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CONSUMER PERCEPTION AND APP LOYALTY THROUGH PERSONALIZED PUSH NOTIFICATIONS

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ABSTRACT

Research explores the influence of personalized push notifications on perception and app loyalty in the context of online shopping. With the rise of digital marketing, personalized notifications have emerged as a critical tool for enhancing user engagement and driving purchase decisions. The consumers aged 18 to 25 were the subjects of the study and reveals that most of the participants receive personalized notifications, primarily from shopping apps like Amazon. Findings indicate that users perceive these notifications as highly relevant, positively influencing their shopping experiences. However, privacy concerns and the potential for misleading content pose significant challenges. The analysis shows a moderate positive relationship between personalized push notifications and app loyalty, suggesting that effective customization can enhance user satisfaction. No significant differences in perception were found across gender and occupation, indicating a collective awareness of the advantages and drawbacks of personalized marketing. Future research can be done to investigate the long-term effects of personalized notifications on app loyalty or preferred notification content and formats and assess consumer awareness regarding innovative marketing strategies. By addressing privacy concerns and optimizing notification strategies businesses can improve trust and enhance customer loyalty in an increasingly competitive digital world. Besides, understanding user preferences for notification frequency and content can further refine marketing strategies, ensuring that push notifications remain engaging rather than intrusive. By leveraging the information from consumers, marketers can create a more personalized experience that not only enhances revenue but also cultivates long-term loyalty and utility.

KEYWORDS: App Loyalty, Digital Marketing, Perception, Personalised Push notifications

INTRODUCTION

Digital marketing encompasses a variety of strategies, including content marketing, blogging, pay-per-click advertising (PPC), social media marketing, and online advertising (Thilo Kunkel, 2023). These strategies are essential for companies seeking to differentiate themselves from competitors and achieve sustainable growth. In recent years technological advancements and rapid digitalization of industries have significantly fuelled the growth of digital marketing, particularly in India. As consumers increasingly engage with brands through digital channels, understanding the mechanism that fosters consumer loyalty has become more important than ever. Recent research indicates that most consumers have downloaded applications from their favorite brands by enabling push notification alerts (Relanda 2019). This trend highlights the potential of push notifications to not only enhance consumer loyalty but also stimulate spontaneous purchases (Hoffman 2022). Push notifications are pop-up messages that appear on the user's screen, serving as an effective digital marketing tool. They are designed to engage users actively and have been adopted by numerous companies worldwide. However, while personalized push notifications can enhance user loyalty and retention they can also be perceived as intrusive by some users (Gavilan & Gema 2022). In today's competitive landscape, companies must refine their approach to push notifications to capture the attention of their target audience effectively. This is particularly relevant for shopping apps, where push notifications play a vital role in informing and retaining users. These notifications can provide valuable information, make personalized recommendations, offer order and shipping updates, and encourage user reviews, thereby fostering a connection between the brand and the consumer.

The effectiveness of push notifications lies in their ability to communicate directly with users in a timely and personalized manner. By delivering relevant information, reminders, and offers straight to the consumers' devices, brands can capture attention and encourage interaction. Personalized push notifications are particularly potent, as they resonate more deeply with users by aligning with their preferences and behaviors. This customized approach not only enhances user engagement but also improves a sense of loyalty, making consumers more likely to return to the brand for future purchases. It is important to recognize that not all users appreciate this form of communication; some may find it to be intrusive or annoying (Pretolesi et.al. 2023; Wohllebe, 2020) Therefore, it is challenging for organizations to strike a balance between engaging consumers and respecting their preferences. These notifications help in connecting and communicating with various users delivering timely and important messages to their smartphones (HaithamEl, 2016). However, many of the users also find these notifications disturbing and misleading due to their ineffective content and frequency. Therefore, businesses must work on their push notifications to make them more interactive and effective. Analyzing these notifications from the viewpoint of consumers is very necessary for companies to know about the attitudes of different consumers towards the various pop-up notifications. This research aims to address the following key questions: Does push notifications influence the purchase

decision of consumers? Does continuous push notifications on mobile phones make the user loyal to any specific app? Does it satisfy the user's needs? Do push notifications make users feel distracted and misleading? The purpose of the research is to investigate consumer perception and engagement on personalized push notifications of apps and to explore how this marketing strategy is contributing towards app loyalty.

RELATED LITERATURE

Digital marketing strategies increasingly rely on customized communication, and understanding how different notification types influence user engagement is vital. Kunkel (2023) examined how different motivational affordances in push notifications influence subsequent app usage. Through an online experiment, survey, and in-app field experiment, findings revealed that progression notifications were selected most frequently, followed by social notifications, highlighting the varying impacts of notification types on user engagement. Pretolesi et al. (2023) focused on mobile applications promoting social and mental well-being, finding that respondents found notifications useful, while some deemed them disruptive. This suggests that user attitudes toward notifications vary, emphasizing the importance of customization to enhance user experience. Fraser et al. (2019) investigated persuasive elements in push notifications to improve delivery outcomes. Their smartphone app study demonstrated that personalized persuasive notifications significantly increased click-through rates, indicating the potential of tailored content to drive user interaction. Rigollet and Kumlin (2015) explored the impact of mobile notifications on online shopping behavior, finding that push notifications could stimulate impulsive buying. This aligns with the idea that timely marketing communications can effectively influence consumer decisions. Pielot et al. (2018) users manage daily notifications, revealing that the average individual received a median of 56 notifications daily; and distinguished between individual and group messages, suggesting a need for balance in notification types to prevent user fatigue. Wohllebe et al. (2021) examined push notifications in a retail context, demonstrating that increased frequency of non-personalized notifications correlated with higher uninstall rates. This underscores the risk of overwhelming users with excessive notifications. Freyne et al. (2017) analyzed how task notifications can encourage dietary changes. Although initial engagement was positive, user response waned over time, suggesting that while notifications can drive engagement, they must be sustained effectively. Czakó (2020) studied the effects of a 48-hour push notification "detox" on users' emotional well-being. The research showed no significant impact on positive or negative affect, implying that some users may benefit from reduced notifications to enhance well-being. Costacurta (2019) assessed how push notifications from supermarket apps influence purchasing decisions and indicated that users receiving notifications had higher average monthly grocery expenses, suggesting that well-timed alerts can effectively drive sales. Jacob and Gupta (2017) identified the push notification formats that entice user engagement, highlighting the importance of factors such as trust and informativeness in shaping user responses. Heinisch et al.

(2021) the relationship between user habits and notification response times and indicated that physiological signals could predict response times, underscoring the complexity of user interactions with notifications. Fahlman et al. (2018) addressed how social networking app notifications can maintain user interest. They found that users often dislike excessive notifications, emphasizing the need for a balanced approach to user engagement. Based on the review of existing literature the objective of the study is framed as:

To exhibit consumer perception towards personalized push notifications.

To identify the influence of personalized push notifications in creating loyalty among apps.

METHODOLOGY

The study employs an analytical research design to investigate the influence of personalized push notifications on consumers' perceptions in the context of online shopping. Purposive sampling method to select participants who meet specific criteria relevant to the research objective. The target population consists of consumers aged between 18 and 25 years residing in Calicut city who actively participate in online shopping. This criterion ensures that the sample comprises individuals who are likely to have encountered personalized push notifications and can provide valuable insights regarding their influence on shopping. Primary data for this research was collected through a structured questionnaire designed to capture various aspects of consumer perception regarding personalized push notifications. The questionnaire was carefully constructed to include both closed-ended and Likert-scale questions to quantify responses effectively. The survey instrument was designed to cover key variables, including consumer awareness, engagement with push notifications, perceived relevance, and influence on purchasing decisions.

RESULTS

The survey comprised a hundred respondents, with a gender distribution of fifty-one males and forty-nine females. A significant majority, 70% were identified as students, while 26% were employed. Educationally, 85% of the sample were graduated and above. Notably, 96% received personalized push notifications from shopping apps, and 73% reported shopping regularly. Among the shopping apps, Amazon emerged as the most favored, followed by Myntra. The findings indicated that notifications about discounts and exclusive offers significantly enhance consumer engagement. While assessing the perception of these notifications, the majority agreed that this enhances their shopping quality and is relevant in decision-making. Some of the respondents expressed their concern regarding privacy issues while using these notifications. Regarding app loyalty, catchy notifications increase engagement, with a majority (70%) favoring image-rich notifications. Conversely, 45% of respondents felt notifications were often misleading, and 52 found the content and timing unsatisfactory.

Consumer Perception on Personalised Push Notification:

Personalized push notifications have become important for enhancing consumer engagement and driving purchasing decisions (Heinisch et al. (2021). Understanding consumer perceptions of these notifications is essential for optimizing their effectiveness and addressing potential concerns the descriptive statistics related to consumer ranking of various aspects of personalized push notifications provide insight into how consumers view the relevance quality enhancement privacy implications and satisfaction associated with these notifications. The findings came to inform strategies for improving user experience in addressing consumer concerns in the context of personalized marketing.

Table1: Perception of Personalised Push Notification

Factors	Mean	Std. Deviation
Relevance	3.8600	.80428
Enhances quality of shopping	3.8200	.78341
Privacy concerns	3.6000	.93203
Purchase decisions	3.6000	1.03475
Opt out notifications	3.5500	1.02863
Utility	3.4700	.88140

(Source: Primary data)

The analysis reveals that the highest-ranked perception is relevance, indicating that consumers find personalized notifications highly pertinent to their shopping experiences. Following closely, the second rank is attributed to the perception that these notifications enhance the quality of shopping. Concerns regarding privacy and its influence on purchase decisions are tied for the third rank reflecting a notable awareness among consumers regarding the implications of personalised notifications. The ability to opt out of notification is ranked fifth, highlighting consumers' agency in managing their engagement. Lastly, satisfaction is ranked, showing a moderate level of contentment with the notifications received. The findings show that consumer perception is balanced between engagement and utility against concerns about privacy and content relevance.

Gender and Perception:

H1: There is a significant difference between the gender perception of consumers on personalized push notifications.

Table 2: Gender and perception of consumers on personalized push notifications

Group	Mean Rank	Mann Whitney U Test	P Value
Male	56.84	926.000	0.16
Female	43.90		

(Source: Primary data)

The mean rank for males is slightly higher than that for females, indicating that on average Males (56.84) may have a slightly higher perception response as compared to females (43.90). The difference in mean rank is tested and verified with the help of Mann-Whitney U Statistics and significance value. Hence it has failed to uphold the hypothesis at 5% level of significance with U statistics of 926.000 and a significance value of 0.16, subsequently, there exists no significant difference in the mean rank of gender and perception variables of personalized push notifications.

Occupation and perception:

H1: There is a significant difference between occupation and perception of consumers on personalized push notifications.

Table 3: Occupation and perception of personalized push notifications

Total N	100
Test Statistics	1.746
Degree Of Freedom	2
Asymptotic Significance	.418

(Source: Primary data)

Based on the p-value, the significance is more than 0.05. Therefore, it has failed to uphold the hypothesis. This suggests that there is no significant difference between occupation and the perception

variables of consumers on personalized push notifications.

Personalized Push Notifications and App Loyalty:

Personalized push notifications a customized to individual preferences and behaviors, aiming to provide relevant information and offers that resonate with users. By capturing their attention and driving interactions, personalized notifications can significantly influence consumers' perceptions and experiences with an app. Understanding the relationship between these notifications and app loyalty is essential for business organizations, seeking to retain their users and maximize the effectiveness of their marketing efforts.

H1: There is a significant influence on personalized push notifications on app loyalty

$$Y = \alpha + \beta X + e$$

The regression model explains app loyalty as the dependent variable (Y) and personalized push notification (X) which explains the features of these variables.

Table 4: Summary of Regression Analysis

Variable	Unstandardized coefficient	Standardized coefficient Beta	Standard Error
Affectivity	.561	.550	.62222

$r^2 = .303$, adjusted $r^2 = .296$, p value = .000 (source: primary data analysis)

The affectivity variable has an unstandardized coefficient of .561, which indicates that for each one-unit increase, the dependent variable is estimated to increase by .561 units. The Beta value of .550 in the standardized coefficient indicates the strength and direction of the relationship. The result suggests a moderate positive relationship between personalized push notifications and app loyalty.

DISCUSSION

The study is aimed to explore consumer perceptions of personalized push notifications and their influence on app loyalty. The findings show the critical role that these notifications play in enhancing consumer engagement and satisfaction in online shopping. Most respondents (96%) stated that they receive tailored push notifications from shopping apps and Amazon appears to be the most preferred platform. Considering the high engagement rates (73% shopping frequently), these notifications pique

consumer engagement and interest and are effective in marketing when there are sales and exclusive offers. Descriptive statistics revealed that relevance is the highest-ranked perception among consumers, indicating that users find these notifications pertinent to their shopping experiences. These findings suggest that customizing notifications to individual preferences can significantly enhance their effectiveness. Conversely, the concerns regarding privacy and the perceived misleading nature of some notifications highlight a double-edged sword while personalized push notifications can increase engagement, they also raise significant privacy issues that businesses must address to maintain consumer trust. The analysis of gender and occupation perceptions revealed no significant differences as indicated by the test statistics. This suggests that consumer perceptions of personalized push notifications are largely homogeneous across different demographics within the study population. Such uniformity in perception may indicate a collective understanding of the advantages and potential drawbacks associated with personalized marketing tactics.

The regression analysis established a moderate positive relationship between personalized push notifications and app loyalty, this suggests that effective personalized notification can significantly contribute to users' loyalty towards an app the models' explanatory power indicated by the r^2 value of .303, implies that while personalized push notifications are influential other factors also play a crucial role in shaping app loyalty. In summary, this research highlights the importance of personalized push notifications in enhancing consumer engagement and app loyalty. While relevance and quality can significantly boost user satisfaction, businesses must also navigate privacy concerns to optimize their effectiveness. These findings provide valuable insights for marketers seeking to leverage personalized notifications in their strategies, emphasizing the need for a balance between engagement and consumer privacy. Future research could explore the long-term effects of personalized notifications on app loyalty across diverse consumer demographics and contexts.

CONCLUSION

The research highlights the importance of personalized push notifications in enhancing consumer engagement and app loyalty in online shopping. The findings indicate that most users appreciate the relevance of these notifications, particularly from preferred platforms like Amazon; however, concerns about privacy and potentially misleading content present challenges for businesses. To optimize the effectiveness of personalized marketing, companies must balance user engagement with privacy considerations. Research highlights how crucial customized notifications are for building customer loyalty while also pointing out the need for strategies that prioritize consumer trust and satisfaction. Businesses must navigate these challenges carefully while creating and sustaining marketing strategies. Future research can be focused on the long-term effects of personalized push notifications, the notification contents and preferred forms, advertisements using AI and machine learning, and assessing consumer education regarding the benefits and uses of push notifications.

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