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"Impact of digital banking services on customer satisfaction: A Comparative study between SBI and HDFC bank"

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Abstract:

The sphere of digital banking services has extended in all the directions of the banking transactions in such a way that no bank can stay away from the transformation of traditional banking affairs in digital modes. Over the span of last 20 years, starting from basic Internet banking to UPI and digital currency we are now on the verge of entry into a completely new world of banking where traditional modes of banking routines may just be remembered as we remember radios in the era of Internet. However, in India, we know changes in banking stream take place but later than other countries due to its large, diversified and complicated customer base. Although, we have a long way to go for complete transformation, many pioneer banks have travelled significant distance in the direction of digital banking. Indian banking system has two major counterparts, public sector banks and private sector banks. Almost all banks have done significant progress as far as involvement of digitalization is concerned. For the purpose of study, researchers have picked up two banks as the representative of their own category. SBI from public and HDFC bank from private category. Both are giants and undoubtedly placed at first rank by size in their respective categories. This paper is intended to comparatively study the impact of digital banking service on customer satisfaction with the help of a statistical analysis of the data collected through a specifically prepared questionnaire. The questionnaire is devised to collect data under 5 different parameters that can justify the effectiveness of digital banking. The five parameters are Service Quality, Responsiveness, Privacy and Security, Ancillary services and Resolution of Issues. Collection of data through a questionnaire, sorting and categorizing the data bank wise and parameter wise, application of statistical analysis–T-test, extract findings and derive at conclusions are the main components of our research design. This area of research is also not uncovered by researchers but this paper has been prepared with different variables, parameters and samples that distinguishes it from previous researches.

Keywords: Digital Banking, Customer Satisfaction, Internet Banking, UPI, Service, Quality, Responsiveness, Privacy

1.1 Introduction, History and Development of Banking:

Traces of banking transactions have their imprints on the sand of time as old as approx. 2000 BCE. If definition of banking is understood in a broader way, considering any sort of intermediation activity, banking can be associated with mankind for over 4000 years. In ancient times, temples, royal palaces and some private houses served as storage facilities for valuable commodities such as grain, the ownership of which could be transferred by means of written receipts. There are records of loans by the temples of Babylon as early as 2000 BCE; temples were considered especially safe depositories because, as they were sacred places watched over by gods, their contents were believed to be protected from theft.

In Europe, development of banking took place in the name of bills of exchange instead of actual currency, to assist merchants in making distant payments. The history of banking in India is also believed to be as old as Vedic Civilization. There are mentions of terms like *Mapatra, Kusidin etc* in Manustmriti. The existence of professional banking in India could be traced to the 500 BC. Kautily's Arthashastra, dating back to 400 BC contained references to creditors, lenders and lending rates. During the Mauryan period (321-185 BCE) an instrument called *adesha* came about, which was an order on a banker directing him to pay the sum on the note to a third person, which is closer to the modern bill of exchange.

Introduction of Money in the trading activities changed the complexion of economic transactions in a way as if money is a prism and light passing through it results in number of colours. Number of dimensions of economic transactions then came into existence and wiped out. The Banking sector in India has seen a lot of transitions and changes over the centuries. It can be broadly categorized into 3 sub-parts that are:

- **Pre-Independence (Before 1947)**
- **II Phase (1947 to 1991)**
- **III Phase (1991 and beyond).**

1.2 Emergence of Computerization:

The need for computerization of the banking sector was felt in the late 1980s. Therefore, the Reserve Bank set up a committee in this regard in 1988 headed by Dr. C. Rangarajan. Banks started using information technology initially with the introduction of standalone Personal Computers and migrated to Local Area Network connectivity. Then with further evolution, banks adopted the core banking platform. It was when branch banking was changed to bank banking.

1.3 Computerization married with Internet:

Finland was the first country in the world who took a lead in E-banking. In India, ICICI bank was the first bank that initiated E-banking as early as 1997 under the brand name Infinity. In past three decades the operational efficiency of Indian banks has increased to several folds, now the time taken by the banks in performing different transaction has been reduced, with this advancement competition among banks has also increased. Every bank is trying to use as much latest technological innovations in order to facilitate its customers. Internet Banking or E- Banking refers to a system that allowing individual customers to perform various banking activities from different sites like their home, office and other locations via Internet based secured networks.

Through Internet or online banking traditional banks are enable customers to perform all routine transactions, such as account transfers, balance inquiries, bill payments and stop-payment requests, and some even offer online loan and credit card applications. Internet banking is a web-based service that enables the banks authorized customers to access their account information. It permits the customers to log on to the banks website with the help of banks issued identification and personal identification number (PIN). The banking system verifies the user and provides access to the requested services, the range of products and service offered by each bank on the Internet differs widely in their content. The popular services provided by E-banking are ATMs, telebanking, Internet banking, mobile banking, anywhere and anytime banking etc. The concept of e-banking is till date evolving, it still involves lot of innovation that are taking place every day.

1.4. Review of Literature:

Pappu Rajan, G. Saranya (2018), have studied to identify various factors affected of digital banking with regards to customer Satisfaction. Their study was based on parameters like the level of adaptability, accessibility, efficiency and affordability in the use of digital banking.

Amin (2016) have researched on Service quality of Internet banking and its impact on customer loyalty and satisfaction. He has studied on 520 sample size from Saudi Arabia and Riyadh.

Chong et al. (2010) has identified various factors influencing to the acceptance of digital banking in Vietnam. He used multiple regression analysis and correlation on 103 respondents' data. Results of study identified perceived usefulness, trust and government support have superior significance on customer satisfaction.

Loonam and O'Loughlin (2008) went for study on e-services quality of banking in Ireland through exploratory study. They arranged semi structured interviews with selected digital banking customers. Study resulted that web usability, trust, flexibility and access are key factors.

Kuisma et al. (2007) has researched on customer satisfaction resistance to Internet banking in Finland. He took 30 samples with in depth interviews. Findings suggest feeling of insecurity and lack of information are main resistance to Internet banking.

Laforet and Li (2005) has studied on consumer attitudes towards online banking and mobile banking in China. He used sample size of 300 and found lack of awareness and Risk perception are main barriers for online banking.

Sohail and Shanmugham (2003) have analyzed e-banking trends in Malaysia with 300 sample size. They found e-banking awareness, digital accessibility and resistance from consumers are main barriers impacted on usage of digital banking.

Nui Polatoglu and Akin (2001) have studied in Turkey on factors affecting consumers' acceptance of digital banking. They used exploratory research with sample size of 114. Cluster analysis and two factor analysis were used to achieve result which show reduction in operational costs through Internet Banking leads to higher customer satisfaction.

Bauer et al. (2005) studied on quality of web portals for e-banking by establishing a model on Service quality, security and transaction support. Results of study found that web portals are key factors for e-banking.

Rijwani et al. (2017) has studied on Service Quality of banks and customer satisfaction in India. Researcher analyzed by regression analysis, correlation, factor analysis and Reliability analysis to find effectiveness of service quality. Study resulted that there is a direct relationship between service quality and customer Satisfaction.

Tharanikaran et al. (2017) has studied to analyze e-banking service quality with t-test and found high degree of service quality and customer Satisfaction in study.

Toor et al. (2016) has studied on the effects of e-banking on customer satisfaction. He used multiple regression analysis, correlation and SERVQUAL model to identify significance level of customer satisfaction on E-banking.

Jun and Palacios (2016) have conducted study to find various dimensions of mobile banking service quality. The study showed that dimensions have two categories: mobile banking application quality and mobile banking customer service.

Vijay M. Kumbhar (2011), in his study analyzed impact of service quality on perceived value, brand perception and customer satisfaction in e-banking. He has gone for customer survey, which indicates that cost effectiveness, brand perception, ease of use, perceived value, security and convenience have major impact on customer satisfaction in e-banking.

1.5 Objectives of the study:

1. To analyse and understand major digital banking services provided by SBI and HDFC bank.
2. To identify the major factors affecting digital banking services and customer satisfaction of selected banks.
3. To comparatively analyse the impact of digital banking services on customer satisfaction in terms of service quality, responsiveness, privacy and security, ancillary services and issue resolution.
4. To find out major reasons/factors responsible for customer dissatisfaction.
5. To find out better bank and banking sector in terms of digital banking services.

1.6. Research problem:

The success of any organization is based on customer satisfaction. Customers have key role to play. In banking business expectations of customers have sky rocketed so digital banking services improve access of customer, facilitate them with more services and also attract new customers in this competitive era. That is why digital banking services are wide spread need of banking business. Hence to attract customers, technological advancements is very essential to attract new customers. Therefore, researchers have objectives to identify relationship between digital banking services and customer Satisfaction. *The problem of the study is to analyse the impact of digital banking services and satisfaction of customers towards digital banking* and find out the problems witnessed by the customers. The research focus on Service quality, responsiveness, Ancillary services, resolution of problems and privacy and security in the use of digital banking services.

1.7 Research Design:

The study is based on primary data and it is a descriptive study. For the purpose of collection of data, a questionnaire has been prepared which is consisting of five major parameters to comparatively analyze the impact of digital banking services on customer satisfaction viz, service quality, responsiveness, privacy and security, ancillary services and issue resolution.

Researchers have used simple random sampling technique and sample size of the study is 500 customers. The questionnaire was circulated randomly among clients of SBI and HDFC banks respectively to collect the data. The questionnaire was created in Google forms platform and was divided in 7 sections, one for introduction and disclaimer, one for primary information of respondent and five for five parameters.

After collection of data through google form questionnaire, a master excel work sheet was formed consisting of data under each category and parameter. The data then was subdivided, sorted and put to the statistical process. The researchers have used T-test for the purpose of testing the hypothesis curated.

1.8 Setting of hypotheses:

H0: There is no significant difference in the impact of service quality of digital banking services on customer satisfaction of SBI and HDFC bank.

H0: There is no significant difference in the impact of responsiveness of digital banking services on customer satisfaction of SBI and HDFC bank.

H0: There is no significant difference in the impact of privacy and security of digital banking services on customer satisfaction of SBI and HDFC bank.

H0: There is no significant difference in the impact of ancillary services of digital banking services on customer satisfaction of SBI and HDFC bank.

H0: There is no significant difference in the impact of issue resolution of digital banking services on customer satisfaction of SBI and HDFC bank.

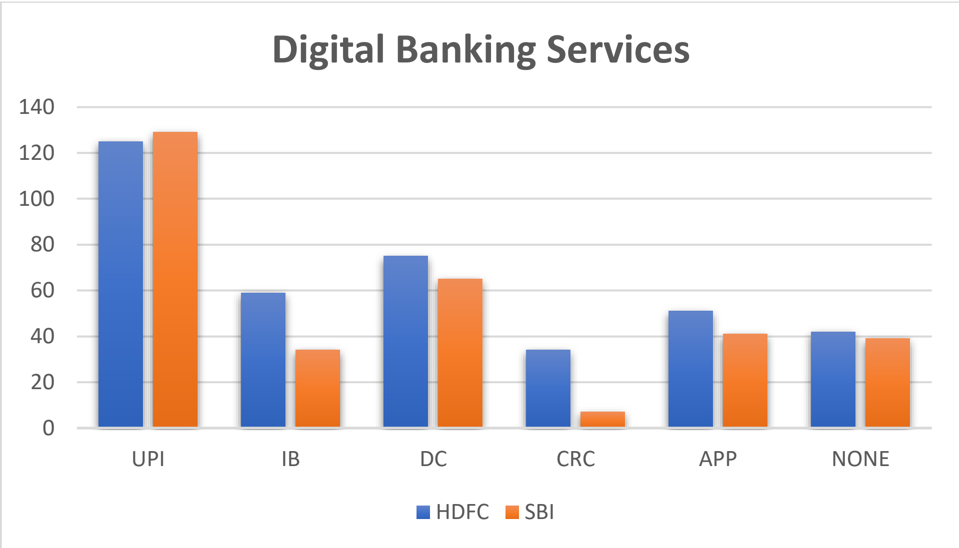
1.9 Data analysis and interpretation:

❖ ***Use of various modes of Digital Banking Services***

Table-1

Banks	UPI	INTERNET BANKIING	DEBIT CARD / ATM	CREDIT CARD	MOBILE APP	NONE
HDFC	125	59	75	34	51	42
SBI	129	34	65	07	41	39

Chart-1



As per the Table-1and chart-1, it is shown that the performance of SBI related to UPI is slightly better than HDFC whereas in digital banking services like Internet Banking, Debit Cards, credit cards and mobile application are used more in HDFC Bank as compared to SBI. Major difference identified in usage of digital banking services between SBI and HDFC is credit card facilities. Clients prefer HDFC credit cards as compared to SBI credit cards.

❖ ***Average of service quality satisfaction***

H0: There is no significant difference in the impact of service quality of digital banking services on customer satisfaction of SBI and HDFC bank.

Table-2

Banks	UPI	INTERNET BANKIING	DEBIT CARD / ATM	CREDIT CARD	MOBILE APP
HDFC	3.82	3.59	3.61	3.35	3.56
SBI	3.42	3.31	3.38	3.14	3.37

Chart-2

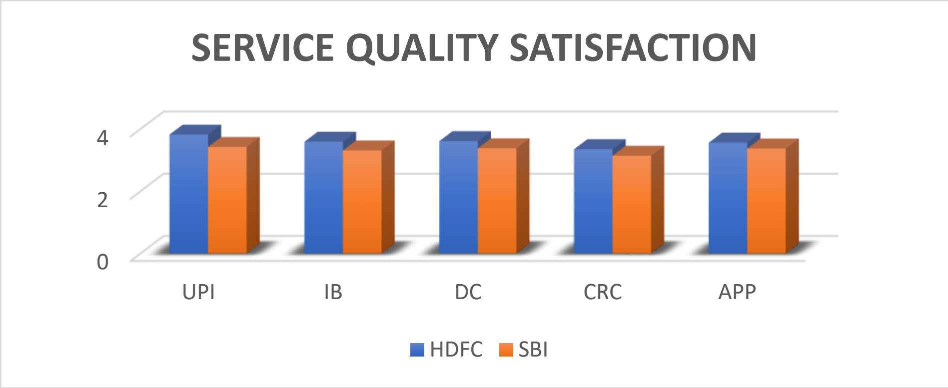


Table-2.1

t-Test: Paired Two Sample for Means		
	HDFC	**SBI**
Mean	3.586	3.324
Variance	0.02793	0.01213
Observations	5	5
Pearson Correlation	0.89616	
Hypothesized Mean Difference	0	
df	4	
t Stat	6.96749	
P(T<=t) two-tail	0.00223	
t Critical two-tail	2.77645	

Result interpretation of service quality satisfaction			
t Stat		**t Critical two-tail**	**H0 rejected**
$\lvert t \rvert$	>	$t\infty$	
6.96749	>	2.77645	

Hence H0 rejected. It indicates that There is a significant difference in the impact of service quality of digital banking services on customer satisfaction of SBI and HDFC bank.

❖ ***Average of ranks given to responsiveness of various digital banking transactions***

H0: There is no significant difference in the impact of responsiveness of digital banking services on customer satisfaction of SBI and HDFC bank.

Table-3

Banks	**OTP TRANSACTIONS**	**RTGS, NEFT, IMPS**	**STATE-MENT**	**UPI**	**ATM**
HDFC	**3.71**	**3.36**	**3.46**	**3.77**	**3.73**
SBI	**3.32**	**3.22**	**3.33**	**3.48**	**3.61**

Chart-3

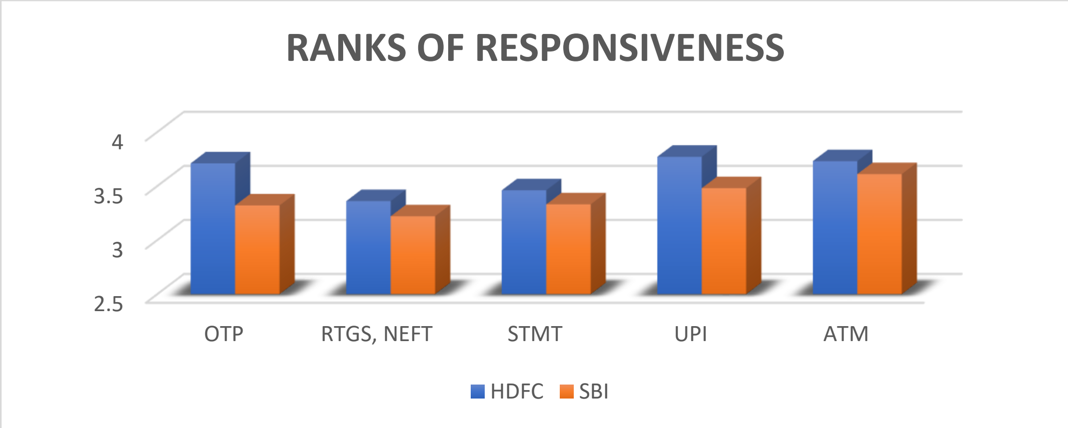


Chart-3.1

t-Test: Paired Two Sample for Means		
	HDFC	**SBI**
Mean	3.606	3.392
Variance	0.03373	0.02347
Observations	5	5
Pearson Correlation	0.75828	
Hypothesized Mean Difference	0	
df	4	
t Stat	3.96978	
P(T<=t) two-tail	0.01654	
t Critical two-tail	2.77645	

Result interpretation of responsiveness of digital banking transactions			
t Stat		**t Critical two-tail**	**H0 rejected**
$\|t\|$	>	t_∞	
3.96978	>	2.77645	

Hence H0 rejected. It indicates that There is a significant difference in the impact of responsiveness of digital banking services on customer satisfaction of SBI and HDFC bank.

- ***Average of ranks given to privacy and security level of various digital banking transactions***

H0: There is no significant difference in the impact of privacy and security of digital banking services on customer satisfaction of SBI and HDFC bank.

Table-4

Banks	**UPI**	**INTERNET BANKIING**	**DEBIT CARD / ATM**	**CREDIT CARD**	**MOBILE APP**
HDFC	**3.76**	**3.78**	**3.75**	**3.68**	**3.76**
SBI	**3.58**	**3.59**	**3.61**	**3.47**	**3.53**

Chart-4

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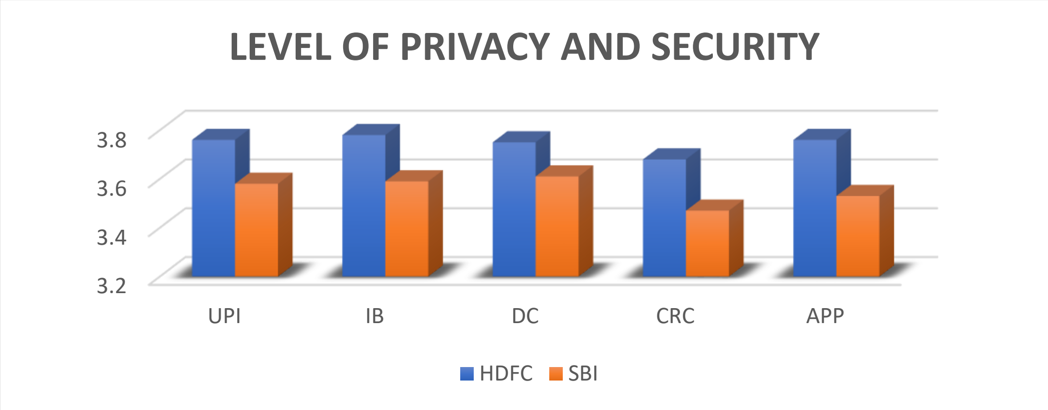

Table-4.1

t-Test: Paired Two Sample for Means		
	HDFC	**SBI**
Mean	3.746	3.556
Variance	0.00148	0.00318
Observations	5	5
Pearson Correlation	0.80897	
Hypothesized Mean Difference	0	
df	4	
t Stat	12.5282	
P(T<=t) two-tail	0.00023	
t Critical two-tail	2.77645	

Result interpretation of privacy and security level of various digital banking transactions			
t Stat		**t Critical two-tail**	**H0 rejected**
$\lvert t \rvert$	>	t∞	
12.5282	>	2.77645	

Hence H0 rejected. It indicates that There is a significant difference in the impact of privacy and security of digital banking services on customer satisfaction of SBI and HDFC bank.

❖ ***Average of ranks given to various digital ancillary services provided by banks***

H0: There is no significant difference in the impact of ancillary services of digital banking services on customer satisfaction of SBI and HDFC bank.

Table-5

Banks	BILL PMT	RECH	INSU	DEMAT	INVT	FSTG	SHP	LOANS
HDFC	**3.59**	**3.71**	**3.56**	**3.42**	**3.47**	**3.51**	**3.62**	**3.48**
SBI	**3.46**	**3.64**	**3.43**	**3.31**	**3.37**	**3.29**	**3.57**	**3.29**

Chart-5

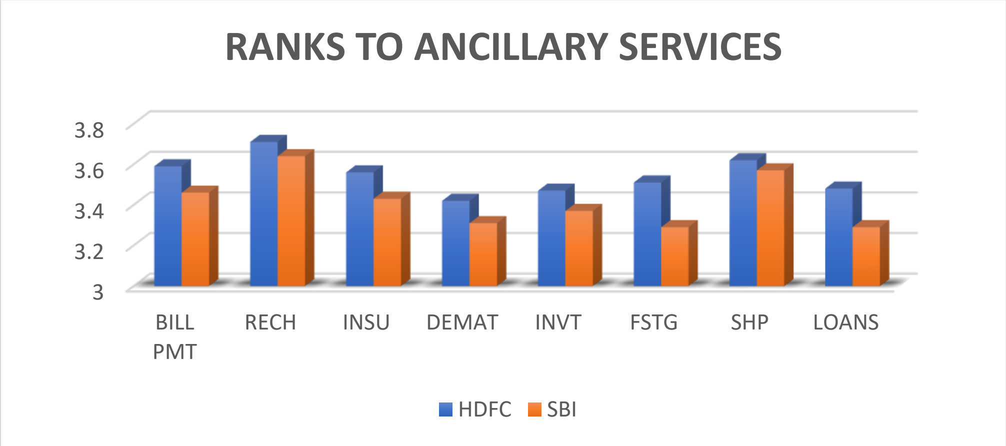

Table-5.1

t-Test: Paired Two Sample for Means		
	HDFC	**SBI**
Mean	3.545	3.42
Variance	0.00883	0.0172857
Observations	8	8
Pearson Correlation	0.92513	
Hypothesized Mean Difference	0	
df	7	
t Stat	6.19493	
P(T<=t) two-tail	0.00045	
t Critical two-tail	2.36462	

Result interpretation of various digital ancillary services provided by banks			
t Stat		**t Critical two-tail**	**H0 rejected**
|t|	>	t∞	
6.19493	>	2.36462	

Hence H0 rejected. It indicates that There is a significant difference in the impact of ancillary services of digital banking services on customer satisfaction of SBI and HDFC bank.

❖ ***Average of ranks given to issue resolution of digital banking service parameters of banks***

H0: There is no significant difference in the impact of issue resolution of digital banking services on customer satisfaction of SBI and HDFC bank.

Table-6

Banks	SERVICE QUALITY	RESPONSIVENESS	PRIVACY & SECURITY	ANCILLARY SERVICES
HDFC	**3.60**	**3.55**	**3.70**	**3.69**
SBI	**3.32**	**3.29**	**3.55**	**3.47**

Chart-6

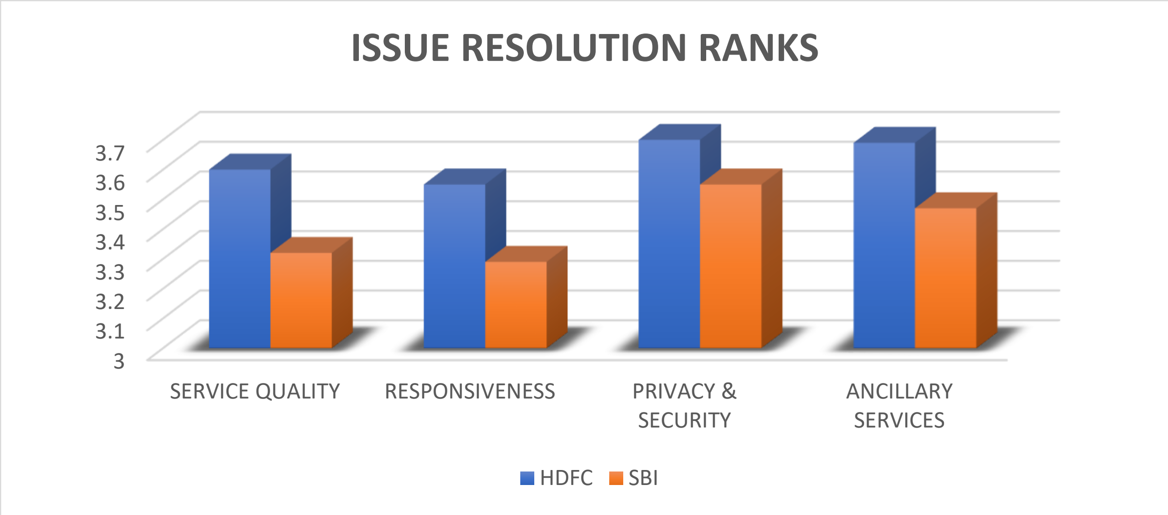

Table-6.1

t-Test: Paired Two Sample for Means		
	HDFC	**SBI**
Mean	3.635	3.4075
Variance	0.00523	0.015225
Observations	4	4
Pearson Correlation	0.96159	
Hypothesized Mean Difference	0	
df	3	
t Stat	7.93055	
P(T<=t) two-tail	0.00418	
t Critical two-tail	3.18245	

Result interpretation of issue resolution of digital banking service parameters			
t Stat		**t Critical two-tail**	**H0 rejected**
|t|	>	t∞	
7.93055	>	3.18245	

Hence H0 rejected. It indicates that There is a significant difference in the impact of issue resolution of digital banking services on customer satisfaction of SBI and HDFC bank.

1.10 <u>Findings:</u>

1. It is found that between the two banks, HDFC bank leads the chart of various digital banking services like internet banking, debit card, credit card and mobile app. Whereas SBI is a touch better than HDFC in context of the use of UPI. A major difference is found in the use of credit card facilities provided by the banks. HDFC leads the table with 34 to 7.

2. HDFC bank provides better Service quality of various digital banking services as stated in Table – 2. Howsoever, both the banks have better than average service quality.

3. HDFC bank comes out as better responder to the various digital banking transactions as stated in Table -3, compare to SBI. Performance of both banks in this parameter is found to be better than average i.e. above 3.

4. Privacy and Security level of HDFC bank is found to be better than that of SBI as per the statistical result shown in Table 4.1. However, both banks provide figures above average.

5. HDFC bank provides better range of ancillary services compare to SBI.

6. Issue resolution regarding service quality, responsiveness, privacy and security and ancillary services are found to be better in HDFC than that of SBI as per table 6.1.

1.11 Limitations of study:

The following were the limitations of the study:

- **Small sample size:** the sample size of 500 can not justify true result of wide spread population in Gir Somnath District.
- **Shortage of time:** the study has been conducted within very limited period of time. Project work like this requires more time period.
- **Inadequate data:** data collection has its own limitations as data collected through questionnaire is not adequate to reach at final conclusion.
- **Cost Factor:** Researchers were not in position to conduct extensive research because of scarcity of huge funds.

1.12 Further scope of study:

- This study is limited up to the respondents of Gir Somnath District only. It can be further extended to the population of Gujarat state or whole India.
- Sample units can be increased with more public sector and private sector banks in India.
- Various factors like age group, education level, technological advancements, income status of respondents etc can further be studied to analyze customer satisfaction with respect to the digital banking services provided by banks.

1.13 Conclusion:

The study was undertaken not only considering the two giant banks but also keeping in mind the stature of the banks, i.e. HDFC is a largest private sector bank and SBI is a largest public sector bank in India. Hence, the findings of the study may also reflect comparative output of the quality of banking between public and private sector banks of India. Having built the two tailed hypothesis, the study was done neutrally and without any bias. Considering all the five parameters taken for the purpose of research, HDFC bank has been found to be front runner in all the five aspects. This also indicates that private sector banks provide healthy and stiff competition to the public sector banks.

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