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Journal of Business and Economic Analysis, Vol. 7, No. 2 (2025) 22-47

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DOI: <https://doi.org/10.5281/zenodo.17420307>

EFFECTIVE DETERMINANTS OF THE NONPRESCRIPTIVE PURCHASING BEHAVIOUR: CONSCIOUSNESS, TRUSTWORTHINESS AND ASSERTION

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Received 28 November 2024

Revised 30 July 2025

Revised 18 August 2025

Accepted 22 August 2025

Published 22 October 2025

Abstract

Self-medication through over-the-counter (OTC) medicines is rising due to convenience and cost savings. This growing trend of self-medication with OTC medicines necessitates this study to identify key behavioral factors influencing consumer decisions and promote safer, more informed, and responsible medication practices. Using a survey-based approach through simple random sampling and convenience sampling technique, the study validates a proposed conceptual model through integration of chi square, CFA and SEM, that captures consumer behavior across three stages: the cognitive stage (information search/awareness), the affective stage (evaluation of alternatives/perceived trustworthiness), and the behavioral stage (actual purchase behavior/purchase frequency). The findings demonstrate statistically significant relationships between demographic variables and behavioral characteristics such as consciousness, trustworthiness, and assertion, all of which shape consumers' purchasing patterns. The results confirm the proposed conceptual model and provide valuable insights into consumer decision-making for OTC medicines. Practically, the study underscores the importance of promoting responsible self-medication by encouraging consumers to verify and follow label instructions, seek expert advice when needed, and remain aware of potential adverse effects, thereby guiding consumers, sellers, and policymakers toward safer and more informed OTC medication use.

Key Words: *Cognitive, Nonprescription/OTC medicines, Evaluation, Purchase Decision, Responsiveness, Sources of Information,*

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1. Introduction

Purchase of non-prescription/OTC medicines is generally known as self-medication. Consumers typically buy over-the-counter medications for minor health issues such as the common cold, flu, and cough, as well as body aches, stomach pains, toothaches, backaches, headaches, and fever; plus gas and acidity, sore throats, intestinal infections, calcium deficiencies, vitamin deficiencies, cuts and burns, asthma, erectile dysfunction, sleep disorders, diabetes, birth control, allergies, skin and hair problems, acne protection, eye care, ear care, rashes, constipation, diarrhea, and so on (Lim et al., 2023; Kuntz, et al., 2014; Nagaraj et al., 2015). The practice of curing minor ailments is common among most people, and this trend is getting more and more popular among people all over the world (Holden et al., 2019; Chiappini et al., 2023; Narang et al., 2023; Aghaei & Alarsali, 2022).

People commonly use non-prescription medicines under self-direction to treat certain “minor” symptoms without consulting a physician or being supervised by a physician. A non-prescription pharmacy provides medications under expert approval, including those that are received without prescriptions, those purchased with old prescriptions resubmitted and reused, medications taken on the recommendation of family or others, or medications used when leftovers remain (Martins et al., 2002; Zafar et al., 2008). By taking self-medication correctly, you will quickly ease urgent medical symptoms, save time by avoiding doctor's appointments, become more cost-effective, and even save your life in life-threatening circumstances. Increasingly, doctors are acknowledging that patients can improve their health through self-care, through responsible self-medication, as well as through healthcare providers, the pharmaceutical industry, and the government. In addition to strengthening the prevention and treatment of ailments without requiring a medical consultation, the WHO 1995 has found that self-medication is a less expensive option for treating common ailments. Supported by Gupta et al. (2011), one cause for self-medication is a lack of adequate funds to go and meet with a doctor. Self-medication, however, must be accompanied by accurate health records (Kafle & Gartoulla, 1993; Lim, 2023).

A lack of access to healthcare staff, minor disease, prior treatment experience, and economic considerations are commonly cited as explanations for self-medication, according to the literature. In today's society, self-medication is a noticeable aspect of healthcare. This is the treatment of a mild ailment with a medicinal substance that is available without a prescription. Analgesics and antimicrobials are popular self-medication drugs (Shankar et al., 2002). Over-the-counter (OTC) medicines or nonprescription preparations have been seen as a part of a larger trend

toward self-care as people take greater responsibility for their own health and engage in programs aimed at maintaining their health, preventing and limiting sickness, and gaining health after accidents or diseases (Hanna & Hughes, 2011). Separate research by Nga et al. in 2014 revealed that fever was the most common reason for purchasing antibiotics in rural areas, while in urban areas, cough was the primary motivator. Antibiotics were also prescribed for fever, cough, and dental infection. Many medications are dispensed over the counter in various developed countries under minimal medical supervision. Self-medication is a major factor in the rise of antibiotic resistance in those without access to clinical services, although it can also serve as a cost-effective option for individuals who cannot access clinical services (Phalke et al., 2006).

Self-medication practice is affected by many factors, including education, family, environment, law, drug affordability, and exposure to TV, social media, and e-commerce advertising (Temechewu, 2020; Zafar et al., 2025; Okada et al., 2020; Srivastava & Wagh, 2020). Those who prescribe over-the-counter medications can benefit from more specific information. Predictors of self-medication include a high degree of education and professional standing (Martins et al., 2002; Larrain & Groene, 2023; Chiappini et al., 2023; Okada et al., 2020; Srivastava & Wagh, 2020). The results of Catlin, Pechmann and Brass (2012) show that brand-name Principal Display Factors (PDFs) are influenced by weak demand for cognition, as Drug facts labels of PDFs with brand names (versus generic) were less carefully read by those exposed to the brand name and better understood by those exposed to generics. According to Hollis et al (2008), three types of consumers exist: fast fixers, value seekers, and those who want to know how and why the product works. Customer perceptions of a product's quality are influenced most by its brand name, regardless of company, price, advertising, and retailer popularity factors (Setiawan, 2022).

Over the years, researchers have attempted to define general market values that underpin motivation as the present consumer is hit with a lot of drug choices in the market. Any of this initiative stems from the realization that different people have different mindsets in the consumer world. Individuals prefer to take medications, which necessitate access to information to comprehend the susceptibility of a drug profile for specific health conditions. Pharmacists and drug dispensers should be more attentive and helpful in clearly conveying drug information to those taking medication without a prescription. In the future, it can reduce the incidence of any adverse effects due to indiscriminate and unnecessary self-medication.

In this context this study presents the factors consumers anticipate when purchasing non-prescription/OTC medicines in the Indian context. It begins with a brief introduction, followed by sections on literature review and conceptual framework and hypothesis development, and methodology adopted, which covers research design and sampling techniques. In the empirical results section, reliability analysis is conducted, respondent profiles are evaluated, Chi-square tests are carried out, factor analysis is conducted, inferences are made, discussions and conclusions, implications, and limitations are also discoursed in the relevant sections.

1.1 Prevalence and Patters

OTC use is highly common across age groups and settings and therefore creates large absolute exposure that enables frequent misuse and harm. Population and survey data in the literature quantify both routine use and frequent self-medication behavior, which amplify risk at scale. In this context 56% of U.S. children (<18 years) and 82% of U.S. adults take at least one OTC medication each week (Hines, 2017). Self-medication prevalence in an urban adult sample includes 83.0% reported self-medication among 400 adults in Dhaka City (mean age 26.5 years; 52% female). The medications involved NSAIDs (33.0%), antacids (20.5%), antibiotics (17.5%), antipyretics (13.0%) through cross-sectional survey using multistage cluster sampling [Sarwar et al., 2025]. High prevalence of OTC use is among youth and the dosage always exceeds. So, 91% of surveyed young adults reported using medications without prescription and 20% admitted consuming more than the package-recommended dose (Szefczyk-Polowczyk et al., 2015). An estimate cited in the literature places 3,000 annual deaths in Poland attributable to complications from improper NSAID use (Szefczyk-Polowczyk et al., 2015). Surveys show high OTC purchasing across broad adult populations (pharmacy use monthly 74.6%, monthly OTC purchase 32.2%) and especially high self-medication among younger adults (e.g., 91% in one youth sample) (Wazaaify et al., 2005; Szefczyk-Polowczyk et al., 2015). Pharmacists report that users who self-treat to return quickly to work (working adults, students) tend to use synthetic OTCs more and therefore may have higher cumulative exposure and interaction risk (Szefczyk-Polowczyk et al., 2015).

In USA 56% children weekly use and 82% adults weekly use at least one medication, including OTCs (Hines, 2017). In public purchasing patterns, 74.6% of people reported visiting a community pharmacy at least monthly and 32.2% reported buying OTC drugs at least once per month, while most respondents said they usually follow product directions (Wazaify et al., 2005).

Similarly in a large urban survey in Dhaka, 83% of adults reported self-medication in the past three months, with NSAIDs and antibiotics commonly used without prescription, illustrating very high self-medication prevalence in some regions (Yla-Rautio et al., 2020). Youth and young-adult self-medication studies report very high use: 91% of surveyed young adults reported using medications without a prescription, and 20% admitted consuming more than the package-recommended dose, behaviors that raise risk for hospitalization or worse outcomes (Szefczyk-Polowczyk et al., 2015). At a national estimate referenced in the youth study, complications associated with improper NSAID use were cited as causing approximately 3,000 deaths per year in Poland (reported in that paper's discussion) (Szefczyk-Polowczyk et al., 2015). Unintentional misuse of non-prescription acetaminophen-often via multiple products or excess dosing-has been repeatedly identified as a major cause of acute liver injury risk and is singled out for prevention efforts (Wolf et al., 2012).

In community pharmacy documentation, 0.6% of OTC customers had a drug-related problem detected over one week; 26.3% of those problems concerned high-risk OTC medicines, with NSAIDs being the majority within high-risk cases (Yla-Rautio et al., 2020). In Causal evidence and dose dependence a structured review concluded that each major non-prescription analgesic (acetaminophen, aspirin, ibuprofen, naproxen, ketoprofen) has evidence supporting a causal relationship with at least one form of harm, and risks rise when consumers exceed non-prescription dosing limits (lavonas et al., 2012).

2. Conceptual Framework and Hypothesis Development

In addition to medical sociology, public policy, pharmacy practice, sustainability development, environmental science, ethics, and law, self-medication has been discussed in other disciplines. In the present study, we fill the knowledge gap regarding consumer behavior and the self-medication decision-making process, and it is a step towards determining the parameters of the consumer decision-making process and the association of different aspects from a managerial perspective towards nonprescription medication.

With reference to nonprescription medication, there are various sources of information/knowledge available to a common person, like pharmacist/chemist/druggist, medical practitioner, family doctor, medical representative, online websites, advertisements, social media, family, peers, and friends. High-end advertisements, social media marketing, personal promotion,

magazines, newspapers, posters, banners, fliers, and word-of-mouth publicity play a dominant role in promoting these medicines and have made them more open. Moreover, the home delivery option of nonprescription medicines on e-commerce marketing has made it more accessible, self-management of mild illness, readily available, a cost & time-saving practice. It is, however, not always healthy and has been linked to harmful health effects (Bertoldi et al., 2014). Also, the study of Malvi, Papiya and Sonam (2011) revealed that self-medication is practiced commonly for minor ailments to get quick relief and is most prevalent in young males. Pain was the most prevalent reason for nonprescription purchases, which included dental pain, myalgia, body aches, headaches, gastrointestinal issues such as diarrhea and constipation, and respiratory issues such as cough and fever (Bertoldi et al., 2014).

Also, unavailability of health workers, moderate disease, and experience dealing with a related illness are the most common reasons for self-medication (Shankar et al., 2002). OTC medications are commonly referred to as neighborhood or discount pharmacies, which spawned the metonym-based term of the same name. The availability of different treatments enables people to easily access a variety of medications and take a proactive part in managing their own health and illnesses, as noted by Nettleton (2006).

2.1 The Research Framework and Hypothesis Development

We followed a systematic research framework in order to develop the hypothesis (Almunawar & Anshari, 2024). Supported by various researcher's consumer decision-making in the context of over-the-counter (OTC) medication purchase is influenced by a dynamic interplay of professional guidance, social influence, Peer guidance, price sensitivity, and media exposure. A foundational determinant is trust in pharmacists, which consistently emerges as a central factor in shaping consumer choices. Studies highlight that pharmacist recommendations are highly valued, often serving as a primary source of information for consumers navigating OTC options (Temechewu, 2020; Zafar et al., 2025; Meseret & Gebremedhin, 2020). Alongside trust, price sensitivity plays a critical role, as consumers exhibit strong awareness of OTC medicine pricing, adjusting their purchasing decisions based on perceived affordability and value (Kertesz et al., 2024). Social influences, especially recommendations from family and friends, also significantly impact consumer behavior. While often secondary to professional advice, such social inputs can rival or even surpass expert recommendations in certain contexts (Okada et al., 2020; Srivastava & Wagh, 2020; Tang, 2023). This underscores the interplay between social trust and professional credibility,

suggesting that both personal relationships and expert authority inform consumer judgment (Zafar et al., 2025; Aghaei & Alarsali, 2022).

Moreover, media exposure and interpersonal communication channels, including mass media, digital platforms, and direct interactions with professionals, significantly influence consumer attitudes toward OTC advertising (Lee et al., 2022; Szigeti & Józsa, 2023; Pilli et al., 2024). These findings suggest that hybrid communication strategies combining digital reach with personalized engagement may be most effective in shaping perceptions and behavior. Beyond consumer behavior, the literature also addresses prescriber dynamics. Research indicates that peer influence among physicians—especially through strategically positioned social networks—can enhance prescribing performance (Larrain & Groene, 2023). However, ethical ambiguities remain regarding the practice of prescribing medication to friends or family, highlighting a need for clearer ethical guidelines and documentation protocols (Escalante & Smith, 2024). Complementing this, Larrain and Groene (2023) propose interventions such as enhanced labeling and consumer education as mechanisms to improve safe usage. Additionally, Sangeetha et al., (2024) and Ray et al., (2022) call for urgent regulatory measures to monitor and control self-medication practices, highlighting the potential public health risks associated with unregulated access to OTC drugs.

So, we adapted statements that are part of the structured questionnaire from previous studies pertaining to self-medication, OTC medication, and non-prescription medication, etc. A few statements were adapted based on expert advice (Hawkins & Tull, 1994).

2.1.1 Involvement

The relationship between demographic characteristics and consumer behavior in pharmaceutical markets has garnered significant attention in healthcare research, particularly regarding over-the-counter medicine (OTCM) purchasing patterns. Demographic variables such as age, gender, income, education level, and geographic location serve as fundamental determinants of healthcare-seeking behaviors and self-medication practices (Malvi et al., 2011; Shankar et al., 2002). Research has consistently demonstrated that older adults exhibit distinct OTCM purchasing patterns compared to younger demographics, often driven by increased health awareness and chronic condition management needs (Ali et al., 2010; Martins et al., 2002). Gender differences further influence medication-seeking behaviors, with studies indicating varying preferences for self-treatment approaches between male and female consumers (Tannenbaum et al., 2014; Burghardt et al., 2013). Socioeconomic factors, including income and educational attainment, significantly impact both the frequency and types of OTCM purchases, as higher-educated

individuals tend to make more informed pharmaceutical decisions (Kuntz et al., 2014; Lim et al., 2023). Contemporary research continues to validate these demographic influences, with recent studies confirming that cultural background and geographic accessibility also shape OTCM consumption patterns (Akande-Sholabi & Akinyemi, 2023; Wangler & Jansky, 2022). These convergent findings establish a compelling foundation for investigating how demographic determinants influence the involvement stage of OTCM purchase decision-making processes.

H1. Demographics determine the frequency/rate of purchase of OTC medicines (involvement Stage).

2.1.2 Consciousness

Consumer decision-making in healthcare involves complex cognitive processes that significantly influence purchasing behaviors. The cognitive stage of consumer behavior, particularly consciousness-related variables, plays a pivotal role in determining how frequently individuals purchase over-the-counter (OTC) medicines. Research has consistently demonstrated that conscious awareness of health needs, symptom recognition, and deliberate evaluation of treatment options directly impact consumer choices in pharmaceutical markets (Holden et al., 2019; Schaefer et al., 2008; Catlin et al., 2012; Ali et al., 2024). Consciousness encompasses various dimensions, including health awareness, risk perception, and informed decision-making processes that guide consumers through their medication selection journey (Martins et al., 2002; Himmelstein et al., 2011; Tannenbaum et al., 2014; Burghardt et al., 2013). Studies have shown that heightened consciousness about health conditions leads to more frequent monitoring and proactive medication purchasing behaviors (Nagaraj et al., 2015; Zafar et al., 2008; Kuntz et al., 2014; Dimitrijevic et al., 2014). Furthermore, conscious consumers demonstrate greater engagement with product information, leading to more informed and frequent purchase decisions (Eric, 2001; Bessel et al., 2003; Shankar et al., 2002; Chiappini et al., 2023).

H2. Consciousness determines the frequency/rate of purchase of OTC medicines (cognitive stage).

2.1.3 Trustworthiness

Consumer decision-making in the over-the-counter medicine (OTCM) market represents a complex cognitive process where trustworthiness emerges as a fundamental determinant of purchasing behavior. The pharmaceutical self-medication landscape requires consumers to

navigate product selection without professional prescription guidance, making trust-based evaluations critical to their decision-making framework (Holden et al., 2019; Catlin et al., 2012). Research demonstrates that trust operates through multiple dimensions, including confidence in healthcare professionals' recommendations, family and friends, product quality perceptions, and institutional credibility of pharmaceutical sources (Escalante & Smith, 2024; Tannenbaum et al., 2014; Burghardt et al., 2013; Chiappini et al., 2023; Ali et al., 2024). Studies consistently reveal that pharmacist advice and professional endorsements significantly influence consumer purchasing decisions, with 96% of customers emphasizing trust in pharmacy guidance as critical to their medication choices (Kinsey & Nykamp, 2017; Kuntz et al., 2014; Schaefer et al., 2008; Narang et al., 2023; Dimitrijevic et al., 2014). Furthermore, trustworthiness affects both cognitive evaluation processes and emotional responses during OTCM selection, with consumers employing "fast and frugal heuristics" that rely heavily on trust-based shortcuts (Schaefer et al., 2008; Setiawan, 2022; Reddy & Chui, 2024; Shankar et al., 2002). The cognitive stage of consumer behavior theory suggests that trust evaluations directly impact purchase frequency patterns, as consumers develop loyalty toward trusted sources and products (Himmelstein et al., 2011; Cooper, 2013; Nagaraj et al., 2015; Tian et al., 2023). Given this theoretical foundation and empirical evidence demonstrating trust's pivotal role in medication decision-making, it follows that trustworthiness fundamentally determines the frequency and rate of OTCM purchases within the cognitive evaluation framework.

H3. Trustworthiness determines the frequency/rate of purchase of OTC medicines (cognitive stage).

2.1.4 Assertion

Consumer behavior in the over-the-counter (OTC) medicine market is fundamentally influenced by cognitive processes that shape purchasing decisions and frequency patterns. The cognitive stage of consumer decision-making involves complex evaluations of product efficacy, safety perceptions, and personal health beliefs that collectively inform purchasing behaviors (Cooper, 2013; Bertoldi et al., 2014; Chiappini et al., 2023; Nagaraj et al., 2015). Research has consistently demonstrated that consumers' assertiveness in health-related decision-making significantly impacts their medication-seeking behaviors, with more assertive individuals demonstrating distinct patterns in their approach to self-medication practices (Nettleton, 2006; Schaefer et al., 2008). Contemporary studies have further established that assertion-related variables, including confidence in health decisions, willingness to self-treat, and proactive health management

attitudes, serve as critical determinants in OTC medicine utilization patterns (Narang et al., 2023; Abdasaeed et al., 2013). The interplay between consumer assertion and cognitive processing manifests through various mechanisms, including information-seeking behaviors, risk assessment capabilities, and treatment preference formations (Hanna & Hughes, 2011; Eaves, 2015; Tian et al., 2023). Furthermore, empirical evidence suggests that assertive consumers exhibit heightened engagement with health information, leading to more frequent and deliberate OTC medicine purchases as part of their proactive health management strategies (Stone et al., 2017; Hollis et al., 2008; Catlin, Pechmann, & Brass, 2012; Setiawan, 2022; Reddy & Chui, 2024). Given these established relationships between assertion, cognitive processing, and health-related consumer behaviors, it becomes evident that assertion fundamentally determines purchase frequency patterns in the OTC medicine market.

H4. Assertion determines the frequency/rate of purchase of OTC medicines (Cognitive Stage).

2.2 Conceptual Framework

This study revolves around the following (see Figure 1) conceptual/behavioral model based on the objective to explore and identify the key determinants influencing consumer purchase decisions toward non-prescription (OTC) medications. To test the model and the proposed variables, a structured questionnaire was prepared (with reference to study the behavior of customers towards purchase of nonprescription/OTC medication), which included the variables like; demographics (Participation/involvement variable like Age, Gender, Marital Status, Education), search for information/cognitive stage (prior knowledge & experience, medical store, pharmacist/chemist/druggist, medical representative, interpersonal/family & friends, advertisements, pharmaceutical websites), evaluation parameters/ Affective stage (safety & side effects, price, store convenience, speedy relief, familiarity with the brand, popularity of the brand, familiarity with the store, & availability of medicine), and frequency/rate of purchase (behavioural/action stage). The author has taken four factors as categorical variables (demographic, informational sources, evaluation of different parameters, and rate of purchase) to be correlated in the model (see figure 1).

The author has used descriptive statistics, Chi-square modeling, EFA, CFA to determine the final path model in order to see the impact and actual relationship between the variables.

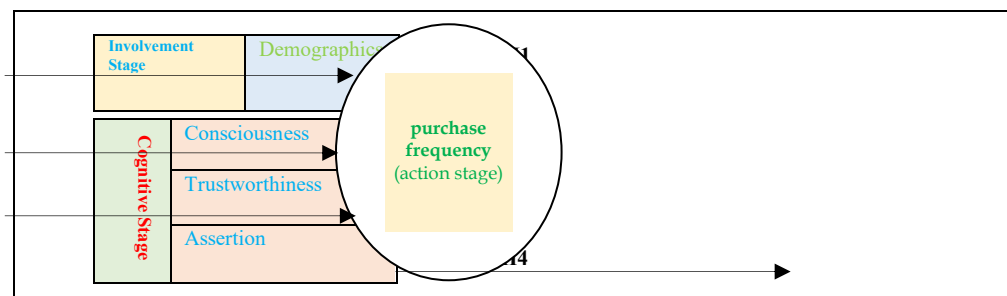


Figure 1. Conceptual Framework

3. Methodology

This section presents the development of the survey instrument, design of the study, sampling, data collection procedure, and statistical techniques used.

3.1. Study design

This research is a survey-based validation study piloted through a structured questionnaire. The structured questionnaire consists of four parts; The first part deals with the rate/frequency of purchase of nonprescription/OTC medicines (behavioural stage), the second part deals with demographic profile of the respondents (participation stage), the third part deals with various sources of information (cognitive stage), the fourth part deals with the parameters of product evaluation (affective stage).

3.2. Data collection and sampling

A structured survey questionnaire was personally distributed among the people who purchase nonprescription medication/medicines from drug/medical stores/shops. Initially 40 drug stores were selected from about 800 drug stores in the city through purposive sampling technique. A minimum of 6 responses were collected from each of the 40 drug stores in Srinagar city of J&K through simple random sampling technique to minimize selection bias, wherein respondents were specifically targeted based on their criteria of purchasing, using, or consuming nonprescription/OTC medicines from respective stores. Although 240 questionnaires were distributed personally to the respondents, only 200 were observed to have correct responses, and 40 biased/incomplete responses were excluded from statistical analysis.

3.3. Statistical analysis technique

We use chi-square as a non-parametric data analysis technique and parametric techniques like factor analysis (EFA and CFA) and structural equation modelling to test various relationships between variables and to draw various inferences through SPSS AMOS 22.0.

4. Empirical Results

4.1. Scale Reliability

The validity of the overall scale was tested by reliability analysis, which showed that a valid/reliable scale was developed for the study. Fifteen (15) items have been put in the five-point Likert scale, and the results generated through SPSS AMOS 22.0 are represented in Tables 1 and 2 below. The overall scale value, with a Cronbach's Alpha of 0.854, as accepted by Hair et al., (1998), justifies further analysis as the reliability results are valid for the scale in the study. Data was collected from 200 respondents across 20 parameters, which comprised four demographic variables (age, gender, education, and marital status) and 15 statements concerning consumers' behavior towards non-prescription medicines. Fourteen (14) statements have followed a typical probability course, with one removed, and the identified dimensions have been grouped into three factors (refer to Table 1) through Exploratory Factor Analysis, a data reduction method, which has been validated by a confirmatory factor analysis of the measurement model. Also, the effect of various demographic variables on the frequency of nonprescription/over-the-counter medicine purchases (H1) was evaluated using Chi-square analysis. The test results show a significant impact of all the demographic variables on purchase frequency ($p < 0.05$; Chi Square 4.388; $df=4$).

4.2. The Respondent Profiles

The study utilized a survey methodology to collect feedback via a meticulously crafted questionnaire based on an in-depth review of existing literature. An overview of the respondents reveals that 61% were male and 39% were female. The majority of participants, accounting for 45.5%, belonged to the age bracket of 30-40 years, with 22.5% falling in the 41-50 age range, followed by 17.5% less than 30 years and 14.5% above 50 years. Respondents who are married were 66%, and 34% were unmarried respondents. Most of the respondents, 45.5% were graduates, followed by post-graduates, 35.5%, 12% of the respondents were qualified above post-graduation, and 7% below graduation. Of the total respondents, 44.55% purchase nonprescription medicines

irregularly, while 40.5% of respondents purchase often/regularly, and 15% of respondents purchase medicines rarely/sometimes.

4.3. Factor analysis

Table 1 illustrates the data structure and the dimensions of the items based on the exploratory factor analysis results (Hair et al., 2006) through VARIMAX rotation of principal component analysis (Nunnally, 1978), along with Kaiser Normalization. The analysis done by the research in order to generate inferences is visible in this part; mean, standard deviation, and variance have been displayed in Table 1. Fourteen (14) variables have been put under test in the data reduction technique of exploratory factor analysis, and only one variable was removed due to low factor loading. Rotated component matrix in factor analysis has detected three (3) factors with eigenvalue > 1, $df = 91$, KMO-MSA = (0.882), $p < 0.001$, Approx. Chi square = 374.267. The three factors are labelled by the researcher according to his own understanding and observation, as illustrated in Table 1. The variable dropped is EA H-popularity of the brand, having a loading below 0.200 with $P > 0.05$. The overall factor analysis explained 76.023 per cent of the total cumulative variance. As the rotated component has swapped the variables into three components, now the researcher has the liberty to name the factors as per their judgment, so the factors are named as F1=Consciousness, F2=Trustworthiness, and F3=Assertion.

Table 1. Exploratory Factor Analysis^a

Factor	label	α	VE	KMO	CR	AVE	λ	TVE
Consciousness	CON	0.832	34.657	0.882	0.859	0.548		
Pharmacist/Chemist/Druggist	SI C						0.831	
Medical Representative	SI D						0.673	
Ad/social media	SI F						0.864	
Pharmaceutical Websites	SI G						0.651	
Familiarity with a particular brand	EA E						0.692	76.023
Trustworthiness	TRW	0.858	23.426	0.882	0.894	0.589		
Previous Knowledge and Experience	SI A						0.718	
Medical Store	SI B						0.604	
Interpersonal/Family and Friends	SI E						0.873	
Nearest store to home	EA C						0.878	

Speedy relief from the medicine	EA D	0.715
Familiarity with the store/well-known store to you	EA F	0.784
Assertion	ASS	0.738 17.95 0.882 0.797 0.567
Safety and side effects of the medicine	EA A	0.823
Price of Medicine	EA B	0.734
Availability of Medicine in Store	EA G	0.699

Extraction method: Principal Component Analysis; Rotation method: Varimax with Kaiser Normalization. a. Rotation converged in 5 iterations; Variable EA H (popularity of brand) was removed due to low factor loading.

5. Model Analysis

The ability of a factor model to match observed collection data has been assessed using CFA. Since testing hypotheses is simpler with confirmatory data analysis than with exploratory data analysis, CFA was employed in this study.

5.1. Measurement model

The factors entered as latent variables were put for the 1st order CFA test in AMOS 22.0. The results show the relationship between latent variables (factor/construct) and their indicators (observed variables). The results of the measurement model of 1st order CFA showed an accepted model fit with significant results through Chi-square = 203.889, df = 74, CMIN/df = 2.755, GFI = 0.857, AGFI = 0.832, CFI = 0.869, RMSR = 0.062, NFI 0.845, RMSEA = 0.052, PCFI = 0.716, ECVI = 1.031.

5.1.1. Validity and reliability

The researcher used construct validity as an instrument to test the model's validity. The composite reliability is above 0.60. Also, convergent validity is determined by average variance extracted, which is above 0.50 (Fornell & Larcker, 1981). Convergent and discriminant validity are established when the square root of the average variance extracted is greater than the correlation coefficient. As a result, both the convergent validity of the variables and the discriminant validity of the constructs have been achieved, indicating they do not overlap significantly and are not measuring the same thing (Fornell & Larcker, 1981). The findings are displayed in Table 2.

Table 2. Convergent and Discriminant Analysis

	CR	AVE	MSV	ASV	CON	TRW	ASS
CON	.859	.548	.123	.103	.740		
TRW	.894	.589	.139		.223	.767	
ASS	.797	.567	.049		.352	.374	.752

Notes: In the above table, the square root of the AVE is highlighted in bold diagonally; RESP-Responsiveness; CONN, connection; ALER-Alertness; AVE = average variance extracted; CR = composite reliability; MSV = maximum shared variance; ASV = average shared variance.

5.2. Structural model

The conceptual model needs to be tested for validity on the basis of the investigator's conceptualization and coupling of the variables. So, a 2nd order CFA test was conducted with path analysis in the structural model to determine the relationship between the factors and the frequency/rate of purchases entered as dependent variables on 40% of the data set. The results obtained using AMOSS 22.0 with Chi square = 218.126; df= 73 show an acceptable model fit for the structural model: CMIN/df = 2.98, GFI = .890, CFI = .912, NFI = .905, RMSEA = .048, RMSR = .043. Final results of path coefficients are presented in Table 3.

Table 3. Estimates of SEM

Hypothesis	Relationship	β	t-value	p-value	Result
H2	Consumer consciousness determines frequency of purchase	.486	6.392	.001	Supported
H3	Consumer trustworthiness determines frequency of purchase	.465	6.252	.001	Supported
H4	Consumer assertion determines frequency of purchase	.451	6.959	.001	Supported

6. Assessment and Discussions

6.1. Assessment

The effect of nominal variables like age, income, gender, and marital status on purchase frequency was analyzed through a chi-square test. The test results show a significant impact of all the demographic variables on purchase frequency ($p < 0.05$; Chi Square 4.388; df=4). Although these factors do matter, the differences observed are not random. So, while it's significant, the effect size (strength of association) may be small, but H1 is accepted. This is in agreement with many scholars like Srivastava & Wagh, (2020), Akande-Sholabi & Akinyemi, (2023), Wangler & Jansky, (2022), Tian et al., (2023), and Tang, (2023).

The results indicate that H2 is statistically significant ($\beta = 0.486$; t value = 6.392), implying that the frequency/rate of purchase is positively influenced by consciousness towards purchase and is consistent with a study conducted by Uday, Nagesh, and Venkat (2011), where many individuals lacked adequate information about effective self-medication and had limited knowledge of the benefits and risks involved. In relation to the current research, an increasing number of individuals choose to buy non-prescription/over-the-counter medicines from pharmacies (Calamusa et al., 2012; Amoako et al., 2003; Stosic, 2001; Indermitte et al., 2007). It is crucial that pharmaceutical counseling is readily available and proactively provided to customers, as the range and utilization of OTC drugs continue to expand (Hanna, 2020). People should first be informed about the risks of indiscriminate drug use to prevent or reduce the risks of self-medication (Larrain & Groene, 2023; Sangeetha et al., 2024; Ray et al., 2022). Second, proper regulatory drug regulation must be enforced, limiting the supply of medications to the general population reasonably. These two steps will significantly decrease the number of drug-related mishaps and aid in ensuring personal and societal well-being. The pharmacist and physician can also provide valuable guidance when it comes to making decisions about over-the-counter medications. Interview participants frequently viewed the physician as a reliable source of advice on these medications (Kinsey & Nykamp, 2017; Wilcox et al., 2005; Sleath et al., 2001).

Likewise hypothesis-H3 is statistically significant which indicates frequency/rate of purchase has a positive relationship with trustworthiness towards purchase ($\beta = 0.465$; t value = 6.252) is in connection with studies like (Kristoffersen, et al., 2012; Brabers, 2013; Hanna & Hughes, 2011; Simoens, et al., 2009; Hakonsen et al., 2016; Tian et al., 2023) where consumer expectations for OTC prescription stores are often dependent on improved competition in terms of local proximity and long operating hours. Increased access to successful medications, decreased number of hospital visits, reduced healthcare rates, improved public understanding, and increased patient autonomy are some of the beneficial effects of non-prescription/OTC drugs (Setiawan, 2022; Reddy & Chui, 2024). Similarly, the study of Jafari, Khatony & Rahmani (2015) mentions previous experience with the treatment, saving time, non-seriousness of the illnesses, and prior experience with the disease showed similar results.

Also, hypothesis-H4 is statistically significant which indicates frequency/rate of purchase is determined by the assertion towards purchase ($\beta = 0.451$; t value = 6.959) is in association with studies like It is in collaboration with study of Holden, et al., (2019); Eric, (2001) which states that other factors influencing non-prescription/over-the-counter drug purchases included cost, size, and

habit. Individuals differ on various dimensions in decision making and behaviour such as familiarity, prior knowledge, and beliefs, with the adversarial effects of OTC medicines. Other reports contend that protective measures based on teaching people about confrontational consequences or efficacy could be insufficient if cost considerations are not taken into account (Holden et al., 2019; Chiappini et al., 2023; Tian et al., 2023). In agreement with Eric, (2001), Patients' inaccuracies in diagnosis, use of suboptimal treatment, increased tolerance to infections due to improper use, adverse effects, medication allergies, and physicians' alleged lack of control are some of the potential risks associated with self-medication.

Hence, OTC drug decision-making is aided by education, awareness, product labeling, and decision aids that use customized, just-in-time knowledge. Personalization could include tailoring information through personal judgment, symptoms, experience, or the emphasis put on factors like expense, protection, side effects, and effectiveness. However, consumers often have a poor understanding of the properties of over-the-counter medications and how to handle them properly (Setiawan, 2022; Reddy & Chui, 2024).

6.2. *Discussions*

The study has shown how various internal and external variables influence an individual's decision and how each factor contributes to making the final behavior towards the purchase of nonprescription medicines. The research highlights the importance of enhancing the education and training regarding the necessity of rational prescribing (Chawla, Agarwal & Arora, 2013). Additionally, physicians can exercise prudent prescribing practices. However, implementing ethical and legal regulations to restrict over-the-counter drug purchases remains crucial. This would ensure that pharmacists can only dispense medications upon receiving a prescription from a doctor (Sangeetha et al. 2024 and Ray et al. 2022).

Research by Tannenbaum et al. (2014), Burghardt et al. (2013), and Kuntz et al. (2014) shows that customer-centered approaches to medications affect not only actions but also factors such as understanding, attitudes, education, and empowerment that influence consumers (Okada et al., 2020; Srivastava & Wagh, 2020; Tang, 2023). Additionally, studies by Hanna & Hughes (2011), Eaves (2015), and Stone et al. (2017) indicate that consumers' perceptions of over-the-counter (OTC) medications are shaped by brand recognition, which can lead them to view OTC medications as healthy or 'not actual' medicines. However, further testing in real-world and artificial OTC retail environments, where decision-making and action can be observed

prospectively and accurately. Given that OTC medications are available for purchase without a prescription, at any given time and location, by anyone, the packaging materials (both regulatory and clinical) to be precise, secure, and clearly written in English and the local language, accompanied by relevant illustrations.

Pharmaceutical companies must work with the Drug Regulatory Authority, Drug Administration, and the Ministry of Health and Family Welfare to remain watchful and implement key measures, thereby safeguarding public health and enhancing the healthcare system.

7. Implications

Self-medication with non-prescription medications is expected to grow as a result of continued product deregulation and consumers taking more responsibility for their own health (Hughes, 2003). Both self-medication drugs can be abused. Such goods, however, can be exploited and described as the use of medications for non-medical reasons. For example, antihistamines can be manipulated to have the mind-altering benefits, and laxatives can be abused to lose weight. More medical deaths have resulted from non-prescription product misuse. The availability of various pharmaceutical sources increases the likelihood of non-essential medication use due to ease of access. Pharmacists play a crucial role in promoting safe and effective medication use by offering information, guidance, and counselling (Temechewu, 2020; Zafar et al., 2025; Larrain and Groene, 2023; Kinsey & Nykamp, 2017). However, to ensure accurate medication management, technological support and evidence-based protocols must be taken care of (Sangeetha et al., 2024; Ray et al., 2022).

Similarly, the results of the study by Ali, Ibrahim, & Palaian (2010) indicate the need for approaches like awareness campaigns, medicine rebate policies, and all other innovative measures that could reduce medicine storage and self-medication activities. A consumer's level of medical knowledge and understanding of relevant facts are crucial factors in successful self-medication, which requires patient education about its benefits and potential hazards (Sangeetha et al., 2024; Ray et al., 2022). Ultimately, pharmacist involvement in self-medication is absolutely necessary. Their expertise, guidance, and commitment to patient safety contribute significantly to the proper execution of self-medication, allowing individuals to make informed decisions about their health without compromising their well-being (Temechewu, 2020; Zafar et al., 2025; Meseret & Gebremedhin, 2020). So, the pharmacists have a duty and responsibility to commit to lifelong

learning and to provide appropriate education and counselling on the use of non-prescription medicines (Kinsey & Nykamp, 2017).

A comprehensive understanding of health-seeking behavior can help prevent certain side effects by advising and directing patients (Dimitrijevic et al., 2014). This knowledge may also decrease diagnosis delays, improve patient compliance, and boost health-promotion efforts in different settings. Enhanced synchronization of consumers' requirements, funding, and public health resources is imperative. So, the research has three-fold implications: one for the consumer, two for the seller, and three for policy makers. This responsibility falls on the consumer to make informed health and well-being decisions. For pharmacists, chemists, sellers, and store operators, it is their responsibility to ensure that proper information about drugs is disseminated and that only standardized drugs are sold. The widespread distribution of antibiotics without a prescription by neighborhood pharmacists is both unethical and concerning. Pharmacists' and consumers'/patients' perceptions, skills, and attitudes are critical in designing interventions to change existing dispensing procedures (Narang et al., 2023; Abdasaeed et al., 2013). Furthermore, it is the moral obligation of policymakers to implement administrative and regulatory measures to prevent the excessive use of OTC drugs, which can have otherwise harmful consequences (Temechewu, 2020; Zafar et al., 2025; Meseret & Gebremedhin, 2020; Sangeetha et al., 2024; Ray et al., 2022).

8. Conclusion

Hence, an important role is played by demographics (age, gender, marital status, and education), information search (cognitive stage), and evaluation parameters (affective stage) in determining overall purchase decision (action stage) towards non-prescription OTC medicines. These are significantly associated with the frequency of purchase to determine the actual pattern of consumer self-medication. Through various statistical tests, the results reveal that the variables in the study fit the conceptual/behavioural model very well (Srivastava & Wagh, 2020; Akande-Sholabi & Akinyemi, 2023; Wangler & Jansky, 2022; Tian et al., 2023; Tang, 2023).

With the increasing use of self-medication, whether for convenience or habit, first and foremost, the community and individuals must be accountable for the safe use of these medicines. The level of medical awareness and information is a vital factor in effective self-medication, which necessitates education about the advantages and possible dangers. Health care and health protection are a right of every person. Every individual has the right to obtain sufficient

information and counselling regarding advantages, drawbacks, risks, and limitations in order to evaluate the medicines (Okada et al., 2020; Srivastava & Wagh, 2020; Tang, 2023). Appropriate self-medication can help to reduce the concealment of symptoms of certain serious diseases. Patients have the ability to take part in self-care and self-medication, which is essential for attaining desired goals and outcomes. Additionally, the study outcomes indicate a significant connection between various determinants of non-prescription/OTC medication.

9. Limitations and Future Research

The current investigation is restricted to a specific geographic region and has only examined a few variables (consisting of four factors) with a median sample size. Additionally, the current model proposed in the study has provided compelling evidence by demonstrating the significant contribution of these variables/factors in determining the purchase decision of OTC medication. Future research should include a wider range of variables and parameters and cover a larger population and a broader geographic area in order to identify more robust and meaningful correlations. It is also essential to conduct research to identify the various obstacles or factors that prevent consumers from accessing medical care. These obstacles may include geographical, socioeconomic, economic, cultural, and organizational influences. By understanding and addressing these variables, we can bridge the gap between non-prescription drug consumers and healthcare system regulations.

Further research is needed to determine how user cognitive characteristics and PDF contents affect OTC knowledge transmission. Nonprescription medication misuse is a recognized concern worldwide, but it is currently overlooked. Much analysis is needed to measure and assess strategies, and collect participant perspectives in order to inform legislation, enforcement, and interventions (Tannenbaum et al., 2014; Burghardt et al., 2013; Cooper, 2013; Nath et al., 2013).

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