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Identifying the different influencing factors toward customer satisfaction & loyalty: An Empirical study on HDFC bank

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Abstract
In the modern and dynamic market scenario, every company facing toughest challenge as they ever faced. With LPG economy with changing dynamics of political & economical scenario even, the banking sector is becoming complex and most competitive with a huge and diverse number of competitors. Retention of customer has become toughest challenge to any bank as each competitor is providing comparative strategy to win over the market. To study the pattern followed in the private banks the paper has taken the case of HDFC bank. The paper studied different Banking practices made by HDFC bank to satisfy their customer. The policies of HDFC bank towards customer retention are also investigated here. The data has been collected through secondary data and primary data through administration of questionnaire. The paper investigated association between customers' perception and expectation related to the banking practices, Bank's attributes and customers' Perception, customers' satisfaction and recommendation. Chi square and ANOVA are used as statistical techniques. The paper recommends to improvise to more specialized services for the customers, More branches and ATMs should be open to increase visibility, to change their urban brand image to increase customer base .

Keywords: Customer satisfaction, banking practices, customer loyalty, customer retention

Introductions
In the contemporary banking industry, customer retention and loyalty are pivotal to achieving long-term success and competitive advantage. HDFC bank, a leading international bank with a prominent presence in various emerging markets, has continuously strived to maintain and enhance its customer base through strategic initiatives aimed at fostering loyalty and reducing attrition. Understanding the multifaceted factors influencing customer retention and loyalty is essential for banks to develop effective customer relationship management (CRM) strategies. This study explores the different influencing factors toward customer retention and loyalty within the context of HDFC bank.

Customer retention and loyalty are influenced by a myriad of factors, including service quality, customer satisfaction, trust, and the perceived value of services offered (Hennig-Thurau, Gwinner, & Gremler, 2002) [2]. Service quality, particularly in the financial sector, encompasses various dimensions such as reliability, responsiveness, assurance, empathy, and tangibles (Parasuraman, Zeithaml, & Berry, 1988) [5]. High service quality often leads to increased customer satisfaction, which is a crucial determinant of customer loyalty (Kotler & Keller, 2016) [3]. Trust in the financial institution also plays a significant role, as it mitigates perceived risks and fosters a sense of security and confidence among customers (Morgan & Hunt, 1994) [4]. Additionally, the perceived value, which is the customers' evaluation of the utility of a product based on what is received versus what is given, significantly affects their loyalty (Zeithaml, 1988) [5]. In the banking sector, perceived value can be enhanced through personalized services, competitive pricing, and innovative financial products that meet the evolving needs of customers (Verhoef, 2003) [6]. Moreover, relationship marketing strategies that focus on building long-term relationships rather than short-term transactions are essential for sustaining customer loyalty (Berry, 1995) [1].

The present case study aims to analyze these influencing factors in the context of HDFC bank, examining how the bank leverages these elements to retain its customers and cultivate loyalty. By doing so, the study contributes to a deeper understanding of effective CRM

practices in the banking sector and provides insights for other financial institutions seeking to enhance their customer retention and loyalty strategies.

Literature Review

Customer retention and loyalty have been extensively studied across various industries, including the banking sector. These concepts are integral to sustaining competitive advantage and ensuring long-term profitability. This literature review examines key factors influencing customer retention and loyalty, such as service quality, customer satisfaction, trust, perceived value, and relationship marketing, with a focus on their application within the banking industry.

Customer loyalty is very crucial both for the organization and the customer. Customer loyalty as "the marketplace currency of the twenty-first century (Singh and Sirdeshmukh, 2000) [8]. It is better to serve first the existing customer before obtaining new customers (Walsh, Groth, and Wiedmann, 2005) [12]. The serving cost of a loyal customer is five or six times less than a new customer in the banking organizations (Pfeifer, 2005) [10]. If the attitude of a customer is poor within the industry, then an organization which has just better than "poor" could elicit a positive customer "relative attitude" score and high repeat patronage (Salegna and Goodwin, 2005) [11].

Loyalty can be defined as "A deeply held commitment and rebuy or repatronize a preferred product or service in the future despite situational influences and marketing efforts having the potential to cause switching behavior" (Oliver, R. L. 1997) [9]. Loyalists report both high satisfaction and high loyalty. These customers are, in essence, an extension of your sales force because they spread positive word-of-mouth publicity. Loyalists also typically increase their spending more rapidly than other customers in your customer base. Understand, serve, and protect these customers and focus on developing communities for (And with) them. Because relationships with loyalists tend to last longer and because of their role in generating referrals, customer acquisition costs for loyalists tend to be lower than those for other customers.

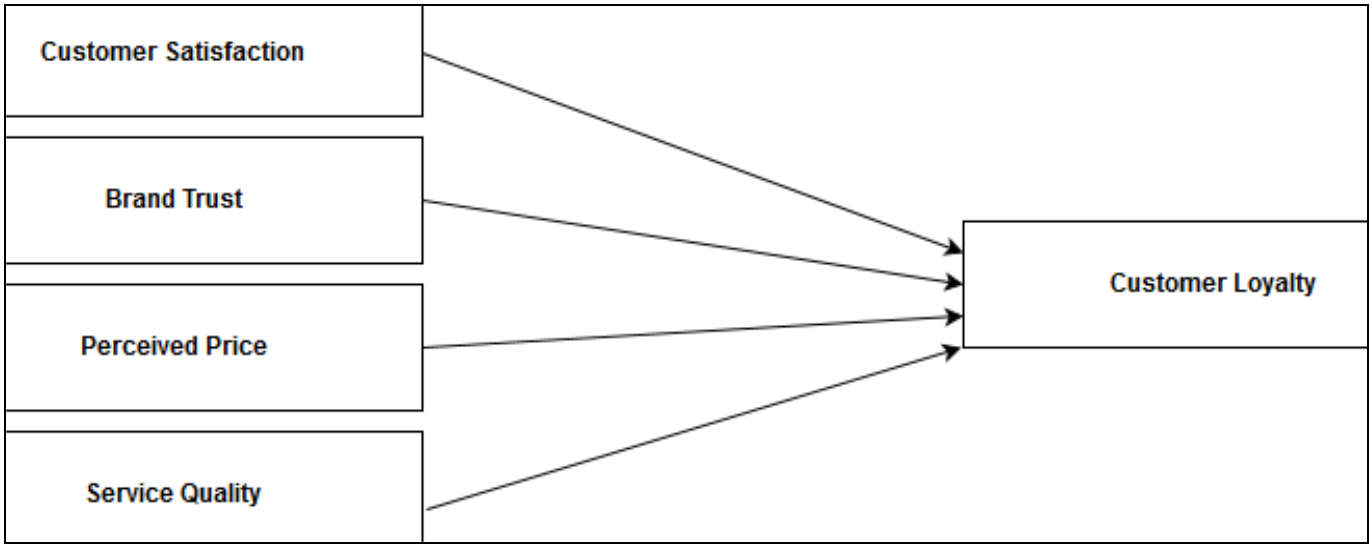
Because of the many benefits loyalists bring to your business, you should prioritize any strategies that strengthen and expand these relationships.

Customer satisfaction acts as a mediator between service quality and customer loyalty. According to Kotler and Keller (2016) [3], satisfied customers are more likely to exhibit repeat purchase behavior and recommend the service to others. For banks, this means that ensuring customer satisfaction through excellent service delivery can significantly enhance loyalty and retention rates. Hennig-Thurau, Gwinner, and Gremler (2002) [2] further emphasized that customer satisfaction stems from the perceived benefits of the relationship, which include social and psychological benefits in addition to functional benefits.

Trust is another pivotal factor in fostering customer loyalty, especially in the banking industry where financial transactions are involved. Morgan and Hunt (1994) [4] posited that trust reduces perceived risk and enhances customer commitment. They introduced the commitment-trust theory of relationship marketing, suggesting that trust and commitment are essential for successful relational exchanges. In the context of banking, trust can be built through transparent operations, security of transactions, and consistent service delivery.

Perceived value, which is the customer's overall assessment of the utility of a service based on perceptions of what is received versus what is given, significantly impacts customer loyalty. Zeithaml (1988) [5] argued that perceived value encompasses not just monetary aspects but also non-monetary costs such as time and effort. Verhoef (2003) [6] added that in the banking sector, perceived value can be enhanced through personalized services, competitive pricing, and innovative financial products tailored to meet customer needs.

Service quality is a critical determinant of customer retention and loyalty. Parasuraman, Zeithaml, and Berry (1988) [5] developed the SERVQUAL model, which identifies five dimensions of service quality: reliability, responsiveness, assurance, empathy, and tangibles. Their research highlights that high service quality leads to increased customer satisfaction and loyalty. In the banking sector, reliability and responsiveness are particularly important, as customers expect accurate and timely services.



Objective of the Study

The objectives of the research study are as follows

1. To find out the different Banking practices made by HDFC bank to satisfy their customer.
2. To find out whether the respondents are satisfied with HDFC bank.
3. To find out whether the respondents are Loyal to HDFC bank.
4. To find out whether there are any significant differences between the bank services and customers attitudes related to bank services.

Scope of the Study

This study focuses on a comprehensive analysis of customer retention and loyalty at HDFC bank, particularly within the context of the Kolkata market. The scope encompasses several critical aspects designed to provide a detailed understanding of the factors influencing customer loyalty and satisfaction.

Firstly, the study involves a constant analysis of market dynamics to understand current trends and developments impacting the banking sector. This includes monitoring competitors' strategies, customer preferences, and emerging market opportunities. By diagnosing the current situation through detailed information collection, the study aims to identify the root causes of customer retention and loyalty issues.

Secondly, the study will identify HDFC bank's competitive strengths and weaknesses. This involves a thorough assessment of the bank's services, customer feedback, and market positioning. Highlighting these strengths and aligning them with market opportunities will enable the formulation of specific objectives for service enhancement and market development. Strategies and tactics will be devised to leverage these strengths and address identified weaknesses.

Additionally, the study will measure the impact of the bank's brand and the influence of advertising and media coverage, both print and electronic, on customer perceptions. This involves evaluating the effectiveness of the bank's promotional activities and their role in shaping customer loyalty. The research will utilize a structured questionnaire to gather insights on various aspects of the bank's services, commercial appeal, and overall image. Face-to-face interviews with account holders, taking approximately half an hour each, will provide in-depth data on customer experiences and expectations. Overall, the study aims to offer actionable recommendations for enhancing customer retention and loyalty at HDFC bank, thereby contributing to its long-term success and competitive positioning in the market.

Problem Definition

HDFC bank faces a critical organizational problem: determining the key marketing parameters that drive customer loyalty. Customer loyalty is essential for sustaining competitive advantage and ensuring long-term profitability in the banking industry. However, identifying the specific factors that influence loyalty remains a challenge. Transforming this organizational problem into a research problem involves a systematic investigation into the various elements of HDFC bank's marketing strategies and their impact on customer loyalty.

The research problem, therefore, Is to examine and identify the marketing practices and policies of HDFC bank that most effectively foster customer loyalty. This involves analyzing customer satisfaction with the bank's products and services, understanding customer perceptions and expectations, and evaluating the effectiveness of the bank's customer retention strategies. By focusing on these areas, the research aims to uncover the critical factors that contribute to customer loyalty, providing actionable insights for enhancing the bank's marketing efforts. This transformation from an organizational to a research problem is essential as it guides the data collection process, ensuring relevant and focused data is gathered. This reduces data redundancy and enables a clearer understanding of how specific marketing parameters influence customer loyalty at HDFC bank, ultimately aiding in the development of more effective customer retention strategies.

Research Methodology

This study employs a descriptive research design to analyze customer retention and loyalty factors at HDFC bank in Kolkata. The research utilizes both primary and secondary data sources to ensure a comprehensive understanding of the subject matter. Primary data will be collected through a structured and closed-ended questionnaire, specifically designed for this study. The survey method will be used, and the sample will consist of 50 customers of HDFC bank. Personal contact methods will be employed to gather data, wherein respondents will be selected and interviewed following a predetermined sequence of questions.

The structured questionnaire aims to capture various dimensions of customer satisfaction, loyalty, and perceptions of HDFC bank's products and services. The data processing will focus on identifying the ultimate satisfaction level of customers with the bank's services. This will involve examining the association between customers' perceptions and expectations regarding banking practices, the bank's attributes, and customer satisfaction and recommendations. Statistical techniques such as Chi-square tests and Analysis of Variance (ANOVA) will be applied to analyze the data and uncover significant patterns and relationships. This methodology is designed to provide insights that can inform future marketing strategies and enhance customer retention efforts at HDFC bank.

Use of Chi-Square (χ^2) test was first devised by Karl Pearson to decide whether the findings or observations are in good agreement with a hypothetical distribution i.e. whether the samples may be supposed to have arisen from a specified population. A chi-square test is any statistical hypothesis test in which the sampling distribution of the test statistic is a chi-square distribution when the null hypothesis is true, or any in which this is asymptotically true, meaning that the sampling distribution (if the null hypothesis is true) can be made to approximate a chi-square distribution as closely as desired by making the sample size large enough.

The chi-square test is a non-parametric test in statistical work. The quantity describes χ^2 the magnitude of discrepancies between the theory and observation. The formula for computing χ^2 is:

$\chi^2 = \sum (f_o - f_e)^2 / f_e$

If χ^2 is zero, observed and expected frequencies coincide.
If χ^2 is greater, the discrepancy between these frequencies will be greater.

Degrees of Freedom
Degrees of Freedom are calculated as:
(No of columns - 1) (No of rows - 1)
i.e. (C-1) (R-1)

Condition for χ^2 test
- The sample observation must be independent to each other.
- The sample data must be drawn at random from population.
- The sample under study must be large.
- The data should express in original units and not in percentage.

Use
- Test for goodness of fit
- Test for independence of attributes.
- Test of homogeneity i.e. testing of difference between two or more samples

In Statistics, Analysis of variance (ANOVA) is a collection of statistical model, and their associated procedures, in which the observed variance in a particular variable is partitioned into components attributable to different sources of variation. In its simplest form ANOVA provides a statistical test of whether or not the means of several groups are all equal, and therefore generalizes t-test to more than two groups. Doing multiple two-sample t-tests would result in an increased chance of committing a type 1 error. For this reason, ANOVAs are useful in comparing two, three or more means.
Using this technique, we have been able to draw the inferences about whether the samples have drawn from populations having the same mean. The method has been applied by comparing the sample variances using F – distribution. In our study we have applied the one-way ANOVA method to test the null hypothesis (H0) against the alternative hypothesis (H1).

The hypotheses are written as:
Ho: µ1 = µ2= _ µn (For n groups)
Against H1: µ1 ≠ µ2 =_ _ ≠ µn
Where µ1, µ2 _ _ µn are the population means.

The test procedure involves F – test (Mean sum of squares between Groups (MSB) / Mean sum of squares within groups (MSW). We have found a calculated F from the observed data, which is verified against a critical value of F with corresponding degrees of groups & error, corresponds to certain predefined level of significance (β). If it is found that the observed value of F less than the tabulated value of F, then we can conclude that null hypothesis (H0) is accepted applying all the groups are statistically homogenous. On the other hand, if A is found that the observed value of F is coming to be equal or greater than the corresponding tabulated value of F, than we conclude that the null hypothesis is rejected implying alternative hypothesis (H1) is accepted.
The degrees of freedom (d.f.) for total variance will be equal to the number of items in all samples minus one i.e., (n – 1). The degrees of freedom for between and within must add up to degrees of freedom for total variance i.e.

$(n - 1) = (k - 1) + (n - k)$

If the observed F – ratio is found insignificant in comparison with the tabulated F – value with the same degrees of freedom then the independent variable does not exercise much influence on the dependent variable.
Alternatively, it can be derived using the following notations and steps
k = Number of independent Samples or Groups
n_1 = Number of observations in the I – th sample
N = Total number of observations in all the samples = $\sum n_1$
X_{ij} = the j – th observation in the I – th group
T_i = Total of the I – th sample = $\sum_j x_{ij}$
T = Grand total of all observations = $\sum T_i = \sum\sum x_{ij}$
$\bar{x}_i$ = Mean of the sample = T_i/n_i
$\bar{x}$ = Grand mean of all observations = T/N
Correction Factor (CF) = T^2/N
Total SS = $\sum x_{ij}^2 - CF$
SSB = $\sum(T_i^2/ n_i) - CF$
SSW = Total SS – SSB
D.f. (Degrees of freedom) for SSB = (k – 1)
D.f. (Degrees of freedom) for SSW = (N – k)
Mean squares between Groups (MSB) = SSB ÷ (k – 1)
Mean squares Groups (MSW) = SSW ÷ (N – k)
The observed values of F will be obtained on dividing MSB by MSW:

F = MSB ÷ MSW

Compare the F – observed and F – critical value at 5% and 1% level of significance corresponding to the degrees of freedom (k – 1, N – k). If the observed value of F equals or exceeds the tabulated value of F, we reject the null hypothesis, and conclude that all the populations' means are not equal.

Data Analysis
Analysis (1): Customers' Experiences on Bank's Services

Items	Very Bad	Bad	Neutral	Good	Very Good	Total
Time taken to open an account.	0	6	0	32	12	50
Easy To complete account opening forms.	4	7	2	26	11	50
Easy To contracting Someone at the bank.	0	3	6	21	20	50
Total	4	16	8	79	43	150

Let,

H_0: Null hypothesis: There is no significant differences exist between Banking Services.

H_1: Alternative hypothesis: There is significant differences exist between Banking Services.

H_0: Null hypothesis: There is no significant differences exist between Customers' Attitudes.

H_1: Alternative hypothesis: There is significant differences exist between Customers' Attitudes.

Anova: Two-factor without replication						
Summary	**Count**	**Sum**	**Average**	**Variance**		
Row 1	5	50	10	176		
Row 2	5	50	10	91.5		
Row 3	5	50	10	96.5		
Column 1	3	4	1.333333	5.333333		
Column 2	3	16	5.333333	4.333333		
Column 3	3	8	2.666667	9.333333		
Column 4	3	79	26.33333	30.33333		
Column 5	3	43	14.33333	24.33333		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	0	2	0	0	1	4.458
Columns	1308.667	4	327.1667	17.765	0.000482	3.84
Error	147.3333	8	18.41667			

Interpretation

In row wise operations the calculated value of F (0) is less than F_{crit} (4.458).

Therefore, we will accept the Null Hypothesis (H_o) which interprets that there are no significant differences between banking services.

In column wise operations the calculated value of F (17.765) is greater than F_{crit} (3.84). Therefore, we will reject the Null Hypothesis (H_o) and accept the Alternative hypothesis (H_1) which proclaims that significance differences exist between customers' attitude on Banking Services.

Therefore, the bank will introduce more specialized services for the customers of the bank.

Chi square Testing

Observed Frequency (f_o)

Items	Very Bad	Bad	Neutral	Good	Very Good	Total
Time taken to open an account	0	6	0	32	12	50
Easy To complete account opening forms	4	7	2	26	11	50
Easy To contracting Someone at the bank.	0	3	6	21	20	50
Total	4	16	8	79	43	150

Expected Frequency (f_e)

(4x50)/150 =1.33	(16x50)/150 =5.33	(8x50)/150 =2.67	(79x50)/150 =26.33	(43x50)/150 =14.33
(4x50)/150 =1.33	(16x50)/150 =5.33	8x50)/150 =2.67	(79x50)/150 =26.33	(43x50)/150 =14.33
(4x50)/150 =1.33	(16x50)/150 =5.33	8x50)/150 =2.67	(79x50)/150 =26.33	(43x50)/150 =14.33

H_o: Null hypothesis

There is no significant relationship between Banking services and customers' attitude.

H_1: Alternative hypothesis

There is significant relationship between Banking services and customers' attitude.

$\chi^2 = \sum (f_o - f_e)/ f_e$

$=[(0 – 1.33)^2 / 1.33 + (6 – 5.33)^2 / 5.33 + (0 – 2.67)^2 / 2.67 + (32 – 26.33)^2 / 26.33 + (12 – 14.33)^2 / 14.33 + (4 – 1.33)^2 / 1.33 + (7 – 5.33)^2 / 5.33 + (2 – 2.67)^2 / 2.67 + (26 – 26.33)^2 / 26.33 + (11 – 14.33)^2 / 14.33 + (0 – 1.33)^2 / 1.33 + (3 – 5.33)^2 / 5.33 + (6 – 2.67)^2 / 2.67 + (21 – 26.33)^2 / 26.33 + (20 – 14.33)^2 / 14.33] = [1.33 + 0.08 + 2.67 + 1.22 + 0.38 + 5.36 + 0.52 + 0.17 + 4.13 + 0.77 + 1.33 + 1.02 + 4.15 + 1.08 + 2.24]$

$= 26.45$

Here degree of freedom (d.f)

= (No of column – 1) (No of row – 1)

= (3 – 1) (5 – 1)

= (2 x 4)

= 8

The Chi square value at 8 degree of freedom on 5 % level of significance is 15.507. Therefore, we will reject the Null Hypothesis (H_o) and accept the Alternative hypothesis (H_1), which implies that there is significant relationship between Banking services and customers' attitude.

Analysis 2: Customers' perception & experiences on HDFC bank

Items	Very Bad	Bad	Neutral	Good	Very Good	Total
Trustworthy & Fair	1	8	6	20	15	50
Provides accurate Information	1	4	7	20	18	50
Services match with expectation	3	5	2	21	19	50
Maintains clarity on charges & fees	2	3	0	24	21	50
Total	7	20	15	85	73	200

Let,

H_o: Null hypothesis: There is no significant differences exist between Bank's Attributes and Features.

H_o: Null hypothesis: There is no significant differences exist between Customers' Perception and expectation on HDFC bank.

H_1: Alternative hypothesis: There is significant differences exist between Bank's Attributes and Features.

H_1: Alternative hypothesis: There is significant differences exist between Customers' Perception and expectation on HDFC bank.

Anova: Two-Factor Without Replication				
Summary	**Count**	**Sum**	**Average**	**Variance**
Row 1	5	50	10	56.5
Row 2	5	50	10	72.5
Row 3	5	50	10	85
Row 4	5	50	10	132.5
Column 1	4	7	1.75	0.916667
Column 2	4	20	5	4.666667
Column 3	4	15	3.75	10.91667
Column 4	4	85	21.25	3.583333
Column 5	4	73	18.25	6.25

ANOVA						
Source of Variation	**SS**	**df**	**MS**	**F**	**P-value**	**F crit**
Rows	0	3	0	0	1	3.4902
Columns	1307	4	326.75	49.64	2.28E-07	3.259
Error	79	12	6.583333			
Total	1386	19				

Interpretation

In row wise operations the calculated value of F (0) is less than F_{crit} (3.4902). Therefore, we will accept the Null Hypothesis (H_o) which advocates that there are no significant differences between Bank's Attributes and Features. In column wise operations the calculated value of F (49.64) is greater than F_{crit} (3.259). Therefore, we will reject the Null Hypothesis (H_o) and accept the Alternative hypothesis (H_1) which proclaims that significance differences exist between customers' Perception and expectation on HDFC bank.

Therefore the bank will emphasis on more positive attributes and features so that the customer will have more positive outlook and experiences on the HDFC bank's operations.

Chi Square Testing

Observed Frequency (f_o)

Items	Very Bad	Bad	Neutral	Good	Very Good	Total
Trustworthy & Fair	1	8	6	20	15	50
Provides accurate Information	1	4	7	20	18	50
Services match with expectation	3	5	2	21	19	50
Maintains clarity on charges & fees	2	3	0	24	21	50
Total	7	20	15	85	73	200

Expected Frequency (f_e)

(7x50)/200 =1.75	(20x50)/200 =5	(15x50)/200 =3.75	(85x50)/200 =21.25	(73x50)/200 =18.25
(7x50)/200 =1.75	(20x50)/200 =5	(15x50)/200 =3.75	(85x50)/200 =21.25	(73x50)/200 =18.25
(7x50)/200 =1.75	(20x50)/200 =5	(15x50)/200 =3.75	(85x50)/200 =21.25	(73x50)/200 =18.25
(7x50)/200 =1.75	(20x50)/200 =5	(15x50)/200 =3.75	(85x50)/200 =21.25	(73x50)/200 =18.25

H_o: Null hypothesis

There is no significant relationship between Bank's attributes and customers' Perception.

H_1: Alternative hypothesis

There is significant relationship between Bank's attributes and customers' Perception.

$\chi^2 = \sum (f_o - f_e)/ f_e$
=[$(1 – 1.75)^2 / 1.75 + (8 – 5)^2 / 5 + (6 – 3.75)^2 / 3.75 + (20 – 21.25)^2 / 21.25 + (15 – 18.25)^2 / 18.25 + (1 – 1.75)^2 / 1.75 + (4 – 5)^2 / 5 + (7 – 3.75)^2 / 3.75 + (20 – 21.25)^2 / 21.25 + (18 – 18.25)^2 / 18.25 + (3 – 1.75)^2 / 1.75 + (5 – 5)^2 / 5 + (2 – 3.75)^2 / 3.75 + (21 – 21.25)^2 / 21.25 + (19 – 18.25)^2 / 18.25 + (2 – 1.75)^2 / 1.75 + (3 – 5)^2 / 5 + (0 – 3.75)^2 / 3.75 + (24 – 21.25)^2 / 21.25 + (21 – 18.25)^2 / 18.25$] = [0.32 + 1.8 + 1.35 + 0.08 + 0.58 + 0.32 + 0.2 + 2.84 + 0.07 + 3.42 + 0.89 + 0 + 0.82 + 2.96 + 0.03 + 0.04 + 0.8 + 3.75 + 0.37 + 0.41]
= 21.05

Here degree of freedom (d.f)
= (No of column – 1) (No of row – 1)
= (4 – 1) (5 – 1)
= (3 x 4)
= 12

The Chi square value at 12 degree of freedom on 5 % level of significance is 21.02, which lower than the calculated value. Therefore, we will reject the Null Hypothesis (H_o) and accept the Alternative hypothesis (H_1), which implies that there is significant relationship between Bank's attributes and customers' Perception.

Analysis 3: Customer loyalty

Items	Very Bad	Bad	Neutral	Good	Very Good	Total
Level of Satisfaction	1	4	5	27	13	50
Recommendation	3	5	2	21	19	50
Total	4	9	7	48	32	100

Let,
H_o: Null hypothesis: There is no significant differences exist between customers' satisfaction and recommendation.

H_o: Null hypothesis: There is no significant differences exist between Customers' loyalties on HDFC bank.

H_1: Alternative hypothesis: There is significant differences exist between customers' satisfaction and recommendation.

H_1: Alternative hypothesis: There is significant differences exist between Customers' loyalties on HDFC bank.

Anova: Two-Factor Without Replication				
Summary	**Count**	**Sum**	**Average**	**Variance**
Row 1	5	50	10	110
Row 2	5	50	10	85
Column 1	2	4	2	2
Column 2	2	9	4.5	0.5
Column 3	2	7	3.5	4.5
Column 4	2	48	24	18
Column 5	2	32	16	18

Anova						
Source of Variation	**SS**	**df**	**MS**	**F**	**P-value**	**F crit**
Rows	0	1	0	0	1	7.708
Columns	737	4	184.25	17.139	0.008782	6.388
Error	43	4	10.75			
Total	780	9				

Interpretation
In row wise operations the calculated value of F (0) is less than F_{crit} (7.708). Therefore, we will accept the Null Hypothesis (H_o) which advocates that there are no significant differences between customers' satisfaction and recommendation.
In column wise operations the calculated value of F (17.139) is greater than F_{crit} (6.388). Therefore, we will reject the Null Hypothesis (H_o) and accept the Alternative hypothesis (H_1) which proclaims that significance differences exist between customers' loyalties on HDFC bank.
So the bank must introduce high level of services to become the customers more loyal to the bank.

Analysis (3) Chi square Testing
Observe Frequency (f_o)

Items	Very Bad	Bad	Neutral	Good	Very Good	Total
Level of Satisfaction	1	4	5	27	13	50
Recommendation	3	5	2	21	19	50
Total	4	9	7	48	32	100

H_o: Null hypothesis
There is no significant relationship between customers' satisfaction and recommendation which turns into customer loyalty.

H_1: Alternative hypothesis
There is significant relationship between customers' satisfaction and recommendation which turns into customer loyalty.

Expected Frequency (f_e)

(4 x 50) / 100 = 2	(9 x 50) / 100 = 4.5	(7 x 50) / 100 = 3.5	(48 x 50) / 100 = 24	(32 x 50) / 100 = 16
(4 x 50) / 100 = 2	((9 x 50) / 100 = 4.5	(7 x 50) / 100 = 3.5	(48 x 50) / 100 = 24	(32 x 50) / 100 = 16

$\chi^2 = \sum (f_o - f_e)^2 / f_e$
$= [(1 – 2)^2 / 2 + (4 – 4.5)^2 / 4.5 + (5 – 3.5)^2 / 3.5 + (27 – 24)^2 / 24 + (13 – 16)^2 / 16 + (3 – 2)^2 / 2 + (5 – 4. 5)^2 / 4.5 + (2 – 3.5)^2 / 3.5 + (21 – 24)^2 / 24 + (19 – 16)^2 / 16]$
$= [0.5 + 0.05 + 0.64 + 0.37 + 0.56 + 0.5 + 0.05 + 0.64 + 0.37 + 0.56]$
$= 4.24$

Here degree of freedom (d.f)
= (No of column – 1) (No of row – 1)
= (2 – 1) (5 – 1)
= (1 x 4)
= 4

The Chi square value at 4 degree of freedom on 5 % level of significance is 9.488. So the table value is higher than the calculated value 4.24. Therefore, we will reject the Alternative hypothesis (H_1) and accept the Null Hypothesis (H_o), which implies that there is no significant relationship between Bank's attributes and customers' Perception.

Conclusion
The findings of the study on customer retention and loyalty at HDFC bank reveal several key insights into the bank's performance, customer perceptions, and market positioning. Overall, the study indicates a positive outlook for the bank, with customers demonstrating strong satisfaction and loyalty towards its services. Firstly, respondents unequivocally express a preference for HDFC bank's services, highlighting the bank's success in meeting customer needs and expectations. The high level of loyalty demonstrated by customers, as evidenced by their willingness to recommend the bank to others, underscores the effectiveness of the bank's customer retention strategies. Moreover, the study indicates that the services offered by HDFC bank are readily accessible to account holders, contributing to overall customer satisfaction. Transactions between the bank and its customers are reported to be satisfactory, reflecting positively on the bank's operational efficiency and service quality.
The findings also suggest promising prospects for the bank's further development in India, supported by its robust promotional activities and the perceived glamour associated with its brand name. Despite being predominantly city-based, the bank enjoys popularity among high middle-class city dwellers, indicating a strong market presence in urban areas. Additionally, the study highlights the bank's adoption of modern techniques such as internet services, SMS alerts, and e-statements to enhance service delivery and customer convenience. This demonstrates the bank's proactive approach towards leveraging technology to improve customer experience. Furthermore, the findings suggest that HDFC bank is attentive to customer feedback and committed to providing better service, as indicated by the proactive measures taken by bank authorities. In conclusion, the study underscores HDFC bank's success in fostering customer satisfaction, loyalty, and market appeal. The bank's proactive approach to addressing customer needs, coupled with its strong brand presence and modern service offerings, positions it well for continued success and growth in the competitive banking landscape. Moving forward, continued focus on customer-centric strategies and technological innovation will be crucial for maintaining and further enhancing the bank's competitive edge and market position.

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