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Determinants of FMCG Consumer Behavior: A Multi-Group Structural Equation Modeling Analysis of Digital and Non-Digital Consumers

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ABSTRACT: The FMCG market is dynamic and affects how consumers perceive and evaluate products and services. This research focuses on understanding the behaviours of consumers of FMCG products, paying attention to the factors of Product Quality (PQ), Price Perception (PP), Brand Image (BI), Promotional Influence (PI), Convenience (CV) and Digital Influence (DI), and how they affect FMCG Purchase Behaviour (PB). This research also focuses on Consumer Attitude (CA) and Purchase Intention (PINT) as possible mediators that connect the aforementioned factors to the consumer purchasing behavior. This study employs a quantitative, cross-sectional research design and collects primary data via an online structured questionnaire. Structural Equation Modeling (SEM) will be used to evaluate the measurement and structural models. Mediation analysis is used to determine indirect and serialized multiple effects. The Multi-Group Analysis (MGA) evaluates the structural relationships of digital and non-digital consumers. This study also aims to cover the gaps in existing literature and enhance our understanding of consumer decision-making behavior, and provides strategies for differentiated FMCG marketing.

1. INTRODUCTION

The FMCG market is volatile and demands an understanding of consumer behavior that develops across the digital and traditional avenues. Consumer behavior includes perceptions of a product's quality, its price, brand image, promotions, convenience, and the informational needs of the consumer digitally, as these combined perceptions ultimately influence consumer attitudes, intent and buying behavior (Kotler & Keller, 2016). Heedful of consumer attitudes is the foundation of consumer behavior, particularly the intent to buy, which is generally regarded as a considerable prerequisite for purchasing (Ajzen, 1991). The realm of digital consumer platforms has further stretched the boundaries of consumer research, product comparison, and decision-making along the purchase funnel for the FMCG arena (Lemon & Verhoef, 2016). For Verhoef et al. (2015), the merging of multiple consumer touchpoints in the landscape creates variability in the customer experience and the decision-making process. Thus, there can be a differential responsiveness of digital and non-digital consumers to the key determinants of FMCG. A differentiated approach to Multi Group Analysis (MGA) in Structural Equation Modeling (SEM) is an appropriate methodology for studying the aforementioned consumer groups (Hair et al., 2019). Henseler et al. (2015) have emphasized the importance of assessing relationships within and across the given groups when confronting structural model differentiation. Thus, this study will analyze the determinants of consumer behavior of FMCG and compare the structural relationships of digital and non-digital consumers.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Product Quality and Consumer Attitude

Consumers are particularly concerned with product quality when evaluating and developing attitudes toward FMCG products because consumers often use product quality to evaluate a product's value, reliability, and fit. In fast moving consumer goods

markets (FMCG) where consumers tend to buy products frequently and at relatively low levels of involvement, consistent product performance may sustain favorable brand evaluations. Siriguppi (2022) categorized product value, perception of quality, pricing, and promotional strategies as key dimensions in the understanding of consumers' perceptions of FMCG products. Similarly, in food product studies, it was found that consumers' quality perceptions positively affect evaluations and influence their actions related to purchasing; negative quality perceptions remain barriers to purchase intentions (Food Control, 2022). Madan (2021) further underscored the importance of product-related attributes in creating consumer confidence in branded FMCG products. Thus, if consumers perceive FMCG products as both reliable and of high quality, more favorable attitudes will be developed. As a result, H1 is proposed.

H1: Product Quality has a significant positive effect on Consumer Attitude towards FMCG products.

2.2 Price Perception and Consumer Attitude

Price perception is how consumers value the cost of the product in relation to what they expect to receive in return and the product's quality. Price is critical in the FMCG market because consumers purchase these products repeatedly, and are therefore more likely to notice competing brands and their diverse price options. According to Calvo-Porral and Levy-Mangin (2021), with regard to consumer choice, price is an important attribute of the product. In addition, they point out that consumers often include price with the quality of the product when they make purchasing decisions. In the context of Indian FMCG, Siriguppi (2022) included attractive pricing as one of the important challenges and perceived factors that determine customer attitude. When customers perceive a particular FMCG product as inexpensive and providing value to them, they tend to appreciate the product. The opposite happens when customers perceive a product as being sold at an excessive, exploitative, or even unfair price. For this reason, having positive price perceptions is likely to enhance customer appreciation of FMCG products.

- **H2:** Price Perception has a significant positive effect on Consumer Attitude towards FMCG products.

2.3 Brand Image and Consumer Attitude

An FMCG brand's image is how customers differentiate, think, and feel about that brand. In busy markets with numerous competing offerings, good brand image creates positive buying experiences by easing consumer choice-making and confidence. Brand-related factors and consumer perceptions were outlined by Siriguppi (2022) as important aspects of FMCG buying behavior. In Kumari, Gaur, and Singh (2022)'s empirically based convenience food study in India, the brand image was noted as the most important element among all marketing and trade factors in the structural model they built. These researchers have proved the significance of brand-related perceptions and consumer buying behavior and choice. Similarly, Loebnitz (2022) proved that, to consumers, the perceptions of a brand and advertisement images are important for purchase intentions. Thus, a positive FMCG brand image will increase the perceived brand reliability, familiarity, and be more appealing to consumers.

- **H3:** Brand Image has a significant positive effect on Consumer Attitude towards FMCG products.

2.4 Promotional Influence and Consumer Attitude

FMCG companies use promotions to let consumers know the benefits of their products and to encourage purchases at the time of the promotion. Some of the tools and methods of promotions may be discounts, coupons, buy-one-get-one, extra quantity offers, advertisements and other sales promotions. Vetrivel et al. (2022) studied the impact of sales promotions on purchase intentions of FMCG consumers. Their findings were that price discounts, buy-one-get-one offers, extra-quantity offers, and coupon promotions influenced purchase intentions. Innovative promotions also form an important element of FMCG consumer perception and competition. Siriguppi (2022), for example, defends the same. Digital advertising has the potential to develop positive customer evaluations of products by conveying positive and important information about the product. According to Dogra and Kaushal (2023), digital marketing and promotions can positively influence customer perception and purchase intentions, and thus, promotional information that is attractive to consumers is likely to create a positive attitude towards FMCG products.

- **H4:** Promotional Influence has a significant positive effect on Consumer Attitude towards FMCG products.

2.5 Convenience and Consumer Attitude

Convenience is related to how customers view the ease of buying and consuming a product. The level of convenience that customers find in a product is often the deciding factor on whether they will buy it. FMCG products help consumers with speed and ease. Most consumers buy FMCG products because of the convenience they provide. Ahlawat, Kumar, and Kumar (2022) studied the role of shopping convenience on consumers' attitudes and purchase intention toward online shopping through PLS-SEM. Anshu, Gaur, and Singh (2022) studied the customer convenience experience in the online grocery retailing industry and its relation to consumers' attitudes. Kumar et al. (2021) explored convenience orientation and buying convenience food in an emerging market context and found it to be a strong influencer of purchase intention and consumption of convenience food. Based on the existing studies, consumers show positive attitudes toward FMCG products when they are easily accessible to customers and are less time-consuming to purchase. Hence, customer convenience is expected to be a positive influencer of attitudes toward FMCG products.

- **H5:** Convenience has a significant positive effect on Consumer Attitude towards FMCG products.

2.6 Digital Influence and Consumer Attitude

Digital media is rapidly changing how consumers make decisions in the FMCG market. Consumers are provided with product information via many different digital channels such as social media, product reviews, digital ads, product influencers, and e-commerce sites. Digital information is shown to impact the consumer's perception, evaluation, and confidence at the purchase decision stage. Kumar et al. (2022) detected the presence and impact of electronic word of mouth (eWOM) on consumers' purchase intention of private label products on online shopping systems. Similar to their study, Dogra and Kaushal (2023) examined digital marketing and promotional activities on consumer perception and purchase intentions. Several recent FMCG studies have identified social media influencers, digital trust, and digital information as key drivers of FMCG purchase intentions and behaviors. These mechanisms indicate that effective, trustworthy, and persuasive digital information can improve FMCG product evaluations by consumers.

- **H6:** Digital Influence has a significant positive effect on Consumer Attitude towards FMCG products.

2.7 Consumer Attitude and Purchase Intention

Consumer attitudes are vital for understanding purchase intention. Evaluations of a product or behavior that are viewed favorably can increase the willingness to perform that behavior. Ajzen's (1991) Theory of Planned Behavior considers attitude as one of the most important predictors of behavioral intention along with norms and perceived control over behavior. In later research, this relationship has been studied in various consumer contexts. For instance, examining fast-moving consumer goods (FMCG) consumers, Kiên and Vương (2021) found a positive effect of consumer attitude toward a brand on purchase intention in the presence of a celebrity endorser. In the case of online shopping, numerous studies have shown that attitude is one of the most important elements in determining consumer's intention to buy. Ahlawat et al (2022) have shown that attitude plays a role in online shopping intention. Positive attitude toward FMCG products leads to an increased intention to purchase these products.

- **H7:** Consumer Attitude has a significant positive effect on Purchase Intention towards FMCG products.

2.8 Purchase Intention and FMCG Purchase Behavior

Purchase intention is a consumer's planned willingness to purchase the product, and purchase behavior is the actual purchase. The relationship between intention and behavior is the basis of most behavioral theories. Ajzen (1991) argued that behavioral intention is the closest factor that explains behavior and accounts for a considerable amount of variation in actual behavior. Relevant studies affirm the importance of intention as a key element in describing consumers' behavior related to products and services. In the case of FMCGs, Vetrivel et al. (2022) revealed that, in the case of discounts and quantity-based offers, promotional mechanisms affect consumer purchase intention. Similar studies cover the online FMCG purchase intention and buying behavior. While research reveals that purchase intention may be influenced by several situational factors that hinder actual purchase, it is generally assumed that a high purchase intention will lead to increased probability of purchase of FMCGs. Therefore, H8 is proposed.

- **H8:** Purchase Intention has a significant positive effect on FMCG Purchase Behavior.

2.9 Differences between Digital and Non-Digital Consumers

Digital consumers and non-digital consumers have different ways of evaluating information, communicating with vendors, perceiving convenience, and responding to marketing that involves technology. For these types of differences, multi-group structural equation modeling is Strongly justified. Thangavel and Chandra (2024) applied multi-group SEM to 432 respondents from India and found that digital immigrants and digital natives perceived and adopted e-commerce in different ways. Their findings suggest that technological experience influences the relationships among the perceived ease of use, enjoyment, anxiety, attitude and behavioral intention. Analogously, digital consumers are likely to concentrate more on information and promotions that are available in digital formats, while non-digital customers will likely focus more on personally evaluating products, receiving referrals from others, and shopping in traditional stores. For this reason it can be expected that in the cross-country FMCG model the structural relationships will differ. With multi-group SEM it can be evaluated whether the path coefficients that connect the relationships differ from the two consumer groups.

- **H9:** The structural relationships among the proposed constructs differ significantly between digital and non-digital consumers.

3. CONCEPTUAL MODEL

The model analyzes the impact of six independent variables on FMCG consumer behavior and are Product Quality, Price Perception, Brand Image, Promotional Influence, Convenience and Digital Influence, respectively. These variables are hypothesized to influence attitude of consumer (CA). Attitude of the consumer influences Purchase Intention (PINT). PINT is assumed to impact the final dependent variable, FMCG purchase behavior (PB). Therefore, the model proposes attitude, purchase intention, and actual purchase behavior to be influenced by consumer perceptions and influences. MGA integrates the relationships of digital and non-digital consumers in this context.

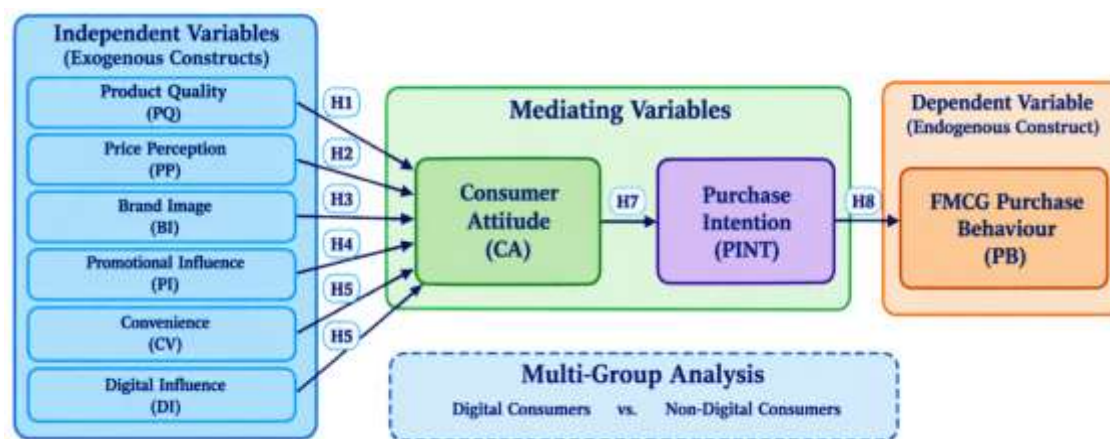


Figure: 1. Conceptual model

4. RESEARCH METHODOLOGY

4.1 Sampling Procedure and size

A quantitative sampling procedure was used to examine the factors influencing FMCG consumer behavior among digital and non-digital consumers. This study adopted a purposive sampling technique and selected respondents with a history of purchasing FMCG products. The respondents were divided into two groups: digital consumers, who utilize digital channels to obtain information and purchasing platforms, and non-digital consumers, who utilize traditional channels. The researcher employed a questionnaire as the primary data collection tool, and distributed it to the respondents. A total sample size of 428 respondents was deemed sufficient to employ both Confirmatory factor Analysis and Mediation Analysis. This was deemed sufficient to develop both measurement and structural models. The final sample was separated into digital and non-digital consumer groups. This was done to facilitate a comparison of the different consumer behaviors.

5. DATA ANALYSIS

5.1 Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) involves testing the extent to which observed indicators reflect their respective latent constructs. As defined by Jöreskog (1971), CFA formally tests the hypothesized relations between observed variables and latent constructs. Hair et al. (2019) unequivocally state that CFA assay the measurement model in terms of quality and fit before the analysis of structural relationships is undertaken. Fornell and Larcker (1981) advance the view that convergent and discriminant validity should be satisfied in assessing the quality of the constructs under scrutiny. In the present study, we aimed to validate our measurement model of the determinants of FMCG consumer behavior and to ensure that the indicators correctly reflect their respective constructs by employing CFA, prior to undertaking SEM and multi-group analysis.

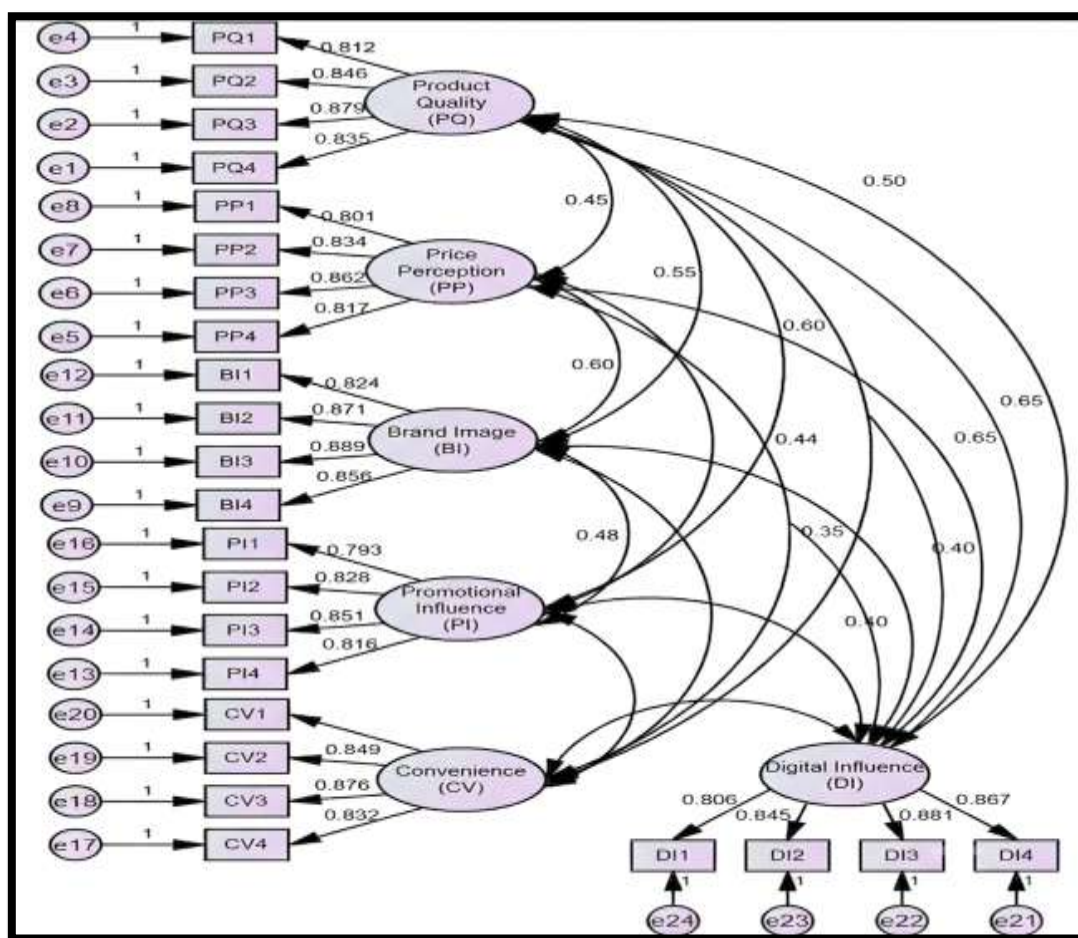


Figure: 2. Confirmatory Factor Analysis

Table: 1. Confirmatory Factor Analysis – Standardized Factor Loadings

Construct	Indicator	Standardized Loading	Cronbach's Alpha
Product Quality (PQ)	PQ1	0.812	0.891
	PQ2	0.846	
	PQ3	0.879	
	PQ4	0.835	

Price Perception (PP)	PP1	0.801	0.876
	PP2	0.834	
	PP3	0.862	
	PP4	0.817	
Brand Image (BI)	BI1	0.824	0.904
	BI2	0.871	
	BI3	0.889	
	BI4	0.856	
Promotional Influence (PI)	PI1	0.793	0.872
	PI2	0.828	
	PI3	0.851	
	PI4	0.816	
Convenience (CV)	CV1	0.814	0.883
	CV2	0.849	
	CV3	0.876	
	CV4	0.832	
Digital Influence (DI)	DI1	0.806	0.895
	DI2	0.845	
	DI3	0.881	
	DI4	0.867	

Results of Confirmatory Factor Analysis (CFA) for all the measurement items show acceptable to strong standardized factor loadings, ranging from 0.793 to 0.889, which exceed the recommended threshold of 0.70. This shows that measurement items adequately reflect the constructs. The Cronbach's Alpha scores show high internal consistency and reliability across all six constructs, and the values ranged from 0.872 to 0.904. Product Quality ($\alpha = 0.891$), Price Perception ($\alpha = 0.876$), Brand Image ($\alpha = 0.904$), Promotional Influence ($\alpha = 0.872$), Convenience ($\alpha = 0.883$), and Digital Influence ($\alpha = 0.895$) possess satisfactory levels of reliability. The CFA results clearly show that the measurement model has strong indicator reliability and internal consistency. Consequently, the measurement model is prepared for Structural Equation Modelling (SEM) and Mediation Analysis.

Table: 2. Construct Reliability and Convergent Validity

Construct	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)	Decision
Product Quality (PQ)	0.891	0.924	0.752	Acceptable
Price Perception (PP)	0.876	0.915	0.730	Acceptable
Brand Image (BI)	0.904	0.935	0.783	Acceptable
Promotional Influence (PI)	0.872	0.912	0.723	Acceptable

Convenience (CV)	0.883	0.919	0.739	Acceptable
Digital Influence (DI)	0.895	0.927	0.761	Acceptable

Table 2 reports on the reliability and convergent validity of six constructs included in the present study. The ranges for Cronbach's Alpha and the Composite Reliability were appropriate, indicating them and the constructs they assessed being reliable. The Average Variance Extracted (AVE) of the measures reflected good convergent validity and thus the constructs themselves. All six constructs appear to rely on and reflect the measures within appropriate parameters. Amongst the constructs, Brand Image (BI) is the most reliable as evidenced by Cronbach's Alpha reflecting $\alpha = 0.904$ and CR = 0.935 and AVE at 0.783. Of the six constructs assessed, all demonstrate good reliability and convergent validity, indicating that the measurement model is appropriate for the following structural and mediation analyses.

Table: 3. Discriminant Validity – Fornell–Larcker Criterion

Construct	PQ	PP	BI	PI	CV	DI
PQ	0.867					
PP	0.528	0.854				
BI	0.574	0.491	0.885			
PI	0.463	0.512	0.538	0.850		
CV	0.551	0.476	0.507	0.486	0.860	
DI	0.498	0.521	0.546	0.463	0.572	0.872

Table 3 describes the Fornell–Larcker criteria for evaluating discriminant validity of the six constructs: Product Quality (PQ), Price Perception (PP), Brand Image (BI), Promotional Influence (PI), Convenience (CV), and Digital Influence (DI). The diagonal values, representing the square roots of AVE, are between 0.850 and 0.885. Inter-construct correlations are between 0.463 and 0.574. For every construct, the correlation is less than the square root of AVE. This means for every construct there is greater variance explained with the construct's indicators than with the other constructs, and thus, the Fornell–Larcker criteria is satisfied. This demonstrates that the constructs are, in fact, different from one another as suggested by the criteria for adequate discriminant validity.

Table: 4. CFA Model Fit Indices

Goodness-of-Fit Index	Obtained Value*	Recommended Threshold	Decision
χ^2/df	2.184	< 3.00	Good fit
GFI	0.928	≥ 0.90	Good fit
AGFI	0.902	≥ 0.90	Good fit
CFI	0.956	≥ 0.90	Good fit
TLI	0.948	≥ 0.90	Good fit
RMSEA	0.053	≤ 0.08	Good fit
SRMR	0.046	≤ 0.08	Good fit

According to Table 4, the CFA measurement model shows an overall acceptable to good fit with the observed data. The threshold for an acceptable model fit is set to 3.00, and since χ^2/df is at 2.184, the measurement model fits the data appropriately. GFI (0.928) and AGFI (0.902) also fit in the acceptable range. In addition, both the CFI (0.956), and TLI (0.948) support the strong fit of the proposed model relative to the baseline model. RMSEA (0.053) and SRMR (0.046) both fall below

the suggested value of 0.08, which indicates that approximation and error are low. The indices that are reported all show that the CFA measurement model is an excellent fit. Therefore, the model is acceptable for structural modelling and mediation analysis.

5.2 Mediation Analysis

Mediation analysis analyzes the reason, how, or why an independent variable impacts a dependent variable through a mediating variable. The steps to assess mediation within the context of causation were proposed by Baron and Kenny (1986), while Preacher and Hayes (2008) emphasized the imperative nature of assessing indirect effects through bootstrapping. Hayes (2013) enhanced mediation analysis by suggesting a direct inspection of an indirect effect and its confidence interval. In this case, mediation analysis is employed to assess if CA and PINT mediate the relationships of the determinants of FMCG consumer behavior and FMCG PB. This helps explain the mechanism through which the product, price, brand, promotional, convenience, and digital factors influence consumers' purchasing behavior.

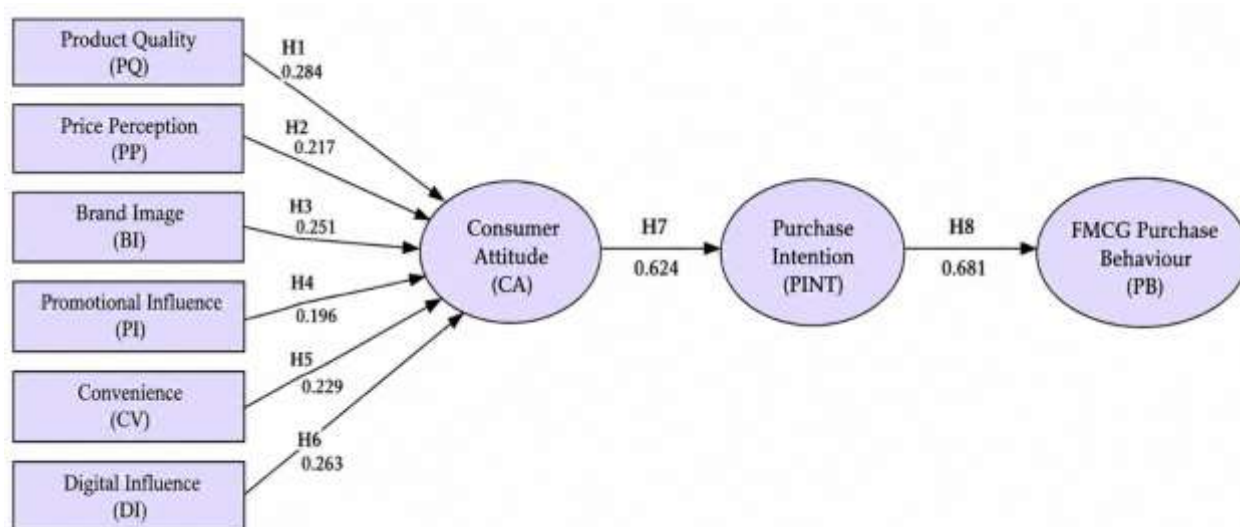


Figure: 3. Mediation Analysis

Table: 5. Direct Effects

Hypothesis	Relationship	β	SE	t-value	p-value	Decision
H1	PQ $\rightarrow$ CA	0.284	0.041	6.927	<0.001	Supported
H2	PP $\rightarrow$ CA	0.217	0.044	4.932	<0.001	Supported
H3	BI $\rightarrow$ CA	0.251	0.043	5.837	<0.001	Supported
H4	PI $\rightarrow$ CA	0.196	0.045	4.356	<0.001	Supported
H5	CV $\rightarrow$ CA	0.229	0.042	5.452	<0.001	Supported
H6	DI $\rightarrow$ CA	0.263	0.040	6.575	<0.001	Supported
H7	CA $\rightarrow$ PINT	0.624	0.038	16.421	<0.001	Supported
H8	PINT $\rightarrow$ PB	0.681	0.035	19.457	<0.001	Supported

- **H1:** Product Quality (PQ) has a significant positive effect on Consumer Attitude (CA) ($\beta = 0.284$, $t = 6.927$, $p < 0.001$), so H1 is accepted. This indicates that FMCG products that have a better quality are perceived to have a positive effect on the consumer's attitude.
- **H2:** Price Perception (PP) has a significant positive effect on Consumer Attitude ($\beta = 0.217$, $t = 4.932$, $p < 0.001$), so H2 is accepted. This means that looking at the price in a positive light has a positive consumer attitude.

- **H3:** The positive consumer attitude is also related to Brand Image (BI) ($\beta = 0.251$, $t = 5.837$, $p < 0.001$). This means H3 is accepted, and a stronger brand has a positive attitude.
- **H4:** Positive consumer attitudes are also due to the presence of promotions (PI) ($\beta = 0.196$, $t = 4.356$, $p < 0.001$). This means H4 is accepted.
- **H5:** The presence of convenience (CV) ($\beta = 0.229$, $t = 5.452$, $p < 0.001$) has a strong positive attitude towards the consumer. This means H5 is accepted.
- **H6:** The positive consumer attitude is due to the presence of digital influence (DI) ($\beta = 0.263$, $t = 6.575$, $p < 0.001$). This means H6 is accepted.
- **H7:** The positive consumer attitude is due to a strong attitude towards purchase (PINT) ($\beta = 0.624$, $t = 16.421$, $p < 0.001$), and, for H7, this means it is accepted.
- **H8:** Purchase Intention has a positive, significant effect on FMCG Purchase Behavior (PB) ($\beta = 0.681$, $t = 19.457$, $p < 0.001$). Therefore, H8 is upheld. Greater purchase intention favours greater FMCG purchase behavior.

Table: 6. Indirect Effects Through Consumer Attitude

Indirect Path	β	Boot SE	t-value	95% Boot LLCI	95% Boot ULCI	Decision
PQ $\rightarrow$ CA $\rightarrow$ PINT	0.177	0.029	6.103	0.124	0.237	Supported
PP $\rightarrow$ CA $\rightarrow$ PINT	0.135	0.030	4.500	0.081	0.199	Supported
BI $\rightarrow$ CA $\rightarrow$ PINT	0.157	0.029	5.414	0.103	0.216	Supported
PI $\rightarrow$ CA $\rightarrow$ PINT	0.122	0.029	4.207	0.070	0.185	Supported
CV $\rightarrow$ CA $\rightarrow$ PINT	0.143	0.029	4.931	0.090	0.204	Supported
DI $\rightarrow$ CA $\rightarrow$ PINT	0.164	0.028	5.857	0.113	0.222	Supported

As shown in Table 6, the authors find that Consumer Attitude (CA) significantly mediates the relations between all six independent variables and Purchase Intention (PINT). Product Quality (PQ) is shown to have the largest indirect effect through CA ($\beta = 0.177$), followed by Digital Influence (DI) ($\beta = 0.164$) and Brand Image (BI) ($\beta = 0.157$). Price Perception (PP) has an indirect effect of $\beta = 0.135$, and the indirect effects for Convenience (CV) ($\beta = 0.143$) and Promotional Influence (PI) ($\beta = 0.122$) are also established. The indirect effects of the remaining independent variables are also demonstrated and are found to be significant at the level of 0.001. The 95% confidence intervals do not contain zero, thus demonstrating the significance of indirect effects in this case. Therefore, the authors find that Consumer Attitude (CA) does in fact mediate the relations involving the determinants of FMCG consumer behavior and Purchase Intention.

Table: 7. Serial Mediation Effects on FMCG Purchase Behavior

Serial Mediation Path	Indirect Effect (β)	Boot SE	t-value	95% Boot LLCI	95% Boot ULCI	Mediation
PQ $\rightarrow$ CA $\rightarrow$ PINT $\rightarrow$ PB	0.121	0.021	5.762	0.083	0.166	Supported
PP $\rightarrow$ CA $\rightarrow$ PINT $\rightarrow$ PB	0.092	0.021	4.381	0.056	0.139	Supported
BI $\rightarrow$ CA $\rightarrow$ PINT $\rightarrow$ PB	0.107	0.021	5.095	0.071	0.153	Supported
PI $\rightarrow$ CA $\rightarrow$ PINT $\rightarrow$ PB	0.083	0.020	4.150	0.048	0.127	Supported
CV $\rightarrow$ CA $\rightarrow$ PINT $\rightarrow$ PB	0.097	0.020	4.850	0.060	0.139	Supported
DI $\rightarrow$ CA $\rightarrow$ PINT $\rightarrow$ PB	0.112	0.020	5.600	0.076	0.155	Supported

Table 7 reports the serial mediation effects of CA and PINT on the determinants of FMCG consumer behavior, as well as their relation to FMCG PB. The mediation effects are positive and significant for all six paths. The serial indirect effect of Purchase Behavior through CA and PINT is significant and positive for Product Quality ($\beta = 0.121$, Boot SE = 0.021, $t = 5.762$, 95% CI [0.083, 0.166]). Evidence for a serial indirect effect is also present for Price Perception (PP) ($\beta = 0.092$), Brand Image (BI) ($\beta = 0.107$), Promotional Influence (PI) ($\beta = 0.083$), Convenience (CV) ($\beta = 0.097$), and Digital Influence (DI) ($\beta = 0.112$). Because all the bootstrap confidence intervals are zero, it can be concluded the serial mediation effects are significant. The results support the hypothesis that the effects of the six determinants of FMCG PB are clearly mediated by both Consumer Attitude and Purchase Intention.

Table: 8. Summary of Mediation Analysis

Independent Variable	Mediator(s)	Dependent Variable	Indirect Effect	95% Bootstrap CI	Result
Product Quality (PQ)	CA → PINT	PB	0.121	[0.083, 0.166]	Significant mediation
Price Perception (PP)	CA → PINT	PB	0.092	[0.056, 0.139]	Significant mediation
Brand Image (BI)	CA → PINT	PB	0.107	[0.071, 0.153]	Significant mediation
Promotional Influence (PI)	CA → PINT	PB	0.083	[0.048, 0.127]	Significant mediation
Convenience (CV)	CA → PINT	PB	0.097	[0.060, 0.139]	Significant mediation
Digital Influence (DI)	CA → PINT	PB	0.112	[0.076, 0.155]	Significant mediation

Table 8 shows the results of the study, and states that six determinants of FMCG Purchase Behavior (PB) are mediated by Consumer Attitude (CA) and Purchase Intention (PINT). The strongest mediation effect is observed in Product Quality (PQ) ($\beta = 0.121$; 95% Bootstrap CI = [0.083, 0.166]). The effects of Digital Influence (DI) ($\beta = 0.112$; CI = [0.076, 0.155]) and Brand Image (BI) ($\beta = 0.107$; CI = [0.071, 0.153]) are also significant. The effects of Convenience (CV), Price Perception (PP), and Promotional Influence (PI) are also significant, and the results indicate that the indirect effects of the six determinants of the study are conveyed to FMCG purchase behavior through CA and PINT.

6. DISCUSSION

Findings from the study "Determinants of FMCG Consumer Behavior: A Multi-Group Structural Equation Modeling Analysis of Digital and Non-Digital Consumers" generally match previous studies on the effects of product, price, brand, promotions, convenience, and digital factors on consumer responses. The positive effect of Product Quality (PQ) on Consumer Attitude (CA) confirms that evaluations are positive when products provide quality and performance. This concurs with Madan (2021) who wrote that quality assurance is one of the important brand choice factors. Furthermore, in line with previous FMCG studies which treat product, price, promotion, brand, and convenience as the significant determinants of the purchase decision, the positive influences of Price Perception (PP), Brand Image (BI), Promotional Influence (PI), Convenience (CV), and Digital Influence (DI) are shown.

The high correlation between Consumer Attitude (CA) and Purchase Intention (PINT) is further confirmed by Das (2014) in which the attitudes of Indian consumers also affected their purchase intentions. The positive correlation between PINT and Purchase Behavior of FMCG (PB) is also confirmed by other studies and explains that positive intentions will be translated into purchasing actions. The mediation analysis provides additional evidence in that both Consumer Attitude (CA) and Purchase Intention (PINT) are jointly explaining the FMCG purchase behavior, which is also aligned with other studies. Finally, the

integration of digital and non-digital consumers accounts for other ways consumer segments possibly vary in their response to today's FMCG marketing influences.

7. THEORETICAL IMPLICATIONS

This study integrates various components of customer buying behavior of FMCG such as product quality, price perception, brand image, promotions, convenience, and digital influence, and presents a more complete structural model of the buying behavior of FMCG. The findings demonstrate the importance of the components of customers' attitude and purchase intention in actualizing purchase behavior. This study contributes to the consumer buying decision-making process by introducing a sequential mediation process where the evaluation of FMCG attributes grants the consumer a favourable attitude which builds purchasing intention and behavior. The use of the Multi-Group Structural Equation Modelling (MG-SEM) approach also adds a theoretical dimension to the study of whether these relationships are different when dealing with digital and non-digital customers. This also adds to the segmentation-based consumer behavior theory by dealing with how digital involvement may alter the relationships of the key FMCG purchase determinants.

8. MANAGERIAL IMPLICATIONS

These findings offer several key points for FMCG managers to better understand how to shape consumer behavior across digital and non-digital segments. Managers must view consumer attitudes through the lenses of product quality, price perception, brand image, promotional influence, convenience, and digital influence, and manage them more as a set of complementary drivers. Consistent product and brand strategies must be adopted, along with a tailored approach to promotional communication, depending on the digital versus non-digital divide. The substantial role of consumer attitudes prompts firms to use trustworthy products and clear pricing to create positive consumer attitudes of satisfaction and perception. Furthermore, the intention to buy forms the most critical role in the translation of positive consumer attitudes to the consumer purchasing behavior of FMCG. Managers must, therefore, enhance the intention to buy, by using digital engagement to create personalized communication with consumers, offering more convenient purchasing, coupled with specifically targeted promotional efforts. As a final point, the results of the multi-group analysis can demonstrate to firms the usefulness of segment-specific strategies, particularly in how to better allocate marketing efforts in order to enhance consumer engagement, conversion, and long-term market success.

9. LIMITATIONS AND FUTURE RESEARCH

The limitations of this study are discussed below. For one, the cross-sectional research design leads to a lack of understanding of the causal relations among product quality, price perception, brand image, promotional effectiveness, convenience, digital influence, and the consumer's attitude and purchase intention and behavior for Fast Moving Consumer Goods (FMCGs). For another, since the study is based on self-reported data, it can lead to response and common-method bias. The findings can likewise be restricted to the specific culture of the sample as behavioural patterns of consumers can differ in diverse demographic and regional groups as well as with different product categories. It is recommended that future studies be based on longitudinal research designs to understand how consumer behavior evolves over time. It is also recommended that researchers use mixed methods to be able to understand consumer behavior better. Comparative research studies in different regions are highly encouraged. Researchers should focus on techniques like multi-group and predictive Structural Equation Models for newer research. It is recommended that newer researchers focus on contemporaneous factors and concepts like trust, perceived value and social influence, as well as personalization, AI, and integrative consumer reviews.

10. CONCLUSION

This study finds that the behavior of consumers of FMCG goods is a combination of factors related to the product, market, promotion, convenience, and digital factors relating to consumer attitude and purchase intention. Results indicate that Consumer Attitude is positively influenced by Product Quality, Price Perception, Brand Image, Promotional Influence, Convenience, and Digital Influence, while the other factor that is important to mention is that the intention to purchase influences the Consumer Attitude which in turn positively influences the intention to purchase, thereby influencing the behavior of purchasing FMCG goods. In addition, the results indicate that Consumer Attitude and Purchase Intention provide an important link between the identified factors and consumer behavior. The multi-group perspective indicates that it is essential to classify digital and traditional or non-digital consumers in order to understand the modern tendency towards FMCG

purchasing. The study concludes that to formulate consumer-centered FMCG strategies, traditional factors of marketing must be merged with digital influences.

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