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"Examining Ai Integration In Personalized Marketing To Attract Customers: Evaluate The Challenges And Impact Of This Trending Marketing"

Dr. Jenifer Lawrence[1] , Tilahun Haile Filatie[2] , Dr. Manoj Govindaraj[3], Dr. Rahamath Sulthana[4]

[1]Dept.Of.Management, Woldia University-Ethiopia https://orcid.org/0000-0002-4115-1521 Email-aljeniferalbin@gmail.com
[2]Dept.Of.Management, Woldia University-Ethiopia. Email-tilahun.h@wldu.edu.et
[3]Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, India. https://orcid.org/0000-0003-2830-7875
[4]Dept.Of.Management Studies, B.S.Abdur Rahman Crescent Institute of Science and Technology, India. Email-rahamathsulthana@gmail.com

Abstract

Introduction: *Considering the overall changes in the business environment it was noted that AI has become a significant aspect of modern business. As a result, the study offers insight into the potential and difficulties brought about by this changing marketing trend when integrating AI. Furthermore, related objectives, aims and questions are presented in the introduction.*
Literature Review: *An analysis of previous research on consumer behaviour and customer satisfaction was carried out. Deeper perspectives on the topic were produced.*
Methodology: *After the primary data collection, quantitative analysis was performed using IBM SPSS. Seventy survey participants were selected for an interview to gather data the data was collected using 13-question questionnaires.*
Findings: *Challenges including data privacy, AI algorithm complexity, data accuracy, customization fatigue, and different platform integration were noted. To solve all of these problems, a well-balanced approach that places a high value on superior data management, transparency, and continuous algorithm optimization is needed.*
Discussion: *The overall discussion is presented based on the analysis data and an exhaustive discussion is presented.*
Conclusion: *To give a brief overview of the whole empirical investigation, a research summary and a concise analysis of the findings are provided.*

Keywords: AI, AI for marketing, Customer engagement, Implication of AI, Business Technology

INTRODUCTION

AI's fast-paced integration into personalized marketing changes customer engagement. Factors such as the effectiveness of content personalization, degree of AI integration, and others indicate the significance of AI-driven strategies to enhance customer engagement (Usman et al.2024). Therefore, the study discusses insight into the challenges and opportunities presented by this evolving marketing trend during integration of AI.

Even with significant AI adoption in personalized marketing, the effects on customer engagement are not very clear. Various challenges are involved in the process, making it highly difficult to execute due to differences in the effectiveness of the personalised content (Stone et al. 2020). For instance, inconsistency in AI integration, fluctuating customer demand, and most importantly, concerns over data accuracy are some of the major concerns (De Bruyn et al. 2020). These factors require a critical understanding of the optimization of AI-driven marketing strategies.

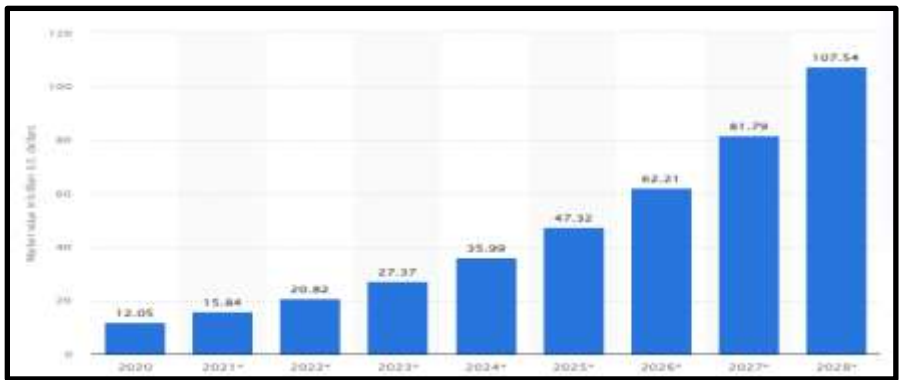

Figure 1: Market value of AI for marketing from 2020 to 2028
("Source: Statista, 2023")

Figure 1 describes the market value for AI integration. This chart makes it clear that there is a significant, steady expansion. It is estimated that the market for artificial intelligence marketing is predicted to be worth 15.84 billion US dollars in 2021 (Statista, 2023). By 2028, this value is predicted to have more than quadrupled to approximately 107.5 billion (Statista, 2023). The information specifies that AI is relevant to marketing prediction, which can improve consumer engagement to a great extent. Furthermore, this data also contributes to the rationale of the study.

AIM

The study aims to assess how AI integration into personalised marketing influences customer engagement, and the effectiveness of personalised content

RESEARCH OBJECTIVES

RO1: To understand the effectiveness of personalised content for improving customer engagement.
RO2: To understand the significance of AI integration for delivering personalized content in marketing.
RO3: To analyse the associated challenges hindering the integration of AI for personalised contests in marketing.
RO4: To recommend tangible solutions for countering the challenges associated with the integration of AI for personalized marketing content.

RESEARCH QUESTIONS

RQ1: What is the effectiveness of personalised content for improving customer engagement?
RQ2: What is the significance of AI integration for delivering personalized content in marketing?
RQ3: How to analyse the associated challenges hindering the integration of AI for personalised contests in marketing?
RQ4: What are the tangible solutions for countering the challenges associated with the integration of AI for personalized marketing content?

LITERATURE REVIEW

DISCUSSION ON THE EFFECTIVENESS OF PERSONALIZED CONTENT FOR IMPROVING CUSTOMER ENGAGEMENT

Increasing business competition can be identified with the modernization of a business. Therefore, personalisation of the marketing campaign is significant to achieve a competitive edge for a business. As per the opinion of Ratakam&Petison (2023), personalization can improve the engagement of the consumer by

providing trend-oriented data and reasonable information. Therefore, the engagement of the relevant consumer can be improved. On the other hand, Whang et al. (2023) have stated that data quality is significantly important for the effectiveness of AI models. Thus, it can be understood that data accuracy impacts the outcome of AI marketing.

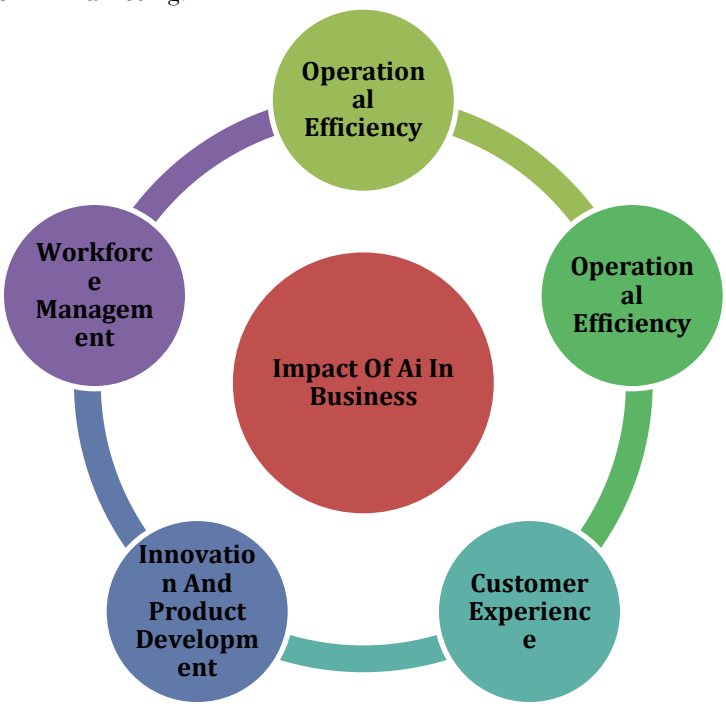

Figure 2: Impact of AI in business
(Source:Hoehle et al.2022)

In addition, there is a fine line between utilizing data and the security of data. As stated by Hoehle et al. (2022), a brand can lose loyal consumers with the rising concerns of data security. Thus, data works as a fuel for the AI integration for marketing which is also a critical aspect of data integration.

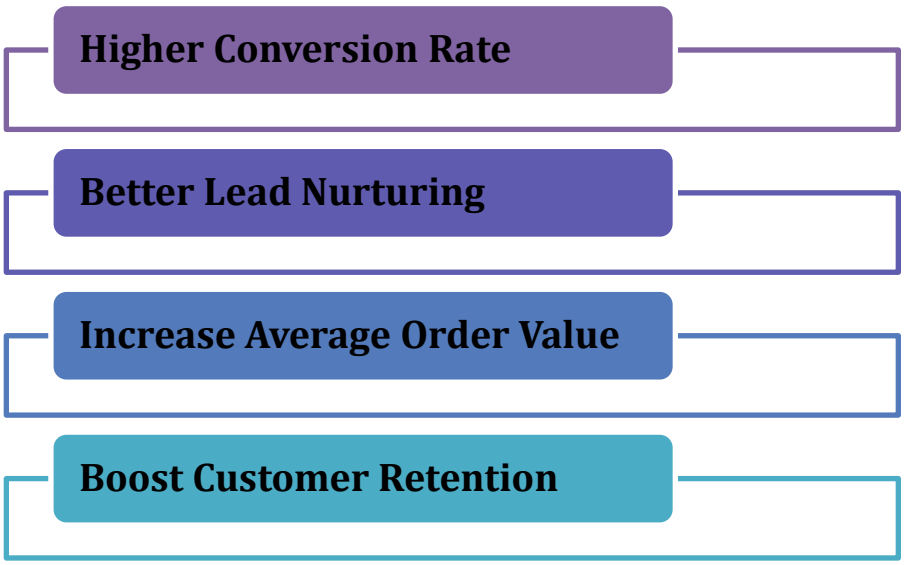

Figure 3: Benefits of Personalized
(Source:Hoehle et al. 2022)

CHALLENGES ASSOCIATED WITH THE IMPLEMENTATION OF AI FOR MARKETING

With the integration of AI technology for personalized marketing, there exist several major challenges. Wu et al. (2021) stated that one major challenge lies in the assurance of data quality and accuracy. If the data is of poor quality, then that compromises the effectiveness of the AI algorithms because they depend on high-quality data to effectively generate personalized content. Similarly, personalization

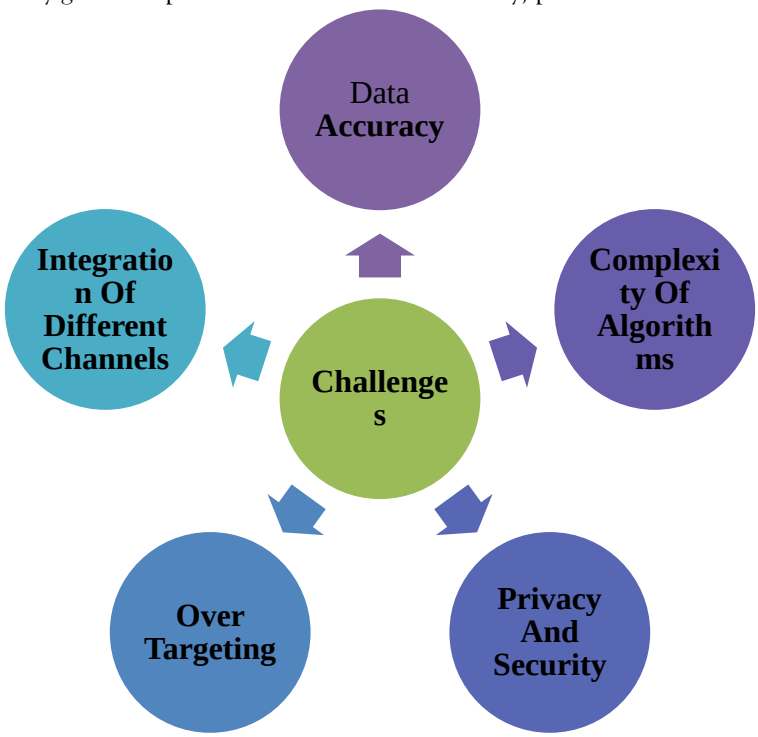

Figure 4: Challenges associated with AI in management
(Source: Gupta et al. 2023)

Figure 4 discusses the different challenges associated with the integration process of AI for personalized marketing. As stated by Gupta et al. (2023) privacy and data security a significant issues that impact the effectiveness of AI.

Challenges	Description
Accuracy in the quality of the data.	The quality and accuracy of the data are what underpins AI. Accurate data will lead to recommendations for what is relevant; otherwise, the customer is offered irrelevant products resulting in poor customer experience.
Complexity of different algorithms	Large expert-led concerns develop and maintain advanced AI algorithms. Badly designed algorithms will simply lead to ineffective personalization.
Privacy and security of data	There are concerns about privacy and the protection of data obtained by the large-scale harvesting and analysis of personal data. In respect to this, safety measures along with transparency are highly important.

Over targeting	Too much of the content that customers receive is over-targeted, leaving them often fatigued, and disengaged. Striking a middle way in a relevant personalized context without getting too intrusive is what a marketer needs to focus on.
Integration of different channels	The effective integration of AI technologies with their current infrastructure is crucial to constantly delivering personalized experiences in an uninterrupted, frictionless manner across channels and systems.

Table 1: Description of the Challenges

Table 1 is presented in describing the different issues associated with the overall implication of AI for the personalization of marketing.

"METHODOLOGY"

Primary quantitative approaches were employed for the investigation. According to Purwanto (2021), obtaining "primary quantitative data" makes sense since it helps extract participants' experiential knowledge, which contributes to relevant conclusions. The study also used "descriptive statistics" and a deductive research technique to help clarify the research topic. A "questionnaire that included questions for 70 people" with a range of ages, genders, and economic status was used to collect the data.

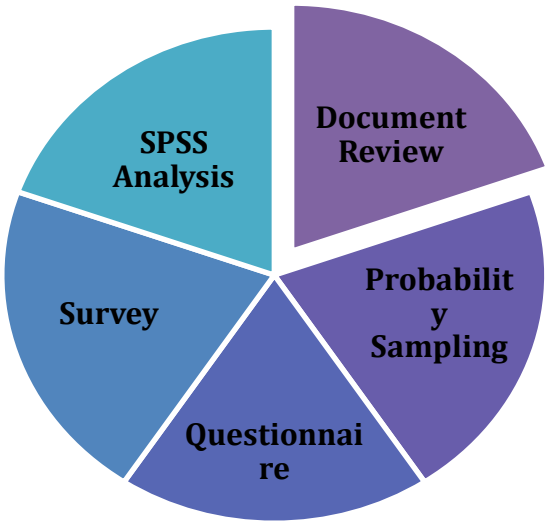

Figure 5: Factors of Primary Quantitative Method

The questionnaire had "thirteen closed-ended questions," of which "ten dealt with variables and three indicated demographic information." The data proficiency was analysed using "operational datasets" (Pandey & Pandey, 2021). Throughout the whole study process, SPSS analysis was employed to obtain relevant data. Finding the significance of the findings from the "regression analysis, ANOVA test, and correlational analysis" was one of the methods used to evaluate the data. Consequently, to ascertain the dataset's size and distribution, "descriptive statistics" were incorporated.

"FINDING AND ANALYSIS"

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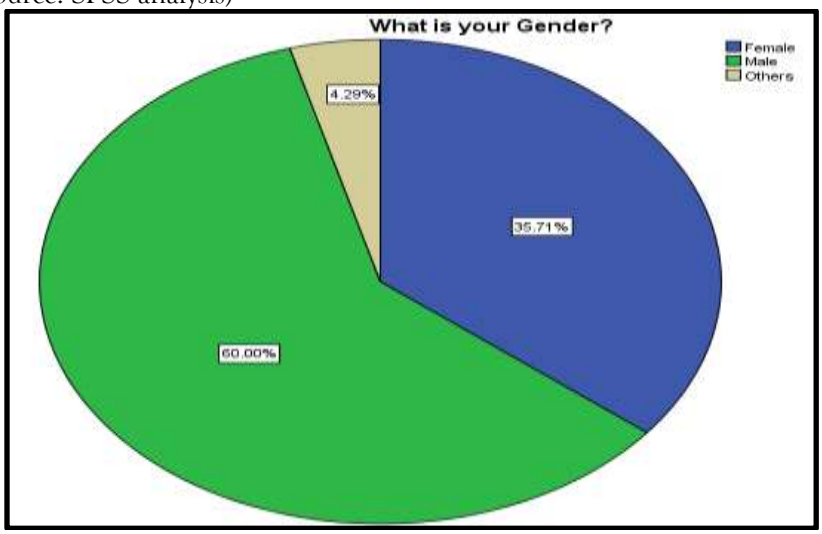
DEMOGRAPHIC ANALYSIS

GENDER

What is your Gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	25	35.7	35.7	35.7
	Male	42	60.0	60.0	95.7
	Others	3	4.3	4.3	100.0
	Total	70	100.0	100.0	

"Table 2: Gender
(Source: SPSS analysis)"



"Figure 6: Gender
(Source: SPSS analysis)"

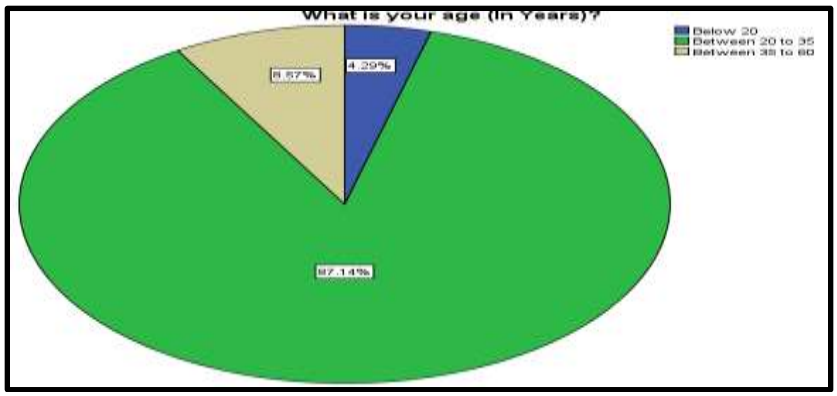
Table 2 and Figure 6 present a breakdown of participant genders, indicating that around 35.7% of participants were female and 60% were male. Furthermore, 4.3% of the individuals said they belonged to a different gender group.

Age Group

What is your age (In Years)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 20	3	4.3	4.3	4.3
	Between 20 to 35	61	87.1	87.1	91.4
	Between 35 to 60	6	8.6	8.6	100.0
	Total	70	100.0	100.0	

"Table 3: Age Group
(Source: SPSS analysis)"



"Figure 7: Age Group
(Source: SPSS analysis)"

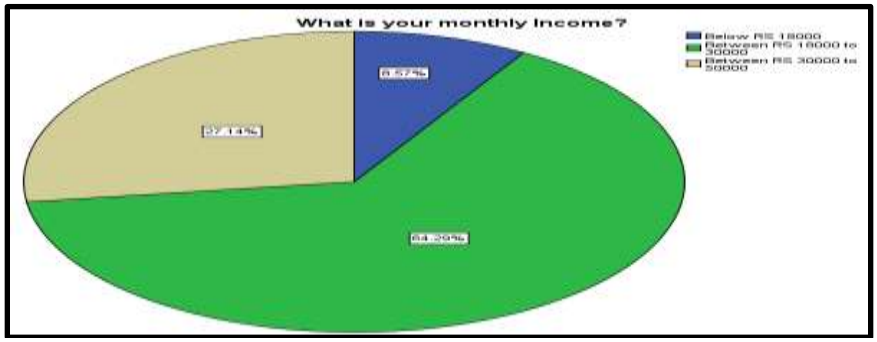
Table 3 and Figure 7 show the population's age distribution. 4.3% of participants were younger than twenty years. 87.1% of participants are in the age range of 20 to 35. Moreover, 8.6% of those between the ages of thirty and sixty are shown. Therefore, it stands to reason that the age group between 20 and 35 have the highest participation rate.

Monthly Income

What is your monthly Income?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below RS 18000	6	8.6	8.6	8.6
	Between RS 18000 to 30000	45	64.3	64.3	72.9
	Between RS 30000 to 50000	19	27.1	27.1	100.0
	Total	70	100.0	100.0	

"Table 4: Monthly Income
(Source: SPSS analysis)"



"Figure 8: Monthly Income
(Source: SPSS analysis)"

Figure 8 and Table 4 present the monthly income breakdown of the population. 8.6% of participants made less than RS 18000. Between RS 18000 and 30000, 64.3% representation was observed, and between RS

30000 and 50000, a percentage of 27.1% was observed. Therefore, it can be said that the bulk of the data set consisted of middle-class individuals.

"Statistical Analysis"

"Descriptive Analysis"

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
DV	70	2.00	8.00	4.8286	1.83344
IV1	70	2.00	8.00	4.5286	2.12454
IV2	70	3.00	8.00	5.0000	1.66812
IV3	70	2.00	8.00	4.8286	1.92596
IV4	70	2.00	8.00	4.8286	1.85700
Valid N (listwise)	70				

"Table 5: Descriptive analysis of different variables
(Source: SPSS analysis)"

The information that is needed to evaluate the components using descriptive statistics is included in Table 5. When assessing the relationship between several study-related variables, descriptive statistics is helpful (Cooksey & Cooksey, 2020). Descriptive statistics are thus given in the study to enable a broad understanding of the dataset. The "dependent variable's" standard deviation was found to be 1.83344, with a mean value of 4.8286. The "first variable's" mean value is 4.5286, while its standard deviation was found to be 2.12454. For the "Second independent variable", a mean value of 5.0000 and a standard deviation of 1.66812.

It is evident that the "third independent variable" has a mean value of 4.8286 and a standard deviation of 1.92596. Moreover, a mean value of 4.8286 and a standard deviation value of 1.85700 were obtained from the "fourth independent variable". Consequently, it may be said that the standard deviation is greater than the mean value for each variable. These data sets help to comprehend the basis and pace of the data set. Furthermore, the same can be used to identify the outliers (Salcedo & McCormick, 2020). Thus, as the standard deviation is greater than the mean value it can be concluded from the data that is shown that the data is grouped around the mean further, the same speed is not on the higher side.

"Hypothesis analysis"

Hypothesis 1: Customer engagement is directly associated with the effectiveness of personalized content for marketing.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.939	.882	.880	.63576

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	204.458	1	204.458	505.843	.000
	Residual	27.485	68	.404		
	Total	231.943	69			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.159	.180		6.442	.000
	IV1	.810	.036	.939	22.491	.000

"Table 6: Regression analysis of H1
(Source: SPSS analysis)"

Table 6 is associated with the "regression analysis" for the first hypothesis. A relation between Customer engagement (DV) and the Effectiveness of personalized content (IV1) is shown in the first hypothesis. As can be seen according to the opinion of Mosa et al. (2020), the engagement of the consumer is a KPI that aids in understanding business growth. With an R2 of 0.882, the data shows a high positive correlation between IV1 (Effectiveness of Personalized Content) and DV (Customer Engagement), meaning that IV1 accounts for 88.2% of the variance in customer engagement. The robustness of the model is shown by the substantial F-value and coefficient ($p < 0.001$).

Hypothesis 2: The level of AI integration influenced customer engagement for a brand

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.938	.880	.879	.63888

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	204.187	1	204.187	500.255	.000
	Residual	27.755	68	.408		
	Total	231.943	69			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.328	.243		-1.349	.182
	IV2	1.031	.046	.938	22.366	.000

"Table 7: Regression analysis of H2
(Source: SPSS analysis)"

The "regression analysis" for the study's second hypothesis is linked to Table 7. The overall effectiveness and integration of AI for marketing are impacted, as indicated by the existence of several AI tools (Basri, 2020). The second hypothesis presents a relationship between the Level of AI integration (IV2) and consumer engagement (DV). With an R2 of 0.880, the results show that IV2 (AI Integration Level) and the dependent variable, Customer Engagement, have a perfect positive connection. This demonstrates that IV2 accounts for 88.0% of the variation in consumer engagement. The model's strength is confirmed by the endpoint F-value and coefficient, which are significant at $p < 0.001$. However, the non-significant constant indicates that engagement levels and AI integration are very near.

Hypothesis 3: Customer engagement is directly associated with the customer satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.890	.793	.790	.84067

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	183.886	1	183.886	260.194	.000
	Residual	48.057	68	.707		
	Total	231.943	69			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.736	.273		2.696	.009
	IV3	.848	.053	.890	16.131	.000

"Table 8: Regression analysis of H3
(Source: SPSS analysis)"

Table 8 of the study is associated with the regression analysis for the third hypothesis. According to the opinion of Arora et al. (2021), retaining consumer customer engagement is essential. However, there is

a significant concern associated with the data security. An R^2 of 0.793 indicates that 79.3% of the variance in customer engagement is explained by customer satisfaction, demonstrating a significant positive link between IV3 (consumer satisfaction) and DV (customer engagement). The model's validity is supported by the substantial F-value and coefficient ($p < 0.001$), and the significant constant ($p = 0.009$) indicates that baseline involvement is not dependent on customer happiness but is much boosted by it.

Hypothesis 4: Customer engagement and the accuracy of the data for AI models are related.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.923	.853	.851	.70863

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	197.796	1	197.796	393.894	.000
	Residual	34.147	68	.502		
	Total	231.943	69			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.426	.237		1.795	.077
	IV4	.912	.046	.923	19.847	.000

"Table 9: Regression analysis of H4
(Source: SPSS analysis)"

The regression analysis for the fourth hypothesis is linked to Table 9. According to Agbehadji et al. (2020), when the AI models work with the given data, accuracy is directly correlated. As a result, the result has an immediate effect on how a corporation makes decisions and develops its strategies. With $R^2 = 0.853$, the data shows a very significant positive link between the DV (Customer Engagement) and IV4 (Accuracy of Data). The veracity of the data explains why customer interaction is valued at around 85.3%. The model's strength is primarily supported by the substantial F-value and coefficient ($p < 0.001$), but the constant remained relatively average at $p = 0.077$, indicating a heavily dependent baseline on data accuracy.

DISCUSSION

In analyses of the data, the critical role of each of the factors influencing customer engagement with personalized AI-driven marketing was presented. All the models show strong relationships between independent variables and customer engagement, which reflects a strong influence of those factors. The regression model for the Effectiveness of Personalized Content (IV1) is highly impressive, exhibiting an R^2 of 0.882. This means 88.2% of the variance in customer engagement can be explained by the effectiveness of the personalized content (Salcedo & McCormick, 2020). This is a very strong effect that makes the importance of relevance in the marketing strategies.

AI Integration Level (IV2) similarly makes a significantly very high impact, with its $R^2 = 0.880$; hence, a high level of AI integration greatly enhances customer engagement (Hollebeek, Sprott& Brady, 2021). It is clear that this indicates the importance of advanced AI technologies in executing generally more interesting marketing experiences that engage a customer to a very high level.

From the results obtained, Customer Satisfaction (IV3) explains an R^2 of 0.793, clearly indicating it is a major driver of the level of engagement. Such levels will be improved by enhancing personal interaction to make customers more satisfied (Tsai, Liu &Chuan, 2021). Data Accuracy (IV4), based on its R^2 of 0.853, shows that for personalization to be effective, data have to be correct. High data accuracy results in relevance in content, thus more engagement on the side of the content. This is further evidence that good data quality under AI marketing cannot be overemphasized.

It is clear from the statistics that every difficulty can be met with the practical solutions covered in the suggestion.

RECOMMENDATION

- To increase the relevance and accuracy of material produced by AI, make sure that robust data collecting and administration procedures are followed.
- Give consumers the assurance that their data will be used openly and with defined privacy safeguards.
- Strike a balance between being relevant and being very personal to prevent over-personalization.
- Good metrics will prevent over-personalization by striking a balance between intrusiveness and relevancy.
- Maintain a constant state of improvement for AI algorithms so they can react quickly to shifting consumer preferences and market trends.

Businesses can minimize obstacles and use AI integration more skilfully to increase customer happiness and engagement by concentrating on these suggestions.

CONCLUSION

Although there are certain benefits to this connection in terms of consumer interaction and relevant content, it is difficult to avoid associated challenges. It was noted that challenges such as data privacy, complexity of AI algorithms, data accuracy, personalization fatigue, and seamless platform integration. A highly balanced strategy that prioritizes excellent data management, openness, and ongoing algorithm optimization is required to address all of these issues. Businesses can fully utilize AI's potential to provide relevant and engaging consumer experiences that increase happiness and loyalty if they can professionally handle these challenges.

REFERENCES

1. Agbehadji, I. E., Awuzie, B. O., Ngowi, A. B., &Millham, R. C. (2020). Review of big data analytics, artificial intelligence and nature-inspired computing models towards accurate detection of COVID-19 pandemic cases and contact tracing. International journal of environmental research and public health, 17(15), 5330. Retrieved on 14th August 2024 from: https://www.mdpi.com/1660-4601/17/15/5330/pdf
2. Arora, L., Singh, P., Bhatt, V., & Sharma, B. (2021). Understanding and managing customer engagement through social customer relationship management. Journal of Decision Systems, 30(2-3), 215-234.Retrieved on 14th August 2024 from:https://www.researchgate.net/profile/Lokesh-Arora-4/publication/349379198_Understanding_and_managing_customer_engagement_through_social_customer_relationship_management/links/603bde55a6fdcc37a85d505c/Understanding-and-managing-customer-engagement-through-social-customer-relationship-management.pdf
3. Basri, W. (2020). Examining the impact of artificial intelligence (AI)-assisted social media marketing on the performance of small and medium enterprises: toward effective business management in the Saudi Arabian context. International Journal of Computational Intelligence Systems, 13(1), 142-152.Retrieved on 14th August 2024 from: https://link.springer.com/content/pdf/10.2991/ijcis.d.200127.002.pdf
4. Cooksey, R. W., & Cooksey, R. W. (2020). Descriptive statistics for summarising data. Illustrating statistical procedures: Finding meaning in quantitative data, 61-139. Retrieved on 14th August 2024 from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7221239/
5. De Bruyn, A., Viswanathan, V., Beh, Y. S., Brock, J. K. U., & Von Wangenheim, F. (2020). Artificial intelligence and marketing: Pitfalls and opportunities. Journal of Interactive Marketing, 51(1), 91-105.Retrieved on 14th August 2024 from:https://www.sciencedirect.com/science/article/am/pii/S1094996820300888

6. Gupta, M., Akiri, C., Aryal, K., Parker, E., &Praharaj, L. (2023). From chatgpt to threatgpt: Impact of generative ai in cybersecurity and privacy. IEEE Access.Retrieved on 14th August 2024 from: https://ieeexplore.ieee.org/iel7/6287639/10005208/10198233.pdf
7. Hoehle, H., Venkatesh, V., Brown, S. A., Tepper, B. J., &Kude, T. (2022). Impact of Customer Compensation Strategies on Outcomes and the Mediating Role of Justice Perceptions: A Longitudinal Study of Target's Data Breach. Mis Quarterly, 46(1).Retrieved on 14th August 2024 from: https://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=02767783&AN=155825476&h=6Kml6RPs1ufyTnGPX16gI7w%2FL0S%2Flft8x7nmgBHQKzJ19vjOGvGfmihjU%2FakLH7YcU7Bf9VY8EHBHMu6dmX%2F%2FQ%3D%3D&crl=c
8. Hollebeek, L. D., Sprott, D. E., & Brady, M. K. (2021). Rise of the machines? Customer engagement in automated service interactions. Journal of Service Research, 24(1), 3-8.Retrieved on 14th August 2024 from:https://journals.sagepub.com/doi/pdf/10.1177/1094670520975110
9. Mosa, M., Agami, N., Elkhayat, G., &Kholief, M. (2020). A literature review of data mining techniques for enhancing digital customer engagement. International Journal of Enterprise Information Systems (IJEIS), 16(4), 80-100.Retrieved on 14th August 2024 from: https://www.igi-global.com/article/a-literature-review-of-data-mining-techniques-for-enhancing-digital-customer-engagement/265126
10. Pandey, P., & Pandey, M. M. (2021). Research methodology tools and techniques. Bridge Center.Retrieved on 14th August 2024 from: http://dspace.vnbrims.org:13000/jspui/bitstream/123456789/4666/1/RESEARCH%20METHODOLOGY%20TOOLS%20AND%20TECHNIQUES.pdf
11. Purwanto, A. (2021). Education research quantitative analysis for little respondents: comparing of Lisrel, Tetrad, GSCA, Amos, SmartPLS, WarpPLS, and SPSS. JurnalStudi Guru Dan Pembelajaran, 4(2).Retrieved on 14th August 2024 from: https://www.e-journal.my.id/jsgp/article/download/1326/1095
12. Ratakam, P., &Petison, P. (2023). From means to end: Understanding the millennial mind when buying luxury jewelry brands. Journal of Global Fashion Marketing, 14(1), 35-47. Retrieved on 14th August 2024 from: https://www.researchgate.net/profile/Phallapa-Petison-2/publication/355914326_FROM_MEANS_TO_END_UNDERSTAND_MILLENNIALS'MIND_WHEN_THEY_BUY_LUXURY_JEWELRY_BRAND/links/64314abf4e83cd0e2f9d136a/FROM-MEANS-TO-END-UNDERSTAND-MILLENNIALSMIND-WHEN-THEY-BUY-LUXURY-JEWELRY-BRAND.pdf
13. Salcedo, J., & McCormick, K. (2020). SPSS Statistics for dummies. John Wiley &Sons.Retrieved on 14th August 2024 from: https://books.google.com/books?hl=en&lr=&id=JmH0DwAAQBAJ&oi=fnd&pg=PA3&dq=descriptive+statistics+SPSS&ots=vyJovj0bmj&sig=iWbunW5A8UivGE8DqCsnmsUpMx4
14. Salcedo, J., & McCormick, K. (2020). SPSS Statistics for dummies. John Wiley &Sons.Retrieved on 14th August 2024 from: https://books.google.com/books?hl=en&lr=&id=JmH0DwAAQBAJ&oi=fnd&pg=PA3&dq=descriptive+statistics+SPSS&ots=vyJovj0bmj&sig=iWbunW5A8UivGE8DqCsnmsUpMx4
15. Statista, 2023, Market value of artificial intelligence (AI) in marketing worldwide from 2020 to 2028, Retrieved on 14th August 2024 from: https://www.statista.com/statistics/1293758/ai-marketing-revenue-worldwide/
16. Stone, M., Aravopoulou, E., Ekinci, Y., Evans, G., Hobbs, M., Labib, A., ... &Machtynger, L. (2020). Artificial intelligence (AI) in strategic marketing decision-making: a research agenda. The Bottom Line, 33(2), 183-200.Retrieved on 14th August 2024 from:

https://research.stmarys.ac.uk/id/eprint/3892/1/AI%20in%20strategic%20marketing%20decision%20making%20final%20V2.pdf

17. Tsai, W. H. S., Liu, Y., &Chuan, C. H. (2021). How chatbots' social presence communication enhances consumer engagement: the mediating role of parasocial interaction and dialogue. Journal of Research in Interactive Marketing, 15(3), 460-482.Retrieved on 14th August 2024 from:Tsai, W. H. S., Liu, Y., &Chuan, C. H. (2021). How chatbots' social presence communication enhances consumer engagement: the mediating role of parasocial interaction and dialogue. Journal of Research in Interactive Marketing, 15(3), 460-482.
18. Usman, F. O., Eyo-Udo, N. L., Etukudoh, E. A., Odonkor, B., Ibeh, C. V., &Adegbola, A. (2024). A critical review of ai-driven strategies for entrepreneurial success. International Journal of Management & Entrepreneurship Research, 6(1), 200-215. Retrieved on 14th August 2024 from: https://fepbl.com/index.php/ijmer/article/download/748/939
19. Whang, S. E., Roh, Y., Song, H., & Lee, J. G. (2023). Data collection and quality challenges in deep learning: A data-centric ai perspective. The VLDB Journal, 32(4), 791-813.Retrieved on 14th August 2024 from: https://arxiv.org/pdf/2112.06409
20. Wu, X., Zheng, W., Xia, X., & Lo, D. (2021). Data quality matters: A case study on data label correctness for security bug report prediction. IEEE Transactions on Software Engineering, 48(7), 2541-2556.Retrieved on 14th August 2024 from: https://ink.library.smu.edu.sg/cgi/viewcontent.cgi?article=8439&context=sis_research