Applying Theory of Planed Behavior to Analyze the Influence of Brand Image on Intentions and Buying Behavior of OTC Drug Consumers in the Haryana state

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Abstract

India is widely recognized as a "pharmacy of the world", holding a profitable share of the global market. Intensification of competition among the pharmaceutical products and increasing market saturation influences the buying intentions, and buying behavior of the consumers positively or negatively, where the image of brands plays a pivotal role. Considering the role of brand image and its association with buying intentions and consumers buying behavior, the current study targeted to explore the impact of the brand image on buying intention, and buying behavior, as well as to analyze the mediation role of attitude between brand image and buying intentions of over-the-counter drug consumers in Haryana state. The research targeted on the most populated districts, Hissar and Faridabad, and utilized multistage-convenience sampling techniques to gain the responses on a 5-point Likert scale from 132 OTC drug analysis used SPSS software (version 23) and PLS-SEM (version 4) for analysis. The research work reported a significant and positive relationship between the image of brands, buying intentions (b-value: 0.0.230, t-value: 2.785, p-value: 0.005), and buying behavior (b-value: 0.369, t- value: 4.338, and p-value: 0.000). Furthermore, a significant (p-value 0.000) partial mediation role of attitude was analyzed between brand image and buying intentions. The research concludes that brand image significantly influences the consumers buying intentions, buying behavior and attitude serves as a mediation mechanism between image of brands and the buying intentions of consumers. The study remained limited to Haryana state and over-the-counter drugs only. The sample size was small 132 consumers. Employing a larger sample size across multiple states and countries may enhance the generalizability of the results. The study results will give insight to the marketing companies to develop new and refine the existing marketing strategies to improve the market share and to achieve organizational goals. From the social perspective positive image of brands will improve consumer confidence towards the brands and reduce the perceived risks, leading to the responsible usage of the over-the-counter drugs, which will further help to prevent drug abuse/misuse and to better handle emergency health conditions.

Keywords: Consumer behavior, buying intentions, Over-the-counter drugs, brand image, past experiences, quality, packaging, decisions making.

Introduction

The "Pharmaceutical industry" has a role in the discovery, development, production, and marketing of pharmaceutical drugs that consumers purchase and self-administer to treat and prevent the symptoms of illness and injuries. To support the healthcare system, pharmaceutical companies remain engaged in the manufacturing of medical devices and medications. India has emerged as a global leader in supplying generic drugs and vaccines to the entire world. The export market of India extends to the major regions such as the UK, Canada, the US, and the European Union. Economic survey 2023 reported that the domestic pharmaceutical market turnover was estimated to be USD 41 billion. Furthermore, India exhibited the third position in terms of drug and medicine exports. As of 2023, India has 670-USFDA-approved pharma manufacturing organizations with good manufacturing facilities and regulatory compliance. India is designated as the "pharmacy of the world", sharing a profitable market position globally. Active pharmaceutical ingredients, innovations, and generic drugs, cost effectiveness, quality of drugs, and a price value 33% lower than those in the United States are considered to be the most important aspects of the pharmaceutical industry of India, for which the country is renowned all around the world's market. A long-term vision of the Indian government is to establish a leading position in the manufacturing of pharmaceutical items, so the Indian government decided to create pharmaceutical mega parks to promote domestic production of pharmaceutical products. Chennai, Aurangabad, Ahmedabad, Hyderabad, Pune, Kolkata, Ankleshwar, Sikim, Vapi, and Vadodara are the major pharmaceutical hubs of India (Dheeraj et al., 2024).

Over-the-counter drugs

The category of drugs that do not require a prescription from a licensed physician is said to be over-the-counter drugs (OTC drugs). Safety, effectiveness, and quality standards of OTC drugs are required to meet the regulatory standards by the Food and Drug Administration (USFDA). It's convenient for consumers to assess OTC drugs because they can buy them directly from grocery stores and airport shops without medical consultation. In countries like the UK and the US has a well-relevant regulatory body for the classification, distribution, and use of OTC drugs. In contrast, in India, no such regulatory system is maintained for governing OTC drugs. The Indian regulatory system categorizes drugs into schedules: H, H1, and X. The drugs that do not fall under these schedules are regarded as OTC drugs. Mohsen and Tarek (2020) reported that symptoms of rashes, headache, fever, cough, and cold can be treated through OTC drugs without the consultation of a medical practitioner. A brand has its own personality, name, and identity, which enables it to distinguish itself from a cluster of other products. In the pharmaceutical market, branding of the drug items plays well to impact the behavior of the drug consumers. Findings of many articles revealed major role of branding in shaping and anticipating consumer preferences in the pharmaceutical sector. As Zhang (2015) identified, the image of brands is the most prominent factors that impact the buying decisions of OTC drug consumers. Similarly, Albari and Safitri (2013) and Shah et al. (2012) investigated the positive brand image influenced the purchase behavior of consumers for drugs. A volume of factors was found to influence consumer behavior while making purchase decisions. Social, psychological, cultural, and personal factors were empirically investigated to significantly influence the decision-making of OTC drug consumers (Rani, 2014). Aufegger et al. (2021) highlighted that age is a key determinant of consumers' behavior toward OTC drugs. Consumers follow a structured purchase process before purchasing any product.

A review of previous studies revealed many gaps. A study of brand image was analysed by many articles using different associations of the brand image (Rizwan, 2021; Lodorfos et al., 2018; Adlakha & Sharma, 2019). These studies largely analysed the limited parameters of brand image. The current study addressed this gap by combining the brand associations: previous experiences, quality, and packing characteristics of products to investigate brand image influence on consumer-related concerns. The interrelationship of brand image, buying intentions and buying behaviour, particularly for over-the-counter drugs

which were not well explored. Further conversion of purchase intentions into purchase behaviour also remained insufficiently explored, targeting the Haryana state. Attitude defines the preferences of consumers and plays a majorly in shaping consumer behaviour. The theory of planned behaviour (TPB) was well applied in many studies to examine the intentions and consumers buying behaviour. Conversion of attitude towards a brand translates into purchase intentions; the mediation role of attitude between image of brands, and buying intentions of buyers, specifically focusing on over-the-counter drugs got very little attention. In light of all the above gaps, the current study formulated the objectives given below:

1. To assess the influence of the brand image of over-the-counter drugs on the buying intentions of consumers in the Haryana region.
2. To investigate the impact of the brand image of over-the-counter drugs on the buying behavior of consumers in the Haryana region.
3. To scrutinize the relationship between buying intentions and buying behavior of over-the-counter consumers concerning the Haryana region.
4. To examine the mediation role of the attitude of OTC drug consumers on the relationship between brand image and buying intentions

Literature Review and Hypothesis

Brand image and Buying intention

The intentions act as a central part of the behavioural intentions of the OTC drug consumers and are a major component that predicts the actual buying behaviour of consumers. Purchase intentions of drug consumers can be effectively anticipated through their underlying intentions (Nuanchaona et al., 2021). Previous research by Kumar and Devi (2024b) had declared that consumers' trust in the image of brands played a major role in sustaining the trust of consumers and strengthening the emotional connections of consumer which further enhances their intentions for purchasing. Image of products was also identified as a critically crucial parameter that further determines the intentions of consumers (Rahmasari et al., 2024). Further more influence of emotional, social, and functional values of consumers on intentions of consumers was well explored in past studies. An empirical investigation by Khoerunisa et al. (2025) had indicated that the image of brands had significantly and positively anticipated the purchase interests of consumers in the cosmetics sector. Similarly, research by Shah et al. (2012) also explored a positive connection of brand image with buying intentions of OTC drug buyers. Consumers usually evaluate many features of products before making purchase decisions. Visually appealing packaging features, such as bright colors and attractive creative design on packaging, were found to attract attention of consumers and positively influence the consciousness of consumers towards purchasing (Bhattacharyya & Das, 2020). The intentions of the drug consumers were found to be related to brand associations such as perceptions, colors, and imaginary concerns related to the product items (Rizwan, 2021). Lodorfos et al. (2018) empirically demonstrated that past experiences were significantly and positively related to the intentions of the consumers, whereas Lu & Nien (2017) declared a negative connection between the brand image and consumers' intentions for the pharmaceutical products.

Brand image and Buying behavior

Drug-related information mentioned on the packaging, such as expiry date, manufacturing date, quality marks, and usage instructions, plays an important role in shaping and positioning of the brand image in consumers' psychology, as it is concerned with their perceptions. Evaluation of consumers for pharmaceutical products predominantly concentrates on quality attributes, which in turn motivate and significantly influence the buying behavior of consumers (Mishra, 2018). An investigation on 300 consumers by Srivatva and Wagh (2017) stated a significant impact of brand's image on purchase decisions of the consumers for the drugs; conversely, Cirstea et al. (2017) reported a limited influence of brand's image on buying intentions, and buying behavior. Siripipatthanakul et al. (2022) emphasized that brand experiences of consumers defined the favorable behavior of consumers, thereby influencing the decision-making process. A similar investigation by Ibrahim (2025) indicated a strong influence of brand's image on the decision making the of consumers. Furthermore, Adlakha and Sharma (2019)

declared that quality attributes develop an image of the brands that further enhances their awareness, recognition, and finally influences the buying behavior of consumers. Wijaya et al. (2024) concluded that "brand image" is a key determinant of consumer purchase behavior. According to Siddiqui et al. (2015), external factors of products and quality determine the consumer's buying behavior. However, contradictory literature is also available, as observed by Wang and Chen (2016) and Nasermoadeli and Maghnati (2013), who stated a minimal influence of product quality on buying decisions of consumers for the pharmaceutical products. Damodaran and Sambandam (2019) found that packing color is the most influential factor influencing consumers' buying behavior. Similarly, Harwani and Sakinsh (2019) reported a positive influence of packaging designs on the purchasing behavior of consumers. Bhattacharyya and Das (2020) identified the role of visual designs and graphics in shaping the decisions of consumers for the drug items, whereas Wang et al. (2020) investigated the attraction of children towards multisensory designs and colours of packaging. The role of quality parameters was emphasized by many studies in the previous literature (Aufegger et al., 2021). In contrast, a weak influence of quality on buying behaviour was reported by Ago et al. (2015). Mor and Sethia (2015) reported a positive relationship between the quality and decision-making of consumers, whereas Srivastava (2013) declared a negative association between consumer behaviour and the quality of products. Furthermore, Spence (2021) revealed that packaging attributes of drug items, such as colour, designs, and shape, have a significant influence on decision-making of consumers; conversely, no relationship between packaging and buying decisions was identified by Dehingia and Khan (2022).

Buying Intentions and Buying Behavior

Brand image is surrounded by the brand's public perception, unique identity, and reputation, which helps the buyers to apply cognitive shortcuts while purchasing the items through their judgments (Rolando et al., 2025). The decision-making process was studied to be effectively run by the buying intention of consumers, which acts as a key predictor for the purchase behavior of consumers (Chen & Huang, 2012). A prior investigation by Temechewu and Gebremedhin (2020) found that consumers' past experiences act as tools to transform their intentions into their buying decisions, which further revealed a significant association between past experiences, buying behavior, and buying intentions of consumers. Familiar and well-established products are usually offered by the consumers, leading to a favorable brand image, which further reduces the perception risks and elicits a positive buyer's response (Lin, 2007). In support of this view, Rizwan (2021) demonstrated a strong relationship between prior experiences and consumers' purchase intentions, which ultimately impact the buying decisions of consumers in the context of over- the-counter drugs. Saxena and Vij (2023) investigated a positive connection between intentions for purchase, and purchase behaviour of consumers; however, a minimal association was identified between intentions and buying behaviour of consumers, revealing a gap between intentions and buying behaviour (Thogersen & Olander, 2006). Zhang et al. (2022) conceptualized purchase intentions reflects willingness and unwillingness of consumers towards the products, while an empirical work by Shastry and Anupama (2021) measured buying behaviour through the conduct of buying intentions of the consumers.

Brand image, Attitude and Buying intentions

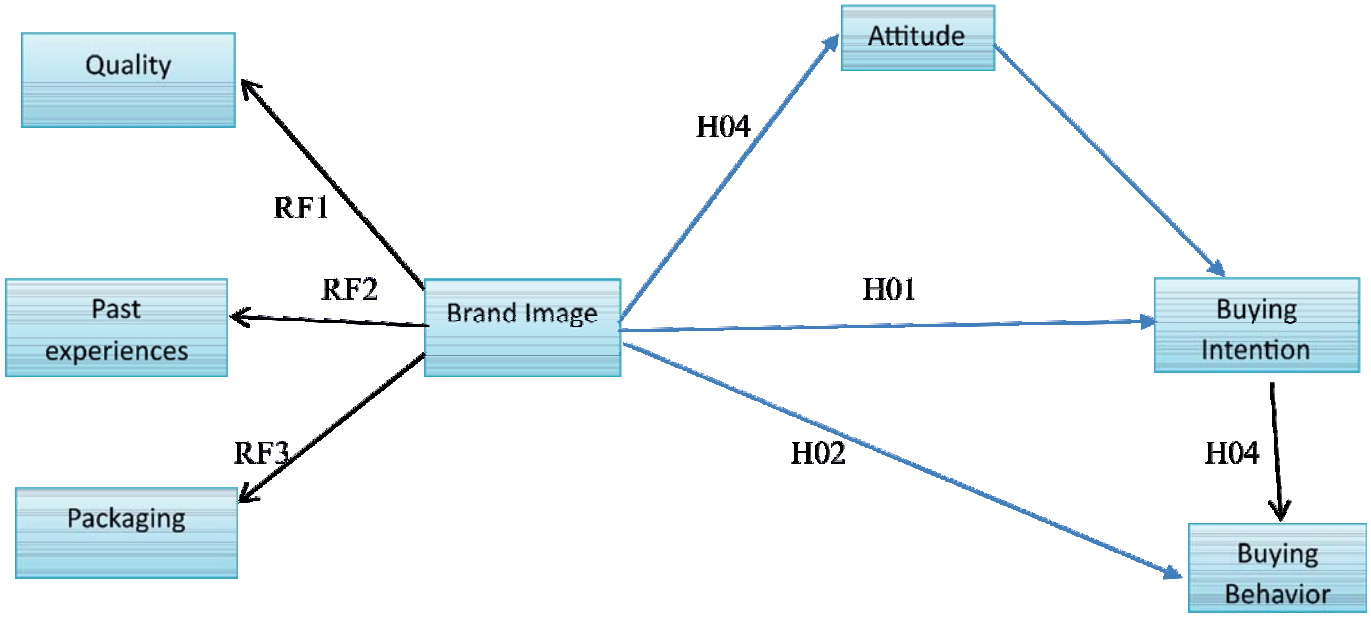
Attitude is a core component of the Theory of Planned Behavior which determines the intentions of consumers. Positive along with negative evaluations of consumers for the products are usually reflected in their attitude. Prior research by Ashinze et al. (2021) had revealed the direction of purchase behavior, further affecting their purchase behavior. Similarly, attitude was found to be a significant factor for decision making of consumers (Li et al., 2009). Moreover, consumer purchase intentions for the products were largely reinforced through the attitude of consumers (Haque et al., 2019). Attitude was determined to be a significant factor involved in the decision-making of consumers for the product purchasing (Li et al., 2009). Purchase intentions of consumers were mainly confirmed through the role of attitude (Haque et al., 2019). Across variable cultures, a positive association was analyzed between intentions and the attitude of consumers (Mostafa, 2007). Haque and Jamaludin (2020) statistically reported

that both purchase intention and buying behavior were significantly influenced by the attitude of consumers; conversely, Haque et al. (2020) investigated a comparatively weaker relationship between purchase intention and consumers' attitude. Bhowmick and Jha (2017) reported psychological responses such as feelings, thoughts, and emotions associated with brands, which shape the attitude of consumers which in turn impacts the behavior of consumers. Dewi et al. (2024) analysed the partial mediation role of attitude between purchase intentions and brand image. Similarly, Cheah and Phau (2011), Huthasuhut et al. (2022) empirically confirmed the mediation role of attitude between purchase intentions and image of brands. Lu and Nien (2017) reported a negative association between brand image and attitude toward purchase intention, which indicated that brand image and consumer attitude does not always translate into intentions.

Conceptual Model

The theory of planned behavior was followed in the present study to assess the buying intentions and buying behavior of consumers (Aizen, 1991). Brand image (BI) is representative of its associations, which occupy space in the consumer's mind. past experiences (PE), packaging (PEX), and quality (QUA), and constitute the key dimensions of brand image. Clearly depicted in the conceptual framework Figure 1, a direct association of brand image with buying behavior (BB) and buying intention (BIN) where attitude (ATD) functions to play its role as a mediator between brand image, and buying intention. Hierarchical model component with higher-order constructs and lower-order constructs is followed in this project. Image of brand is specified as a higher-order or first order construct that is reflectively measured through lower-order constructs: past experiences, quality, and packaging. The framework captures the interconnections between image of brands, buying intentions, and the buying decisions of over-the-counter drug consumers. Each component of brand image is measured through three statements, mapped on a 5-point Likert scale.

Figure 1- Conceptual Model



Hypothesis Development

Mixed findings were revealed through the existing literature review, where some studies revealed a positive relationship, and others demonstrated a negative association between brand image, buying behavior, and buying intentions of consumers. Based on study of previous literature and proposed associations, independent and dependent variables (presented in Figure 1) following hypotheses were formulated:

H01) There is no significant relationship between brand image and buying intentions of over-the-counter drug consumers.

H02) There is no significant relationship between brand image and the buying behavior of over-the-counter drug consumers.

H03) There is no significant relationship between buying intentions and the buying behavior of over-the-counter drug consumers.

H04) Attitude of consumers does not mediate the relationship between brand image and buying intention.

Research Methodology

Both descriptive and empirical research designs were employed in the present study. A mixed approach, both qualitative and quantitative perspectives were employed to find the associations of brand image with buying behavior and buying intentions of consumers for OTC drugs.

Research Design and Research Process

Scope

Grounded on the Indian Census 2011-2021 (Census2011.co.in), the most populated districts of Haryana state, namely Hissar and Faridabad, were selected, and the present research work remained confined to the selected districts only. The selected categories of OTC drugs: digestives, antipyretics, cold-cough, and antiseptic drugs were specifically focused in this study. A primary survey was conducted following multistage convenience sampling techniques and face-to-face interviews to gain responses from the OTC drug consumers.

Scale development

The research constructs were effectively measured through the well-established and validated scales from the prior studies. Focusing on the dimensions of brand image, the present study adopted the scale given by Mekworawth (2014), Manandhar (2019), and Yousef (2020) to measure past experiences, quality, and packaging, respectively. Purchase intention was measured by the instrument utilized by Kumar (2012), whereas the buying behavior of consumers for OTC drugs was assessed through the scale developed by Manandhar (2019).

Questionnaire design

A survey of consumers was conducted through a structured questionnaire, which is categorized into two sections. Section A was composed of questions concerned to the demographics of consumers, along with closed-ended basic queries related to OTC drugs. Section B was constituted with items to assess the influence of brand image, buying intention, and buying behavior, which were estimated on a 5-point Likert scale.

Sample size

Based on the Indian census data 2011-2021 obtained from Census 2011.co.in, Considering, margin of error 5% and confidence interval 95%, the total sample size determined was 132 OTC drugs.

Sampling technique

The data was collected through a multistage sampling technique. As per the Indian census data 2011-2021 (Census2011.co.in), the most populated districts, Faridabad and Hissar, were selected from the Haryana state. These selected districts were further stratified into tehsils. At the convenience of the researcher, the OTC drug consumer visiting the medical stores within particular blocks/wards were chosen to obtain the responses.

Data collection

The sample consumers targeted were aged 18 and above. A primary survey was conducted to gain responses related to the buying intentions and buying behavior through face-to-face interview techniques.

Result and Discussion

This part of the research presented the analysis of the responses collected from OTC drug consumers of Faridabad and Hisar regions of the Haryana state through the primary survey. Data was collected between November 2023 and February 2024. Screening of the data was performed using SPSS (version 23) to remove any missing values. The association between brand image, purchase intention, and purchase behavior was determined through PLS-SEM (version 4) software. Data analysis results are discussed in the following sections.

Descriptive Analysis

Demographic profile of consumers is presented through demographic statistics of consumers. Analysis of socio-economic variables of consumers was performed on age, education, gender, and income, followed by some basic queries related to the over-the-counter drugs. Consumer demographics are given in the Table 2.

Table 2- Demographic variables of respondents

GENDER-WISE CLASIFICATION OF CONSUMERS		
Gender	No. of Respondents	Percentage (%)
Male	83	62.8
Female	49	37.1
Total	132	
AGE- WISE CLASIFICATION OF CONSUMERS		
Age	No. of Respondents	Percentage (%)
18<30	67	50.8
30<45	44	33.3
45<60	11	8.3
Above 60	10	7.6
Total	132	
EDUCATION- WISE CLASIFICATION OF CONSUMERS		
Education	No. of Respondents	Percentage (%)
Illiterate	14	10.6
High School	59	44.7
Graduate	59	44.7
Total	132	
INCOME- WISE CLASIFICATION OF CONSUMERS		
Income	No. of Respondents	Percentage (%)
<10000	69	52.3
10000<25000	40	30.3
25000<40000	14	9.8
40000<55000	4	3.0
Above 50000	6	4.5
Total	132	

Consumers are classified into subgroups through demographic profiles. The behaviour of consumers is analysed through demographic profiles. Demographics of consumers are shown in Table 2. A total of 132 responses were collected from the respondents of Haryana state, targeting the districts of Hissar and Faridabad. From the respondents' data total figure of male consumers was 83 (62.8%), and the female figure was 49 (37.1%).

Age is a considerable demographic factor of consumers that defines their choices well. Consumer age with the highest number was 67 (50.8%), and was lying between 18<30, 44 (33.3%) respondents were of age between 30<45, 11 (8.3%) were 45<60, whereas 10 (7.6%) consumers were above 60 years old.

Qualification of consumers was also noted. The analysis reported that 14(10.6%) consumers were illiterate, and both high school and graduates were 59 (44.7%) of the sample.

The buying capacity of consumers can be defined through their income. As per the analysis report of the current data, 69 (52.3%) earned less than 10000. The monthly income of 40 (30.3%) consumers was between 10000<25000, 14 (9.8%) were 25000<40000, only 4 (3.0%) were 40000<50000, and 6 (4.5%) were carrying a monthly income of more than 50000.

Table 3- Responses of consumers toward basic queries related to over-the-counter.

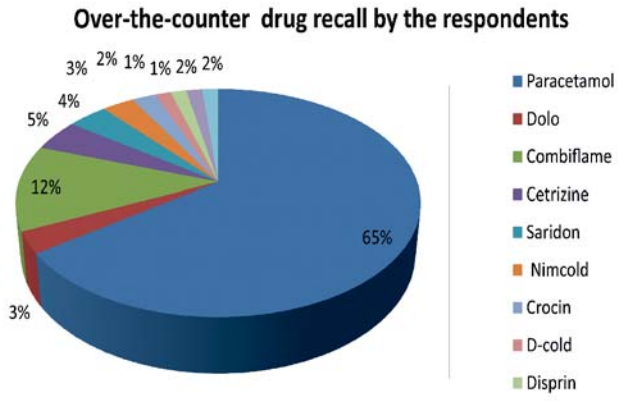
	|Are you aware about Over-the-counter drugs		
S. no	Description of response	No. of Respondents	Percentage (%)
1	Yes	13	9.8
2	No	119	90.2
Total		**132**	
	What type of OTC medicine generally you purchased		
	Description of response	No. of Respondents	Percentage (%)
1	Digestives	13	9.8
2	Antipyretic	62	47
3	Antiseptic	6	4.6
4	Cold-Cough	51	38.6
Total		**132**	
	Do you consider brand of OTC drugs before making purchase?		
	Description of response	No. of. Respondents	Percentage (%)
1	Seldom	84	63.9
2	Less Frequently	12	9.1
3	Frequently	20	15.2
4	Very Frequently	16	12.1
Total		**132**	
	From where you generally buy OTC drugs		
	Description of Response	No. of. Respondents	Percentage (%)
1	Medical store	132	100
2	Grocery store	0	
3	Online	0	
Total		**132**	

Consumer responses related to the basic queries are summarized in Table 3. Regarding the awareness of consumers related to over-the-counter drugs, only 13 (98%) consumers were aware of OTC drugs, whereas a maximum no of consumers, 119 (90.2%) lacked awareness of over-the-counter drugs. The buying decision of the consumers was analyzed, and reported that highest proportion from the whole sample, 62 (47%), generally buy antipyretic drugs, followed by cold-cough consumers 51 (38.6%), 13(9.8%) purchased digestives, while 6(4.6%) purchased antiseptics.

An important aspect of the paper was to address the queries concerned with brand consideration by the consumers before making their buying decisions. Results shown in Table 3 reported the maximum number of consumers, 84 (63.9%), seldom considered the image of brands while making their buying decisions. 12 (9.1%) reported less frequently, and 20 (15.2%) were frequent in considering brands, whereas 12 respondents (9.1%) were the only set of consumers who were frequently focusing on considering the brands before making their buying decisions.

Furthermore, all 132 (100%) respondents were purchasing over-the-counter drugs exclusively from medical stores. Over-the-counter drug recall behavior by consumers who purchased in the past is given in Figure 2.

Figure 2. Name of over-the-counter drug recalled by the respondents.



Drug recall behavior and analysis of respondents are presented in Figure 2. Results reported that a maximum of respondents readily recalled the Paracetamol drug (65%). Combi flame (12%) was also found to occupy a strong position in consumers' minds, which they recalled very quickly. Other OTC drugs were Dolo. D-cold, Eno, Digene, and Crocin were remembered and commonly recalled by the consumers.

PLS-SEM Analysis

Smart PLS-SEM is simple, non-parametric, user-friendly, and widely used software for conducting statistical analysis. The PLS-SEM software approach clearly defines the relationships between all the indicators and constructs in the model (Hair, Ringle, et al., 2012). In the beginning stage, measurement analysis was carried out to obtain outer loadings, which indicate the extent to which indicator variables explain the endogenous and exogenous variables. In the subsequent step, structural analysis was conducted, wherein the bootstrapping was performed to assess hypothesized relationships.

Measurement analysis

Initially, outer loadings were obtained by conducting measurement model analysis. According to Chin (1998), Hair, Ringle, & Sarstedt (2011), outer loading values for the items should be 0.7, preferably above 0.708. to ensure adequate reliability of the indicators, which will be further processed to measure the respective constructs. Average variance extracted (AVE) values determines the convergent validity of the constructs.

Outer loading

Figure 3: PLS SEM structural model showing outer loadings of all indicators.

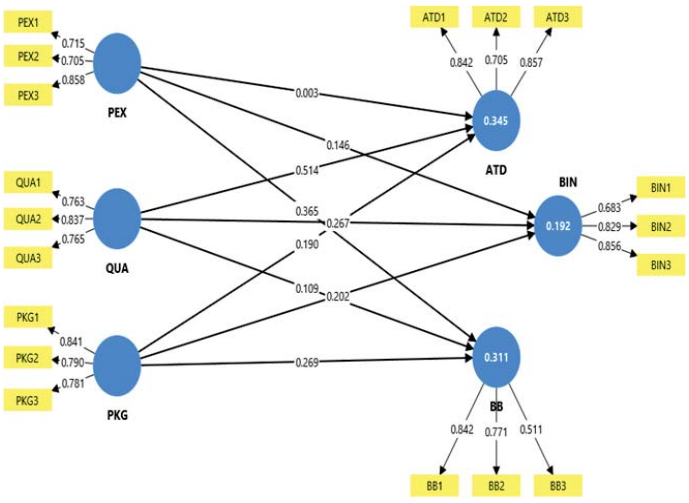


Table 3- Results for indicator loadings, composite reliability, Cronbach's alpha AVE, and VIF values.

Variables	Item Code	Outer Loading	Cronbach's Alpha	Composite Reliability	AVE	VIF
Attitude	**ATD1**	0.842	0.729	0.845	0.647	1.556
	ATD2	0.705				1.312
	ATD3	0.857				1.538
Buying Behavior	**BB1**	0,842	0.560	0.759	0.521	1.225
	BB2	0.771				1.171
	BB3	0.551				1.122
Buying Intentions	**BIN1**	0.683	0.706	0.834	0.629	1.254
	BIN2	0.829				1.482
	BIN3	0.856				1.523
Past experiences	**PEX1**	0.715	0.648	0.805	0.581	1.226
	PEX2	0.705				1.271
	PEX3	0.858				1.318
Packaging	**PKG1**	0.841	0.729	0.846	0.647	1.470
	PKG2	0.790				1.396
	PKG3	0.781				1.452
Quality	**QUA1**	0.763	0.697	0.832	0.623	1.301
	QUA2	0.837				1.474
	QUA3	0.765				1.356

As shown in Table 3, the outer loading values for all items were more than the benchmark 0.7 therefor all statements were accepted for further statistical analysis.

Reliability analysis

Reliability test analysis was assessed through the internal consistency of all latent and observed constructs. As suggested by Hair et al. (2011), the standard value for composite reliability. and Cronbach's alpha exceeding 0.7 indicate satisfactory reliability level. As reported in Table 3, columns 4 and 5, all the composite reliability and Cronbach's alpha values for all latent constructs are exceeding the threshold level, thereby confirmed the reliability and internal consistency of all the latent constructs.

Validity analysis

Validity testing explains the extent to which the measurement model analysis accurately represents the relationship between the constructs. Validity of the construct is evaluated through discriminant validity and convergent validity, which together indicate adequate measurement and empirical distinctiveness from one another.

Convergent validity: AVE was calculated through the factor loadings assessed from the items. AVE values indicate the amount of variance in the latent construct from its observed variable. The threshold values for the AVE are 0.5 (Hair et al., 2011). Results presented in Table 3 column 6, AVE values for all contracts are above the threshold of 0.5, hence confirmed the convergent validity of all the constructs in the model.

Discriminant validity: Discriminant validity of the constructs is estimated through Fornell Larcker criterion,

and through Hetro Trait Mono Trait ratio, (HTMT) values. As suggested by Fornell and Larcker's criterion, the square root of AVE values should exceed off diagonal corelation values of all constructs row-wise and column-wise (Fornell and Larcker, 1981). In addition, the HTMT ratio value between all the construct pairs should be below 0.8, which further confirms the discriminant validity. (Kline, 2023).

Table 4- Fornell Larcker criterion of discriminant validity.

Constructs	ATD	BB	BIN	PEX	PKG	QUA
ATD	0.804					
BB	0.419	0.722				
BIN	0.516	0.494	0.793			
PEX	0.162	0.475	0.263	0.762		
PKG	0.308	0.415	0.312	0.334	0.805	
QUA	0.557	0.238	0.340	0.185	0.227	0.789

Table 5- HTMT result for discriminant validity

Constructs	ATD	BB	BIN	PEX	PKG	QUA
ATD						
BB	0.597					
BIN	0.712	0.744				
PEX	0.218	0.720	0.369			
PKG	0.423	0.566	0.424	0.494		
QUA	0.759	0.393	0.467	0.265	0.319	

Results for Fornell Larcker criterion in Table 4 reported the square root of AVE values row-wise, and column-wise was more than the off-diagonal inter construct corelation, thus confirming the criterion for the discriminant validity. Furthermore, as given in Table 5, HTMT results reported that all constructs had HTMT values below 0.8, hence confirming the discriminant validity of all constructs.

Multicollinearity test

Variance inflation factor (VIF) determines the multicollinearity issues among the indicators; According to Faul et al. (2009), VIF should not exceed 5. As presented in Table 3, VIF values of all indicators were lower than the threshold value of 5; hence, no multicollinearity issues were of concern in the measurement model.

Structural Analysis

Once the reliability and validity measures are confirmed, in the next step structural model is assessed which involved the examination of predictive capabilities of the model and hypothesized relationship among the constructs and variables.

Hypothesis Testing

The hypothesis results presented in Table 6 showed the results for both indirect and direct relationships among the construct variables. The findings revealed that image of the brands were found to be positively and statistically significant. Moreover, indirect effect between image of brands and purchase intention through attitude was also investigated to be positive and significant, hence confirmed the mediation role of attitude. Results for the testing of all the hypotheses are presented below.

Figure 4: PLS-SEM diagram showing the interrelationship between the constructs and the mediation role of attitude.

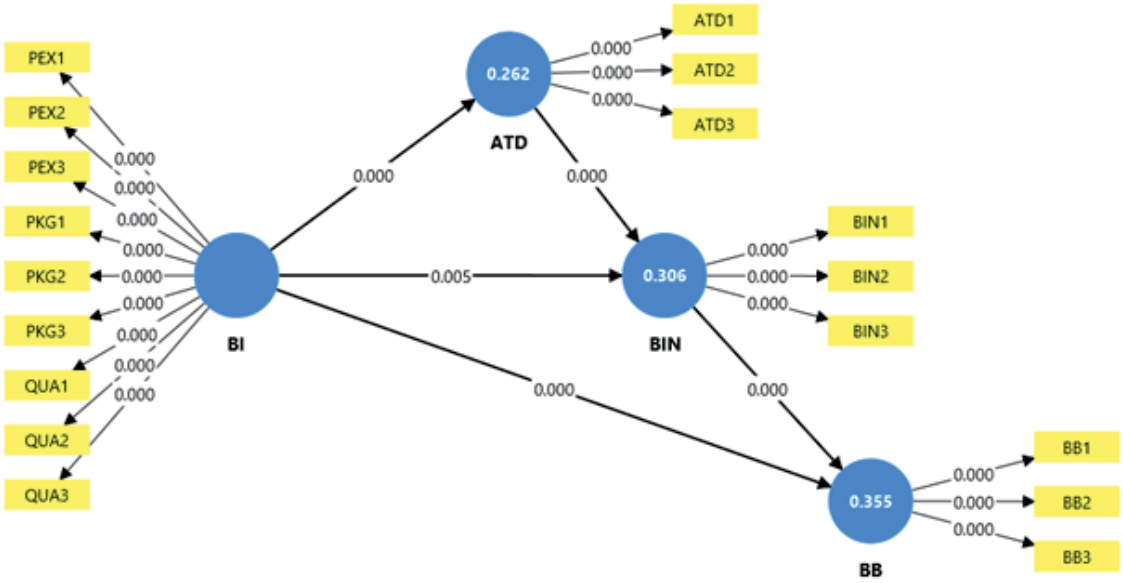


Table 6- Results for B-Value, t-value and P value

Path Directions	Original	Sample mean	Standard deviation	T statistics	P values
ATD -> BIN	0.398	0.395	0.086	4.655	0.000
BI -> ATD	0.512	0.527	0.067	7.608	0.000
BI -> BB	0.369	0.378	0.085	4.338	0.000
BI -> BIN	0.230	0.242	0.083	2.785	0.005
BIN -> BB	0.334	0.330	0.087	3.816	0.000
BI -> ATD -> BIN	0.204	0.208	0.055	3.733	0.000

The development of model, and the strength of association between dependent and independent variables were estimated through PLS-SEM software. In the present research work, an association of brand image: past experiences, quality, and packaging with buying intentions and buying behavior was analyzed through PLS-SEM software. The influence of image of brands lead to the changes in buying intentions through the mediator variable "attitude" was also investigated. The PLS-SEM analysis results for all the proposed hypotheses are discussed in the following sections

H01) There is no significant relationship between brand image and buying intentions of over-the-counter drug consumers.

Table 6 presents the PLS-EM results, which report the beta coefficient of 0.0.230, *t-value* 2.785, *p value* 0.005. The threshold level of significance is 0.05. The value of significance obtained was .005, which is below the threshold criterion of 0.05, thus reflecting a significant connection between brand's image and buying intentions. Hence, rejecting the null hypothesis (H01), which revealed that brand image influenced the buying intention of OTC drug consumers. The results for hypothesis H01 are consistent with the research works conducted in past by Rahmasari et al. (2024), Shah et al. (2012), Rizwan (2021), and Lodorfos et al. (2018). Knowledge and understanding of brand associations: quality, experiences of buyers, and packaging characteristics of the products were found to

influence their buying decisions. Consumer attention can be gained by effectively focusing on the parameters of products. Therefore, marketing companies should emphasize all these parameters to attract consumers and gain market share.

H02) There is no significant relationship between brand image and the buying behavior of over-the-counter drug consumers.

The PLS-SEM analysis results of brand's image, and buying behavior are given in Table 6. The results revealed a *b-value:* of 0.369, a *t-value*: 4.338, and a *p-value*: 0.000. The reported *p-value* of significance was .000, which is less than the accepted threshold value of .05, thus confirmed a statistically significant association between brand's image, and buying behavior of OTC drug consumers. According to the results obtained, the null hypothesis H02 was rejected, which indicates that brand image positively and a significantly influence the buying behavioral decisions of consumers. The results of the present study are in accordance with past studies by Srivatva &Wagh (2017), Siripipatthanakul et al. (2022), Ibrahim (2025, Wang and Chen (2016), Nasermoadeli and Maghnati (2013), and Spence (2021). The positive and strong influence of brand image can directly impact the purchase behavioral concerns of the consumers; therefore, the companies should focus on quality and packaging attributes of the products to strengthen the brand positioning, which will further enhance the buying behavior directly.

H03) There is no significant relationship between buying intentions and the buying behavior of over-the-counter drug consumers.

The results presented in Table 6 indicated a significant association between buying intention and buying behavior of OTC drug consumers with a *b-value* of 0.334, *t-value* 3.816, and *p-value* 0.000. The results demonstrated a positive association between buying intentions and buying behavior, therefore leading to the rejection of hypothesis H03. The calculated results suggested that changes in purchase intention led to changes in purchase behavior. Consequently, pharmaceutical organizations should make efforts to influence consumer intentions that will further play a significant role in the decision-making of consumers. The results of hypothesis H03 support the previous research studies by Saxena and Vij (2023), Zhang et al. (2022), Chen & Huang (2012), and Temechewu and Gebremedhin (2020).

H04: Attitude of consumers does not mediate the relationship between brand image and buying intention.

Mediation Analysis

A mediator is a third variable that transmits its influence indirectly on the relationship between dependent, and independent constructs. In the present study attitude was examined a mediator variable existing between brand image and consumers purchase intention, as depicted in Figure 4. In this study mediation effect was assessed at 95% confidence interval, through a bias-corrected bootstrapping procedure in the PLS-SEM software with 5000 samples. The connection between brand image and purchase intention was significant statistically *(p-value:* 0.000). Accordingly, the indirect relationship among the brand image and purchase intention through the mediator variable "attitude" was also significant. Table 6 presents the *b-value:* 0.204, *t-value:* 3.733, and *p-value:* 0.00, confirming that attitude mediated the relationship between buying intention and brand image; thus, rejecting the null hypothesis H04. The study results were in line with the previous research by Dewi et al. (2024), Cheah and Phau (2011), and Huthasuhut et al. (2022). Visible evidence presented in Figure 4 clearly indicated that brand image directly impacts the purchase intentions and some effect was passing through the mediator variable "Attitude"; hence indicated partial mediation.

Goodness of fit

The R^2 and Q^2 are the key criteria of predictive relevance for the evaluation of the structural model by applying PLS SEM analysis.

Table 7- Shows the coefficient of determination of the value of R2

Constructs	R-square	Results
ATD	0.262	Moderate
BB	0.355	Moderate
BIN	0.306	Moderate

Table 8- Showed predictive relevance through Q2 value

Constructs	Q^2 predict	Prediction relevance
ATD	0.234	Yes
BB	0.233	Yes
BIN	0.157	Yes

Based on the R2 values .19, 0.33, .67 (Chin, 1998), the constructs were considered to have weak, moderate, and substantial explanatory power. R2 values are presented in Table 7, signifies that all constructs, purchase intention, purchase behavior, and attitude had moderate predictive power. Furthermore, predictive relevance was calculated using the Stone–Geisser Q^2 statistic. According to Hair et al. (2014), Q2 values should be greater than 0 for all reflective contracts. Results given in Table 8 indicated, all the Q2 values exceeded the threshold level, thus confirming the adequate predictive relevance of the model.

Future scope

Analysis of buying intentions and buying behavior of consumers serves as a crucial tool for marketing companies to modify and improve their products to align with the preferences of consumers. Researchers can extend the examined parameters for other domains, such as FMCG, herbal products, and prescription drugs. The study of consumer behavior through online platforms may reveal behavioral variation in different purchasing environments. The study of the brand image associations and their relation with intentions and buying behavior provides insight for weakness and strengths of over-the-counter brands and that will further highlight the attributes of the products which needed managerial attention. The study results encourage the marketing companies to develop new and modify the existing marketing strategies to achieve greater market share and achieve organizational goals. Moreover, a positive and strong brand image makes consumers fearless and improves their confidence in the brand's products. Prevention of drug abuse and emergency conditions can be well tolerated through awareness and enhanced knowledge of the brand image.

Limitations

First, the study comprised 132 consumers, which was very small, increase in sample size may give robust and potentially variable results. Second, the scope of the research was limited to OTC drugs only and geographically to the Haryana region only; thus, subsequent research extended to other categories of pharmaceutical drugs and other states of India and countries may enhance the generalization of the results.

Conclusion

The study analysis reported the overall understanding and impact of brand associations on consumers' intention and buying behavior. The relationship among buying intentions, and the buying behavior of OTC drug consumers was systematically studied in the research project. The analysis of the empirical survey offered a logical proof that indicated the variations in consumer behavior with changes in innovations and advanced technologies in the products. Moreover, the results revealed that past experiences of consumers with brands strongly influence buying intentions and buying behavior. Quality, packaging, and past experiences were the key dimensions

of brand image, which significantly confirmed the buying intentions and behavioral outcomes of consumers through the analysis report. Focusing on the insights of the study, marketing companies can obtain a clear understanding of consumer behavior to assess the competitive position and to identify the challenges concerned with products in the market.

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