

IMPACT OF DIGITAL TRANSFORMATION ON PRODUCTIVITY OF RURAL BANKS: AN EMPIRICAL EVIDENCE FROM UTTARAKHAND GRAMIN BANK

Dr. Amit Kumar Uniyal, Associate Professor, Department of Commerce, Graphic Era Deemed to be University, Dehradun, amituniyal171@gmail.com

Ravi Prasad, Research Scholar, Department of Management, Uttaranchal University, Dehradun, raviprasad2007@gmail.com

Harish Kumar, Assistant Professor, School of Management, Graphic Era Hill University, Dehradun, Uttarakhand.

Abstract

In this age of information technology, banking customers are more inclined towards digital transaction for its effectiveness and low operating cost. The paper examines the performance of Uttarakhand Gramin bank and the impact of technological advancement on its productivity over the years. The financial innovation in the rural banking sector and its relevance in enhancing the performance of Uttarakhand Gramin bank are evaluated to know the growth rate. The financial performance is based on profitability, growth of business and deposits from 2013 to 2021. The study investigates the impact of digital transformation on the effectiveness of Uttarakhand Gramin bank and in knowing customer satisfaction level through primary data. The performance of UGB is based on annual reports published by the bank. The study reveals that digital transformation in the Uttarakhand Gramin bank with respect to its various services such as NEFT, RTGS, online internet banking, mobile apps, e-wallet, mobile banking, UPI etc have drastically increased post covid-19 and the bank is facing stiff competition from private sector banks & public sector banks in urban areas in terms of data sharing, connectivity, stability, standardization of application programming interface (API) and data protection. The customers of UGB bank felt that the bank needs to enhance its technology driven services to retain customers and attract potential customers with regards to digitalization, Automation, Artificial intelligence, machine learning, digital money and block chain ledgers.

Keyword: Digitalization, Data sharing, banking services, data security

Introduction

Over the decade, the banking system in India has made a sea change in its banking operations. The cost of operating the bank has drastically reduced due to technological advancement and adoption of the latest and innovative banking services usage and acceptance of it by banking customers in the market. Today's customer focus of efficient digital banking services at minimum cost. This has changed the entire trend of the banking sector. The bank emphasize on providing high quality service at low cost to its customers which has led to increase in the use of internet banking, mobile banking, e-wallet, NEFT, RTGS, ATM, Debit card, Credit Card and automation services. Digital transformation adoption has improved customer access through digital channels. Apart from it, digital transformation has been able to better serve customer needs and has also enhanced productivity of the banks. Banks have been able to reduce their operating cost which further led to productivity of the banking staff. The trust in digital instruments and processes such as artificial intelligence, machine learning, big data analyses, digital money and block chain ledgers is going to have a significant effect on the performance of banks and in the transparency of transactions in the banking industry.

1.1 Objective of the study

1. To investigate the impact of digital transformation on the performance of Uttarakhand Gramin bank from 2012-13 to 2020-21 in the state.
2. To evaluate Uttarakhand Gramin bank's customers perception about integrated digital technological services offered by bank in all aspect of banking business.

1.2 Literature review

G.Tulasi et al.(2015) The study reveals that IT is being used by banks to reach the maximum number of customers in most efficient manner. The virtual platform is the need of the hour in today's scenario as customers look for secure digital services for all online transactions. Arora, P. et al. (2016) The researcher has analyzed the financial performance of local area bank (LAB)from 2002-03 to 2012-13. The results are based on ratio analysis which shows that LAB is more profitable but less efficient as compared to schedule commercial bank and Regional rural banks. Asare Yaw Obeng et al.(2018) In this paper, the author has investigated that the IT innovation has increased the productivity of the staff of the banks. The technology has enhanced the bank employee's productivity. Alshubiri F.et al.(2019) The author investigated the impact of IT on financial development index from 2000 to 2016 of six Gulf Cooperation Council and concludes that effective joint information system helps in construction of efficient economic sector. Hou, M. and Liu Y.(2019) Rural banks in china are providing micro-credit and serving agriculture but the study reveals that funds need to be infused for the sustainable development of rural banks in china and for effective banking services. The policy maker needs to address these issues and assist in getting financial assistance for technological development. Pal.Tanay Kumar Dr et al. (2019) In this paper, the author has analyzed the financial performance of regional rural banks operating in west-Bengal in 2016-17 and finds that the bank has not been effective in disbursing credit for the development of trade, agriculture and cottage industries, credit to small and marginal farmers and also to the weaker section of the society. It recommends that an effective remedial measure has to be taken by the Govt. of Bengal. Rathore Ritu et al.(2019) The author has analyzed the credit disbursed for various purposes such as agriculture advances, recoveries and loan over dues by Rajasthan Marudhara Gramin bank of jobner branch.The bank needs to closely monitor the credit disbursed and have effective collective mechanism as overdues has adversely affected the profitability of the Gramin bank. Tigari, Harish et al. (2019) The researcher has examined the loan disbursed by Pragathi Krishna Gramin bank for three years from 2015-16 to 2017 -18.The study stress on providing more credit in rural areas for women empowerment, self-employment, entrepreneurial activities and rural education. Apart from it, bank should focus on providing ATM services, Gram sevaka, internet banking and enhance its customer services. Satish Chandra Tiwari et al.(2020) The researcher has analyzed the financial performance of RRB in Eastern Uttar Pradesh. The study finds that for rural development credit has been disbursed in abundance but NPA of banks has been the key problems faced by RRB's in these regions. The bank has to have an effective mechanism in collecting the dues and technology can play a significant role in closely monitoring the use of credit disbursed for rural development.

1.3 Research Methodology

The study is based on secondary as well as on primary data. Secondary data for the study is collected from previous study on technological innovations in the banking sector, research reports, articles, banking magazines, RBI reports etc. The annual report of the Uttarakhand Gramin bank is used to know about the annual performance of bank over the years from 2013 to 2021. The primary data was collected to study the impact of technological transformation of Uttarakhand Gramin bank; the researcher has sought answers to questions below.

To know the perception of customers about the digital banking services offered by UGB and its impact on the performance of Uttarakhand Gramin bank, the participants were asked the following questions.

1. Is Uttarakhand Gramin bank's banking services range consistent with latest innovations in banking sector?
2. Do you think that customers are satisfied with the standard of application programming interface of UGB bank?
3. Do you perceive that customers are satisfied with UGB's data protection and cyber security threats?
4. Has technological innovation in UGB's banking services affected the performance in the following areas?
 - a) Products
 - b) Processes & risk management
 - c) Delivery of services in remote areas
 - d) Operation of bank
 - e) Customer Service & employee productivity.
5. Are you satisfied with the IT-enabled products/services and processes offered by UGB?
6. How has innovation impacted the profitability of UGB's bank?

1.4 Data Analysis and Interpretation

The performance of Uttarakhand Gramin bank from 2012-13 to 2020-21 has been studied on the basis of the following:

- A. Growth in business of Uttarakhand Gramin Bank
- B. Profitability of Uttarakhand Gramin Bank
- C. Deposit of UGB's bank

A. Growth in business of Uttarakhand Gramin Bank

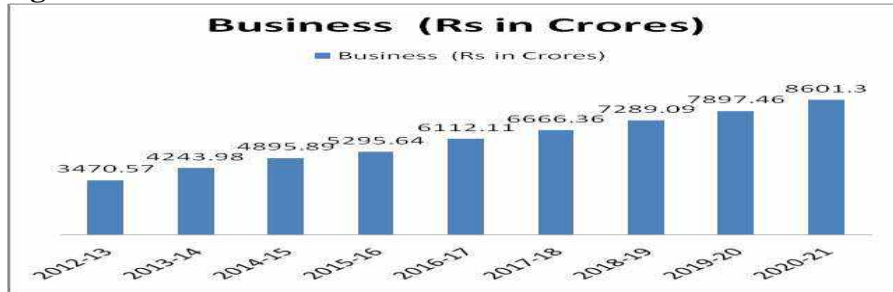
The annual reports of Uttarakhand Gramin bank from 2012-13 to 2020-21 has been used to evaluate the growth of UGB in Uttarakhand. The table 1 shows the impact of merger of three banks to form Uttarakhand Gramin bank and its growth after innovation of the banking services. The table 1 shows that UGB business in 2012-13 was Rs 3470.57 crore which has increased manifold with innovative banking services and its IT-enabled efficient services to its existing customers to Rs 8601.3 crore.

Table:1.1 The growth of Uttarakhand Gramin Bank since its inception.

Year	Business (Rs in Crores)
2012-13	3470.57
2013-14	4243.98
2014-15	4895.89
2015-16	5295.64
2016-17	6112.11
2017-18	6666.36
2018-19	7289.09
2019-20	7897.46
2020-21	8601.3

Source: Annual Reports of Uttarakhand Gramin Bank

Figure: 1.1



The figure 1.1 shows the trend of Uttarakhand Gramin bank performance in terms of growth from 2012-13 to 2020-21. The bank achieved its maximum growth in business in the year 2020-21 of about Rs 8601.3 crores.

B. Profitability of Uttarakhand Gramin Bank

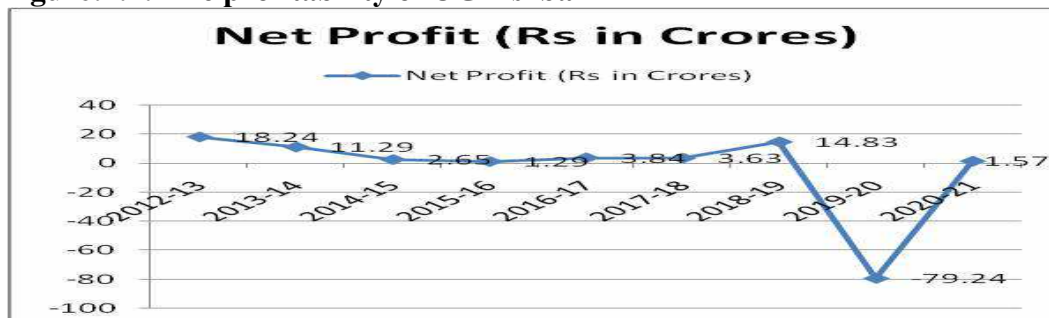
The table 2 depicts the performance of Uttarakhand Gramin Bank from 2012-13 to 2020-21. The bank profit in 2012-13 was only Rs 18.24 Crores but in the 2019-20 the bank profitability was adversely affected due to Covid-19 and the profitability was eroded and it had a negative effect on UGB's profitability as it showed -79.24 crores loss. However, in the year 2020-21, it recovered and 1.5 crore profitability was achieved by the bank. The technology based banking is still not effective for the rural customers and awareness and knowledge related to it has to be increased drastically.

Table 2.1: The Profit of Uttarakhand Gramin Bank is shown in the table below.

Year	Net Profit (Rs in Crores)
2012-13	18.24
2013-14	11.29
2014-15	2.65
2015-16	1.29
2016-17	3.84
2017-18	3.63
2018-19	14.83
2019-20	-79.24
2020-21	1.57

Source: Annual Reports of Uttarakhand Gramin Bank

Figure:2.1: The profitability of UGB's bank



The figure 2.1 shows the profitability of UGB's bank . The bank had 18.4 crore profit in 2012-13 and its maximum profitability was achieved in that year and in 2019-20 it incurred a heavy loss of about 79.24 crore due to adverse affect of covid-19.

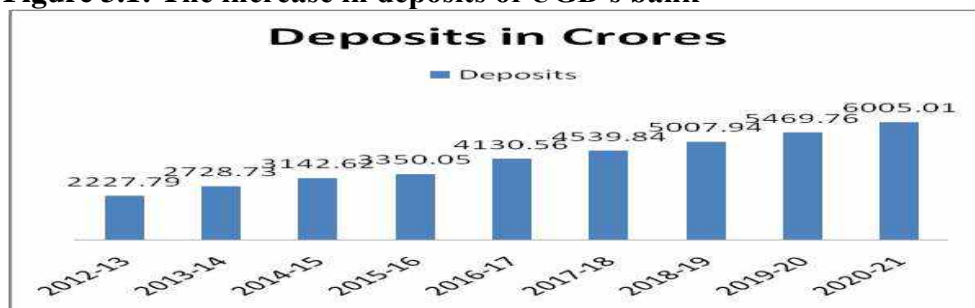
C. Deposit of UGB's bank

The annual reports of Uttarakhand gramin bank shows that in 2012-13 the deposits of the bank was Rs 2227.79 crore in 2012-13 and after the innovation of banking services of Uttarakhand gramin bank , the bank has not only reduced its operating cost but has also drastically enhanced its deposits. The increase in branches and effective strategy adopted by the bank in increasing deposits has raised its deposits Rs 6005.01 crore in 2020-21.

Table 3.1: Deposits of Uttarakhand Gramin Banks

Year	Deposits
2012-13	2227.79
2013-14	2728.73
2014-15	3142.62
2015-16	3350.05
2016-17	4130.56
2017-18	4539.84
2018-19	5007.94
2019-20	5469.76
2020-21	6005.01

Figure 3.1: The increase in deposits of UGB's bank



The figure 3.1 shows the increase in deposits of UGB's bank from 2227.79 in 2012-13 to Rs 6005.01 crore in 2020-21. The bank has been effectively enhance its customer base and retain its customers in spite of stiff competition from private sector banks.

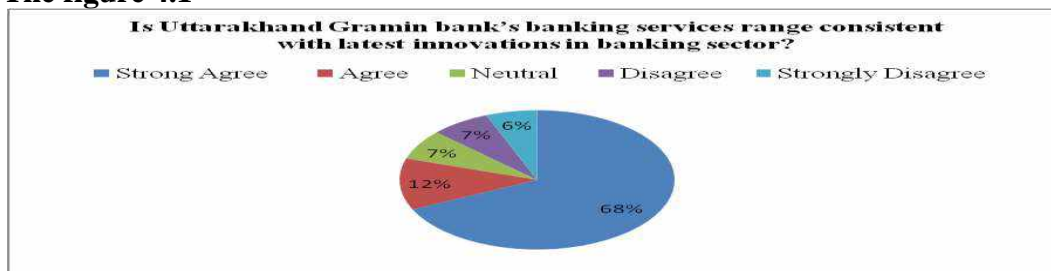
1.5 Customers perception about UGB's digital services and technological advancement

Statements	Strong Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Is Uttarakhand Gramin bank's banking services range consistent with latest innovations in banking sector?	68	12	7	7	6	100

Do you think that customers are satisfied with the standard of application programming interface of UGB bank?	12	24	16	14	34	100
Do you perceive that customers are satisfied with UGB's data protection and cyber security threats?	22	18	17	24	19	100
Has technological innovation in UGB's banking services affected the performance in its product, processes, operations and customer service ?	44	28	18	10	-	100
How has innovation impacted the profitability of UGB's bank?	36	28	18	12	6	100

1.6 Findings of the survey on Uttarakhand Gramin Bank's Digital banking services.

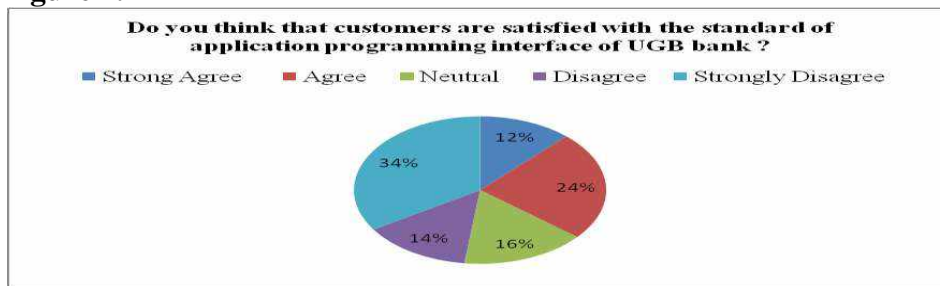
The figure 4.1



Interpretation

The figure depicts that 68% of the respondents strongly agree that Uttarkhand Gramin Bank is not consistent with latest innovations in banking sector and 6% respondents strong disagree. It means that banks have to be consistent and digital transformation is a continuous process and policy makers need to upgrade it as per the latest trends.

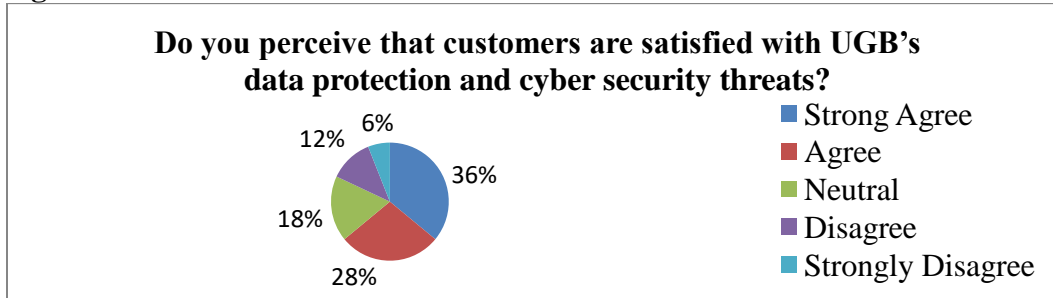
Figure 4.2



Interpretation:

The figure 4.2 shows that 34% of the representatives of the survey are not satisfied with the standard of application programming interface of Uttarakhand Gramin bank while only 12% of the respondents are satisfied. The bank needs to have a customer friendly interface and a demo of the application programming interface has to be conducted on a regular basis to create awareness among the rural customers in Uttarakhand.

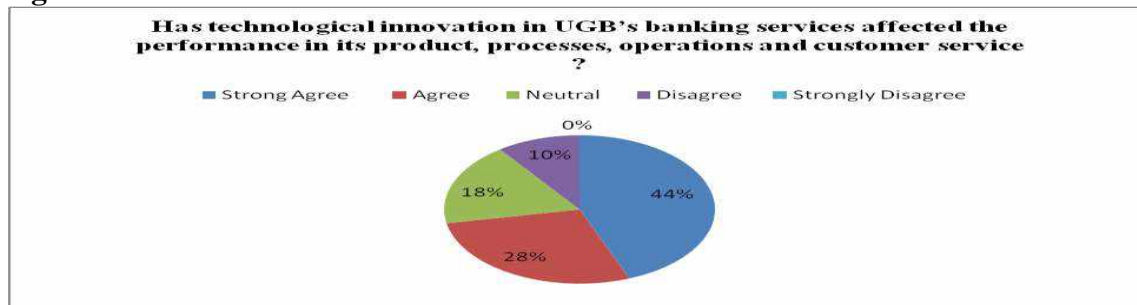
Figure 4.3



Interpretation

The figure 4.3 depicts that 36% of the representative of the survey are satisfied with the UGB's data protection and cyber security threats while 28% strongly disagree on the UGB's data protection and cyber security threats. Bank needs to further enhance its cyber security and data protection threats with latest and innovative technological equipments/software.

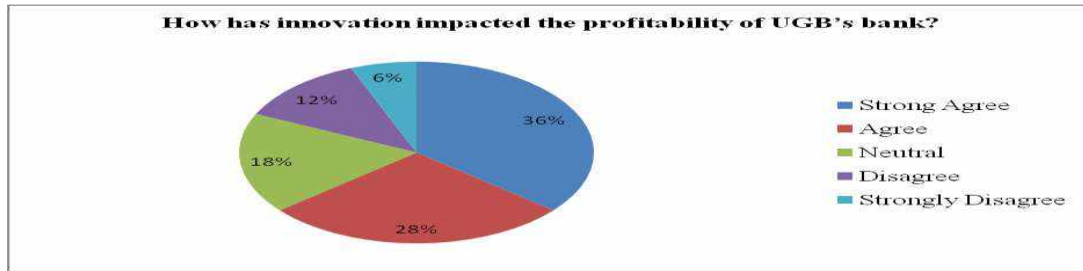
Figure 4.4



Interpretation

The figure 4.4 shows that 44% of the survey's representatives felt that technology innovation adopted by UGB's bank has affected the performance of its products, processes, operations and also has better its customer service while 10% of the respondents felt that it has no impact on UGB's performance. The bank needs to continuously focus on better connectivity, high speed and secure banking services to increase its customer's base and retain existing customers for its growth.

Figure 4.5



Interpretation

The figure 4.5 below depicts that innovation of UGB's banking services has a positive impact on the performance of banks and customers feel that it has not only reduced its operating cost but has been able to provide better customer service to its client with its effective digital services in Uttarakhand.

1.7 Hypothesis of the study

H1 : There is significant relationship between digital transformation and Uttarakhand Gramin bank's performance.

H0 : There is no significant relationship between digital transformation and Uttarakhand Gramin bank's performance.

1.8 Testing of Hypothesis

Chi-square Test. The test was used to test the hypothesis of the study.

Representatives	Observed (O)	Expected (E)	Oberved-Expected)	(Observed-Expected) ²	(Observed-Expected) ² /Expected	Values
Agree	65	45	20	400	400/45	8.88
Disagree	23	33	-10	100	100/33	3.03
Neutral	12	22	-10	100	100/22	4.54

Calculated Value: 16.36, Degree of freedom (n-1) i.e 3-1=2

Tabulated Value of Chi-square Test for 2 degree of freedom @5 % level of significance is 11.56. The calculated value is more than the tabulated value, thus null hypothesis is rejected .Hence, alternative hypothesis is accepted .Thus we can conclude that there is significant relationship between digital transformation and Uttarakhand Gramin bank's performance.

1.9 Conclusion

The study concludes that digital transformation adoption has improved customer access through digital channels. Apart from it, digital transformation has been able to better serve customer needs and has also enhanced productivity of the banks. Banks have been able to reduce their operating cost which further led to productivity of the banking staff. The trust in digital instruments and processes such as artificial intelligence, machine learning, big data analyses, digital money and block chain ledgers is going to have a significant effect on the performance of banks and in the transparency of transactions in the banking industry. The Uttarakhand bank needs to continuously focus on better connectivity, high speed and secure banking services to increase its customer's base and retain existing customers for its growth.

References

1. Alshubiri F.et al.(2019) The impact of ICT on financial development :Empirical evidence from the Gulf Cooperation Council countries. International Journal of engineering business management ,11,https://doi.org/10.1177/1847979019870670

2. Arora, P. et al. (2016) 'Performance of local area banks in India: an empirical study(2003–2012)', *Int. J. Indian Culture and Business Management*, 13(3), pp.310–331 <https://doi.org/10.1504/IJICBM.2016.078835>
3. Asare Yaw Obeng et al.(2018) The impact of IT-technology innovation on the productivity of a bank's employee, *Cogent Business & Management*, 5 (1), doi:10.1080/23311975.2018.1470449
4. Dr. Nagendra Kumar (2020) The performance evaluation of Regional Rural Banks in India *EPR International Journal of Multidisciplinary Research* , 6 (6), pp 31- 38, Journal DOI: 10.36713/epra2013
5. G.Tulasi et al.(2015), Role of Information Technology in Indian Banking sector,*IOSR Journal of Business and Management*,17 (5), 80-84. DOI:10.9790/487X-17518084
6. Hou,M. and Liu Y.(2019) Research on the development of Chinese Rural bank from the perspective of Inclusive Finance-bases on the empirical evidence of Fudeng rural bank.*Open Journal of social sciences*,7, pp 38-52,doi:10.4236/jss.2019.710004
7. Jawarnesh, Malik (2021) Impact of Information technology on the banking sector in Developing countries, *International Journal for modern trends in science and technology*, 7,201-204. Doi : <https://doi.org/10.46501/IJMTST0709032>
8. Pal.Tanay Kumar Dr et al. (2019), A Comparative Study of Regional Rural Banks In West Bengal, *IOSR Journal of Business and Management*,, pp 2319-7668. 21(4), DOI: 10.9790/487X-2104041014
9. Rathore Ritu et al.(2019) A study on the Magnitude of recoveries and overdues of loans disbursed by Rajasthan Marudhana Gramin Bank, *Indian Journal of economics and development*,15 (1),pp 111-116, doi:10.5958/2322-0430.2019.00013.1
10. Satish Chandra Tiwari et al.(2020) Financial Appraisal of RRBs: Evidence from Eastern Uttar Pradesh , *International Journal of Recent Technology and Engineering (IJRTE)* , 8 (6), pp. 903-912 , DOI:10.35940/ijrte.F7425.038620
11. Tigari, Harish et al.(2019) "Regional Rural Banks and Rural Development: A Case of Pragathi Krishna Gramin Bank." *Shanlax International Journal of Economics*,7 (2), pp. 68-74. DOI: <https://doi.org/10.34293/economics.v7i2.315>
12. Wiredu j.labaran U, et al. (2020) The impact of information and communication Technology (ICT) on rural bank management.A case study on Atiwa-rural bank limited in Ghana.*American Journal of Industrial anf Business Management*, 10, pp1681-1706, doi:4236/ajibm.2020.1010106