Leveraging Select Digital Platforms for Consumer Engagement and Sales in Fmgc Industry with Mediation of Demographic Factors

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ABSTRACT

This study investigates the impact of select digital platform features on consumer engagement and sales in the Fast-Moving Consumer Goods (FMCG) industry, with a particular focus on the mediating role of demographic factors. The independent variables examined include Digital Platform Usability, Personalization Features, Interactive Content, Trust and Security, and Customer Support and Services, while the dependent variable comprises Customer Engagement and Sales. A structured questionnaire was administered to a sample of FMCG consumers and descriptive statistics including mean and standard deviation were used to summarize the respondents' demographic characteristics. To ensure measurement reliability, Cronbach's alpha was computed for each construct, all of which demonstrated acceptable internal consistency. Confirmatory Factor Analysis (CFA) was conducted to assess the validity and goodness-of-fit of the measurement model. Subsequently, Structural Equation Modeling (SEM) was employed to examine the hypothesized relationships and the mediating effect of demographic variables such as age, gender, education, occupation and income. The analysis revealed that digital platform features positively influence customer engagement and sales, with demographic characteristics playing a partial mediating role. The findings offer actionable insights for FMCG marketers and digital strategists, highlighting the importance of tailoring digital experiences to diverse consumer segments. The results provide valuable insights for FMCG companies aiming to optimize digital strategies for improved consumer interaction and revenue outcomes. The study contributes to the growing body of literature on digital marketing effectiveness and provides a framework for leveraging digital touchpoints in the evolving consumer landscape.

Key words: Digital platforms, Digital Platform Usability, Personalization features, Interactive content, Trust and Security, Customer support and services, Customer engagement and sales, FMCG (Fast-Moving Consumer Goods)

INTRODUCTION

In the fast-changing environment of the fast-moving consumer goods (FMCG) sector, digital platforms have become influential instruments for brands to interact with consumers and

generate sales. The digital platforms integration in the Fast-Moving Consumer Goods industry has changed the consumer engagement and sales drastically and influenced by various demographic factors such as age, gender, education, occupation and income. As digital marketing strategies are evolving, the platforms like TikTok and online shopping sites became an important tool for brands to connect with consumers. This shift not only enhances brand visibility but also significantly alters the purchasing behaviours. The paradigm shift makes it essential for companies to adapt to digital strategies accordingly. The rise of online platforms has made shopping more convenient, with personalized recommendations and competitive pricing driving consumer preferences (Liu, 2024). Even it is observed that differences in demographic factors influence interact differently the digital platforms with influencing their purchasing decisions. (Mulyawan et al., 2022). consumer preferences are shaped through social media strategies & these will play a crucial role, with engagement acting as a mediator in the decision-making process for FMCG products (Menka, 2023)

Instead of all the benefits, organizational resistance and data privacy concerns hinder effective digital marketing adoption in the FMCG sector (Chowdhury, 2024). In future organizations need to Embrace AI and machine learning for predictive analytics to enhance consumer engagement and sales growth in competitive landscape. (Chowdhury, 2024). It is notable that some consumers may still prefer traditional shopping methods due to familiarity or trust issues, highlighting the need for a balanced approach in marketing strategies

IMPORTANCE OF THE STUDY

The importance of the study lies as it addresses a pressing need in the digital era, where FMCG companies are increasingly using the online platforms to reach as well as to retain its consumers. As consumers are becoming more digitally connected, platforms such as e-commerce websites, social media, and mobile applications play a crucial role in influencing purchasing decisions. Understanding how features like usability, personalization, interactive content, trust, and customer support contribute to consumer engagement helps marketers create more effective digital strategies. The study even goes a step further to examine how demographic factors such as age, gender, education, income and occupation mediate the relationship between digital platforms and consumer engagement leading to sales. The study gives the insights of understanding the diversity of consumer behavior and to avoid one-size-fits-all digital approaches. This helps to identifying which features resonate most with different demographic groups so that the FMCG companies can use these features to enhance customer experience, increase conversion rates, and build stronger brand relationships

SCOPE OF THE STUDY

The scope of this study is confined to analysing the effectiveness of select digital platforms with their features of in the form of its usability, personalization, interactive content, trust, and customer support in driving consumer engagement and sales specifically within the FMCG industry. It encompasses various digital features and investigates how these elements interact with consumer demographics to influence engagement behavior. The research provides a foundation for digital marketing strategies according to demographic profiles, making campaigns more targeted and impactful. It also opens avenues for further exploration into platform-specific effects, behavioural factors, and long-term customer loyalty in the digital space. This research can serve as a reference for marketers who aim to improve digital outreach,

enhance customer satisfaction, and drive sustainable sales growth in a highly competitive FMCG environment.

RESEARCH OBJECTIVES

- ➢ To investigate the impact of digital platform usability on consumer engagement and sales, considering the mediating influence of demographic factors.
- ➢ To assess how personalization features influence consumer engagement and sales, moderated by demographic characteristics.
- ➢ To evaluate the role of interactive content in enhancing consumer engagement and driving sales across different demographic groups.
- ➢ To explore the effect of trust and security on consumer engagement and purchase behavior, and how this varies with consumer demographics.
- ➢ To analyze how the quality of customer support services affects consumer engagement and sales, with demographics acting as a moderating variable.

REVIEW OF LITERATURE & HYPOTHESIS FORMULATI

Murni Astuti et al., (2023), the presence of digital technology has fundamentally changed the business landscape, and one of the most striking transformations is the birth of e-commerce. Online business has become a global phenomenon that is spurring economic growth, increasing the accessibility of products and services, and changing the way companies interact with customers. In this context, three main factors emerge as key elements influencing the success of an e-commerce business: superior user experience, wise pricing strategy, and a sophisticated e-commerce platform. This research aims to find out how demographics, user experience and platforms influence the digital business world. The research method used in this research is Systematic Literature Review (SLR) with a qualitative approach in a systematic review which is used to summarize research results that are descriptive qualitative in nature. The results of this research are that there is a significant influence between demographics and user experience because these three variables greatly influence customer purchases because they can be a comparison of various aspects of purchasing through platforms in the digital business world
H1 The relationship between digital platform usability and consumer engagement is mediated by demographic factors.

Yeon Hee Kim and Kyu Hye Lee (2007), The apparel market is extremely competitive and thus apparel manufacturers should try to maximize consumer satisfaction with cost-efficient but consumer-oriented strategies. Personalized strategies considering each consumer's characteristics have to be developed. The purpose of this study is to investigate the effects of consumers' characteristics on personalization strategies of apparel brands. Investigating personalization based on consumers' values and demographic characteristics will allow apparel manufacturers to attract target consumers. A survey method was used for the empirical study. Questionnaires from 420 respondents were analyzed using factor analysis, cluster, t-test, and ANOVA. The results indicated a significant influence of consumer values on customer service-related aspects of personalization. Female consumers demanded product- and information-oriented factors of personalization. Age, residential area, and clothing expense also had significant influence on the need for personalization of apparel shopping
H2 The influence of personalization features on consumer engagement is moderated by demographic characteristics.

Flavia Herlie, paper explores the relationship between social media content characteristics and consumer engagement. Utilising a systematic literature review, we analysed 89 relevant studies, highlighting key findings on how various content types, formats and other characteristics affect user engagement. Our findings reveal that while high-quality visual content generally enhances engagement, emotional appeal and interactivity are essential for fostering connections with consumers. However, we identified several gaps in the literature, which future research should address to clarify how social media content should be designed and delivered in order to maximise consumer engagement

H3 The relationship between interactive content and consumer engagement varies across different demographic groups.
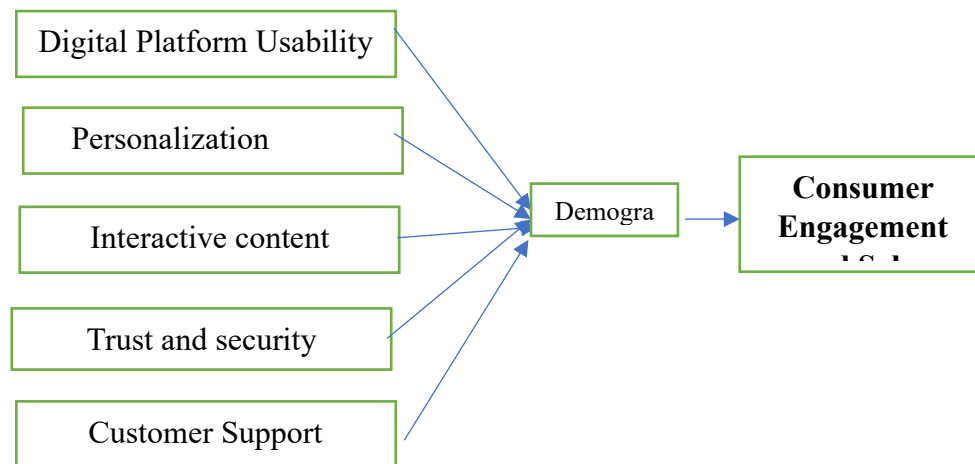
Sofil Handoyo (2024), through the comprehensive meta-analysis investigated the significant factors influencing consumer decision-making in e-commerce. The main focus was on the parameters like trust, perceived risk, perceived security, and electronic word-of-mouth (e-WOM). The study provided insightful revelations on their integral roles in shaping e-commerce purchasing decisions. The findings demonstrate the above parameters significantly influence consumers' e-commerce purchasing decisions. Perceived Risk plays a substantial moderating role in the relationship between Trust and e-commerce purchasing decisions, amplifying the importance of managing and minimizing risk in online transactions to cultivate consumer trust. Contrastingly, the roles of Perceived Security and e-WOM do not hold the same moderating effect. The research reveals no significant size effect difference among respondents from high-income and low-income countries or between general internet users and online shoppers concerning the impact of trust on e-commerce purchasing decisions. This intriguing finding suggests the universal importance of trust in the digital purchasing landscape, irrespective of socio-economic status or the degree of e-commerce engagement.

H4 The impact of trust and security on purchase behavior varies based on consumer demographics.

S. Yogesh (2022), in his article, stated that the Internet plays a vital role in the competitive world of retail as more customers are showing their interest to purchase products from online stores. These online stores were known for providing more offers and discounts in order to attract new customers and retain their returning customers. Therefore, the main intention of this research was to examine the relationship between E-service Quality and its impact on customer loyalty. The factors assessed were information storage with security and confidentiality, website performance, customer loyalty, job satisfaction, and more. This study made use of primary and secondary data both to carry out the research. From the findings, a relationship between information security and confidentiality and loyalty was clearly observed, as well as a correlation between information security and confidentiality, and loyalty and website performance. Accordingly, age was found to strengthen the relationship between informational security and confidentiality, website performance, and loyalty. Similarly, the correlation between information security and confidentiality, website performance, and loyalty was improved by income, as well as the element of gender.

H5 Demographic variables moderate the relationship between customer support quality and consumer engagement.

CONCEPTUAL MODEL:

RESEARCH METHODS

Research Design

This study employs a descriptive and conclusive research design to investigate the mediating effect of customer demographics on consumer engagement and sales in relation to the independent variables of digital platform usability, personalization features, interactive content, Trust and Security and Customer support services.

Population and Sampling

The population includes consumers who have purchased or intend to purchase FMCG products and are exposed to digital marketing platforms. Since the survey was conducted online, respondents were not limited to a specific geographical area.

Instruments

The questionnaire was structured with items from previous validated scales and also self-developed items to address study specific objectives. A five-point Likert scale was used to capture respondents' opinions, perceptions and attitudes toward digital marketing strategies and purchasing intention.

Sampling Technique

The sampling method used was convenience sampling, targeting individuals who are active on digital platforms. The participants represented a skewed pattern of students leaving behind diverse demographic backgrounds and are well-educated who reflect the online nature of data collection.

Sample Size

A total of 200 valid responses were collected, ensuring the sample size was sufficient for statistical analysis as per the guidelines of Krejci and Morgan (1970).

Data Analysis Techniques

Variables	No of Items	Cronbach Alpha value
Digital Platform Usability	5	0.907
Personalization Features	5	0.915
Interactive content	5	0.909
Trust and security	5	0.889
Customer Support Services	5	0.918
Consumer Engagement and Sales	5	0.898
Demographics	6	0.739

Descriptive statistics, including mean and standard deviation, were used to summarize demographic characteristics. Reliability of the scales was tested using Cronbach's alpha.

Confirmatory Factor Analysis is used that evaluates whether a theoretically constructed model adequately explains the covariances among observable variables and to evaluate the feasibility of one or more theoretical models that depict the links between conceptually defined latent variables and their associated manifest variables, as assessed against sample data. Issues pertaining to goodness of fit are analyzed, with the interpretation of the CFA solution. Structural equation modeling, a multivariate analysis technique is used to investigate intricate interactions between constructs and indicators.

RESULTS AND DISCUSSION
Table-1 Reliability Analysis

Interpretation

The reliability analysis using Cronbach's Alpha reveals that all the variables in the study demonstrate acceptable to excellent internal consistency. The variables Digital Platform Usability ($\alpha = 0.907$), Personalization Features ($\alpha = 0.915$)*, and* Interactive Content ($\alpha = 0.909$) show excellent reliability, indicating that the items under each of these constructs are highly consistent and effectively measure the same underlying concept. Similarly, Customer Support Services has the highest reliability score of 0.918, further confirming excellent internal consistency among its items. The constructs Trust and Security ($\alpha = 0.889$) and Consumer Engagement and Sales ($\alpha = 0.898$) exhibit good reliability, suggesting that while slightly lower than the threshold for excellence, their items still reliably measure their respective constructs. The Demographics variable, with a Cronbach Alpha value of 0.739, demonstrates acceptable reliability. This is reasonable, as demographic variables typically cover a diverse range of aspects such as age, gender, education, and income, which are not expected to be strongly interrelated. Overall, the high reliability scores indicate that the questionnaire used in this study is well-structured and suitable for capturing consistent and dependable responses across the measured dimensions

Confirmatory Factor Analysis
Confirmatory factor analysis (CFA) is a powerful and flexible statistical technique that has become an increasingly popular tool in all areas of psychology including educational research. CFA focuses on modeling the relationship between manifest (i.e., observed) indicators and underlying latent variables (factors). CFA is a special case of structural equation modeling (SEM) in which relationships among latent variables are modelled as covariances/correlations rather than as structural relationships (i.e., regressions). CFA can also be distinguished from exploratory factor analysis (EFA) in that CFA requires researchers to explicitly specify all
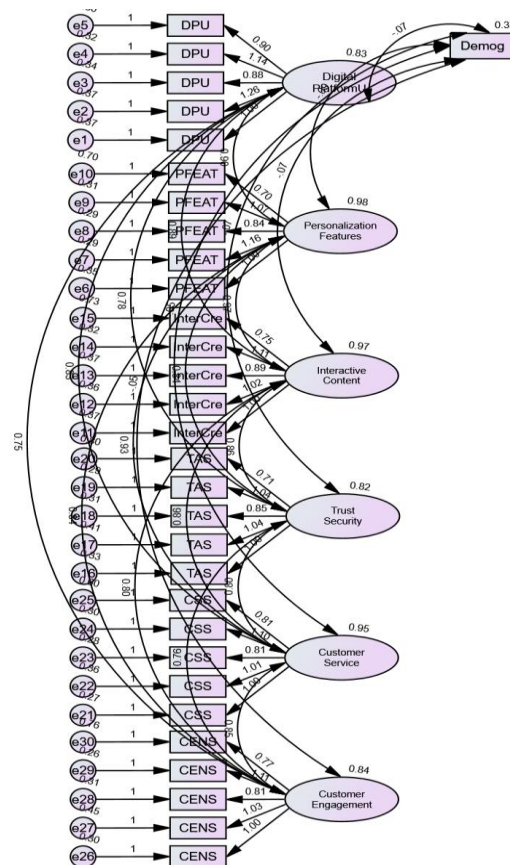
characteristics of the hypothesized measurement model (e.g., the number of factors, pattern of indicator factor relationships) to be examined whereas EFA is more data-driven (Gallagher & Brown, 2013).

Fit Indices	Recommended	Observed	Result
CMIN/df (minimum discrepancy as indexed chi-square)	>5 Terrible, >3 Acceptable, >1 Excellent	2.164	Acceptable Fit
GFI	>0.80	0.818	Good Fit
CFI (Comparative Fit Index)	<0.90 Terrible, <0.95 Acceptable, >0.95 Excellent	0.977	Excellent Fit
TLI (Tucker–Lewis index)	> 0.9	0.950	Excellent Fit
PNFI (Parsimony-Adjusted Measures)	> 0.5	0.657	Good Fit
RMSEA (Root mean square error of approximation)	>0.08 Terrible, >0.06 Acceptable, <0.06Excellent	0.041	Excellent Fit

(Table – 2 Fit Indices of Confirmatory Factor Analysis)

Interpretation

The fit indices obtained from the structural equation modeling (SEM) analysis indicate that the proposed model fits the data well, based on standard benchmark criteria. The CMIN/df value is 2.164, which falls within the acceptable range (between 1 and 3), suggesting a reasonable fit between the hypothesized model and the observed data. The Goodness-of-Fit Index (GFI) value is 0.818, which exceeds the recommended threshold of 0.80. This indicates a good fit and implies that the model accounts for a significant proportion of the variance and covariance in the dataset. Similarly, the Comparative Fit Index (CFI) value is 0.977, which is well above the acceptable threshold of 0.95, indicating an excellent fit. This suggests that the proposed model fits the data significantly better than a null or independent model. The Tucker–Lewis Index (TLI) is reported at 0.950, which also reflects an excellent fit, reinforcing the model's strong ability to explain the relationships in the data. The Parsimony-Adjusted Normed Fit Index (PNFI) is 0.657, which is above the acceptable threshold of 0.50. This indicates a good balance between model complexity and goodness of fit, meaning the model achieves a good fit without being overly complex. The Root Mean Square Error of Approximation (RMSEA) value is 0.041, which is well below the acceptable threshold of 0.06, indicating an excellent fit. A lower RMSEA suggests that the model has minimal error in approximation per degree of freedom. Its observed that, all fit indices either meet or exceed the recommended thresholds, providing strong evidence that the model has a good to excellent fit with the observed data. This confirms the structural validity of the model and supports its use for further interpretation and analysis

Structure Equation Modelling

Structural equation modeling is a multivariate data analysis method for analyzing complex relationships among constructs and indicators. To estimate structural equation models, researchers generally draw on two methods: covariance-based SEM (CB-SEM) and partial least squares SEM (PLS-SEM). Whereas CB-SEM is primarily used to confirm theories, PLS represents a causal–predictive approach to SEM that emphasizes prediction in estimating models, whose structures are designed to provide causal explanations. PLS-SEM is also useful for confirming measurement models (Hair et al., 2021).

Fit Indices	Recommended	Observed	Result
CMIN/df (minimum discrepancy as indexed chi-square)	>5 Terrible, >3 Acceptable, >1 Excellent	2.107	Acceptable Fit
GFI	>0.80	0.829	Good Fit
CFI (Comparative Fit Index)	<0.90 Terrible, <0.95 Acceptable, >0.95 Excellent	0.962	Excellent Fit
TLI (Tucker–Lewis index)	> 0.9	0.918	Excellent Fit
PNFI (Parsimony-Adjusted Measures)	> 0.5	0.556	Good Fit
RMSEA (Root mean square error of approximation)	>0.08 Terrible, >0.06 Acceptable, <0.06Excellent	0.021	Excellent Fit

(Table – 3 Fit Indices of Structure Equation Modelling)

Interpretation

The structural equation modeling (SEM) analysis presents a set of fit indices that collectively demonstrate a strong model fit. The CMIN/df observed value is 2.107, which falls within the acceptable range (1–3). This indicates that the difference between the observed and expected covariance matrices is not too large, and thus the model fits the data reasonably well. The Goodness-of-Fit Index (GFI) has an observed value of 0.829, which is above the recommended minimum of 0.80. This reflects a good fit, signifying that the model explains a substantial proportion of the variances and covariances in the data. The Comparative Fit Index (CFI), the value is 0.962, which is above the 0.95 threshold, indicating an excellent fit. This suggests the model fits significantly better than an independent (null) model and captures the data structure well. The Tucker–Lewis Index (TLI) value of 0.918 also reflects an excellent fit, further affirming that the model is well-specified and not overfitting the data. The Parsimony-Adjusted Normed Fit Index (PNFI) is 0.556, which is above the minimum threshold of 0.50. This value indicates a good balance between model fit and simplicity, meaning the model fits well without being unnecessarily complex. The Root Mean Square Error of Approximation (RMSEA) value is 0.021, which is significantly below the 0.06 threshold, suggesting an excellent fit. A low RMSEA value indicates that the model has a minimal error of approximation, making it a very precise representation of the population data structure. It's observed that, all fit indices fall within the acceptable or excellent range, indicating that the structural model is robust, well-fitting and suitable for further interpretation and application. The combination of excellent and good fit indices provides strong evidence of the model's validity in explaining the relationships among the observed variables.
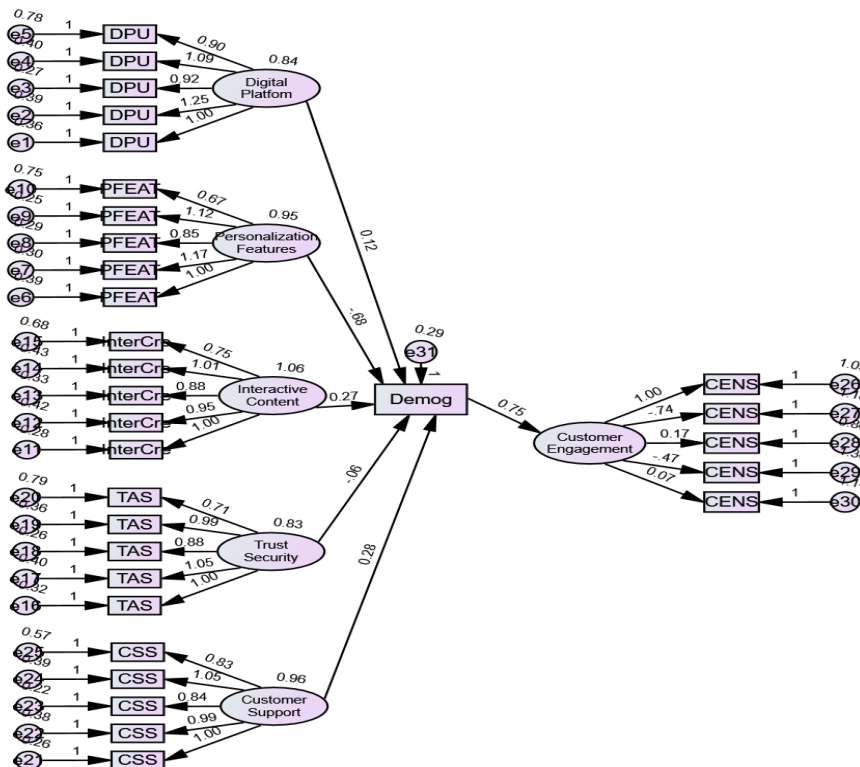
Table -3 Hypothesis Testing

Hypothesis	P-Value	Result
Digital Platform Usability & Demographics	0.010	Significant
Personalization Features & Demographics	0.000	Significant
Interactive content & Demographics	0.000	Significant
Trust and security & Demographics	0.188	Not Significant
Customer Support Services & Demographics	0.000	Significant
Demographics & Consumer Engagement and Sales	0.000	Significant

Interpretation

The hypothesis testing results indicate how demographic factors such as age, gender, education, occupation and income are related to various digital platform features and consumer engagement, with the help of p-values which show whether these relationships are statistically significant, meaning whether the observed effects are genuine or could have occurred by chance. The relationship between Digital Platform Usability and Demographics has a p-value of 0.010, means the relationship is statistically significant, suggesting that demographic characteristics have a meaningful impact on how users perceive or experience the usability of digital platforms. Similarly, the relationship between Personalization Features and Demographics is also significant with a p-value of 0.000, showing that different demographic groups have different expectations or preferences when it comes to personalized content or services offered on digital platforms. For Interactive Content and Demographics, where the p-value of 0.000 confirms a strong, significant relationship. This means that users' interaction with digital content varies across demographic segments. In contrast, the relationship between Trust and Security and Demographics has a p-value of 0.188, which is not significant. This means that demographic differences do not have a major influence on how users perceive the trustworthiness or security of the digital platform. The relationship between Customer Support Services and Demographics is significant with a p-value of 0.000. This implies that demographic factors play an important role in how users value or respond to customer support services on digital platforms. Finally, the relationship between Demographics and Consumer Engagement and Sales is also highly significant with a p-value of 0.000. This suggests that consumer engagement and purchasing behavior on digital platforms differ across demographic groups. The most digital platform features, except for trust and security, others are significantly influenced by demographics. This highlights the importance of tailoring digital strategies according to different demographic profiles to enhance usability, personalization, content interactivity, support services, and consumer engagement.

CONCLUSION

The demographic factors significantly influence how consumers interact with various features of digital platforms in the FMCG industry. Key components such as usability, personalization features, interactive content, and customer support services showed a strong and significant relationship with demographics, indicating that consumer behavior and engagement vary across these parameters. Even, demographic factors were found to have a significant impact on consumer engagement and sales, reinforcing their role as mediators in the digital consumer journey. It was observed, trust and security did not show a significant relationship with

demographics, suggesting that the trust and security is universally valued regardless of consumer background. The overall model fit indices confirmed the robustness and validity of the conceptual framework, supporting the hypothesized relationships. These findings emphasize the importance for FMCG brands to customize their digital marketing strategies based on demographic segments to maximize engagement and drive sales. Utilizing certain digital channels is ever more critical to consumer interaction and sales in the FMCG sector. These channels tend not to penetrate all segments of consumers, particularly in rural or low-connectivity regions. The online space is extremely competitive and cluttered, requiring ongoing investment in marketing and content to stay in touch. Shorter attention spans, changing consumer habits and the threat of negative word-of-mouth make digital marketing more complicated. The FMCG businesses need to have a balanced, responsive, and multi-channel strategy that harmonizes digital initiatives with offline operations, providing enduring consumer engagement and sustained long-term growth in a changing marketplace.

LIMITATIONS

Utilizing select digital channels for consumer interaction and sales in the FMCG space offers significant potential but also faces considerable constraints. A major challenge is limited audience coverage, as not all consumer segments particularly older groups and those in rural or underserved areas are active online, restricting the brand's reach. And reliance on a few digital platforms exposes brands to risks like regulatory shifts and service disruptions that can reduce visibility and engagement. The crowded and competitive digital environment makes it difficult for FMCG brands to stand out without sustained investment in creative marketing. Measuring the effectiveness of digital efforts is also challenging as linking online engagement to offline sales might be inaccurate. Maintaining a strong digital presence requires significant resources including skilled talent, ongoing content creation and data analysis, which can be especially difficult for smaller brands. With constantly evolving consumer preferences and platform updates, FMCG companies must continually adapt their strategies to remain relevant and impactful.

SCOPE FOR FUTURE RESEARCH

The future scope of this research offers several promising directions. The platform-specific studies can be conducted to understand how various digital platforms such as mobile apps, e-commerce websites and social media channels individually influence consumer engagement and sales in the FMCG sector. The future research could expand beyond demographics to include behavioural and psychographic variables such as lifestyle, digital literacy and shopping motivations, offering a more comprehensive view of consumer engagement. Conducting longitudinal studies would help to capture the changes in consumer behavior over time and assess the evolving influence of digital strategies. Additionally, studies could be extended to different geographical regions to understand the cultural and regional variations in digital platform usage. The integration of emerging technologies such as artificial intelligence, Chatbots and augmented reality in digital marketing strategies also presents a valuable area for exploration, especially in terms of how these innovations appeal to various demographic segments. Even analysing the impact of digital engagement on post-purchase behavior such as customer satisfaction, loyalty and repeat purchases, could provide deeper insights into long-term business outcomes for FMCG brands.

DISCUSSION

The findings from this study offer valuable insights into how digital platform features influence consumer engagement and sales in the FMCG industry, particularly when mediated by demographic factors. The high Cronbach's Alpha values for all constructs, ranging from 0.889 to 0.918, indicate excellent internal consistency, confirming the reliability of the measurement scales used to assess digital usability, personalization, interactivity, trust, support services, and consumer engagement. The demographic construct, with an alpha value of 0.739, also showed acceptable reliability, given its diverse nature. The structural equation modeling (SEM) provided robust model fit indicators. The values for CMIN/df, GFI, CFI, TLI, PNFI, and RMSEA all fell within acceptable to excellent ranges (e.g., CMIN/df = 2.107, RMSEA = 0.021, CFI = 0.962), confirming that the proposed model is statistically sound and well-suited to represent the observed data. These results validate the framework linking digital platform features, demographics, and consumer engagement outcomes. Hypothesis testing using p-values revealed that most digital features—namely digital platform usability, personalization features, interactive content, and customer support services had a significant relationship with demographic variables, indicating that factors such as age, gender, income, and education influence how consumers interact with and respond to digital touchpoints. These results underline the importance of segmenting digital strategies based on demographic profiles to maximize engagement. However, the relationship between trust and security and demographics was found to be non-significant (p = 0.188), suggesting that trust and security are universally important across demographic segments and may not require tailored approaches. Furthermore, demographics were also found to significantly influence consumer engagement and sales (p = 0.000), highlighting their mediating role in shaping the effectiveness of digital strategies. This emphasizes the need for FMCG companies to consider demographic nuances when designing digital campaigns to enhance consumer relationships and drive purchase behavior. Overall, the statistical analysis supports the conclusion that while digital platform features are critical drivers of engagement and sales, their effectiveness is significantly influenced by the demographic profile of consumers. Therefore, personalization, interactivity, and responsive support must be designed with demographic diversity in mind to achieve optimal marketing outcomes in the FMCG sector

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