

## **Marketing Automation and Artificial Intelligence Streamlining Marketing Processes for Efficiency and Growth**

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### **Abstract**

The study explores the combination of marketing automation and Artificial Intelligence (AI) that creates a revolutionary synergy to optimize the marketing process, resulting in unattainable efficiency and substantial growth. Utilizing AI algorithms, business entities create highly focused and customised marketing campaigns by analyzing large datasets to extract insightful information about consumer behaviour, preferences, and trends. The campaigns are then smoothly carried out across a variety of channels via automation systems, which optimize the delivery, content, and timing to maximize impact. This connection ensures accuracy in audience segmentation and engagement, as well as minimizing manual labour and improving customer experiences in the process. In addition, AI-powered analytics are used to continuously enhance plans and quickly adapt them to changing market circumstances. The dual approach of qualitative and quantitative insights from marketing professionals offers a holistic understanding of the streamlined processes and growth outcomes resulting from the integration of these technologies. It offers practical insights for marketers and organizations adopting marketing automation and AI technologies. It outlines methods for overcoming implementation challenges, underscoring the significance of aligning these technologies with organizational objectives. The integration of AI with marketing automation not only improves operational effectiveness but also enables companies to build deeper relationships with their target audience. This leads to long-term growth and a competitive edge in the constantly shifting landscape of modern marketing.

**Keywords:** *Marketing Automation, Artificial Intelligence (AI), Consumer Behaviour, Efficiency, Growth*

## Introduction

In the rapidly evolving landscape of contemporary business, the intersection of marketing automation and artificial intelligence (AI) has emerged as a pivotal force, catalyzing transformative changes in the way organizations conceptualize and execute their marketing strategies. This dynamic synergy between technology and marketing, aptly termed “Marketing Automation and AI,” has become the cornerstone for businesses striving to achieve unparalleled efficiency and sustained growth in today’s competitive markets [Peyravi, *et al.*, 2020].

In the dynamic landscape of the Indian business ecosystem, the integration of Marketing Automation and Artificial Intelligence (AI) has emerged as a transformative force, revolutionizing the way companies strategize and execute their marketing initiatives. As the global paradigm shifts towards digitalization and data-driven decision-making, Indian businesses are increasingly recognizing the potential of Marketing Automation and AI in streamlining their marketing processes for enhanced efficiency and sustainable growth [Stone, *et al.*, 2020]. These innovative technologies empower organizations to automate repetitive tasks, personalize customer interactions, and analyze vast amounts of data to derive actionable insights. In a country characterized by diverse consumer preferences and a burgeoning digital audience, the application of Marketing Automation and AI holds immense promise for businesses seeking to optimize their marketing efforts, engage with audiences on a more personal level, and ultimately drive success in the competitive Indian market [Jain & Aggarwal, 2020]. At its core, marketing automation involves the use of software platforms to automate repetitive marketing tasks and workflows, allowing businesses to streamline their processes and optimize resource utilization. Concurrently, the infusion of artificial intelligence augments these automated systems with the ability to learn, adapt, and make data-driven decisions in real-time. This powerful combination is revolutionizing how companies engage with their target audiences, enabling a more personalized and responsive approach to marketing campaigns [Davenport, *et al.*, 2020].

In the realm of marketing, efficiency is not just about doing more with less; it's about delivering the right message to the right audience at the right time. Marketing automation and AI empower businesses to achieve precisely that by leveraging data analytics to gain profound insights into consumer behaviour [Huang & Rust, 2022]. This granular understanding allows marketers to tailor their strategies with unprecedented precision, ensuring that each interaction with a prospect or customer is not only timely but also highly relevant, thereby maximizing the impact of every marketing effort [Van & Stewart, 2021]. Furthermore, the integration of AI into marketing automation systems enables the creation of intelligent, self-optimizing campaigns. By leveraging machine learning algorithms, these systems can analyze vast datasets, identifying patterns and trends that human marketers might overlook. As a result, campaigns evolve dynamically, adapting to changing market conditions and consumer preferences, ultimately enhancing overall effectiveness and return on investment [Haleem, *et al.*, 2022].

This exploration delves into the key components of this transformative synergy. From the automation of routine tasks to the deployment of advanced AI algorithms for predictive analytics, unravel the myriad ways in which businesses can harness this powerful combination to not only survive but thrive in the complex and ever-evolving landscape of modern marketing [Chintalapati & Pandey 2022]. As technology continues to advance, the convergence of Marketing Automation and AI will likely lead to even more sophisticated solutions. Predictive analytics, voice search optimization, and augmented reality are just a few examples of the innovative directions this synergy may take. The increased reliance on AI in marketing raises ethical questions surrounding data privacy, transparency, and algorithmic bias.

Businesses must navigate these concerns responsibly to build and maintain trust with their audience [Chen, *et al.*, 2022].

Thus, the integration of Marketing Automation and AI represents a paradigm shift in the way businesses approach marketing. From improving efficiency to enhancing customer experiences, this dynamic duo lays the foundation for sustainable growth in an ever-evolving digital landscape. As marketers embrace this transformative synergy, they position themselves at the forefront of innovation, ready to meet the challenges and opportunities of the future head-on.

## Literature Review

In the ever-evolving landscape of digital marketing, organizations are increasingly turning to advanced technologies such as Marketing Automation and Artificial Intelligence (AI) to enhance efficiency and drive growth [Rosario, A. (2021)]. This study of the literature looks at the relationship between AI and marketing automation, highlighting the ways in which these technologies work together to improve marketing operations, give marketers more influence, and help businesses succeed as a whole. With its capacity to automate repetitive operations, nurture leads, and delivers personalized content at scale; marketing automation has become a key component of modern marketing campaigns. The literature continuously emphasizes that Marketing Automation may improve client segmentation; decrease human tasks, and improve the customer experience in general. Marketers may concentrate on strategic tasks by automating repetitive operations, which creates a more responsive and flexible marketing environment.

According to [Domini, *et al.*, 2023], businesses' interaction with their target consumers has undergone a paradigm shift as a result of the incorporation of AI in marketing. AI tools that enable marketers to make data-driven decisions, optimise campaigns, and precisely personalise content are machine learning and predictive analytics. A competitive advantage can be gained by marketers by using AI to anticipate consumer behaviour and extract actionable intelligence, as demonstrated by the literature in this field. Research as per [Silva, *et al.*, 2023; Javaid, *et al.*, 2022] continuously shows that AI and marketing automation work well together. Artificial Intelligence (AI) adds intelligence to marketing automation by handling the execution of pre-established activities and workflows, enabling dynamic adaptation and optimisation. According to the literature, Marketing Automation platforms are enhanced when AI is integrated with them. This allows the platforms to see patterns in data, predict client demands, and make real-time adjustments to marketing campaigns automatically.

The unparalleled degree of personalization that can be achieved by fusing AI and Marketing Automation is one of the main benefits. [De Bruyn, *et al.*, 2020] highlights the ways in which these technologies allow marketers to design hyper-targeted campaigns with tailored material that appeals to individual tastes. This increased level of personalization boosts conversion rates and fosters enduring client loyalty, in addition to increasing consumer engagement. The necessity for qualified staff to manage these technologies, ethical concerns, and data protection issues continue to be prevalent topics. [Mikalef, *et al.*, 2023] underscore the need to adopt a well-rounded strategy, promoting a tactical amalgamation that corresponds with the objectives and principles of the organization.

Ultimately, the study of the literature emphasizes how AI and marketing automation can completely change marketing processes. By integrating these technologies, operational operations are streamlined, and marketers are empowered to improve personalization, make more educated decisions, and promote long-term growth. To maintain competitiveness and achieve long-term success in the ever-

changing marketing industry, companies must comprehend the synergies between AI and Marketing Automation as they continue to navigate the digital landscape.

### **Conceptual Framework and Hypotheses Development**

The convergence of Artificial Intelligence (AI) and Marketing Automation (MA) has become a crucial paradigm for companies looking to boost growth and efficiency in today's fast-changing technology landscape. The symbiotic relationship between marketing automation and AI is outlined in this conceptual framework, with particular attention to mediating and moderating elements that add to overall marketing effectiveness. The degree of automation used, the accuracy of customer segmentation, the level of personalisation, the integration of multi-channel marketing strategies, and the efficient application of data analytics are all critical components of a successful marketing automation implementation. Together, these components create the framework that AI and marketing automation work with to optimize marketing procedures [Murphy, 2018].

The use of marketing automation tools by organizations varies; it can range from simple email automation to complex campaigns powered by artificial intelligence. The effectiveness and sophistication of marketing processes are directly impacted by the degree of implementation, which also affects the way companies interact with their target market and oversee marketing workflows [Klaus, 2021; Swieczak, 2013]. Effective customer segmentation is essential to marketing automation success. To ensure that marketing initiatives are focused, pertinent, and customised, AI algorithms are essential in fine-tuning and optimizing client segmentation. Marketing strategies are more successful when they are based on accurate customer segmentation [Korner, 2023].

A significant factor in determining consumer engagement and response is the level of personalization in marketing communications. In order to produce highly targeted and personalised content that improves client experiences and forges closer ties with the brand, AI-driven personalisation algorithms examine enormous databases [Biegel, 2009]. Multi-channel marketing initiatives must be seamlessly integrated for effective marketing automation to transcend individual channels. Artificial Intelligence enables marketing efforts to be coordinated and synchronized across many channels, resulting in a consistent brand message that appeals to a wide range of market segments. To derive useful insights from large datasets, it is essential to apply data analytics strategically. Combining AI with marketing automation empowers businesses to extract insights from data, allowing for the optimization of marketing campaigns for better results and data-driven decision-making [Charleer, *et al.*, 2017].

Customer involvement, which serves as a mediating variable to connect the many aspects of marketing automation and AI, is at the centre of this conceptual framework. The efficiency of marketing campaigns is ultimately dependent on customer interaction, which acts as a dynamic link between automation tactics that are put into place.

In this approach, marketing effectiveness serves as the ultimate barometer of success. This includes the capacity of AI and marketing automation to produce targeted results, such as increased brand recognition, client acquisition, and revenue development [Varnali, 2021]. Marketing effectiveness is directly shaped by the previously described marketing automation components, and it is also impacted by the mediating variable of client engagement. Technological variables alone do not determine the efficacy of marketing automation and AI. Moderating factors include organisational size and structure, as well as organisational characteristics such as culture, leadership, and internal procedures. These variables shape the total impact on

marketing effectiveness by influencing the extent to which an organization can use marketing automation technologies [Noor, Awan & Zahid, 2019].

Thus the conceptual framework, in broad terms, offers a thorough grasp of the complex connections among marketing automation, artificial intelligence, consumer interaction, organizational dynamics, and size and structure. It lays the groundwork for upcoming studies and empirical inquiries into the complex interactions between these factors as well as the way they all work together to simplify marketing procedures for increased effectiveness and long-term growth.

By identifying research gaps, utilising the conceptual framework, and conducting a thorough literature analysis, the questions put forth seek to address the issues raised in the current study.

How do various marketing automation factors influence customer engagement, and what is the nature and extent of this impact?

In what ways does customer engagement mediate the relationship between marketing automation strategies and marketing effectiveness?

To what extent do organizational dynamics moderate the relationship between marketing automation and marketing effectiveness, and what specific dynamics play a significant role in this moderation?

**To address the research queries, the following objectives are articulated.**

To assess the impact of various marketing automation factors on customer engagement

To examine the mediating role of customer engagement in marketing automation and effectiveness

To explore the moderating effect of organizational dynamics in relationship between marketing automation and marketing effectiveness.

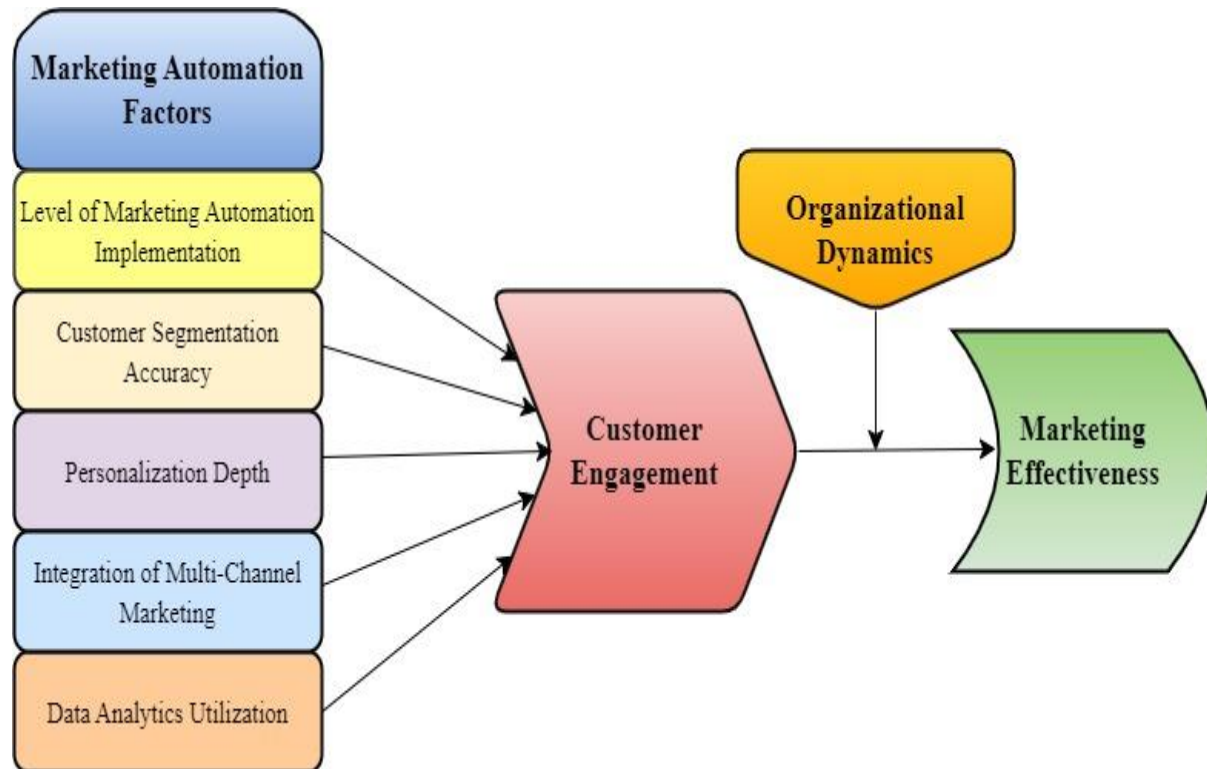
Based on the synthesis of the literature, identification of research gaps, formulation of research questions, delineation of objectives, and development of the conceptual framework, the following hypotheses have been crafted:

H<sub>1</sub>: The enhanced utilization and optimization of marketing automation factors significantly increase customer engagement.

H<sub>2</sub>: The level of customer engagement mediates the relationship between the implementation of marketing automation strategies and overall marketing effectiveness

H<sub>3</sub>: The correlation between marketing automation and marketing effectiveness is more robust when influenced by the dynamics within the organization.

### Conceptual Model



Source: Compiled by Authors

### Research Design

#### Sample and Participants Profile

This research relies on original survey data collected through an online survey platform, with the questionnaire created using Google Forms and disseminated to a varied range of consumer groups via email. The sample comprises 100 participants, offering a diverse demographic representation that encompasses factors such as gender, professional position, industry, and years of experience in marketing. With 54% of the 100 participants in this study being men and 46% being women, the demographic profile of the participants shows a balanced gender distribution. Regarding positions, most of the participants have employment as digital marketing specialists (29%), closely followed by marketing managers (27%), marketing executives (24%), and others (20%). Considering the many viewpoints from different positions within the marketing sector, this diversity of views adds to a thorough comprehension of the subject matter.

The participants' industry distribution offers an extensive overview of the various industries that are represented in the data set. Remarkably, the finance business has the biggest participation, employing 30% of participants. The technology sector, which makes up 20% of the total, is not far behind, offering insights that could be especially pertinent to digital solutions, technological innovation, and related disciplines. Healthcare professionals comprise 14% of the sample and form a large yet distinct segment of the participants, with 18% of them coming from the retail sector. Finally, the category titled "Other" comprises 18% of the sample, signifying an ancillary group that might comprise people from different industries that aren't explicitly mentioned in the breakdown.

The distribution of participants' years of marketing experience is reasonably even, with each group falling into a separate experience bracket. The largest group consists of people with 3-5 years of experience (31%), followed by people with 10 years or more (26%), people with 6-10 years (24%), and people with 0–2 years (19%). This wide range of experience levels guarantees a complex viewpoint, combining knowledge from both seasoned experts and those who are relatively new to the topic, enhancing the study's overall depth.

**Table No. 1**  
*shows the demographic profile of the participants*

Demographic Details	Frequency	Percentage (%)
<b>Gender</b>		
Male	54	54.0
Female	46	46.0
<b>Total</b>	<b>100</b>	<b>100</b>
<b>Position</b>		
Marketing Manager	27	27.0
Digital Marketing Specialist	29	29.0
Marketing Executive	24	24.0
Other	20	20.0
<b>Total</b>	<b>100</b>	<b>100</b>
<b>Industry</b>		
Technology	20	20.0
Healthcare	14	14.0
Retail	18	18.0
Finance	30	30.0
Other	18	18.0
<b>Total</b>	<b>100</b>	<b>100</b>
<b>Years of Experience in Marketing</b>		
0-2 years	19	19.0
3-5 years	31	31.0
6-10 years	24	24.0
More than 10 years	26	26.0
<b>Total</b>	<b>100</b>	<b>100</b>

Source: Calculations by Authors



### Research Instrument

The major aim of this study is to investigate the synergies between marketing automation and artificial intelligence in optimizing marketing processes for enhanced efficiency and growth. Additionally, our study seeks to elucidate the mediating influence of customer engagement in the correlation between various marketing automation factors and the effectiveness of marketing strategies. To capture participants' viewpoints on these aspects, we developed a research instrument utilizing a 5-point Likert scale. The formulation of the instrument's items is informed by insights gleaned from previous studies, exemplified by [De Bruyn, *et al.*, 2020; Huang & Rust, 2022; Chintalapati & Pandey 2022; Korner, 2023; Mikalef, *et al.*, 2023]. The instrument encompasses 40 statements, systematically addressing 8 distinct facets, as delineated in the following table.

**Table No. 2**  
***Details of the research instrument***

Sl. No.	Elements	No. of statements	Source
1.	Level of Marketing Automation Implementation	5	[5, 11, 16, 17, 18]
2.	Customer Segmentation Accuracy	5	[8, 13, 19, 20, 21, 22]
3.	Personalization Depth	5	[15, 17, 23, 24, 25]
4.	Integration of Multi-Channel Marketing	5	[10, 16, 26, 27]
5.	Data Analytics Utilization	5	[7, 14, 28, 29]
6.	Customer Engagement	5	[9, 12, 30, 31]
7.	Marketing Effectiveness	5	[5, 15, 16, 32, 33]
8.	Organizational Size and Structure	5	[12, 34, 35]

**Source:** *Compiled by Authors*

### Statistical tools used

The study utilized SPSS as a statistical tool to support several analytical techniques, such as partial correlation, mediation analysis, and multiple regression analysis. The research was able to delve into complex patterns and interactions within the data by using SPSS, which offered a robust framework for the systematic exploration of correlations among variables.

### Results and Discussion

H1: The enhanced utilization and optimization of marketing automation factors significantly increase customer engagement.



**Multiple Regressions Analysis**

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.242 <sup>a</sup>	.059	.049	.19005

a. Predictors: (Constant), MAI

b. Dependent Variable: CE

In the model, 5.9% of the variance in Customer Engagement determined by using Marketing Automation Implementation (MAI) as the predictor (R Square=0.059). The marginally improved model fit indicated by the updated R Square (0.049) raises the possibility that customer engagement may be influenced by other factors not captured in the model.

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.220	1	.220	6.096	.015 <sup>b</sup>
1 Residual	3.540	98	.036		
Total	3.760	99			

a. Dependent Variable: CE

b. Predictors: (Constant), MAI

Marketing Automation Implementation (MAI) is a predictor in the regression model, which is statistically significant (F=6.096, p=0.015) as per the ANOVA results. This means that MAI significantly contributes to explaining the variation in Customer Engagement (CE). With a sum of squares for the regression component of 0.220, it is possible that a significant amount of the variance in the model can be attributed to the addition of MAI, highlighting its impact on customer engagement.

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	3.795	.294		12.890	.000	3.210	4.379
1 MAI	.162	.066	.242	2.469	.015	.032	.292

a. Dependent Variable: CE

The findings imply that when Marketing Automation Implementation (MAI) is zero, the expected Customer Engagement is 3.795, leaving all other variables constant. A rise in MAI is associated with a noteworthy and favourable effect on Customer Engagement (CE). Improving Marketing Automation Implementation is likely to lead to greater Customer Engagement, as suggested by the narrow 95.0% confidence interval (0.032 to 0.292) that supports the validity of this positive correlation.

Residuals Statistics <sup>a</sup>					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.3775	4.6042	4.5200	.04716	100
Residual	-.47467	.46057	.00000	.18909	100
Std. Predicted Value	-3.021	1.785	.000	1.000	100
Std. Residual	-2.498	2.423	.000	.995	100

a. Dependent Variable: CE

With a mean residual that is almost equal to zero (Mean=0.000) and a modest residual standard deviation (Std. Deviation=0.18909), the residual statistics show that the model’s predicted values agree very well with the actual values. With standardized residuals ranging from -2.498 to 2.423, it appears that the model adequately reflects the variability in Customer Engagement (CE) since most forecasts fall within a fair range. A further indication of the model's success in forecasting CE is the standardized predicted values, which show that most observations fall within a standard deviation of the mean.

The results of the study provide credibility to the hypothesis that customer engagement is greatly increased by optimizing and making better use of marketing automation aspects. Regression analysis reveals that Marketing Automation Implementation (MAI) is a statistically significant predictor of customer engagement (F=6.096, p=0.015). This model explains a considerable amount of the variance in customer engagement. The results show that there is a positive and substantial correlation between the implementation of marketing automation and customer engagement ( $\beta=0.242$ , p=0.015). This relationship is further reinforced by the narrow 95.0% confidence interval for the MAI coefficient (0.032 to 0.292). The model’s minimum divergence from the expected values for forecasting consumer involvement is further supported by the residual statistics. As a result, the hypothesis is accepted in light of the data the regression analysis produced.

H2: The level of customer engagement mediates the relationship between the implementation of marketing automation strategies and overall marketing effectiveness.

**Mediation Analysis**

**Relationship between Marketing Automation Factors to Marketing Effectiveness**

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.045 <sup>a</sup>	.002	-.008	.23244

Predictors: (Constant), MARKET AUTOMATION FACTORS

Dependent Variable: ME

The model indicates that the initial model, including market automation factors as the predictor, explains only a minimal amount of variance in the dependent variable ME (R Square=0.002). The negative adjusted R Square (-0.008) suggests that the chosen predictor has limited explanatory power, indicating that other factors not included in the model may influence the dependent variable.

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.011	1	.011	.202	.654 <sup>b</sup>
Residual	5.295	98	.054		
Total	5.306	99			

a. Dependent Variable: ME

b. Predictors: (Constant), MARKET AUTOMATION FACTORS

The ANOVA results indicate that the regression model, with market automation factors as the predictor, is not statistically significant (F=0.202, p=0.654). This suggests that the chosen predictor does not significantly contribute to the variance in the dependent variable, marketing effectiveness, and the overall model lacks statistical significance.

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	4.895	.854		5.731	.000	3.200	6.591
MARKET AUTOMATION FACTORS	-.086	.190	-.045	-.449	.654	-.464	.292

a. Dependent Variable: ME

The regression coefficients reveal that the constant term is 4.895 (p<0.001), representing the expected value of marketing effectiveness when market automation factors are zero. However, market automation factors have a non-significant negative impact on marketing effectiveness ( $\beta$ =-0.045, p=0.654), indicating that changes in factors are not associated with a statistically significant change in marketing effectiveness. The 95.0% confidence interval for the factor coefficient (-0.464 to 0.292) further supports the lack of a significant relationship.

**Residual Statistics<sup>a</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.4883	4.5499	4.5120	.01049	100
Residual	-.51224	.50145	.00000	.23126	100
Std. Predicted Value	-2.260	3.611	.000	1.000	100
Std. Residual	-2.204	2.157	.000	.995	100

a. Dependent Variable: ME

The residuals statistics indicate that the model's predicted values closely align with the actual values for the dependent variable ME, with a small mean residual close to zero (Mean=0.000) and a minimal standard deviation of residuals (Std. Deviation=0.23126). The standardized residuals, ranging from -2.204 to 2.157, suggest that most predictions fall within a reasonable range, indicating that the model effectively captures the variability in marketing effectiveness.

**Relationship between Marketing Automation Factors to Customer Engagement**

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.077 <sup>a</sup>	.006	-.004	.19529

Predictors: (Constant), MARKET AUTOMATION FACTORS

Dependent Variable: CE

The model indicates that the initial model, including the predictor market automation factors, explains a very small proportion of the variance in the dependent variable, customer engagement, with an R Square of 0.006. The adjusted R Square is negative, suggesting that the model's fit is not improved by the inclusion of the predictor.

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.022	1	.022	.586	.446 <sup>b</sup>
1 Residual	3.738	98	.038		
1 Total	3.760	99			

a. Dependent Variable: CE

b. Predictors: (Constant), MARKET AUTOMATION FACTORS

The ANOVA results indicate that the regression model, which includes market automation factors as a predictor, is not statistically significant ( $F=0.586$ ,  $p=0.446$ ). This suggests that market automation factors do not significantly contribute to explaining the variance in the dependent variable customer engagement.

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
	(Constant)	3.971	.718				5.532
1 Market Automation Factors	.123	.160	.077	.765	.446	-.195	.440

a. Dependent Variable: CE

The regression coefficients reveal that the constant term is 3.971 ( $p<0.001$ ), representing the expected customer engagement when market automation factors are zero. Market automation factors, however, have a non-significant and minimal impact on customer effectiveness ( $\beta=0.077$ ,  $p=0.446$ ), as indicated by the wide confidence interval that includes zero.

**Residual Statistics<sup>a</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.4658	4.5540	4.5200	.01502	100
Residual	-.49515	.46564	.00000	.19430	100
Std. Predicted Value	-3.611	2.260	.000	1.000	100
Std. Residual	-2.535	2.384	.000	.995	100

a. Dependent Variable: CE

The residuals statistics indicate that the model’s predicted values closely align with the actual values, with a small mean residual close to zero (Mean=0.000) and a moderate standard deviation of residuals (Std. Deviation=0.19430). The standardized residuals, ranging from -2.535 to 2.384, indicate that most predictions fall within a reasonable range, suggesting that the model effectively captures the variability

in customer engagement. The standardized predicted values further demonstrate that the majority of observations are within a standard deviation of the mean. Overall, these statistics suggest a good fit for the model.

**Relationship between Customer Engagements to Marketing Effectiveness**

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.167 <sup>a</sup>	.028	.018	.22943

a. Predictors: (Constant), CE

b. Dependent Variable: ME

The model indicates that the initial model, with customer engagement as the predictor, explains 2.8% of the variance in overall marketing effectiveness R Square=0.028). The adjusted R Square (0.018) suggests a limited improvement in model fit, implying that the chosen predictor has limited predictive power in this context.

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.147	1	.147	2.797	.098 <sup>b</sup>
1 Residual	5.158	98	.053		
Total	5.306	99			

a. Dependent Variable: ME

b. Predictors: (Constant), CE

The ANOVA results indicate that the regression model, with customer engagement as the predictor, is not statistically significant (F=2.797, p=0.098). This suggests that customer engagement alone does not significantly contribute to explaining the variance in overall marketing effectiveness.

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	5.406	.535		10.100	.000	4.344	6.469
1 CE	-.198	.118	-.167	-1.672	.098	-.433	.037

a. Dependent Variable: ME

The regression coefficients reveal that the constant term is 5.406 ( $p < 0.001$ ), representing the expected overall marketing effectiveness when customer engagement is zero. However, customer engagement has a negative and marginally significant impact on ME ( $\beta = -0.167$ ,  $p = 0.098$ ), suggesting that an increase in customer engagement is associated with a decrease in overall marketing effectiveness, though this relationship is not statistically strong.

**Residual Statistics<sup>a</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.4170	4.6149	4.5120	.03856	100
Residual	-.53574	.50383	.00000	.22826	100
Std. Predicted Value	-2.463	2.668	.000	1.000	100
Std. Residual	-2.335	2.196	.000	.995	100

a. Dependent Variable: ME

The residuals statistics confirm a strong alignment between predicted and actual values in the model, with minimal deviation from the mean prediction. Standardized residuals falling within a reasonable range (-2.335 to 2.196) signify effective variability capture, and standardized predicted values reinforce the model's reliability. Thus, these statistics collectively indicate a robust fit for the model in predicting overall marketing effectiveness.

The analysis does not provide support for hypothesis, as the proposed mediation of customer engagement in the relationship between marketing automation strategies and overall marketing effectiveness is not substantiated. The initial model linking marketing automation factors to marketing effectiveness lacks significance ( $F = 0.202$ ,  $p = 0.654$ ), indicating that these factors do not significantly explain the variance in marketing effectiveness. Additionally, the relationship between customer engagement and marketing effectiveness is marginally significant and negative ( $\beta = -0.167$ ,  $p = 0.098$ ), suggesting that increased customer engagement is associated with a decrease in overall marketing effectiveness, though the strength of this relationship is limited. Overall, the proposed mediation effect of customer engagement is not supported by the data, and marketing automation factors do not exhibit a significant relationship with marketing effectiveness.

**H3: The correlation between marketing automation and marketing effectiveness is more robust when influenced by the dynamics within the organization.**



**Partial Correlation**

	Mean	Std. Deviation	N
Marketing Effectiveness	4.5120	.23150	100
Market Automation Factors	4.4828	.12263	100
Organizational Size & Structure	4.4800	.22563	100

The descriptive statistics reveal the following central tendencies and variability for the surveyed variables: Marketing effectiveness has a mean of 4.5120 with a standard deviation of 0.23150 based on a sample size of 100. Market automation factors exhibit a mean of 4.4828 with a standard deviation of 0.12263, and organisational size and structure show a mean of 4.4800 with a standard deviation of 0.22563, both also based on a sample size of 100.

**Correlations**

Control Variables			Marketing Effectiveness	Market Automation Factors
Organizational Size & Structure	Marketing Effectiveness	Correlation	1.000	-.036
		Significance (2-tailed)	.	.722
		df	0	97
	Market Automation Factors	Correlation	-.036	1.000
		Significance (2-tailed)	.722	.
		df	97	0

The correlation matrix shows that there is a negligible and statistically insignificant correlation between Marketing Effectiveness and Market Automation Factors (correlation coefficient=-0.036, p=0.722). Additionally, Organizational Size & Structure do not exhibit a significant correlation with either Marketing Effectiveness (correlation coefficient=0.000, p=1.000) or Market Automation Factors (correlation coefficient=-0.036, p=0.722).

The analysis does not support H3, as the correlation between marketing automation factors and marketing effectiveness is negligible and statistically insignificant (correlation coefficient=-0.036, p=0.722), indicating that organizational dynamics do not significantly strengthen this relationship. Descriptive statistics show that marketing effectiveness and market automation factors have means of 4.5120 and 4.4828, respectively, with low variability, while organizational size and structure have a mean of 4.4800. The overall findings suggest that the hypothesized interaction between marketing

automation and organizational dynamics in influencing marketing effectiveness is not supported by the data.

## Conclusion

The purpose of the study was to explore and illustrate the ways in which marketing processes might be optimised through the integration of artificial intelligence and marketing automation. To improve efficiency, targeting, and overall effectiveness in marketing tactics, the research is intended to investigate the synergies between various technologies. Through an analysis of their collective influence, the research offered valuable perspectives on how companies might utilize these developments to attain steady expansion and competitiveness within the ever-changing realm of contemporary marketing.

Regression analysis showed a positive association and significant predictor status for Marketing Automation Implementation (MAI), indicating that optimizing marketing automation greatly increases customer engagement. Nevertheless, there is a lack of support for the theory that customer involvement mediates the relationship between marketing automation and marketing effectiveness. The primary model is not statistically significant, implying that variables related to marketing automation cannot account for variations in efficacy. Furthermore, there is a weakly significant negative association between consumer involvement and marketing effectiveness, indicating that higher engagement is correlated with lower overall effectiveness. Additionally disproved by the modest and statistically insignificant association between these variables is the suggested relationship between marketing automation and organizational dynamics in impacting marketing effectiveness.

The study's potential ability to generalize is severely hindered by the mere fact that its insights are derived from a particular industry or subset of organizational situations. The results' external validity may be limited as a result of the study's potential inability to fully cover the range of varied business situations. Furthermore, a concern presented by the rapidly changing landscape of technology is that the results of the research can become antiquated in the future, especially in the areas of artificial intelligence and marketing automation. Moreover, it is possible that the outcomes of the research cannot be fully applied to other business environments or industries due to the complexity of organizational dynamics and the wide range of elements influencing marketing performance.

The practical implications of the study's findings are noteworthy for firms that seek to boost growth and improve marketing efficiency by incorporating marketing automation and artificial intelligence. Businesses can effectively customize their tactics by utilizing the marketing automation characteristics that have been discovered to have a good impact on consumer engagement. Businesses should concentrate on independently optimizing marketing automation for increased overall effectiveness, as suggested by an understanding that customer engagement is not a key mediator. The need for customizing implementation techniques to the unique organisational setting is further highlighted by the realization that organizational dynamics have a limited moderating influence. In order to optimise the advantages of streamlined processes for long-term efficiency and growth, practical applications include optimizing automation tactics, giving priority to customer interaction activities, and coordinating marketing automation efforts with organizational dynamics.

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