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USERS' ENGAGEMENT IN BANKING ACTIVITIES ON SOCIAL MEDIA: A STUDY WITH REFERENCE TO FACEBOOK

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Abstract: This study was conducted to assess the users' (customers') engagement in Indian commercial banks on social media through customer reactions (likes, comments and shares) to the banking activities (banks' Facebook page posts) on Facebook. The data was collected through Facebook for a period of five and half years (June 2016 to December 2021). This paper also found the presence of Indian commercial banks on various social media platforms. The results show that most of the commercial banks are present in popular social media platforms and all the banks are present on Facebook as well. With respect to users' engagement in social media, private sector banks have more engaged users, especially in ICICI bank in comparison to public sector banks even though there are more public sector banks' activities.

Introduction

Every business entity knows that effective customer engagement is one of the most important factors for the successful business in the today's competitive market. Any business without customers does not have any purpose. This is why customers are more valued to a business. Rupali Singh (2019) says that "Customer engagement is the degree and depth of brand-focused interactions a customer chooses to perform". Appropriate communication and engagement with customers is most important for any business, irrespective of its size. In the old days, communicating and engagement with the customers in person was too difficult. With the rapid growth and technological advancement, communication and engagement with the customers have become far easier than it was in the past.

With the advancement of ICT (Information and Communication Technology) in recent days, banks in India have transformed enormously and the future of banking operations and services will be delivered to customers by the usage of the Internet, computer, mobiles and social media. Therefore, the customers of today are compelled to use new medium for banking operations and services like social media, due to the upgradation of this technology. Banks have started using social media linked activities, which may reduce various costs like advertising and marketing, in addition to Customer Relationship Management (CRM), communication and information dissemination to the customers (users) who are using social media.

Social media are one of the electronic forms of media and they contain websites (Facebook.com, Twitter.com, Youtube.com, etc.) and applications (Facebook Messenger, Facebook Mobile App, Whatsapp, etc.), which enable users to

create and share or exchange the information, ideas, images and videos, etc. Social media follow the technique of WEB2.0, which are user generated contents (i.e., word of mouth) and many rather than one form of communication in traditional media like TV, radio, and newspaper, etc. Social media came into existence with the basic purpose of connecting friends and family members in a network, but later on many companies started using social media for doing businesses, advertising the products, promotion, marketing, communication and customer engagement in real time. Sharron Nelson (2018) says that the Return on Investment (ROI) through social media is also huge if a business entity uses social media for their business activities.

Social media platforms have changed the way of communication and engagement between customers (users) and companies in real time. Social media users can engage with both companies and other users to know more about the products and services by word-of-mouth marketing technology. Therefore, the companies have to engage the customers effectively to sustain in this competitive and customer centric market.

There are 3.484 billion active social media users, as of January 2019, which is 45% of the overall population of the world, and Facebook (2.27 billion users as of January 2019) has a higher number of users than the population of China and India. Average daily use of social media around the globe is 2h 32m. 73% of social media users in India are in the age group of 18–35 years. It took Facebook only two years to reach 50 million customers, while for radio, TV and the Internet it took 38, 16 and 4 years, respectively. Social media users' growth rate is increasing day by day in the world as well as in India. Therefore, social media are seeing a more exponential growth of customers than any other communication channels. This provides companies an opportunity to attain success in business through social media. Social media users can also get better experience towards products and services of any company through it. The benefits provided by social media are both for companies and users.

Facebook has emerged as the leading social networking site worldwide with 38.6% global penetration and in India, Facebook users surpassed USA Facebook users by July 2017, and now India has the most Facebook users across the world. Hence, in the present study, Facebook has been chosen as the social media tool to study the users' (customers') engagement in terms of likes, shares and comments to the selected banks' posts for the period of three years. And also the study includes all the Indian commercial banks' presence in various social media platforms.

Literature Review

This area has been extensively researched by various scholars in foreign countries but not many studies have been found in the Indian context concerning users' engagement in banking activities through social media.

Pyka and Blach (2014) believe that small and medium business enterprises will benefit from good internet services and promotional support. The popularization of electronic banking channels provides positive effect on economic growth and also increases the transaction and customer activities (Polasik, 2013). Banks can use social media to develop a new business model which will cater to effective interaction and close relationship with the clients (Jackowicz, Kozłowski, Kuchciak & Marcinkowska, 2020). A synergy created by social media between work and social orientation improves the team and individual employee performances in the workplace (Song, Wang, Chen, Benitez & Hu, 2019).

A higher level of customer engagement creates an insight for a long lasting emotional relationship towards the brand which is to the extent that the customers are willing to develop and sustain such relationships (Circles, 2010; Johnson, 2010). Through customer engagement, performance in terms of sales growth, competitive advantage and profitability have improvised the dynamic business environment (Neff, 2007; Sedley, 2006; Voyles, 2007).

The feature of adding additional value with the brand and addressing the needs beyond transactional level differentiates social media from traditional media channels (Schultz & Peltier, 2013). There happens a two-way communication flow between consumer and brand which allows a level of interaction, where users of social media become active participants in the brand's communication program. The overall result, having highly engaged customers, is ending up with increased brand equity, retention, share of wallet and return on investment (Vivek, Beatty & Morgan, 2012). Social media are defined as the collection of websites and internet based applications that works by Web 2.0 technologies which provides a platform for users to create and exchange or share the user-generated content (Kaplan & Haenlein 2010), and represent a rich context for engagement demonstration, as they foster the creation of strong, interactive consumer relationships (Gummerus, Liljander, Weman & Pihlström, 2012).

Michael Veenswyk (2013) found that social media have become a feasible and preferred choice for the customers to contact and communicate with the banks. The study also found that customers are more engaged with different social media platforms of banks but, it is a risk for banks to use different social media platforms because of the security issues associated with it. Naeem and Ozuem (2021) opined that social media provided better guidance to customers on awareness and on using internet banking during the COVID-19 pandemic.

It has been found that banks are now focusing more on social media trends which are led by internet services, but if banks want to maximize the benefits of social media for competitive advantage, they have to adapt a more holistic social media strategy (Afolabi, Ezenwoke & Ayo, 2017).

The author found that through privacy policies, terms of use and technical functionality, social media platforms offer protection to the present and potential customers. It says that if the customers are engaged with the social media platforms of their respective banks, they should move further to social media banking, as it provides proper protection for the customers (Babu & Babu, 2018).

Research Methodology

To carry out this study, data were collected in two phases by the researchers. In the first phase, Indian commercial banks' presence on different social media platforms was collected through respective bank websites. In the second phase, the statistical data were gathered from the selected Facebook pages through facepager and netvizz app available on Facebook, including the number of posts by banks and the number of likes, comments and shares by Facebook users (as customers) to those banks' posts. The selected banks comprised of three public sector banks, i.e., SBI, PNB and BOB and three private sector banks, i.e., ICICI, HDFC and AXIS, based on their market capitalization. The data were collected for three years from the Facebook page of the selected banks. More specifically, the data were collected for the period from June 1, 2016 to December 31, 2021. The data were standardized to per post reaction (like, comment and share) because there is a difference in the number of posts and accordingly reactions may also differ. To avoid this, data were standardized. Mean Difference test (t-test) has been performed on the data to analyze the bank's Facebook page data.

Objectives and Hypothesis

The aims of the study are:

1. To find out the Indian commercial banks presence on different social media platforms.
2. To analyze the customer engagement in banking activities on social media with respect to select banks' Facebook page posts.

The hypotheses of the study are:

$H0_{1-7}$: There is no significant difference in Likes of the Bank Facebook Page Posts before and after demonetization for 7, 14, 21, 28, 30, 60 and 90 days.

$H0_{8-14}$: There is no significant difference in Comments of the Bank Facebook Page Posts before and after demonetization for 7, 14, 21, 28, 30, 60 and 90 days.

$H0_{15-21}$: There is no significant difference in Shares of the Bank Facebook Page Posts before and after demonetization for 7, 14, 21, 28, 30, 60 and 90 days.

$H0_{22-28}$: There is no significant difference in Likes between Private and Public sector banks for posts after demonetization for 7, 14, 21, 28, 30, 60 and 90 days.

$H0_{29-35}$: There is no significant difference in Comments between Private and Public sector banks for posts after demonetization for 7, 14, 21, 28, 30, 60 and 90 days.

$H0_{36-42}$: There is no significant difference in Shares between Private and Public sector banks for posts after demonetization for 7, 14, 21, 28, 30, 60 and 90 days.

$H0_{43}$: There is no significant difference in the number of posts between Private and Public sector banks.

$H0_{44-46}$: There is no significant difference in Likes, Comments and Shares between Private and Public sector banks for posts.

Findings and analysis

Indian commercial banks' presence on different social media platforms

The technology advancement in the 20th century is based on the Internet, World Wide Web, computer, mobiles and wireless communications, and these have changed the business world. Through this advanced technological im-

provement, communication ways, means and methods have changed entirely from conventional ways and methods; to compete in this highly dynamic market, banks have to be more communicative, innovative and more customer-centric. To compete in this technological market, social media is the only key for any business and social media have a crucial influence on today's business world (Smith, 2019). Social media are almost an endless and dynamic source of information and an important tool for communication with the customers. In order to make interaction better and deal with the present customers, and also to capture the potential customers in an efficient and frequent manner, Indian commercial banks have become present on different social media platforms. Nowadays, it is a fashionable approach for every financial institution to be present on social media platforms, especially for banks, which have more interaction and dealing with the customers. The social media platform creates new opportunities for banks to share the information about their products and services quickly and efficiently, provide customers the ability to give feedback about products or services, and engage in a discussion about products and services with the community (Stone, 2009). There are some concerns about the reliability of social media as a platform to support the relationship between banks and customers and how compliant they are with the industry's safety standards (Scarborough, 2010; Jaser, 2010). From the data collected in the first phase, most of the Indian commercial banks are present on different social media platforms. The following tables give a clear picture of the presence of banks on social media platforms.

Table 1. Presence of Public Sector Banks on Social Media platforms

Banks	Facebook	Twitter	LinkedIn	Instagram	Pinterest	Google+	YouTube
SBI	Yes	Yes	Yes	Yes	Yes	No	Yes
Allahabad Bank	Yes	Yes	Yes	Yes	No	No	Yes
Andhra Bank	Yes	Yes	Yes	Yes	No	No	Yes
Bank of Baroda	Yes	Yes	Yes	Yes	No	No	Yes
Bank of India	Yes	Yes	Yes	Yes	No	No	Yes
Bank of Maharashtra	Yes	Yes	Yes	Yes	Yes	No	Yes
Canara Bank	Yes	Yes	Yes	Yes	Yes	No	Yes

Table 1. Presence...

Banks	Facebook	Twitter	LinkedIn	Instagram	Pinterest	Google+	YouTube
Central Bank of India	Yes	Yes	Yes	Yes	No	No	Yes
Corporation Bank	Yes	Yes	Yes	Yes	No	No	Yes
Dena Bank	Yes	Yes	Yes	Yes	No	No	Yes
Indian Bank	Yes	Yes	Yes	Yes	No	No	Yes
IOB	Yes	Yes	Yes	Yes	No	No	Yes
OBC	Yes	Yes	Yes	Yes	No	Yes	Yes
PNB	Yes	Yes	Yes	Yes	No	No	Yes
Syndicate bank	Yes	Yes	Yes	Yes	Yes	No	Yes
Union Bank	Yes	Yes	Yes	Yes	No	No	Yes
United Bank of India	Yes	Yes	Yes	Yes	Yes	No	Yes
Punjab & Sind Bank	Yes	Yes	Yes	Yes	No	No	Yes
UCO Bank	Yes	Yes	Yes	Yes	No	No	Yes
Vijaya Bank	Yes	Yes	Yes	Yes	No	No	Yes
IDBI	Yes	Yes	Yes	Yes	No	Yes	Yes

S o u r c e : compiled by the author.

From the above table 1, it can be seen that all the Public Sector banks are present on the five main social media platforms which are Facebook, Twitter, Youtube, Instagram and LinkedIn. With respect to Pintrest, five Public Sector banks, i.e., SBI, Bank of Maharastra, Canara Bank, Syndicate Bank and Union Bank have an active presence on social media platforms. In case of Google+ only two Public Sector banks – OBC and IDBI – are present. In overall, all the banks are present on Facebook, Twitter, Youtube, Instagram and LinkedIn; SBI, Bank of Maharastra, Canara Bank, Syndicate Bank, Union Bank, IDBI Bank and OBC are present on six out of seven Social Media platforms, and the remaining banks are present on five out of seven Social Media platforms.

Table 2. Presence of Private Sector Banks on Social Media platforms

Banks	Facebook	Twitter	LinkedIn	Instagram	Pinterest	Google+	YouTube
Axis Bank	Yes	Yes	Yes	Yes	No	No	Yes
Bandhan Bank	Yes	Yes	Yes	Yes	No	No	Yes
CSB	Yes	No	Yes	No	No	No	Yes
CUB	Yes	Yes	No	Yes	No	No	No
DCB Bank	Yes	Yes	Yes	Yes	No	No	Yes
Dhanalaxmi Bank	Yes	No	Yes	No	No	No	Yes
Federal Bank	Yes	Yes	Yes	Yes	No	Yes	Yes
Hdfc Bank	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ICICI Bank	Yes	Yes	Yes	Yes	Yes	No	Yes
Indusind	Yes	Yes	Yes	Yes	No	Yes	Yes
Idfc Bank	Yes	Yes	Yes	Yes	No	No	Yes
J&K Bank	Yes	Yes	Yes	Yes	No	Yes	Yes
Karnataka Bank	Yes	Yes	Yes	Yes	No	No	Yes
KVB	Yes	Yes	Yes	Yes	No	No	Yes
KMB	Yes	Yes	Yes	No	No	Yes	Yes
LVB	Yes	Yes	No	No	No	No	Yes
Nainital Bank	Yes	Yes	Yes	Yes	No	No	No
RBL Bank	Yes	Yes	Yes	No	No	No	Yes
SIB	Yes	Yes	Yes	Yes	No	Yes	Yes
YES Bank	Yes	Yes	Yes	Yes	No	No	Yes
TMB	Yes	Yes	Yes	Yes	No	Yes	Yes

S o u r c e : compiled by the author.

From the above table 2, it can be seen that almost all private sector banks are present on Facebook; with respect to Twitter, Youtube and LinkdIn, 19 out of 21 banks are present. In case of Instagram, 16 private sector banks are present. Lastly, in the case of YouTube, 16 out of 21 private sector banks are present. Six banks are present on six social media platforms and HDFC is the only bank pre-

sent on all social media platforms while J&K Bank is present on five social media platforms. At last, five private sector banks, i.e., CSB, CUB, Dhanalaxmi, LVB and Nainital banks are present on only three Social Media platforms which is the least among Private Sector banks.

Engagement of customers on banking activities on Facebook

In the contemporary technological environment, people use different technological media for getting connected or engaged with others, and this practice has stepped in to banks as well. Customers of today are reluctant to pay a physical visit to bank branches and prefer to interact with their respective banks through different social media platforms in a quick and frequent manner. Banks also find it easy to share information through social media for their customers effectively. Of late, banks have started to share information related to different products and services through social media and customers can react and engage by the way of likes, shares, comments, etc.

Table 3. Followers of banks' Facebook page

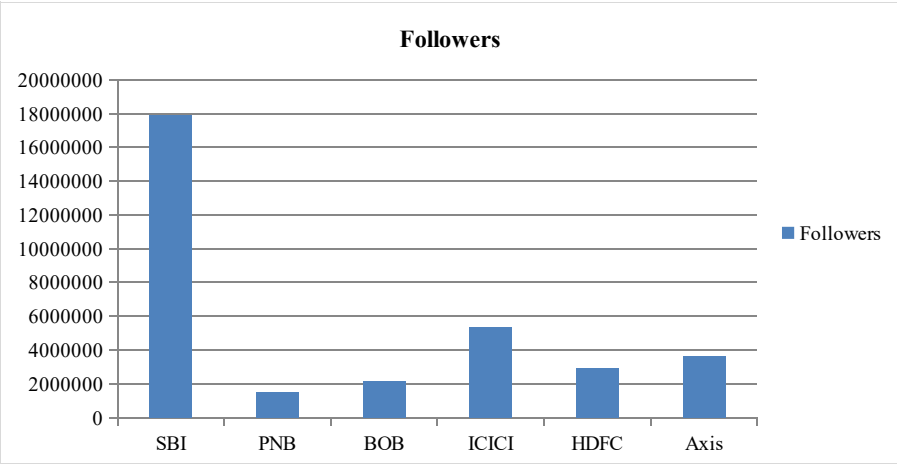
Banks	Followers
SBI	17916994
PNB	1520288
BOB	2183838
ICICI	5363214
HDFC	2911828
Axis	3655471

S o u r c e : compiled by the author (from respective banks' Facebook page)[1].

[1] https://www.facebook.com/StateBankOfIndia; https://www.facebook.com/pnbindia; https://www.facebook.com/bankofbaroda; https://www.facebook.com/icicibank; https://www.facebook.com/HDFC.bank; https://www.facebook.com/axisbank.

From table 3 and chart 1, it can be seen that SBI has the highest numberber of followers, followed by ICICI, AXIS, HDFC, BOB and PNB. As compared to other banks SBI has more followers, it has three times more followers than ICICI and 12 times more than PNB which is in the last place among the selected banks.

Chart 1. Followers of banks' Facebook page



S o u r c e : author's calculation.

Further analysis has been carried out in three phases; the first phase was event study analysis of customer engagement within the selected banks with reference to demonetization which was an important event for the banks during the study period. The second phase of the analysis was focused on customer engagement between public and private sector banks post demonetization for a period of up to three months. The third phase of analysis was focused on customer engagement between public and private sector banks for overall period of three years.

Table 4. t-value for Likes w.r.t Demonetization Event

LIKES						
Days	**HDFC**	**ICICI**	**Axis**	**SBI**	**PNB**	**BOB**
7 Days	0.793	1.732	0.336	1.512	0.413	0.256
14 Days	0.478	1.230	0.673	1.890	0.748	1.200
21 Days	0.249	1.685	0.527	1.892	0.367	1.331
28 Days	0.085	1.752	1.411	1.807	1.034	1.165
30 Days	0.488	2.025	0.924	1.928	1.045	1.139
60 Days	0.868	**2.599****	**2.691*****	1.245	1.580	0.378
90 Days	1.110	**2.647*****	**2.873*****	1.186	1.255	0.882

,* Sig. at 5% and 1% respectively.

S o u r c e : author's calculation.

$H0_{1\text{-}7}$: There is no significant difference in Likes of the Banks' Facebook Page Posts before and after demonetization for 7, 14, 21, 28, 30, 60 and 90 days

Table 4 contains t values for before and after difference in likes for the post of the respective banks before and after demonetization. An event study analysis was carried out for a period from 7 to 90 days to see the difference in likes for bank posts on the Facebook. From the table, it can be seen that there is a significant difference in likes for posts of ICICI and AXIS banks for 60 and 90 days only. For the rest of the banks' posts there is no significant difference.

The difference is only with 2 private banks – ICICI (mean value difference 60 days is 29583.42 and 90 days is 25026.15) and Axis (mean value difference 60 days is -8540.63 and 90 days is -12309.8), which is for a longer period. This could be due to the difference in the number of posts posted by the banks. Even though SBI has a higher number of post difference before and after demonetization than HDFC, PNB and BOB, SBI's difference fluctuates over the period of time, i.e., sometimes the number of posts is higher and sometimes lower compared to ICICI bank; the likes for the Facebook page posts for 60 days and 90 days differ significantly, at 5%, between before and after demonetization. However, for 7 to 30 days there is no significant difference. And also there

is a huge difference in the number of posts posted by ICICI bank on its Facebook page between before and after demonetization from 7 to 90 days. Therefore, over the period of 7 to 90 days before and after demonetization, the number of posts posted by ICICI bank increased. Even though the number of posts for ICICI and Axis banks is lower than for SBI bank, both banks were able to bring out a significant difference in the likes for their posts. This could be due to the nature of the posts and the profile of the customers. The null hypothesis cannot be rejected for HDFC, SBI, PNB and BOB banks, and it is rejected for ICICI and Axis banks.

No other significant difference could be established for other banks studied for any of the time periods. Hence, the conclusion is that even though there is a big difference in numbers of posts of banks, there is no guarantee for a difference in likes. The differences in likes of posts were found only among private banks and not among public sector banks. As discussed above, this could be due to the nature of the posts the banks were posting, their contents, clarity, color and visualization effect. The number of customers and profile of the customers, in reference to their age, educational background, industry they are from and their social status could also have played a role in this phenomenon.

Table 5. t-value for Comments w.r.t Demonetization Event

COMMENTS						
Days	**HDFC**	**ICICI**	**Axis**	**SBI**	**PNB**	**BOB**
7 Days	0.143	**4.286*** **	0.304	1.637	1.291	0.551
14 Days	0.781	**2.497** **	0.251	1.985	0.446	0.174
21 Days	1.192	**2.298** **	0.759	1.974	0.718	1.111
28 Days	1.039	**2.475** **	0.141	1.765	0.423	1.651
30 Days	1.098	**2.328** **	0.727	1.991	0.448	1.932
60 Days	0.232	**2.408** **	0.939	1.883	0.706	0.287
90 Days	0.125	**2.411** **	0.227	1.347	0.480	1.455

,* Sig. at 5% and 1% respectively.

S o u r c e : author's calculation.

$H0_{8\text{-}14}$: There is no significant difference in Comments of the Banks' Facebook Page Posts before and after demonetization for 7, 14, 21, 28, 30, 60 and 90 days

Table 5 contains t values for difference in comments for the posts of the respective banks before and after demonetization for the period of 7, 14, 21, 28, 30, 60 and 90 days. An event study analysis was carried out for a period of 7 to 90 days to see the difference in comments for bank posts on Facebook. From the table, it can be seen that there is a significant difference in comments for posts of ICICI bank only.

The difference in comments for posts is only seen in the case of ICICI bank for the period of 7 days to 90 days. ICICI is the only bank which has a significant difference in comments the entire period of the study. Facebook users of ICICI bank not only click the button for likes but they also express their feelings in the form of words such as comments. The difference in likes is significant for longer days from Table 5, but for comments the difference is for the entire event study period. Even if one argues that the difference in likes is due to some random effect or because of the difference in posts, in terms of comments it is because of the consistent and active customer interaction over the event period. Hence, the researcher cannot reject the null hypothesis for HDFC, Axis, SBI, PNB and BOB banks and can reject it only for ICICI. As discussed earlier, the difference is attributed to the nature of the comments, the profile and socio-economic background of the customers.

Table 6. t-value for Shares w.r.t Demonetization Event

SHARES						
Days	**HDFC**	**ICICI**	**Axis**	**SBI**	**PNB**	**BOB**
7 Days	1.014	**2.724****	0.055	1.157	1.330	0.935
14 Days	0.907	**2.440****	0.419	1.448	0.248	0.327
21 Days	1.648	**2.869*****	0.657	1.503	0.350	0.614
28 Days	1.718	**3.653*****	0.232	1.499	0.428	0.409
30 Days	1.683	**2.482****	0.804	1.561	0.424	0.278
60 Days	0.821	1.640	0.738	1.788	1.272	0.701

Table 6. t-value...

SHARES						
Days	HDFC	ICICI	Axis	SBI	PNB	BOB
90 Days	0.838	1.697	0.719	0.703	1.068	1.914

,* Sig. at 5% and 1% respectively.

S o u r c e : author's calculation.

$H0_{15\text{-}21}$: There is no significant difference in Shares of the Banks' Facebook Page Posts before and after demonetization for 7, 14, 21, 28, 30, 60 and 90 days

Table 6 represents the t-value of shares of the Facebook page posts of different banks between before and after demonetization from 7 to 90 days. An event study analysis was carried out for a period of 7 to 90 days to see the difference in shares for bank posts on Facebook. From table 6, it can be seen that only ICICI bank has significant t-values at the level of 5 percent over the period of 7 days to 30 days before and after demonetization. Apart from just hitting the likes and typing a few comments as their thoughts to the bank's Facebook page post, the Facebook users of ICICI bank also tended to propagate the bank's contents through sharing the bank's Facebook page post. Hence, the null hypothesis cannot be rejected for HDFC, Axis, SBI, PNB and BOB banks over the period of 7 to 90 days and only for ICICI bank the null hypothesis is rejected for 7 to 30 days period. There is a significant difference in shares before and after demonetization for the posts of ICICI bank.

The Facebook users of ICICI bank seem to be more involved and agile than the users of other banks. This is evident from the difference that we were able to establish in likes, comments and shares for the posts of the bank before and after demonetization.

From the event analysis results, it can be concluded that there is a difference in likes of bank's Facebook page post for ICICI and Axis banks only. In terms of comments and shares, ICICI is the only bank having a significant difference before and after demonetization. From the results, it can be opined that the customer interaction on social media within the banks is not very significant for most of the banks studied. The results are bad for public sectors banks because

not even a single public sector bank was able to bring out any difference in reaction to their posts even for a major event like demonetization. Therefore, public sector banks should change the way they use the social media for their banking activity. To begin with, they have to at least change the way and style of their posts.

Table 7. Mean and t-value for Likes w.r.t post Demonetization period

Likes	Private Mean	Public Mean	T value
7 Days	28242.677	2423.847	**2.294****
14 Days	20276.870	2642.122	**2.734*****
21 Days	19008.331	1978.229	**3.453*****
28 Days	16949.721	1647.701	**3.912*****
30 Days	17670.172	1612.727	**4.265*****
60 Days	18481.127	1352.127	**4.679*****
90 Days	20080.344	1214.575	**6.017*****

,* Sig. at 5% and 1% respectively.

S o u r c e : author's calculation.

$H0_{22\text{-}28}$: There is no significant difference in Likes of the Banks' Facebook Page Posts after demonetization for 7, 14, 21, 28, 30, 60 and 90 days

From table 7, it can be inferred that t value for likes of bank's Facebook post after the demonization up to 90 days (3 months) from 7 days is statistically significant at the level of 5 percent. Therefore, the null hypothesis is rejected. Hence, the researcher concluded that there is a significant difference between private and public sector banks with respect to likes of Facebook posts. Private sector banks' facebook posts have more likes than public sector banks' Facebook posts over the period of 7 days to 90 days after the demonetization. Mean values of likes for posts for private sector banks are much higher than those of public sector banks. This is again attributed to the nature and type of the posts and the customer profile of the banks. Customers of private sector banks are mostly young people from software industry and other branches of private sector, whereas customers of public sector banks are mostly people of middle age from government and public sector.

Table 8. Mean and t-value for Comments w.r.t post Demonetization period

Comments	Private Mean	Public Mean	T value
7 Days	190.980	78.546	1.604
14 Days	154.041	85.825	1.353
21 Days	174.152	68.203	**2.442****
28 Days	147.046	58.128	**2.671*****
30 Days	149.439	57.136	**2.947*****
60 Days	138.616	45.682	**4.170*****
90 Days	128.883	44.222	**5.108*****

,* Sig. at 5% and 1% respectively.

S o u r c e : author's calculation.

$H0_{29\text{-}35}$: There is no significant difference in Comments of the Banks' Facebook Page Posts after demonetization for 7, 14, 21, 28, 30, 60 and 90 days

From table 8, it can be inferred that t value for comments of respective bank posts after the demonetization has a significant difference at the level of 5 percent. Therefore, the null hypothesis cannot be rejected for 7 and 14 days and it is rejected for 21 to 90 days period. Hence, it is concluded that there is a difference between private and public sector banks with respect to comments of posts for 21 days to 90 days (3 Months) after demonetization. From the mean values it is very clear that there are many more comments for the posts of private sector banks than those of public sector banks.

Table 9. Mean and t-value for Shares w.r.t post Demonetization period

Shares	Private Mean	Public Mean	T value
7 Days	286.200	679.875	-0.736
14 Days	255.191	437.104	-0.657
21 Days	258.151	321.916	-0.337
28 Days	216.375	258.371	-0.295
30 Days	214.706	250.246	-0.267

Table 9. Mean...

Shares	Private Mean	Public Mean	T value
60 Days	190.828	169.581	0.295
90 Days	167.270	138.881	0.576

,* Sig. at 5% and 1% respectively.

S o u r c e : author's calculation.

$H0_{36\text{-}42}$: There is no significant difference in Shares of the Banks' Facebook Page Posts after demonetization for 7, 14, 21, 28, 30, 60 and 90 days

From the above table 9, one can say that shares of respective banks' posts after the demonetization from 7 to 90 days (3 months) do not have any significant difference as all the t values are insignificant at 5%. Therefore, the null hypothesis is accepted, i.e., there is no significant difference between shares of private and public sector bank posts.

From the above results, we can conclude that the Facebook users tend to like and comment posts more often than to share them. It is because likes and comments are generated by the user but shares of the post are a purely bank generated content which is shared by the user. Another reason is that there are more posts of public sector banks than private sector banks and the users tend more towards private sector banks.

The post-demonetization period analysis of customer interaction between public and private sector banks revealed that there is a significant difference in terms of likes and comments but no significant difference in shares. Therefore, further analysis is carried out for the overall study period between public and private sector banks.

Table 10. Mean and t-value for Post, Likes, Comments and Shares for overall period

Overall	Private Mean	Public Mean	T value
Posts	21.31840796	61.56716418	14.65***
Likes	18687.30166	5058.684348	6.94***
Comments	194.4442331	66.63130232	8.60***
Shares	317.4346155	120.3886651	3.32***

,* Sig. at 5% and 1% respectively.

S o u r c e: author's calculation.

$H0_{43}$: There is no significant difference in the number of Posts between Public and Private sector banks

Table 10 shows the mean values and t values of selected private and public sector banks with respect to overall posts on their Facebook page, as well as Likes, Comments and Shares of those posts by social media users for three years. There are almost three times more posts of public sector banks than those of private sector banks. Therefore, the public sector banks are more active by posting on their Facebook pages than private sector banks and the t value is significant at 5%. Therefore, null hypothesis is rejected signaling a significant difference in the number of posts between private and public sector banks.

$H0_{44\text{-}46}$: There is no significant difference in Likes, Comments and Shares between Private and Public sector banks for posts

Table 10 shows that the mean value of private sectors banks for likes of posts is four times higher than the mean for public sector banks and there is a significant difference with the t value being significant at 5%. Even though public sector banks have a higher number of posts than private sector banks on their respective Facebook pages, Facebook users are more attracted towards private sector banks' posts. Hence, the result reveals the rejection of null hypothesis for Likes of posts.

Table 10 illustrates that for the private banks, the mean value of comments for posts is almost three times higher than public banks' mean and the t-value is statistically significant at 5%. Customer interaction is more visible for private sector banks by way of writing their feelings about the posts, even though

public sector banks have a higher number of posts. Null hypothesis is rejected, i.e., there is a significant difference in comments for posts among private and public sector banks.

Table 10 shows that the t-value of shares for posts, and it is statistically significant at 5%. Even though public sector banks have a higher number of posts than private sector banks, shares of private sector are almost two times higher than that of public sector banks. Therefore, the social media users are more attracted towards private sector banks' posts. Null hypothesis is rejected, i.e., there is a significant difference in shares for posts among private and public sector banks.

From the above, it is very clear that even though the number of posts is much higher for public sector banks, the number of likes, comments and shares is higher only for private sector banks. This clearly defines the quality and the kind of posts public sector banks posts. Public sector banks need to relook the way they operate in social media. A mere presence in social media or just posting posts is not enough to attract customers. There is much more to be done to attract and engage them.

Conclusion

Social media platforms have become the most significant medium for sharing the information of products and services of any business entity (including banks) and getting the quick feedback from customers regarding the products and services. As the concluding statements it can be said that almost all the Indian commercial banks are present on different social media platforms and Facebook is the only platform having all banks' presence. Regarding the engagement of the customer, it has been found that public sector banks are posting more on their respective Facebook pages to their customers than private sector banks; however, their customers are more engaged (i.e., interaction) in terms of likes, comments and shares in reference to the private sector banks' posts than public sector banks. Further, it has been found that SBI has a higher number of followers – 200% more than ICICI to 1100% more than PNB – and it is leading among other public sector banks. It has also been found that SBI is a tough competitor for private sector banks especially in terms of likes, comments and shares (event study analysis). Therefore, as a good competitor for private sector banks and having a higher number of followers than any other of

the selected banks, SBI can get more effective customer engagement than private sector banks if it provides customers more attractive posts than those of private sector banks.

Limitations

The users' engagement in banking activities on social media is restricted for only Facebook users in this study. The present study includes a sample size of only six banks, which is three banks from both public and private sector, instead of variety of bank types (public, private, foreign, rural, payment, small finance an cooperative banks) in India. Also there might be a slightly higher concentration of public banks than private banks in rural areas.

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