Advances in Consumer Research
ISSN (Print): 0098-9258
ISSN(Online): 3079-1766

Vol. 2, Issue 4 (2025) https://acr-journal.com/

Investigating the Effects of Emerging Technologies on AIDA and Marketing Mix in Indian Digital Marketing

Prasenjit Chakrabarty*[1], Raj Sinha[2]

[1]Research Scholar, Department of Management, Dr. K.N. Modi University, Newai, Rajasthan, India, prasenjit.
Email ID: prasenjit.chakrabarty.in@gmail.com
[2]Assistant Professor, Faculty of IT & CS (FITCS), PIET-MCA, Parul University, Vadodara, Gujarat, India.
Email ID: rajsinha2310@gmail.com, Orchid Id: 1 0009-0001-9433-580X, 2 0009-0000-0714-6027
***Corresponding Author:**
Prasenjit Chakrabarty
Email ID: prasenjit.chakrabarty.in@gmail.com

Cite this paper as: Prasenjit Chakrabarty, Raj Sinha, (2025) Investigating the Effects of Emerging Technologies on AIDA and Marketing Mix in Indian Digital Marketing. *Advances in Consumer Research*, 2 (4), 1227-1245

KEYWORDS

Over-the-Top (OTT) Media; AIDA (Attention-Interest-Desire-Action) Model; Consumer Behavior; Artificial Intelligence (AI) in Marketing; Marketing Mix; Consumer Behavior

ABSTRACT

This research examines how emerging technologies—especially artificial intelligence (AI) and machine learning (ML)—influence digital marketing outcomes in India's Over-the-Top (OTT) media sector. OTT refers to streaming services delivered directly to viewers via the internet, bypassing traditional broadcast platforms. The study explores the effectiveness of digital marketing communication through the lens of the AIDA model, which tracks customer journey stages: Attention, Interest, Desire, and Action.

Using a structured questionnaire with a sample of 506 OTT subscribers in India, the study measured consumer responses to key marketing variables such as brand recall, promotional timing, customer support quality, pricing, and content type. We analyzed responses using regression methods and machine learning tools like SHAP (Shapley Additive Explanations), which reveal how much each factor contributed to the outcome.

Findings show that effective customer support and ease of access strongly influence consumer attention, while brand recognition and timely promotions impact purchase decisions. Interestingly, price sensitivity plays a role—but only within certain limits.

This study offers practical insights for digital marketers operating in India's crowded OTT market. It suggests that success lies in blending emotional triggers like brand trust with functional aspects like content delivery and support. By aligning strategies with data-driven insights, marketers can improve both customer acquisition and retention.

1. INTRODUCTION

Indian economy is exhibiting a sustained growth, post pandemic, and is growing at a band of 7-8%. Due to consistent growth of India, in the last decade the share of affluents and middle class have grown to a sizable proportion. As shown in table 1, the percentage of elites have grown from 1% in 2010 to a projected 7% by 2030. Similarly, the growth of affluent households is from 5% in 2010 to 16% by 2030. What is more interesting is that the affluent sections are growing faster than Indian GDP. This phenomenon is creating a upper middle class and middle class with disposable wealth for leisure.

Table 1- The number & household (Mn) in different income categories-

(Mn population)

Year (Annual ₹ Lacs pa)	**2010 (3.9)**	**2019 (5.2)**	**2030 (E) (7.3)**	**Growth (19-30)**
Elite *>20*	3 (1%)	10 (3%)	23 (7%)	2.3 x
Affluent- *10-20*	13 (5%)	26 (9%)	56 (16%)	2.1 x
Aspirer- *5-10*	35 (15%)	59 (21%)	92 (26%)	1.6 x
Next Billion- *1.5-5*	108 (45%)	130 (45%)	142 (40%)	1.1 x
Strugglers- <1.5	79 (33%)	64 (22%)	40 (11%)	0.6 x
Number of Households (Mn)	*238*	*289*	*354*	

(Courtesy- Sanghi & Sanghi, BCG 2020) [11]

2. LITERATURE REVIEW

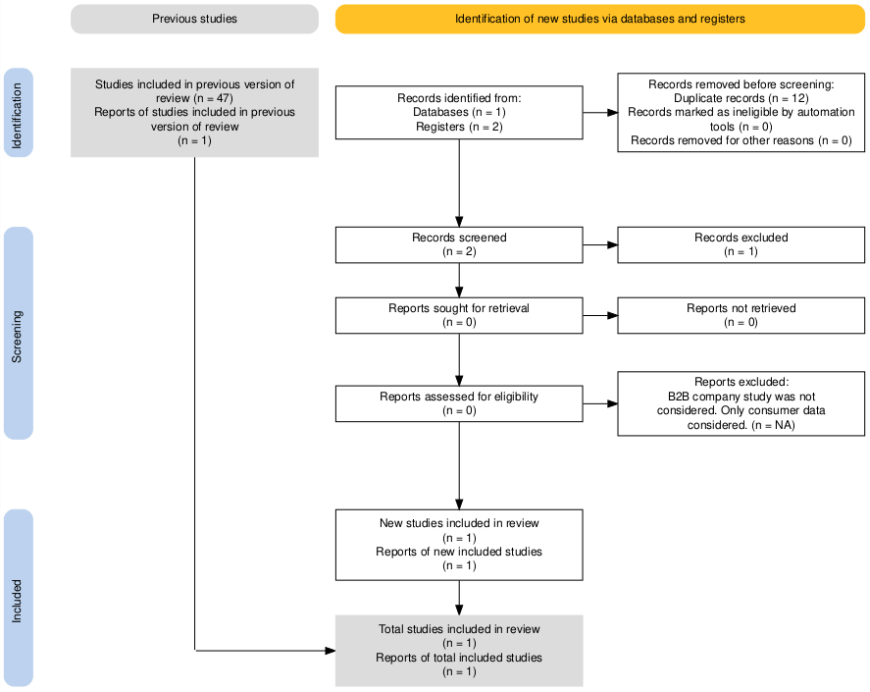
With the affluence, India's digital behavior has revolutionized. over 1200 million Indians now access digital platforms not just for entertainment but also for lifestyle choices. This economic shift has sparked a parallel behavioral change—where mobile-first users demand hyper-personalized content, real-time offers, and emotionally resonant brand interactions. In this dynamic environment, understanding how digital marketing strategies influence attention, interest, and action is not just relevant- it's urgent.

A systematic Literature review was concluded to understand the impact of the sector and consumer space. Studies involving journals, books, newspapers, databases and conference papers were screened and 47 such papers were reviewed. The papers were chosen after evaluation of impact score, the standing of the publication house, relevance to the topic and citation scores. A detailed analysis can be understood from the Prisma 2020 flowchart- shown in Figure 1.

Key citation statistics based on theme-

- Emerging technologies in marketing- 16 nos.
- OTT user behavior & content trends- 10 nos.
- Impact of AIDA stages on purchase decisions- 4 nos.
- Measurement gaps in digital marketing ROI (Return of Investment)- 5 nos.

5 Figure 1- PRISMA 2020



(Courtesy- Prisma-2020) [9]

3. CURRENT LANDSCAPE OF DIGITAL MARKETING IN INDIA

3.1 Growth of Internet Penetration and Mobile Usage

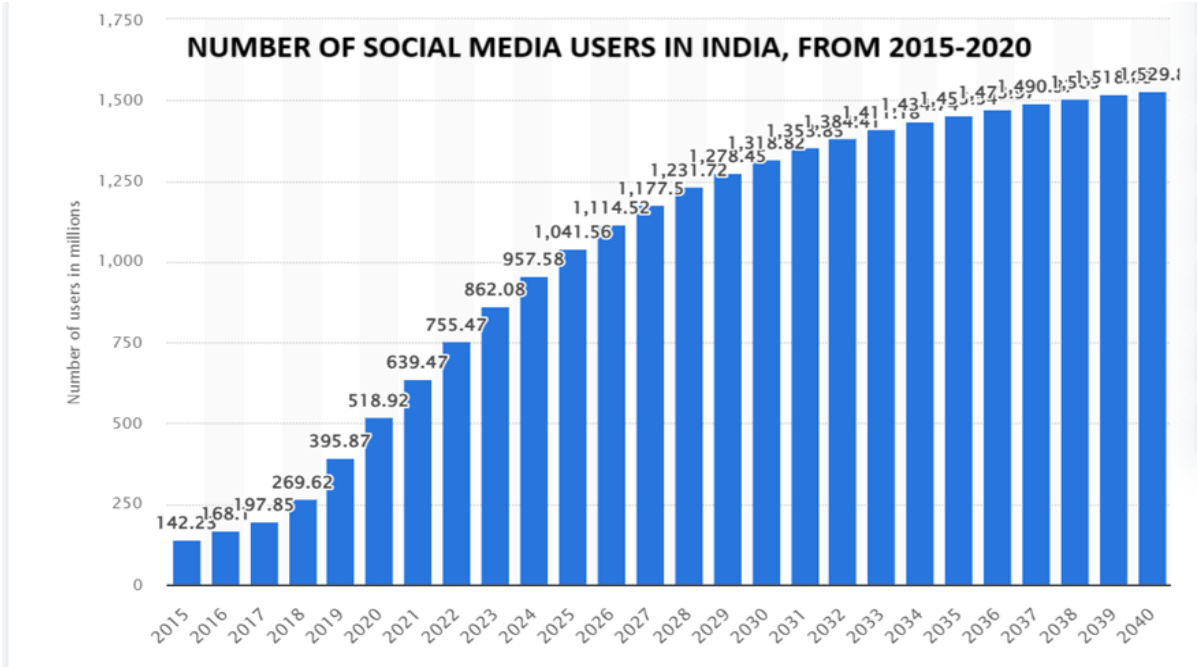
India has seen a phenomenal increase in internet usage. This remarkable growth can be largely credited to the widespread availability of budget-friendly smartphones and data plans, especially after the entry of Reliance Jio into the telecommunications market in 2016. (Trai, 2024) [29]

- Mobile devices have become the primary means of internet access for most Indians, with over 80% of internet users relying on their smartphones for online activities.

Though brand building is key to long-term return-on-investment (ROI), 70% of marketers plan to prioritize performance marketing over brand building. (Neilsen, 2024) [19]

A study by Halvadia and Menon (2021) analyzed how various digital marketing trends affect consumer purchase decisions. They postulated that while emerging trends foster engagement, the established strategies remain bedrock for reaching out to and retaining customers. (Halvadia and Menon, 2021) [12]

6 Figure 2- Social Media in India



(Courtesy: Statista) [26]

The influence of social media in India is multifaceted- which can be seen in the figure 2 (statista data). It has democratized content creation, allowing individuals, influencers, and small businesses to reach large audiences without the need for significant investment. The bulk of the growth was between 2018 to 2025.

3.2 EMERGING TRENDS IN DIGITAL MARKETING IN INDIA

Özoğlu and Topal's (2020) article, "Digital Marketing Strategies and Business Trends in Emerging Industries," provides lenses on how digital marketing blends to advanced technological surge, particularly in emerging industries. They highlight blockchain ecosystems, exploring how this technology enables transparency, security, & efficiency in marketing.

(Özoğlu and Topal's, 2020) [21]

3.3 Measurement Dilemma

Nielson, in their 2024 study of annual marketing report states about 63% of advertising budgets globally are directed towards digital trends, though only 38% measure ROI for the marketing channels. 84% of the responders for the study showed confidence in their digital measurement tools yet only limited cited their ability to measure effectiveness due to complexities of cross channel integration. There was a trend toward retail media, with 70% view digital channels increasingly essential for their digital channels, particularly in personalizing and reaching targeted audience. Also, the marketers highlighted the underinvestment, often due to competing resource priority, leads to underinvestment in videos and display advertisement, limiting ROI potential. 30% use the marketing mix model as a holistic cross-model ROI. (Neilsen, 2024) [19]

3.4 Artificial Intelligence and Machine Learning

Artificial Intelligence (AI) and Machine Learning (ML) are transforming the digital marketing landscape in India. These cutting-edge technologies provide businesses with advanced tools to elevate their marketing strategies and improve customer experience. (Bajaj et al., 2024) [2]

With the increasing popularity of devices like Amazon Echo, Google Home, and Apple's Siri, Indian consumers are relying more on voice commands for various tasks, from web searches to controlling smart home devices. (Nielsen, 2024) [19]

Programmatic advertising is experiencing rapid growth in India, revolutionizing the way digital ads are bought and sold. Our system uses AI and real-time bidding to place ads in front of the perfect audience at the perfect moment, making digital marketing campaigns much more efficient and successful- an advertiser confided to us.

These platforms provide the capability to analyze large volumes of data in real-time, empowering advertisers to make well-informed decisions on the optimal placement, timing, and audience for their ads. Bajaj et al., 2024 showed that using biometric and eye tracking data, with increased neuromarketing analytics, a better prediction of consumer behavior and trigger better ad engagement, recall, and consumer intent can be arrived at. (Bajaj et al., 2024) [2]

3.5 Rise of OTT Industry in India

From Bigflix by Reliance entertainment in 2008, the OTT industry has come a long way. Along with soap opera shows, the channels started streaming services of Indian cricket matches, like Prier league, which exploded their popularity. Netflix launched Indian operations in 2016. It marked the entry of other international players like Amazon Prime Video providing wider choices. Ojha & Vaish, 2024, explored the present and past regulations on the industry and its impact. (Ojha & Vaish, 2024) [31]

Sridevi and Ajith, 2024 explored the push-pull and mooring effect of switching from cable television to OTT services. They demonstrated that frustration with cable channels, freemium pricing, and trendiness impact the consumer choices towards the switch, while cognitive lock-in has a negative impact.

(Sridevi and Ajith, 2024) [32]

An interesting study was conducted to understand the transfer of the brands in OTT context. It was discovered that user's trust on OTT channels as a brand helps to trust other contents in the channel. Trust transfer is not influenced by gender, experience or income- making the appeal more profound. Also, the brand trust on hosting platform does not affect users to subscribe to upsell services.

(Soren & Chakraborty, 2024) [33]

Viewers are hungry for the appealing content and impulsive and hopping in nature. The retention equity and resultant consumption enhancement was demonstrated by Sharma & Kakkar, 2024. Agnihotri and Bhattacharya, 2024, had analyzed Netflix's Indian sales strategies and showed how Netflix captured market despite the presence of big market players like Disney. (Agnihotri and Bhattacharya, 2024) [35]

BCG in Mar 2023, came out with a data to peg Indian OTT companies CAGR between 2019-22 to be 51%, while in US it was 17% and China it was 11%. Per person daily digital video screening in hourly terms went up from 2.1-2.2 to 3.0-3.3 in India. (BCG, 2023) [5]

But the question is why is AIDA and Machine Learning relevant now?

4 CASE STUDIES of digital Marketing in OTT Industry

India has witnessed several successful digital marketing campaigns that have not only captured the attention of millions but also set benchmarks for creativity, innovation, and effectiveness in the digital space.

Figure 3- Zee5

One standout example is the "Zee5 TV Dekha Kya?" campaign by Zee5 [Figure 3]. Although a global initiative, it was tailored to resonate with the Indian audience by fear of missing out.

Figure 4- SonyLiv

Another notable campaign is the "MamlaGambhirHai" campaign by SonyLiv [Fugure 4], which cleverly played on Indian passion for Cricket entertainment.

Figure 5- Netflix

A sewed hand moving in NYC roads [Figure 5]. This brilliant content campaign for Netflix attracted huge consumer attention across the world.

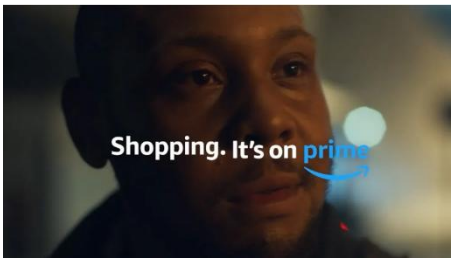


Figure 6- Amazon Prime

Cross selling leveraging amazon shopping brand for Prime has been a long strategy for Amazon Prime [Figure 6] and it has worked well so far, despite headwinds.

4. RESEARCH METHODOLOGY

While prior studies have explored digital marketing trends in India, few have examined how AI-driven insights reshape consumer behavior across AIDA stages within the OTT sector. There remains limited empirical validation using interpretable machine learning models to link marketing mix elements with purchase intent.

Research Objectives

1. Investigation of the relationship between content customization user satisfaction within the AIDA stages in the OTT sector in India.
2. Assessment of the impact of advertisement appeal on capturing consumer Attention and sustaining Interest in OTT subscriptions in India.

The respondents were selected from Indian subscribers with a screening question to determine if they subscribers (with the last 1 year). The total responses were 506. The questions were on the marketing mix and AIDA model. The data was collected using Zoho Survey link and convenient sampling method was employed.

Population- Over 547 million subscribers in India. OTT companies like Disney Plus, Amazon Liv, ZEE5, Netflix India & other, according to Ormax Media's survey on The Ormax OTT Audience Report, July 2024.

Intervention- The structured survey-based questionnaire to customers, using 5-point Likert's scale.

The response options were focused on the brands (Options were- Netflix, Amazon Prime, Disney Hotstar, Zee5, Sony Liv & Other. The Cronbach's Alpha of the original survey was 0.95, concluding high repeatability. The subgroup level response means, and median were calculated, and Cronbach's Alpha was recalculated. Cronbach's Alpha was derived by us and found to be 0.94 & 0.91 respectively. Considering the result, the subgroup-median were considered.

The survey responses were based on 5-point Likert's scale. 1= worst, 2= Bad, 3= Neutral, 4= Good, 5= Best. The response option verbs were modified to help responders to clearly identify the options. The data was subsequently analyzed using JASP & DataTab. Advanced Data science applications using AWS Sage-maker, Data Robot & Dataiku were also used. The packages were chosen taking into consideration of availability, quality & ease of use.

Comparator- The survey was done at one point, and longitudinal analysis wasn't done.

Outcome- The regression studies clearly identified the key independent variables - attractiveness of communication media and appealing or interesting it is for the consumers.

One key limitation of this study is the reliance on self-reported data, which may be subject to biases like social desirability and recall inaccuracy. Although the participants were assured of anonymity, the responses may still include perceived expectations rather than actual behavior.

5. ANALYSIS

The factors considered were a part of the buying decisions (Dependent Variables) as shown in Table 2. The CM (communication Media attractiveness and Interesting CM were the identified dependent variables).

CM= Communication Media *CS= Customer Service*

Table 2- Short Notation- Dependent Variables

Notation	Short Notation	Survey Question
Y_0	CM Attractiveness	How attractive do you find the company's communication media? For example, attractive communication will set the advertisement apart from rest, at your first glance.
Y_1	Interesting CM	How appealing or interesting is the communication media to you as a consumer? An appealing or interesting communication, will mean that it meets your needs and expectation

(Author-Compiled)

Independent Variables

The independent variables were identified in Table 3. These were Types of types of services offered (like movies, web series, tele serials, sports, news), Attractiveness and popularity of the story line, knowledge of the customer support teams for problem resolution, Method adopted by the customer support teams (like Chat, Voice call, Chatbot, Email problem resolution, etc.), brand recognition and recall, pricing of the subscription, Accessibility (like ease to navigate the website, bundle offer availability through telecom operators, etc.), and availability of promotion period.

CM= Communication Media *CS= Customer Service*

Table 3- Sort Notation- Independent Variables

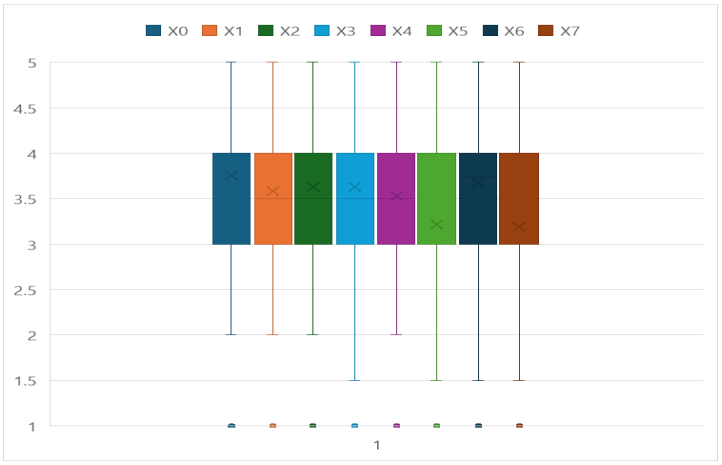
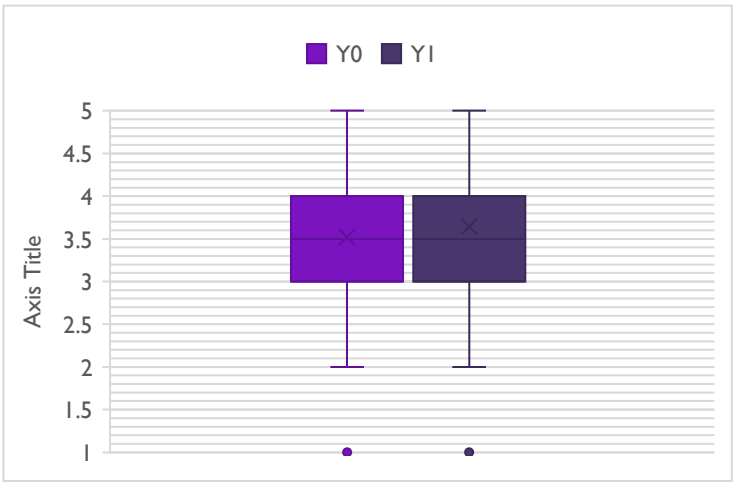
Notation	**Short Notation**	**Survey Question**
X_0	Types of Services	Did you decide to purchase based on the type of services offered (e.g., movies, web series, TV serials, sports, news, etc.)?
X_1	Attractive Content	id the attractiveness, popularity, or storyline of the services influence your decision to purchase?

X2	Knowledge of CS	How competent and knowledgeable was the customer support involved in providing services?
X3	Method of CS	How suitable were the methods of customer support to your needs?
X4	Brand Recognition	Did the brand of the product influence your decision to buy?
X5	Pricing	How acceptable is the product's pricing policy to you?
X6	Accessibility	How easily accessible is the online platform through which you purchased the service?
X7	Promotion Period	Did you purchase during the best promotion period offered by the company?

(Author-Compiled)

The Values, and inter-quartile variations- can be seen in Table 4. The box plot shows uniform distribution and data within the Q1-Q3 inter-quartile range. However, X_3, X_5, X_6 & X_7 have a longer lower tail (kurtosis). The dependent variables look similar.

Table 4- Box Plot Independent Variables

	Mean	Median	Kurtosis	Std. Deviation	Box Plot
X0	3.755	4.00	1.060	0.747	
X1	3.583	3.50	1.298	0.755	
X2	3.629	3.50	0.976	0.734	
X3	3.628	3.50	1.113	0.682	
X4	3.503	3.50	0.339	0.752	
X5	3.216	3.00	0.380	0.770	
X6	3.767	3.75	0.774	0.791	
X7	3.187	3.00	0.351	0.861	
Y0	3.520	3.50	0.698	0.760	
Y1	3.644	3.50	0.612	0.729	

(Author-Compiled)

Step 2- We then looked for Pearson correlations to understand the relationship between the variables- which has been presented in Table 5. At this stage all variables were statistically significant (p-values <0.01).

Table 5- Dependent Variables

Attributes		Pearson Correlation		p- values		Conclusion
		CM Attractiveness (Y_0)	Interesting CM (Y_1)	CM Attractiveness (Y_0)	Interesting CM (Y_1)	
X_0	Types of Services	0.253	0.33	<0.01	<0.01	Significant
X_1	Attractive Content	0.383	0.434	<0.01	<0.01	Significant
X_2	Knowledge of CS	0.326	0.371	<0.01	<0.01	Significant
X_3	Method of CS	0.394	0.397	<0.01	<0.01	Significant
X_4	Brand Recognition	0.266	0.325	<0.01	<0.01	Significant
X_5	Pricing	0.334	0.205	<0.01	<0.01	Significant
X_6	Accessibility	0.257	0.266	<0.01	<0.01	Significant
X_7	Promotion Period	0.285	0.329	<0.01	<0.01	Significant

(Author-Compiled)

Conclusion- All parameters are significant.

Step 3- Independent T Tests were conducted on each variable for each dependent variable to identify key input variables. The T Tests were conducted separately for Y_0 and Y_1 which have been presented at Table 6 & Table 7. The significant ones were colored green, while the insignificant ones were shown in Red.

CM Attractiveness (Y_0)

Table 6- Individual T-Test-Y_0

X_0 Types of Services ✓

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
CM Attractiveness	-	Types of Sevices	−5.743	505	< .001

Note. Student's t-test.

X_1 Attractive Content ×

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
CM Attractiveness	-	Attractive Content	−1.691	505	0.091

Note. Student's t-test.

X_2 Knowledge of CS ✓

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
CM Attractiveness	-	Knowledge of CS	−2.844	505	0.005

Note. Student's t-test.

X_3 Method of CS ✓

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
CM Attractiveness	-	Methods of CS	−3.071	505	0.002

Note. Student's t-test.

X_4 Brand Recognition ×

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
CM Attractiveness	-	Brand Recognition	0.412	505	0.680

Note. Student's t-test.

X_5 Pricing ✓

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
CM Attractiveness	-	Pricing	7.729	505	< .001

Note. Student's t-test.

X6 Accessibility ✓

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
CM Attractiveness	-	Accessibility	−3.711	505	< .001

Note. Student's t-test.

X_7 Promotion Period ✓

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
CM Attractiveness	-	Promotion Period	7.698	505	< .001

Note. Student's t-test.

(Author-Compiled)

In independent T-Test, Attractive content and Brand Recognition were found to be not significant for Y_0 – communication media attractiveness.

T Test for Interesting CM (Y_1)

Table 7- Individual T-Test-Y_1

X_0 Types of Services ✓

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
Interesting CM	-	Types of Sevices	−2.913	505	0.004

Note. Student's t-test.

X_1 Attractive Content ✗

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
Interesting CM	-	Attractive Content	1.745	505	0.082

Note. Student's t-test.

X_2 Knowledge of CS ✗

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
Interesting CM	-	Knowledge of CS	0.407	505	0.685

Note. Student's t-test.

X_3 Method of CS ✗

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
Interesting CM	-	Methods of CS	0.458	505	0.647

Note. Student's t-test.

X_4 Brand Recognition ✓

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
Interesting CM	-	Brand Recognition	3.693	505	< .001

Note. Student's t-test.

X_5 Pricing ✓

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
Interesting CM	-	Pricing	10.178	505	< .001

Note. Student's t-test

X6 Accessibility ✗

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
Interesting CM	-	Accessibility	−0.771	505	0.441

Note. Student's t-test.

X_7 Promotion Period ✓

Paired Samples T-Test

Measure 1		Measure 2	t	df	p
Interesting CM	-	Promotion Period	11.097	505	< .001

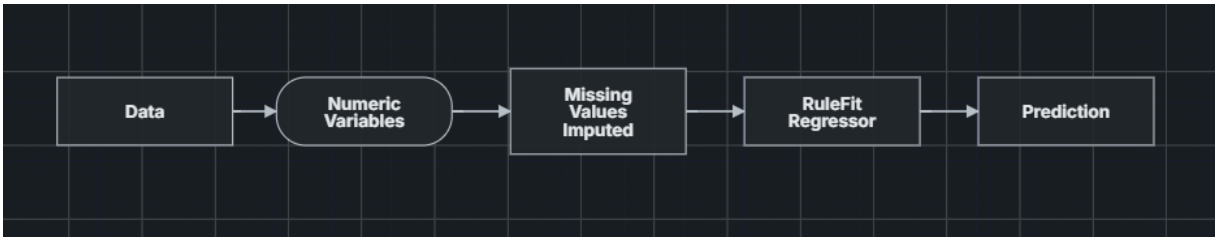
Note. Student's t-test.

(Author-Compiled)

From this observation, for Y_1 (attractive communication media), attractive content, knowledge of customer support, method of customer support, & accessibility was found to be not significant. For understanding significance, the vital independent parameters (which passed through the T-Test) and Y_o and Y_1 were fed to Data Robot and regression tests were conducted, after data cleaning.

Data Wrangling- And Outcome Overview- have been presented in Figure number 7& 8 respectively. The models depict data treatment, which includes data cleaning and standard imputation techniques, like missing value treatment, outlier treatment, etc.

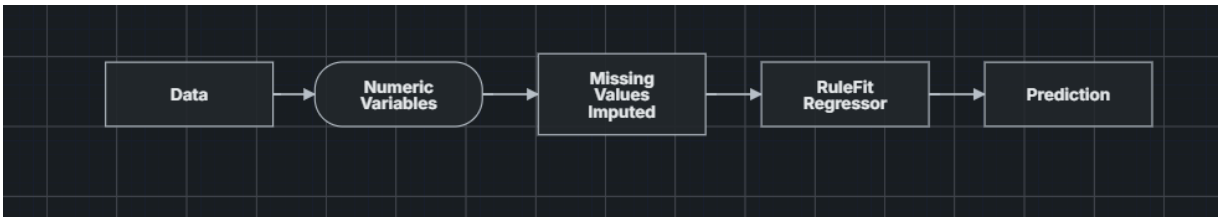
Figure 7- Data cleaning & treatment- Yo Yo Data Wrangling-



(Source- DataRobot)

Y_1 Data Wrangling-

Figure 8= Data cleaning & treatment- Y_1



(Author-Compiled)

Model Interpretation | models were primarily created for Shapley additive Indicators (Shap Values) values detection and not for predictions. Table 10 depicts the key metrics for evaluation of model performance. RMSE (Root Mean Square Error) were used as a determinant of model performance.

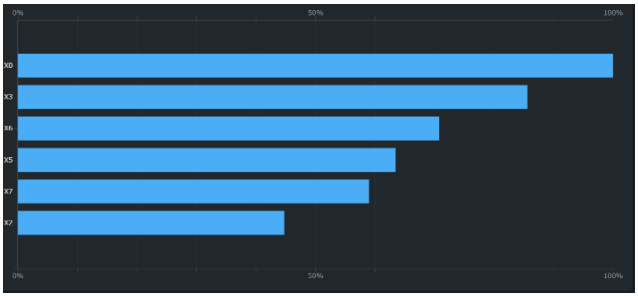
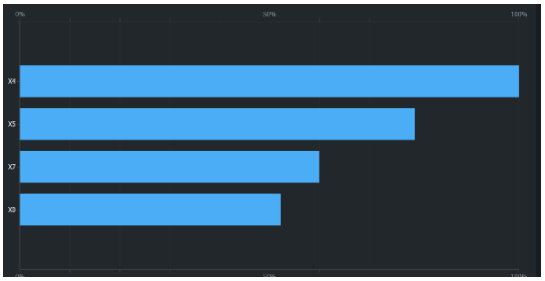
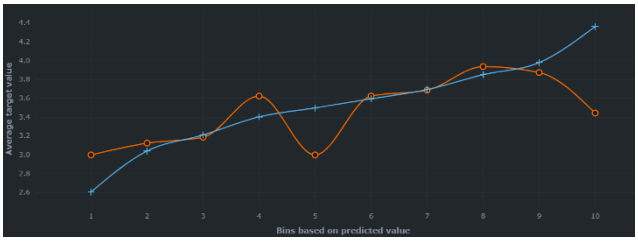
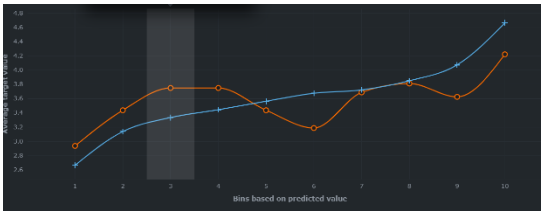
Table 8- RMSE Scores – Cross Validation

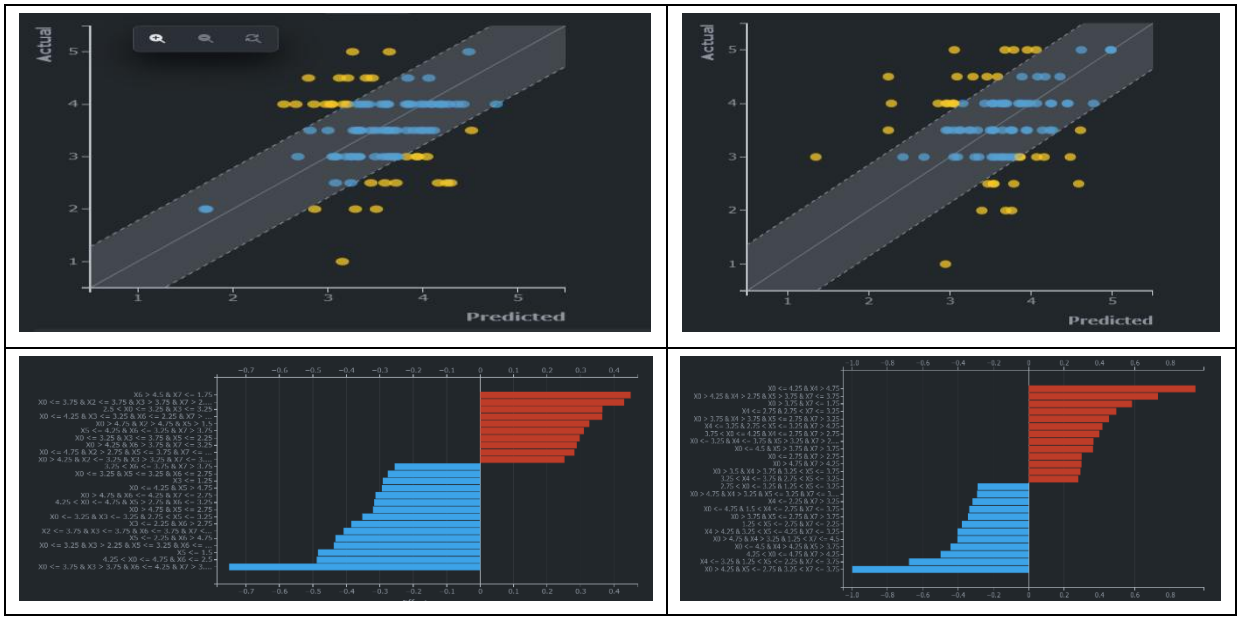
	Y_0 Data	Y_1 Data
Rulefit Regressor [Chosen]	**0.8175**	**0.7335**
Generalised Additive 2 model	0.7228	0.6438
Light Gradient Boosted Trees Regressor	0.7113	0.6297
Extreme Gradient Boosted Trees Regressor	0.6892	0.6588
Random forest Regressor	0.6821	0.6343

(Author-Compiled)

Figure 9 depicts the Shap Factors with percentage of loading, model fitment, and residual plots. The figures have been interpreted below.

Figure 9 – Model Parameters & Performance- DataRobot

Yo Data Explanations	**Y_1 Data Explanations-**
	
	



(Author-Compiled)

SECONDARY VALIDATION OF SHAP FACTORS-

Part A. Regression Analysis and Beta Interpretation- Y_0- CM Attractiveness.

SHAP factors provide details of the influence of independent variables on dependent variables. The complete machine learning predictor models use complex decision trees to arrive at the conclusion. While the same impact can be estimated in statistics using Beta factors. We attempted to validate the SHAP scores with beta factors first.

To understand the relative importance of each predictor on communication medium attractiveness (Y_0), a multiple linear regression was performed with X_0, X_2, X_3, X_5, X_6, and X_7 as independent variables. For calculating Beta statistics, Z-score of each number was calculated by subtracting the sample value from average and diving the result with standard deviation. Then multiple regression was conducted using MS Excel Analytics tool pack to derive the Beta coefficient values. The following table shows the standardized regression coefficients (Beta), their significance, and interpretation:

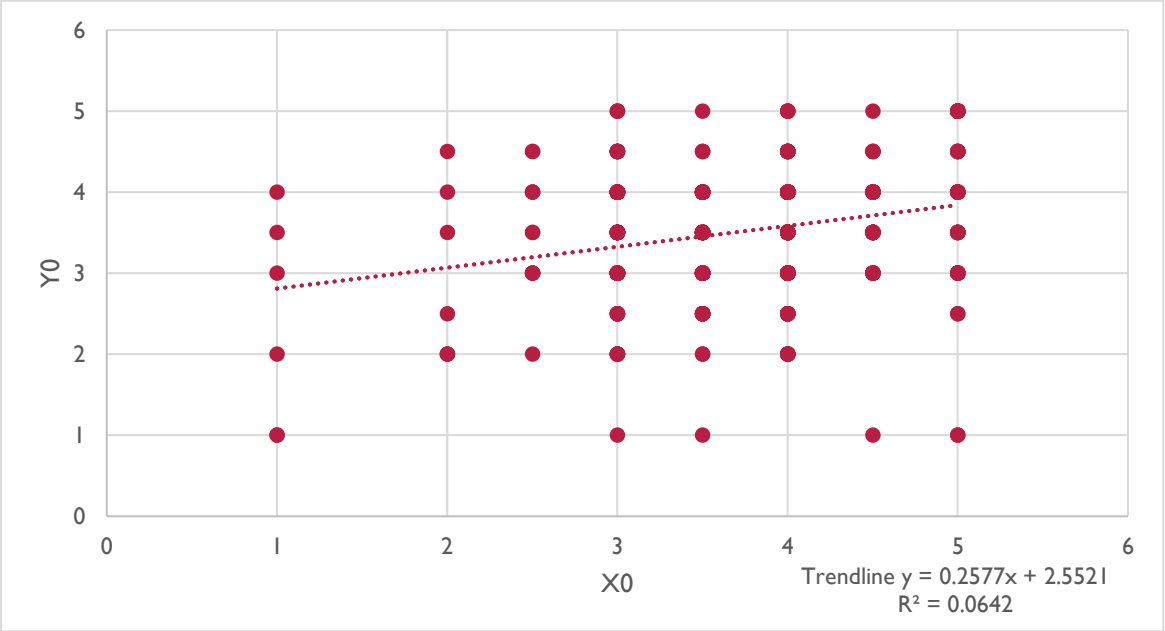
Table 11- Beta Values for Yo

Predictor	Coefficient (Beta)	t-Statistic	p-Value	Interpretation
X_3	0.229	5.13	<0.0001	Strong, significant positive effect
X_5	0.175	4.12	<0.0001	Moderate, significant effect
X_7	0.111	2.61	0.0094	Mild, significant effect
X_2	0.109	2.44	0.0152	Moderate, significant effect
X_0	0.087	2.05	0.0414	Statistically significant but weaker compared to SHAP findings
X_6	0.075	1.77	0.0771	Not significant at 5% level

(Author compiled)

These values validate the SHAP association of X_3, X_6 & X_5 but does not explain the strong association suggested for X_0 in the Rule Fit Regressor model. Anomaly was in the fact that Despite X_0 having the highest SHAP impact, its Beta value is lower than expected, indicating that its importance is likely non-linear or rule-based rather than a strong linear driver. Graphical representation (Scatter Plot) of Yo over X_0.

Figure 10- Scatter Diagram of Yo-Xo



(Author Compiled)

The R^2 showed a low rating showing a low impact of X_0 on Yo.

II. Multicollinearity and VIF Analysis

To ensure the regression model's reliability, Variance Inflation Factors (VIFs) were calculated to test for multicollinearity among the independent variables. For this individually linear regression was calculated in Excel tool pack between X_0 (as a target) and a each of X_2, X_3, X_5, X_6 & X_7. R^2 was noted and the VIF was calculated using,

$$\text{VIF} = \frac{1}{1-R^2}$$

The table below compares the Excel-calculated values:

***Table 12*- Variance Inflation Factor(VIF)**

Predictor	Excel VIF	Interpretation
X_0	-	-
X_2	1.0828	✅ No concern
X_3	1.0599	✅ No concern
X_5	1.0264	✅ No concern
X_6	1.0669	✅ No concern
X_7	1.1114	✅ No concern

(Author Compiled)

Interpretation: All VIF values are well below 5, confirming that multicollinearity is not a problem in this model. Therefore, the low Beta of X_0 is not caused by shared variance with other variables.

III. Partial Correlation Analysis for X_0

To further validate the independent influence of X_0, partial correlation was conducted. This method isolates the relationship between X_0 and Y_0 by removing the linear effects of all other predictors (X_2, X_3, X_5, X_6, X_7). Steps followed were:

1. Regressed X_0 on X_2, X_3, X_5, X_6, X_7 → obtained residuals (Res_X_0)
2. Regressed Y_0 on X_2, X_3, X_5, X_6, X_7 → obtained residuals (Res_Y_0)

3. Calculated Pearson correlation between Res_X_0 and Res_Y_0
4. Computed t-value and p-value using Excel

Partial Correlation Results:

Table 13- Partial Correlation Results

Metric	Value
Partial Correlation	0.0912
t-Statistic	2.045
Degrees of Freedom	499
p-Value	0.0414

(Author compiled)

Interpretation: X_0 maintains a statistically significant ($p < 0.05$) positive partial correlation with Y_0 even after adjusting for other predictors. While the correlation strength is modest, it confirms that X_0 has a unique and non-redundant influence on the outcome. Hence it was decided to retain X_0 as an important key determinant for understanding Yo.

Part B. Regression Analysis and Beta Interpretation- Y_1- Interesting CM

I. Regression Coefficients and Statistical Strength

Table 13- Beta Coefficient of Y_1

Variable	Beta Coefficient	t-Statistic	p-Value	Interpretation
X_4	0.234	5.332821	1.47E-07	Highest Beta. Strong linear predictor of Y_1. P value is significant.
X_7	0.187	4.313606	1.94E-05	Clear positive contribution. Statistically relevant. P value is significant.
X_0	0.178	4.1068	4.68E-05	Moderate predictor, possibly meaningful. P value is significant.
X_5	0.063	1.513856	0.130693	Very weak linear association. Least influential. P value not significant.

(Author compiled)

✅ Conclusion: X_4 and X_7 show statistically strong relationships with Y_1.

❌ X_5 exhibits very low Beta, prompting further checks for potential false signals.

II. SHAP Value Interpretation

The SHAP summary bar chart visually ranks variable importance based on a model's internal decision impact:

Table 14- SHAP Factors

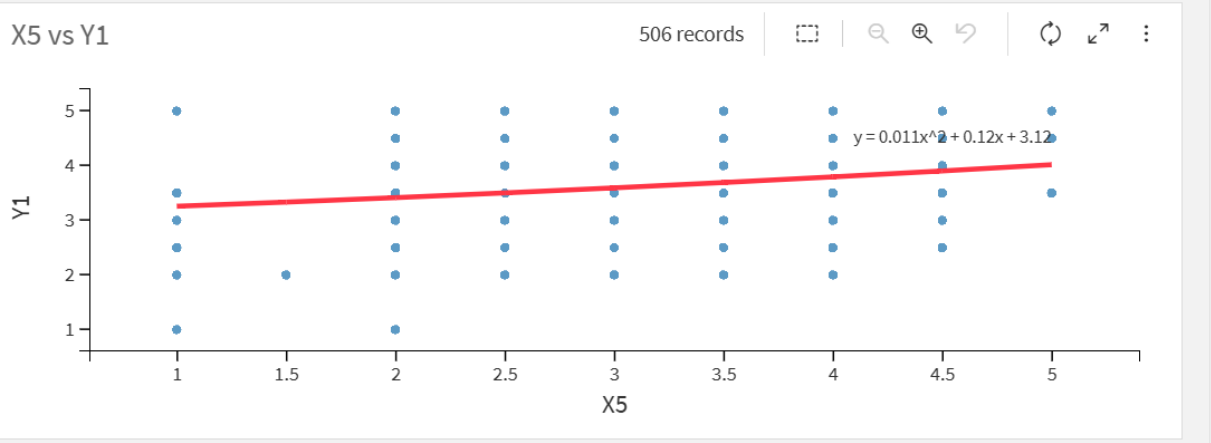
Variable	SHAP Impact (Visual Rank)	Regression Support?	Interpretation
X_4	Highest (~100%)	✅ Yes	Strongly aligns with Beta. Core driver.
X_5	Moderate (~70%)	❌ No	SHAP suggests impact, but regression says otherwise.
X_7	Moderate (~50%)	✅ Yes	SHAP and Beta agree. Reliable predictor.
X_0	Lowest (~40%)	⚠️ Partial	Moderate Beta, weak SHAP - discarded

(Concluded from DataRobot Model)

✅ Conclusion: SHAP values are mostly validated — except X_5, which is flagged for further scrutiny.

III. X_5 — Scatter Plot and Trendline Analysis

Figure 11- Scatter Plot- $Y_1 - X_5$



(Author compiled)

- **X_5 vs Y_1** scatter shows:
  - Dense spread, no visible linear or curved trend.
  - Same Y_1 values across different X_5 levels.
- Polynomial trendline R^2 = negligible:

❌ Conclusion: Graphical evidence does not support X_5's importance.

IV. Variance Inflation Factor (VIF)

Table 15- VIF Score- Y_1

Variable	R^2 (on other Xs)	VIF	Multicollinearity?
X_5	0.0257	1.026	❌ None
X_0	0.0750	1.081	❌ None
X_4	0.0673	1.072	❌ None

✅ Conclusion: No multicollinearity exists. All predictors are statistically independent.

❌ Therefore, X_5's weak Beta is not suppressed — it's genuinely low.

V. Partial Correlation of Residuals (X_5 vs Y_1)

Table 16- Partial Correlation of Residuals

Metric	Value	Interpretation
Correlation	-1.35×10^{-16} (~0)	No relationship after controls
t-Statistic	-3.03×10^{-15} (~0)	Statistically insignificant
p-Value	1.000	Absolutely no significance

❌ Conclusion: Even after adjusting for X_0, X_4, and X_7, X_5 has no net impact on Y_1.

The moderate SHAP value is misleading and not supported by residual analysis.

🎯 Final Summary- for Y_1

Table 17- Final Summary

Variable	SHAP Rank	Beta Support	Residual Analysis	Verdict
X4	✅ High	✅ Strong	✅ Confirmed	✅ Keep
X7	✅ Mid	✅ Moderate	✅ Confirmed	✅ Keep
X0	⚠️ Low	✅ Moderate	Not deeply tested	⚠️ Already discarded
X5	⚠️ Mid	❌ Weak	❌ Rejected	❌ Drop

✅ The analysis successfully validated SHAP outputs for X_4 & X_7 to some degree.

❌ However, X_5 appears to be a false positive in SHAP, lacking support in both linear regression and residual correlation.

However, for final validation, an alternate machine learning model was created in Dataiku to validate. We wanted to check ensemble or GAM kind of modelling, hence chose, we used AutoML to quickly train model. The models selected were,

Figure 12- Models AutoML- Dataiku

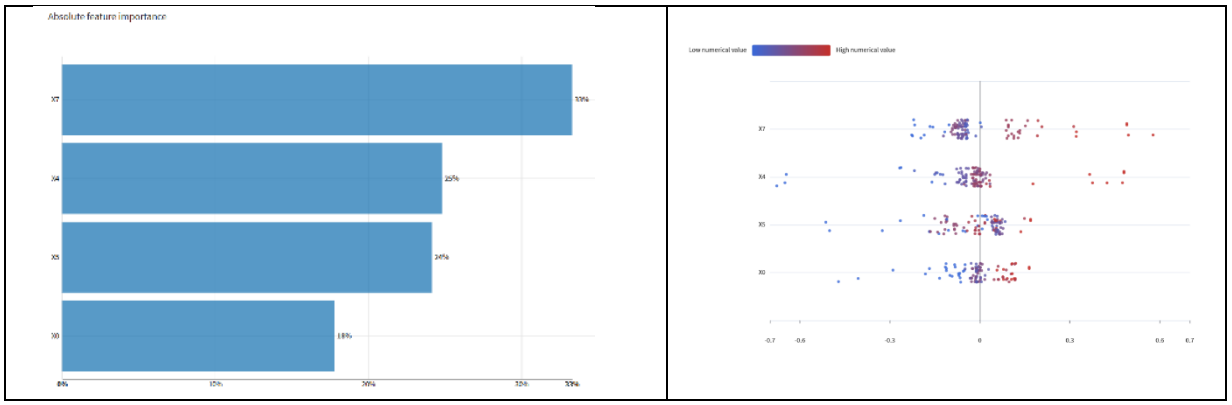
✅ Summary of Model Results (R^2 Score)

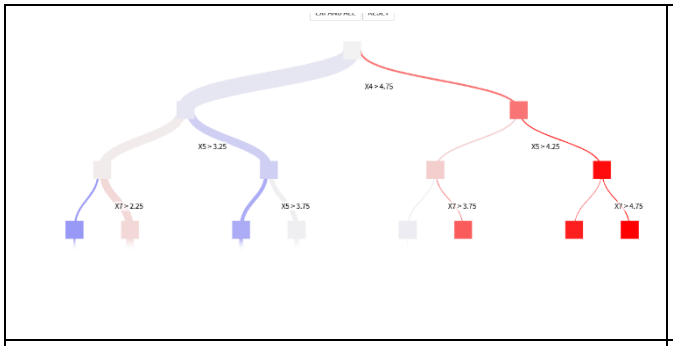
Model	R^2 Score	Comments
Random Forest	**0.304**	⭐ Best performer so far (nonlinear, ensemble)
Ridge Regression	0.271	Slightly underfitting, but stable
OLS (Linear Regression)	0.271	Same as Ridge; confirms low nonlinearity benefit from regularization
Gradient Boosted Trees	0.224	May be underfit due to config (check learning rate)
Decision Tree	0.140	Weak alone, no ensemble effect

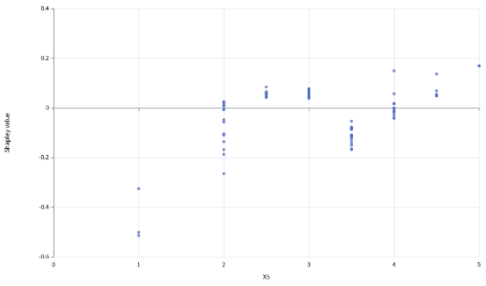
(Author compiled)

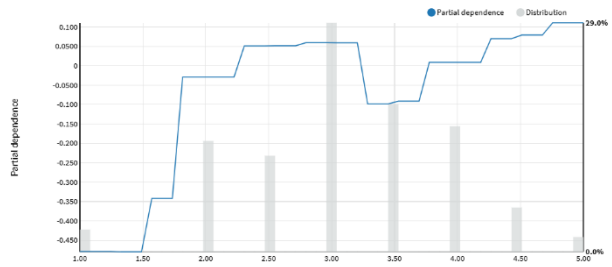
We took Random Forest and some scores are here, Shapley-

Figure 13- Random Forest Regressor result









Since X_5 appears in two models, in RuleFit regressor using DataRobot and Random Forest Regressor, using Dataiku- it has been decided to keep X_5 (Price) for final calculation.

Hence the final takeaway interpretations are enclosed here. Top 3 factors for

Table 18- Final Conclusions

Y_0- Communication Medium Attractiveness	Y_1-Interesting Communication Medium
• X_0- Types of Service (Movies, web series, sports, etc) • X_3- Method of customer support • X_6- Accessibility	• X_4- Brand Recognition • X_7- Promotion Period • X_5- Pricing * * Validated by duplicate model

6. INTERPRETATION & CONCLUSIONS

The article exhibits the factors associated with communication media effectiveness and attractiveness leading to a purchase decision. It finds that knowledge of customer support, methods employed by customer support, has consistent significance over pricing- also it exhibits that other predictors like promotion period also play a significant role.

Attractive communication media effectively capture a prospect's attention (lead acquisition). Here important interpretations were-

- Types of Service are related to the product and the commercial value vs cost decision. They came out as important factors.
- Importance of customer support- even in the time of machine-based interactions, there is no alternative to human-to-human conversation and trust building.
- Accessibility role- the role of accessibility to a lesser extend – like if the apps are available in regional languages, does it provide regional relevant content, how easy is it to navigate through the app or purchase.

While at the advanced sales realization phase (bottom of the funnel), the important determinants were-

- Brand Recognition- The analysis highlights how trusted brands amplify at this stage.
- Promotion period's high score is explained by the consumer's interest and opportunity-based buying decision during the promotion period.

The role of pricing- The shap factor highlighted pricing as the second biggest determinant for this category. The importance of pricing for any services, in India, can not be overstated. However, if the band of price, is within the industry and tolerance limit, the impact of price for distrimanatory decision making seems to be limited.

While communication medium attractiveness denotes more towards method-based sales, the interesting communication media highlights more brand influence and promotional opportunities- implying towards brand trust.

The article highlights the dual pathways through which communication media effectiveness can influence the buyer. First are the functional drivers, which include customer support and pricing. Then there is the emotional driver, which includes brand recognition, and timely promotions, if strategically timed, can sway the customers.

The findings offer actionable insights into OTT marketers, who are aiming to enhance their subscriber acquisition and retention by aligning their strategies to both functional and emotional customer expectations.

7. RESEARCH GAPS

- The study is limited to a single market and narrowly focuses on a single industry. The research domain hence is narrow- having limited operational impact.
- The approach of longitudinal data- analyzing the factors over time- to incorporate the changes. This is required for future studies.
- The study relies heavily on quantitative analysis.

8. FURTHER RESEARCH RECOMMENDATION

- The study needs to incorporate an extended range of variables to better predict the customer purchasing scope.
- The studies domain can be enhanced, and a comparative cross marketing study can be planned.
- A longitudinal research approach can be incorporated to enhance the predictability of the data.
- More qualitative research methods can be incorporated to make the research more snackable.
- The impact of effective interaction and non-linear relationships can be studied.

9. ETHICAL STATEMENT & INFORMED CONSENT

1. Ethical Statement

As our study involved the collection of anonymized survey data from adult participants on a voluntary basis, and did not involve any sensitive personal, medical, or psychological data, a formal review by an institutional ethics committee was not required under the policies of our academic institution. However, we have now added the following Ethical Statement in the manuscript under the “Methodology” section:

‘Review and/or approval by an ethics committee was not needed for this study because the survey involved voluntary responses from adults, did not collect identifiable personal information, and posed no risk to participants. The study followed institutional standards for ethical conduct in social science research.’

2. Informed Consent Statement

All survey participants were informed about the purpose of the research and gave their consent voluntarily before completing the questionnaire. We have now added the following statement in the manuscript:

‘All participants provided informed consent prior to participating in the survey. They were briefed on the study’s objectives, the voluntary nature of participation, and the assurance of anonymity.’

We did not collect any institutional identifiers of participants, except for voluntary email id, which was removed, before analysis and nowhere any personal identifiers have been used in the manuscript, as per the journal’s double-blind review policy.

3. Declaration of Competing Interest

It is declared that we do not have any conflict of interest. We have not been associated with companies or in this sector, as an employee or as an investor.

4. Acknowledgement

This is self-sponsored research, and no research grant has been accepted from any person or agency.

5. Author Note-

This is self-funded research, and no external financial support was obtained. The research was conducted in India pursuing Indian channels.

REFERENCES

[1] Adeusi, O. C., Adebayo, Y. O., Ayodele, P. A., Onikoyi, T. T., Adebayo, K. B., & Adenekan, I. O. (2024). IT standardization in cloud computing: Security challenges, benefits, and future directions. *World Journal of Advanced Research and Reviews, 22*(05), 2050-2057.

[2] Bajaj, R., Ali Syed, A., & Singh, S. (2024). Analyzing applications of neuromarketing in efficacy of programmatic advertising. *Journal of Consumer Behaviour, 23*(2), 939-958.

[3] Bargoni, A., Santoro, G., Petruzzelli, A. M., & Ferraris, A. (2024). Growth hacking: A critical review to clarify its meaning and guide its practical application. *Technological Forecasting and Social Change, 200*, 123111.

[4] Belew, S., & Elad, J. (2024). *Starting an online business all-in-one for dummies.* John Wiley & Sons.

[5] Boston Consulting Group. (2023). *Digitizing consumers in India*.

[6] Chaffey, D., & Smith, P. R. (2022). *Digital marketing excellence: planning, optimizing, and integrating online marketing.* Routledge.

[7] Chahed, H., Usman, M., Chatterjee, A., Bayram, F., Chaudhary, R., Brunstrom, A., ... & Kassler, A. (2023). AIDA—A holistic AI-driven networking and processing framework for industrial IoT applications. *Internet of Things, 22*, 100805.

[8] Cinar, B., & Bharadiya, J. P. (2023). Cloud computing forensics; challenges and future perspectives: A review. *Asian Journal of Research in Computer Science, 16*(1), 1-14.

[9] Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *bmj*, *372*.

[10] Dutta, C., Jha, S. S., Lakshmi, R. V., Vijayakumar, V., Badhusha, M. H. N., & Trivedi, T. (2024). A Study On The Factors That Influence The Success Of Digital Marketing In A Dynamic Marketing Landscape; A Theoretical And Empirical Integration. *Educational Administration: Theory and Practice, 30*(4), 3793-3798.

[11] Singhi, A., & Sanghi, K. (2020). *How India spends, shops and saves in the new reality?* Boston Consulting Group. https://www.bcg.com/how-india-spends-shops-and-saved-in-the-new-reality?

[12] Halvadia, N. B., & Menon, S. (2021). A Study on the Impact of Existing and Emerging Trends in Digital Marketing on Consumer Buying Behavior. *SKIPS Anveshan, 2*(1).

[13] Kendall, N. (2015). *What is a 21st Century Brand? New Thinking from the Next Generation of Agency Leaders.* Kogan Page Publishers.

[14] Katuk, N., Abdullah, W. A. N. W., Sugiharto, T., & Ahmad, I. (2023). Smart technology: Ecosystem, impacts, challenges and the path forward. *Information System and Smart City, 3*(1).

[15] Kumar, V., & Kotler, P. (2024). Transformative Marketing Has Begun. In *Transformative Marketing: Combining New Age Technologies and Human Insights* (pp. 1-17). Cham: Springer Nature Switzerland.

[16] Mahoney, L. M., & Tang, T. (2024). *Strategic social media: From marketing to social change.* John Wiley & Sons.

[17] Mapanje, E. (2024). Impact of Social Media Usage on Consumer Decision-Making in E-Commerce Platforms in Malawi. *International Journal of Marketing Strategies, 6*(2), 1-12.

[18] Meerman, S. D. (2022). *New Rules of Marketing and PR.* Wiley-Blackwell.

[19] Nielsen. (2024). *2024 Annual Marketing Report: Maximizing ROI in a fragmented media world.* The Nielsen Company (US), LLC.

[20] Okorie, G. N., Udeh, C. A., Adaga, E. M., DaraOjimba, O. D., & Oriekhoe, O. I. (2024). Digital marketing in the age of IoT: a review of trends and impacts. *International Journal of Management & Entrepreneurship Research, 6*(1), 104-131.

[21] Özoğlu, B., & Topal, A. (2020). Digital marketing strategies and business trends in emerging industries. In *Digital business strategies in blockchain ecosystems: Transformational design and future of global business* (pp. 375-400).

[22] Rahman, J., Raihan, A., Tanchangya, T., & Ridwan, M. (2024). Optimizing the digital marketing landscape: A comprehensive exploration of artificial intelligence (AI) technologies, applications, advantages, and challenges. *Frontiers of Finance, 2*(2).

[23] Raji, M. A., Olodo, H. B., Oke, T. T., Addy, W. A., Ofodile, O. C., & Oyewole, A. T. (2024). Digital

marketing in tourism: a review of practices in the USA and Africa. *International Journal of Applied Research in Social Sciences, 6*(3), 393-408.

[24] Rachmad, Y. E. (2024). *The Future of Influencer Marketing: Evolution of Consumer Behavior in the Digital World.* PT. Sonpedia Publishing Indonesia.

[25] Risdwiyanto, A. (2024). The Death of Traditional Advertising: How the Rise of Digital Marketing is Changing the Way We Reach Customers. *Management Studies and Business Journal (PRODUCTIVITY), 1*(4), 617-630.

[26] Statista. (2023). Market size of digital advertising industry in India from financial year 2015 to 2024, with estimates until 2028. Statista. Retrieved November 1, 2024, from Statista.

[27] Tabassum, M. (2024). Social media marketing impact for OTT platform-Bongo.

[28] Tarabasz, A. (2024). The Impact of Digital on Marketing Strategy. In *Digital Marketing* (pp. 21-37). CRC Press.

[29] Telecom Regulatory Authority of India. (2024, October 25). Highlights of telecom subscription data as on 31st August, 2024 [Press release No. 78/2024]. Retrieved from TRAI.

[30] The Economic Times. (2024, October 27). Flipkart marketplace arm's revenue jumps 42% to Rs 14,845 crore in FY23; loss narrows 9%. Retrieved November 1, 2024, from The Economic Times.

[31] Ojha, N. K., & Vaish, A. (2024). A Review of OTT Platforms in India: Challenges and Current Status. *Exploring the Impact of OTT Media on Global Societies*, 192-216.

[32] Sridevi, P., & Ajith, N. T. (2024). Switching channels: investigating the push, pull, and mooring effects of moving from cable TV to OTT services. *Leisure Studies*, *43*(4), 644-661.

[33] Soren, A. A., & Chakraborty, S. (2024). Examining the brand trust and willingness to subscribe to third-party add-on services in over-the-top platforms: a brand trust transfer perspective. *Asia Pacific Journal of Marketing and Logistics*.

[34] Sharma, R., & Kakkar, A. (2024). Role of customer retention equity in consumption enhancement of VoD services: a PLS-SEM approach. *International Journal of Sustainable Society*, *16*(4), 277-292.

[35] Agnihotri, A., & Bhattacharya, S. (2024). *Netflix: Resolving Growth Challenges Through Product and Market Diversification*. SAGE Publications: SAGE Business Cases Originals.

fffff