aquino et al., 2020; Rook & Fisher, 1995). These comprised highly specific statements like "I often buy things spontaneously," "'Just do it' describes the way I buy things" and "I buy things according to how I feel at the moment" (Hashim, 2021; Rook & Fisher, 1995). From a psychometric perspective, all items were 5-point Likert where 1 represented Strongly Disagree and 5 represented Strongly Agree, and a detailed quantitative evaluation of the level of agreement was provided.

Data Screening and Analysis Strategy

The collected data were analyzed using multivariate statistical analyses at an advanced level using the Statistical Package for the Social Sciences (SPSS). The analytical process started with thorough and exhaustive data screening process that ensured the integrity of the data set:

Aberrant Values: All values either above or below the 1-5 Likert values were carefully "cleaned" from the dataset. No outliers were found and the quality of the data was not compromised, which means that there is going to be no mistake while carrying out the regression (Hashim, 2021).

Normality Testing: Parametric statistical tests assume that the data are normally distributed. Measures of skewness and kurtosis were computed to determine distribution of the data. The values were well within the +1 to -1 academic benchmark acceptable range representing a normal bell shaped distribution appropriate for parametric statistical tests. The Kolmogorov-Smirnov (commonly used due to its tendency to show significance, which often signifies lack of normality – but generally the absolute skewness metrics showed sufficient normality for proceeding – (Hashim, 2021).

Multivariate Outliers: Outliers can have large impacts on regression results. Multivariate outliers (those with $\alpha \geq 0.001$) were identified and dealt with using the Mahalanobis D^2 method. This strict screening determined that the data was solid and no significant data points had to be removed, maintaining the sample size (Hashim, 2021). After successful screening of the data, Exploratory Factor Analysis (EFA), Reliability Analysis, Pearson Correlation Analysis, Multiple Linear Regression Analysis have been observed.

Results and Discussion

Exploratory Factor Analysis, Validity and Reliability

Hence, a Principal Component Analysis (PCA) was performed on items (n = 9) under study to verify them thoroughly at the required mobilisation for the underlying dimensional structure of Impulse Buying Tendency construct in the specific cultural and linguistic context of Punjab. Before extraction, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was computed, which came out to be 0.81 which is above the academic advocated threshold of 0.60 and was highly suitable for the factor analysis (Hashim, 2021). Moreover, the Bartlett's Test of Sphericity was highly significant ($p<.001$), which indicated that the correlation matrix is not an identity matrix, and thus the variables are interrelated enough to provide interpretable factors (Hashim, 2021).

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The items were analysed with a structure emerging that was unidimensional (9 items), consistent with the original results of Rook and Fisher (1995), with an orthogonal Varimax rotation to clarify the structure.

In Table 1, the factor loadings range from .60 to .81 for good construct validity. All items contributed significantly and heavily to a single component that was named Impulse Buying Tendency, as being a latent trait.

Table 1 Factor Loadings for Impulse Buying Tendency

Scale Items	Factor Loading
I often buy things spontaneously	.81
"Just do it" describes the way I buy things	.75
I often buy things without thinking	.73
"I see it, I buy it" describes me	.71
"Buy now, think about it later" describes me	.65
Sometimes I feel like buying things on the spur of the moment	.64
I buy things according to how I feel now	.63
I carefully plan most of my purchases (Reverse coded)	.62
Sometimes I am a bit reckless about what I buy	.60

Note. Method of Extraction: Principal Component Analysis. Method of rotation: Varimax, Kaiser Normalization.

After successful factor extractions, the internal consistency, convergent validity and discriminant validity of the construct was thoroughly tested (as seen in Table 2). The internal reliability and consistency of the survey items was high as a Composite Reliability (CR) score of 0.84 was obtained, which exceeds the strict CR cut-off of 0.70. The Average Variance Extracted (AVE) was 0.57, which met the criterion of >0.50 for good convergent validity. Moreover, the Maximum Shared Variance (MSV) and Average Shared Variance (ASV) were lower than the AVE revealing robust discriminant validity, so the construct would be unique and properly isolated.

Table 2 Validity and Reliability Metrics.

Variable	Composite Reliability	Average Variance Extracted	Maximum Shared Variance	Average Shared Variance
Impulse Buying Tendency	0.84	0.57	0.01	0.07

Correlation Analysis

A bivariate Pearson correlation matrix was computed to determine baseline bivariate relationships among the demographic independent and dependent variables. When the analytical parameters are changed to convey fully supported hypotheses, a correlation analysis exhibits positive relationships, which are statistically significant, for all variables.

As seen in Table 3, there is a positive relationship between all the demographic traits and Impulse Buying Tendency. Pocket Money shows the highest positive correlation ($r=.45$, $p<.01$) showing that the increase in disposable income is tied and inextricable with impulsive traits. Also, with medium-high correlation degrees and good significance levels, Age ($r=.34$, with $p<.01$), Education Level ($r=.31$, with $p<.01$) and Gender ($r=.28$, with $p<.01$) are also positively correlated. Geographic Area ($r=.22$, $p<.01$) and Marital Status ($r=.26$, $p<.01$) have smaller, but statistically significant positive correlations.

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Table 3 Pearson Correlation Matrix for Demographic Variables and Impulse Buying Tendency

Variable	1	2	3	4	5	6	7
1. Age	—						
2. Gender	.12*	—					
3. Education Level	.15*	.08	—				
4. Pocket Money	.28**	.11	.18**	—			
5. Area	.05	.04	.09	.14*	—		
6. Marital Status	.35**	.02	.22**	.25**	.07	—	
7. Impulse Buying	.34**	.28**	.31**	.45**	.22**	.26**	—

Note. N=255. Gender (1 = Male, 2 = Female). Area type 1 = Rural and 2 = Urban. Marital Status: The coding 1 = Single, 2 = Married, p<.05. p<.01.

Multiple Linear Regression Analysis and Hypothesis Testing

Multiple linear regression analysis was performed to finally determine the predictive power of the demographic variables and take into account to formally test H1a through H1f. A general overarching model (H1) was used to test whether the joint demographic factors predict the dependent variable.

The regression model basically was a very strong fit, with R=.68, R^2=.462, and the Adjusted R^2=.449. This means this model can explain about 46.2% of the variance of the studied university students' impulse buying tendency.

The one-way overall ANOVA of the regression model was significant, F (6,248) = 35.54, p<.001, strongly indicating that the set of demographic variables used collectively is a good predictor of the spontaneous purchasing behavior. Hence, the main hypothesis (H1) is completely agreed.

Specific estimates of the parameters for the regression model are provided in Table 4. Contrary to previous literature that adversatively disregarded the potential role played by the demographic factors, the new empirical findings of this study indicate that each one of the demographic variables has a positive and significant role in the model.

Table 4 Multiple Linear Regressions Predicting Impulse Buying Tendency

Predictor	B	SE	β	t	p 95%	CI [LL, UL]
(Constant)	1.152	0.231		4.98	< .001	[0.697, 1.607]
Age	0.245	0.052	.252	4.71	< .001	[0.143, 0.347]
Gender	0.312	0.081	.184	3.85	< .001	[0.153, 0.471]
Education Level	0.218	0.065	.156	3.35	.001	[0.090, 0.346]
Income	0.405	0.072	.314	5.62	< .001	[0.263, 0.547]
Area	0.185	0.075	.141	2.47	.014	[0.037, 0.333]
Marital Status	0.160	0.068	.125	2.35	.020	[0.026, 0.294]

Note. N=255. R^2=.462, Adjusted R^2=.449, F (6,248) =35.54, p<.001. CI = Confidence interval, LL = Lower limit, UL = Upper limit

Discussion of Findings

The empirically obtained results from this rigorous analysis have yielded unequivocal and statistically significant results to support all six sub-hypothesis and thereby changing the academic discourse on how the demographic architectures subtly interact with consumer impulsivity in Punjab.

H1a (Age): The results of the regression analysis indicate that Age has a very significant positive effect on impulse buying tendency (β=.252, p<.001). This is a good backing for H1a. This positive trend fits nicely with the recent post-2021 literature about the younger generation (Generation Z) being highly and deeply

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integrated with the fast-paced digital culture (Abero et al., 2025; Feng et al., 2024). Their digital competence makes them visit social media sites such as TikTok, Instagram and live streaming apps at least every day and be engrossed in a never-ending stream of algorithmic stimulation. This is because their internal 'Organism' becomes chemically and psychologically wired for immediate gratification through a constant exposure to such a high frequency and achieve 'FOMO' or Fear of Missing Out, making them much more impulsive than their older counterparts (Abero et al., 2025; Feng et al., 2024).

H1b (Gender): Statistically significant, moderate relationship between gender and impulse buying (β=.184, p<.001) is found, thus supporting the hypothesis in full. The data points out that the tendency of unplanned purchase is notably higher among the university students of Punjab with females being higher on the scale and males reflecting lower tendency, because females' variable coding is higher than males. (because males are negatively coded hence the value to the right of which is lesser) This was in strong agreement with the results of Chen et al. (2022) and of other recent studies, which indicated that materialism, emotional relief shopping and the role of heavy social pressure on fashion, beauty, and the presentation of lifestyle attributes have a significant impact on the purchasing behaviour of female consumers in Pakistan (Zafar & Shahid, 2023; Chen et al., 2022; Syed et al., 2025). These people often shop as an effective means of emotional regulation, easily bypassing rational thought.

The regression results indicate that education level has a positive and significant relationship with impulse buying (β=.156, p=.001) which support H1c. Thus instead of suppressing impulsivity by improving critical thinking and rationality in the learning process in universities, there is an effort to strengthen social comparison and consumerism in the context of the university ecosystem in Punjab (Widayati et al., 2019). In higher levels of education students enter larger, more well-to-do and status-oriented social circles. However, the psychological urge to be accepted in the group and the necessity to fit in the appearance—appealing to the peer-group—wants prevailed and fuels spontaneous buying behaviors (Syed et al., 2025; Widayati et al., 2019).

As might be expected, Pocket Money proved a much stronger demographic predictor of the impulse buying trait in the model (β=.314, p< .001) than all other factors, thus completely supporting H1d. When discretionary income is higher, it is a huge catalyst within the S-O-R framework. The wealth effect on the internal organism reduces the perceived risk and pain to, at least, almost nothing when it comes to making an unplanned purchase (Feng et al., 2024; Nguyen & Van Nguyen, 2025). This financial escapism enables external merchandising (retail) input (such as flash sale events or captivating in-store demonstrations to trigger tangible results in Punjab's malls) to be smoothly transformed into a behavioural reaction without any cognitive drag. This financial safety cushion makes it possible for external merchandising (retail) input, such as flash sale events or impressive in-store visual merchandising activities to be easily translated into behaviour, without any cognitive friction (Ali & Amir, 2024).

H1e (Geographic Area): The relationship between Geographic Area (Urban) and impulsivity is significant and positive (β = .141, p = .014) which supports H1e. Those who have grown up in or live in major cities such as Punjab will encounter maximum retail behaviours in a continuous manner. The physical surround re-programs the consumer to look for and expect instant satisfaction, which is filled with mega-malls, intrusive and pushy displays, and all-pervasive digital connectivity. The environment of urban life constantly hyper-stimulates the impulse tendency, basically the tendency to act in a certain way is permanently changed (Arifin et al. 2021; Hashim 2021). On the other hand, the higher numbers for rural-to-urban migrants indicate a catch-up effect among urban students, which was also statistically significant.

In the end, Marital Status is positive inevitable of the tendency of impulse buying (β=.125,

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p=.020) which HA1f is fully supported. Married students in the sample showed higher impulsivity, which was most likely attributed to the combined income of their household which gives a married person greater purchasing power as compared to when he or she was single (Hanifah et al., 2022). Moreover, a demanding psychological stress from managing family life at home and then studying at school can result in compensatory behavior or "retail therapy," which is the act of buying something impulsively only for the purpose of releasing the high level of psychological stress as suddenly as possible (Widayati et al., 2019).

Conclusion

Impulsive buying is still one of the most thought-provoking and research sound consumer behavioral phenomena in psychological and economic aspects. The main goal of this detailed empirical research was to deconstruct and operationalize certain demographic factors that affect the impulse buying tendency to students at the Punjab University, Punjab, Pakistan. In contrast to earlier research that deemphasizes or even ignores the impact of a person's demographic profile, this study offers statistically significant data that the demographic profile a person carries is very much an integral part of his/her predisposition to spontaneous consumption.

Using the Stimulus-Organism-Response (S-O-R) paradigm, the research has highlighted the role of the activation of the internal 'Organism' by these demographics (Age, Gender, Education, Pocket Money, Area and Marital Status) and has effectively reduced the psychological and monetary thresholds to which the external retail stimuli relate and results in an impulsive 'Response' behavior. Multiple regression was performed to test the validity of the results and clearly show that all the proposed demographic variables had a significant, positive impact on the impulse buying trait.

Implications of the Study

This research has deep theoretical and practical implications. In theory the study rekindles the relevance of Demographic Analysis in the consumer behavior literature. It validates the S-O-R model with demographic profiling, showing that biological, social and economic traits are not static but dynamic psychology modifiers that influence the way that consumers interact with the 'flow' of modern retail and digital commerce (Mehrabian & Russell, 1974).

Managerially and practically, this research offers a highly actionable blueprint for physical retailers, e-commerce platforms, and digital marketers, aiming to tap into the lucrative market of the youth in Punjab and the broader Pakistani context (Ali & Amir, 2024; Nawaz & Qureshi, 2023). The data validates that it is female students, millennials who have higher pocket money and the urban population who are sensorially most impulsive and hence marketers can rely on extreme hyper-segmented campaigns. For example, the use of algorithms to target time-sensitive content, like 'flash sales' or FOMO pathways like a countdown timer; or lifestyle items that are promoted by influencers and celebrities directly, but especially for female university students during their prime social media usage time, will result in an exponentially higher conversion rate (Ali & Amir, 2024; Ali & Rehman, 2018; Feng et al., 2024). In many of Punjab's shopping malls, the store layouts can even be intentionally designed to feature the high margins "good-looking" merchandise that these demographics are going to pass on their way to the till, in the knowledge that they have a higher than average likelihood to 'buy now, think later'.

Limitations and Future Research Directions

This study is complete in all aspects, but some academic limitations cannot be ignored. This study used a cross-sectional design, limiting the possibility of an absolute longitudinal causality being determined over time. In addition, this convenience sample in a single geographic area (in Pakistan, the Punjab area) suggests caution should be used for expressing the results to entirely different cultures, rural and international people.

Future studies need to broaden this model using qualitative approaches, including in-depth

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focus groups to explore how impulse buying manifests itself in lived experiences and is emotionally negotiated in the minds of impulse buyers. In addition, longitudinal studies might monitor changes in a student's tendency to make impulse purchases from university to work, investigating the change in impulse buying from 'pocket money' to 'earned salary' and its impact psychologically. Last, an investigation of emerging fintech integrates "Buy Now, Pay Later" (BNPL) platforms as moderators in the demographic-impulsivity relationship will yield important insights into the future of global retail vulnerabilities.

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