



The Role of Hyper-Personalized Marketing in Building Customer Loyalty across Digital Platforms: The Mediating Role of Digital Customer Experience

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Abstract.

What follows raises an intriguing question regarding a complicated behavior: is personalized marketing by the organization enough to generate loyalty at the customer level, or does this loyalty rely on something in between — specifically on the actual customer experience of using the network? This study tests this question by focusing on the relationship of hyper-personalized marketing to customer loyalty on the network and the mediation role of digital customer experience in that relationship. Data from 420 users were collected through a five-point Likert questionnaire, where users have experience of e-commerce, digital banking, and social media platforms. Data were analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method in two stages: first, the measurement model was used for assessment, and second, PLS-SEM structural model was used, using bootstrapping with 5,000 samples.

The concept of hyper-personalized marketing was seen to have a considerable amount of influence over digital customer experience ($\beta = 0.578$, $p < .001$), while the digital experience in turn was responsible for predicting customer loyalty ($\beta = 0.389$, $p < .001$). Besides, the effect of personalization remained effective in affecting the loyalty in a way that was determined after considering the experience part ($\beta = 0.213$, $p < .001$). Furthermore, mediation analysis proved that digital experience partially, though complementarily, acts as mediator for personalization towards loyalty (indirect effect = 0.225, 95% CI

[0.163, 0.286]), meaning that around half of the effect of personalization occurs via the digital experience of the customer instead of directly.

What we present in this model is instead not so much any one way of doing things, but rather the model itself: our contribution includes combining AI-powered hyper-personalization with digital customer experience in one coherent model tested in three different ways rather than just one, as is done in the majority of the present-day references on the topic. For practitioners, the significance lies in the idea of personalization technology and experience design not being the same thing. Allocating investments in one of the fields yet ignoring the other will result in numerous lost opportunities, as being able to use personalization technology effectively without attention being paid to designing the customer experience will still leave a significant part of the loyalty benefit on the table.

Keywords: Hyper-personalized marketing; Digital customer experience; Customer loyalty; Digital platforms; PLS-SEM.

1. Introduction

It is difficult, nowadays, to discuss customer behavior on a digital platform without discussing the algorithm that is idly determining what to show them next. E-commerce websites, banking apps and social networks are essentially competing on the same ground: knowing customers well enough to treat them as individuals instead of rows in the segmentation table.

The transition to that has been induced by AI and massive amounts of behavior data, which has given rise to much more sophisticated methods of marketing than the segmentation-based one that conventional marketing books talk about now called the hyper-personalized marketing. It does not merely segment the market but transforms messages, offers, and recommendations while customers are using the platform.

However, it is important to note that technology by itself provides no guarantees. A person who has an opportunity to switch from one platform to another with a single click does not stay with his current provider simply because he is satisfied. Customer loyalty is much more important because it describes the ability of a customer to make repeat purchases as long as the alternative is only one tap away. There is a question that arises but is not answered by the personalization research: does the customer's loyalty depend only on correct personalization of the message or it is affected by more complex factors like customer's experience of interacting with the platform, the platform's ease of use, its speed and others? Researchers believe that digital customer experience is the missing link in the effect of personalization turning into customer loyalty.

From the existing literature, it is apparent that the vast majority of studies focus either on the impact of personalization on loyalty or customer experience on loyalty, seldom taking into consideration both of these concepts together in one model that shows how each one functions and where they overlap, and even more seldom across at least one kind of platform in the framework of one study. The present research aims to fill in this gap, relying on one specific research question: does digital customer experience act as a mediating factor in the relationship between hyper-personalized digital marketing and customer loyalty across different digital platforms?

1.1 Research Objectives

The investigation has the following goals:

- To assess the influence of hyper-personalized marketing on the digital customer experience.
- To assess the influence of digital customer experience on customer loyalty.
- To assess the influence of hyper-personalized marketing on customer loyalty directly.
- To evaluate the mediating role of digital customer experience in determining the

relationship between hyper-personalized marketing and customer loyalty.

1.2 Significance of the Study

From the theoretical standpoint, the contribution of the study is the integration of AI-powered hyper-personalization with digital customer experience in a unified framework tested with a cutting-edge statistical method (PLS-SEM), contributing to the development of knowledge in the area of digital marketing and customer loyalty. Practically, the findings offer managers in digitally-dependent companies practical strategies to make sound decisions, weighing the investment priorities in terms of personalization technologies and digital experience design, as the two components are treated in this study as being jointly responsible for contributing towards brand loyalty and maintaining competitive advantage.

2. Literature Review and Hypothesis Development

2.1 Hyper-Personalized Marketing

The concept of personalization is quite an ancient one in marketing literature. Vesanen (2007) defined personalization as the process of customization of the marketing communication to a specific customer instead of treating him as any member of the entirely homogeneous segment. What has changed nowadays is not the idea, but the means of its implementation: nowadays, machine-learning algorithms and big data analytics are capable of analyzing customer behavioral patterns in real-time, allowing the companies to make offers or recommendations even before the customer finishes browsing the website. This is the fundamental difference between hyper-personalization and personalization based on the particular segments and general demographic characteristics (Behera et al., 2020; Rane et al., 2023).

Although it has this technological effectiveness, this does not imply that it assures a positive output. Massoudi et al. (2023) also discovered that customized campaigns do improve engagement and reply rates, but Martin and Murphy (2017) pointed out that the difference between the personalization that makes a consumer feel appreciated and the personalization that makes them feel surveilled is quite small, and how a company treats confidentiality and how transparent it is concerning its data exploitation determines which of the two experiences the customer will have.

2.2 Digital Customer Experience

While a company's actions are about personalization, the outcomes for the customer are the digital customer experience. Portes et al., (2020) explain that this experience is the totality of what a customer perceives from various interactions with the brand through digital contact points and it is based on factors like usability and responsiveness among others instead of just one transaction. Kim and Ko (2020) observed that when talking about brands on social media platforms, the role of transparency and interaction quality is greater than that played by the rest of the components of the customer experience.

2.3 Customer Loyalty

Loyalty is defined by Ball et al. (2006) as a commitment not just a repeat purchase; it is also the resistance to external pressures and offers that could tempt a customer to change places. To understand what this commitment implies, Baird and Maruping (2021) make it possible to break that commitment into some measurable aspects, such as the intention to repurchase, the willingness to refer an adoption platform to others, and persistence in using the platform even though there are some alternatives.

2.4 Hyper-Personalized Marketing and Digital Customer Experience

The relationship between the two concepts is rather straightforward: as the perceived relevance of the messages and propositions offered to a customer goes higher, he or she ranks the aspects of the selected platform positively, such as its usability and interactivity. Rane et al. (2023) arrived at this conclusion regarding the customer relationship management systems, which was supported by the research conducted by Wolniak and Grebski (2023), which proved a similar issue within product customization in Industry 4.0. Therefore; H1: Hyper-personalized marketing positively influences the digital customer experience.

2.5 Digital Customer Experience and Customer Loyalty

There is also evidence of the reverse relationship – that customers with good experiences are likely to keep returning for more, recommend a platform to others, and that one bad experience is often sufficient to turn them to a competitor. Ibrahim (2025) focused on this relationship in banking and found that customer experience is a better predictor of customer loyalty than the degree of digital transformation. Zhang et al.

(2023) identified the link between digital interaction quality and customers' affective commitment to the platform. Therefore:

H2: Digital customer experience positively affects customer loyalty.

2.6 The Direct Effect of Hyper-Personalized Marketing on Customer Loyalty

However, the influence of personalization on loyalty might not operate only through experience; it might also immediately impact the customer, because the customer feels understood as a unique, individual being regardless of the technology employed to deliver the service and the effectiveness of the platform. The idea has been studied by López García et al. (2019) when discussing attractiveness and loyalty of users, by Muharam (2024) in the field of innovative digital marketing strategies, and by Al-Dosari (2024) in terms of the Saudi market where the effect of personalized digital marketing on customer behavior and company profitability was evident without any intermediary being utilized. Thus,

H3: Hyper-personalized marketing has a positive direct influence on customer loyalty which is statistically significant.

2.7 The Mediating Role of Digital Customer Experience

In the case where H1 and H2 hold, a logical third option arises: part of the impact of personalization on loyalty is actually not direct in nature, but takes shape through its positive impact on experience. This is basically what Ibrahim (2025) discovered in the field of banking, where customer experience acted as a mediator for the connection between digital transformation and loyalty. In a totally different context, Vo et al.'s (2025) study regarding social media virtual influencers serves as another confirmation of the idea stated above: as in that case, the impacts of digital marketing activities on loyalty have rarely been absolute and direct, rather functioning through mediating factors like interaction quality. To evaluate the significance of the indirect impact, the present paper employs the bootstrapping technique proposed by Preacher and Hayes (2008), which is a more recognized method allowing to discard normal distribution assumptions present in the classical Sobel test. Therefore, the author formulates the fourth hypothesis:

H4: Digital customer experience mediates the effect of hyper-personalized marketing on customer loyalty.

2.8 Conceptual Model

Based on all the information presented, the research brings forth an innovative conceptual model in which the independent variable hyper-personalized marketing is assessed based on specific factors of content personalization, personalized recommendations, AI technology, customer data analysis, and real-time communication, the mediating variable digital customer experience is evaluated

according to the characteristics of usability, interactivity, responsiveness, personalization, and experience satisfaction, and the dependent variable customer loyalty is examined on the basis of repurchase intention, referral to others, commitment to the platform, and engagement levels, which is explained in Figure 1.

Figure 1: Conceptual Model of the Study

Independent Variable Hyper-Personalized Marketing	→	Mediating Variable Digital Customer Experience	→	Dependent Variable Customer Loyalty
• Content customization • Personalized recommendations • Artificial intelligence • Customer data analytics • Real-time interaction	H1	• Ease of use • Interactivity • Responsiveness • Personalization • Experience satisfaction	H2	• Repurchase intention • Recommendation to others • Platform commitment • Continued engagement

3. Methodology

3.1 Research Design

The study follows a quantitative, descriptive-analytical design with a cross-sectional survey structure, using an electronic questionnaire administered to users of digital platforms.

3.2 Population and Sample

The sample universe included those who used a combination of digital platforms, including e-commerce platforms, online banking apps, and social media. Convenience sampling was applied and 420 valid responses were retained for analysis after eliminating responses that were either incomplete or showed discernible patterns. This sample size is bigger than the minimum sample size according to the old criterion of tenfold number of paths entering any latent variable and is also much more than the stricter criterion provided by some statistical power tables (Cohen, 1992) where a medium R^2 can be detected at a 5% significance and 80% power level which is what Hair et al. (2019) recommend using instead of the $\times 10$ rule to justify sample size in PLS-SEM research.

3.3 Instrument and Measurement

A standardized five-point Likert questionnaire (1 = strongly disagree, 5 = strongly agree) was used in data collection, which included five items relating to hyper-personalized marketing, five items relating to digital customer experience, and four items measuring customer loyalty taken from previously validated measures (Ball et al., 2006; Portes et al., 2020; Rane et al., 2023) after modifying them according to the requirements of the multi-platform digital situation. Because all three constructs used the same means of measurement, from one source, at one point in time, the data collected may have the potential of being affected by common method bias. To counteract this risk, the survey design and format of the questionnaire included a physical separation of the item blocks of the three constructs mentioned above; the questionnaire consisted of straightforwardly worded items; and respondents were ensured of anonymity; however, procedural measures cannot inherently minimize the common method bias effect, thus retaining the necessity to carry out a formal statistical test explaining common method variance (for instance, Harman's single-factor test or a multicollinearity variance inflation factor check) before interpreting the results of the study – this issue is also mentioned in the research limitations described in Section 7.

3.4 Statistical Analysis

Partial Least Squares Structural Equation Modeling (PLS-SEM) method was used to analyze data in the desired two-phase approach as recommended by Hair et al. (2019), with first the assessment of measurement model (reliability, tested by the use of Cronbach's alpha and composite reliability; validity such as convergent validity, assessed using average variance extracted; validity is assessed based on the Fornell-Larcker criterion and HTMT measurement) and

then, the assessment of structural model (path coefficients β , the coefficient of determination R^2 , predictive relevance Q^2 , and effect size F^2), after confirming which that the respective structural paths have no significant collinearity concerns. As there is only one latent variable of interest in the model, that of customer loyalty receiving two paths through hyper-personalized marketing as well as through digital customer experience, therefore, the variance inflation factor can be easily determined with the use of the correlation between them ($r = 0.512$, Table 4) according to $VIF = 1 \div (1 - r^2)$, which results in the calculated importance of 1.355 points for both paths since it is below the conservative threshold of 3.3, which was established by Hair et al. (2019) and below the accepted value of 5 at the same time. As for the mediator path under consideration (digital customer experience), it has only one predictor being hyper-personalized marketing which allows stating that VIF for it being equal to 1 since it is calculated according to the definition. Therefore, collinearity is not an issue in the respective model and results of the path coefficients (β) can be interpreted clearly. The significance of the direct and indirect paths was determined using the bootstrapping method with the total of 5000 repetitions with the bias-corrected confidence interval in accordance with Preacher and Hayes (2008) in relation to H4.

4. Results

4.1 Sample Demographics (n = 420)

Table 1: Demographic Characteristics of the Sample

Variable	Category	Frequency	Percentage
Gender	Male	193	46.0%
	Female	227	54.0%
Age group	18–24 years	92	21.9%
	25–34 years	147	35.0%
	35–44 years	101	24.0%
	45 years and above	80	19.0%
Most-used platform type	E-commerce	160	38.1%
	Digital banking apps	113	26.9%
	Social media	147	35.0%
Frequency of use	Daily	172	41.0%
	Several times a week	139	33.1%
	Weekly	67	16.0%
	Rarely	42	10.0%

The data in Table 1 suggests a fairly varied sample: with women (54.0%) making up the majority, the prominent age group was between 25 and 34 years (35.0%), while e-commerce claimed the highest proportion of platform types used (38.1%). The overwhelming majority of respondents used digital platforms at least on a daily basis (74.1% combined) which offers confidence that the sample is formed of active repeat users rather than visitors.

4.2 Descriptive Statistics

Table 2: Means and Standard Deviations of the Study Variables

Variable	Mean	Std. Deviation	Level
Hyper-personalized marketing (IV)	3.82	0.61	High
Digital customer experience (M)	3.91	0.58	High
Customer loyalty (DV)	3.76	0.64	High

All three independent variables performed excellently, with "Digital customer experience" recording the highest average (3.91) which provides a positive general impression of how participants see their relationship with their platforms.

4.3 Measurement Model: Reliability and Convergent Validity

Table 3: Reliability and Convergent Validity Results

Variable	No. of Items	Cronbach's Alpha	CR	AVE
Hyper-personalized marketing	5	0.887	0.912	0.676
Digital customer experience	5	0.901	0.924	0.708
Customer loyalty	4	0.856	0.897	0.686

Chronbach's alpha and composite reliability (CR) values for all constructs were found to be above the minimum threshold value of 0.70 while average variance extracted (AVE) values for all constructs exceeded the minimum threshold of 0.50 indicating that all three latent variables possess sufficient convergent validity and proper internal consistency.

4.4 Discriminant Validity

Table 4: Discriminant Validity — Fornell-Larcker Criterion

	Hyper-Personalized Marketing	Digital Customer Experience	Customer Loyalty
Hyper-personalized marketing	0.822	–	–
Digital customer experience	0.512	0.841	–
Customer loyalty	0.438	0.561	0.828

Table 5: Discriminant Validity — HTMT Ratio

	Hyper-Personalized Marketing	Digital Customer Experience
Digital customer experience	0.612	–
Customer loyalty	0.579	0.647

According to the criterion of Fornell-Larcker (Table 4), we have the square roots of AVE of each of the constructs (diagonal values) being greater than their correlation values with the rest of the constructs. Also, the HTMT values (Table 5) are below the conventional threshold of 0.85; thus, discriminant validity is ensured among the three constructs in question.

4.5 Structural Model Assessment

Table 6: Structural Model Assessment for the Endogenous Latent Variables

Dependent Variable	R ²	Interpretation	Q ²	Predictive Relevance
Digital customer experience	0.334	Moderate	0.221	Acceptable (> 0)
Customer loyalty *	0.282	Weak to moderate	Not reported	Requires blindfolding

Regarding the issue of whether the two predictors of customer loyalty (the direct effect of hyper-personalized marketing as an independent variable and the indirect effect of hyper-personalized marketing through the customer experience operator) are collinear: Section 3.4 has already indicated that the inner variance inflation factor between them, which was calculated directly from correlation coefficient ($r = 0.512$), equals to 1.355, which is well below the threshold of 3.3, which is commonly seen as dangerous. In real-life terms it means that significance of the effect established for hypothesis 3 (that is, the direct effect of personalization on loyalty as well as indirect effect of personalization through experience) is not spurious because of being generated by the shared information between the two predictors; but rather it indicates that there are independent effects of both predictors together with the confidence increased about the complementary partial mediation finding mentioned in Section 4.7.

4.6 Direct Hypothesis Testing

Table 7: Direct Hypothesis Test Results (Bootstrapping, 5,000 Subsamples)

Hypothesis	Path	β	t	p	f ²	Decision
H1	Hyper-personalized marketing → Digital customer experience	0.578	14.221	0.000	0.502	Supported
H2	Digital customer experience → Customer loyalty	0.389	8.014	0.000	0.198	Supported
H3	Hyper-personalized marketing → Customer loyalty (direct)	0.213	4.156	0.000	0.087	Supported

All three hypotheses were confirmed at a highly significant level of $p < .001$. The highest effect in the model is exhibited by hyper-personalized marketing impacting digital customer experience ($\beta = 0.578$), while the second-highest is the influence of digital customer experience on customer loyalty ($\beta = 0.389$), and the third parameter is hyper-personalized marketing impacting customer loyalty ($\beta = 0.213$). Values of the f^2 index demonstrate the same trend.

4.7 Mediation Analysis (H4)

Table 8: Mediation Analysis Results Following Preacher and Hayes (2008)

Path	Effect	Coefficient	Std. Error	t	95% CI	Decision
Hyper-personalized marketing → Digital customer experience → Customer loyalty	Indirect	0.225	0.031	7.258	[0.163, 0.286]	Significant (excludes 0)
Hyper-personalized marketing → Customer loyalty	Direct	0.213	0.051	4.156	[0.113, 0.313]	Significant
Hyper-personalized marketing → Customer loyalty	Total	0.438	0.048	9.125	[0.344, 0.532]	Significant

The indirect influence of hyper-personalized marketing on consumer loyalty using digital customer experience was 0.225, which is statistically significant since the 95% confidence interval [0.163, 0.286] does not include 0. The direct effect (0.213) is also significant with a positive sign, which means that the two effects together meet the criteria established by Zhao, Lynch, and Chen (2010) — which has mostly replaced the Baron and Kenny (1986) method in the marketing field — for complementary partial mediation. According to those criteria, digital customer experience partly mediates the relationship between personalization and loyalty without cancelling out or contradicting the direct effect. Hence, H4 is confirmed. Note that the indirect effect represents approximately 51.4% of the total effect ($0.225 \div 0.438$), indicating that digital customer experience plays a meaningful, albeit not exclusive, role in this respect.

5. Discussion

The first result worth commenting on is the magnitude of personalization effect in the field of digital consumer experience ($\beta = 0.578$), which is the largest result found in this research. This is not surprising for those who are familiar with studies on A.I. personalization. Rane et al. (2023) reported similar finding when talking about CRM systems, whilst Behera et al. (2020) concluded that personalized recommendation engines have positive impact on consumer satisfaction. This particular research provides an important insight as it shows that the impact of personalization is there even when dealing with three different types of platforms — e-commerce, banking apps and social networks — combined in one single sample which was not tested by Wolniak and Grebski's (2023) Industry 4.0 focused paper.

In accordance with the second hypothesis, the impact of customer experience on loyalty ($\beta = 0.389$) confirms findings of Ibrahim (2025) regarding banking customers, where experience predicts loyalty as strongly as the technical factors involved. However, unlike Ibrahim's study which focused only on customers of banks, the data used in the current

investigation suggest that this holds true for all sectors. This also confirms, somewhat loosely, the research of Zhang et al. (2023) who concluded that the quality of digital interaction enhances emotional commitment to the service platform, with their findings being much closer to the realm of gamified online services rather than conventional commercial services.

The third outcome poses a somewhat intriguing inquiry: personalization had direct implications on loyalty ($\beta=0.213$) even while controlling for experience. In other words, some portion of customer loyalty is beyond what can be justified by the platform users' experiences in utilizing the platform but rather simply due to feeling understood by it. This aligns with the observation by López García et al. (2019) that personalization in digital marketing impacts loyalty via multiple channels, as well as Al-Dosari's (2024) finding of a similar impact on the Saudi market despite the absence of mediating effects. Furthermore, this also resonates with the finding by Kim and Ko (2020) that there is a direct impact of online interaction on brand loyalty irrespective of user The most important finding described in the studies is the partial mediation performed by digital customer experience (H4). Approximately 50% (exactly, 51.4%) of the impact of personalization on loyalty did not reach the customer directly — it was transmitted through an enhancement of their experience with the platform. In practice, it means that a company investing in complex personalization technology while ignoring the user interface and response time would lose approximately 50% of the possible outcomes from this investment. The same mediation principle is illustrated in the banking industry by Ibrahim (2025) and supported by Vo et al. (2025), who showed that even in such a different case of virtual influencers promotion on social media, marketing effects on loyalty do not manifest directly, but rather through some forms of mediated engagement. It also connects to the point of Portes et al. (2020) that only having transparency makes companies achieve higher quality of their relationships with customers, rather than simply relying on personalized approaches. Note that Martin and Murphy (2017) also pointed out that effective

personalization without having a secure digital experience is ineffective for companies.

6. Conclusions and Recommendations

6.1 Conclusions

It is established by the research that hyperpersonalized marketing has a positive impact on both digital customer experience (DCX) and customer loyalty, with DCX having a partial mediating effect on the relationship between the two. Thus, personalization's influence on loyalty can be perceived via two channels, one being direct due to the customer's feeling of recognition and the other being indirect by taking into consideration the overall quality of the digital experience.

6.2 Managerial Recommendations

1. Focus on technical investment into AI-based personalization algorithms and real-time customer data analysis while observing transparency requirements and ensuring the security of customer data.
2. Change the digital consumer experience to increase usability, speed of response, and real-time interaction, since these factors are those with significant explanatory power in relation to loyalty in the analyzed model.
3. Utilize composite performance measures, which measure the personalization quality as well as the quality of the digital experience, combined with personalization measures.
4. Develop training for marketing teams on generative AI tools and customer analytics as a fit into the argument by Muharam (2024) regarding the significance of digital capability cultivation for fostering engagement and loyalty.

7. Limitations and Future Research

These findings are limited by a few methodological limitations. This study used a cross-sectional method which limits causal claims by the presence of words such as "affects," which is common in quantitative marketing research and shows predictive relationships as opposed to actual causal relationships. The collected data was self-reported from one source in one instance which causes common method bias, and since no formal statistical tests to verify that exist in study output, it has to be conducted prior to submission of the paper as it is usually expected by reviewers of PLS-SEM journals. The Q^2 needs to be reported from the SmartPLS output, despite the fact that the report can only provide it for the mediating

variables as it was mentioned in Section 4.5. The use of convenience sampling is the last limitation of this paper in this sense, which decreases the generalizability of these findings.

The future of this line of research could benefit from incorporating longitudinal design to track changes in the relationship of personalization, experience, and loyalty over time, as well as cross-cultural or cross-market comparisons for testing the robustness of the proposed model in different geographical locations. It would also be interesting to test additional mediators and moderators, including digital trust and privacy concerns (Martin & Murphy, 2017), and behavioural parameters like gamification, as explored by Zhang et al. (2023).

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