Impact of Products & Services, Process, Technological and Positioning Innovations on Customer Experience in Select Banks at Warangal District – A Study

Dr. B. Jail Singh
Post Doctoral Fellow, Department of Commerce and Business Management, Kakatiya University, Warangal, Telangana State.

Prof. Katla Rajender
Department of Commerce and Business Management, Kakatiya University, Warangal, Telangana State.

Abstract:

Digitalization makes the banking sector more competitive in the present scenario. All banking products and services are offered through innovative technology and process to improve their market position. Post demonetization and Covid -19 has changed the Indian economy into Digital economy and development of new technology leads to innovation in products and services, process and positioning. In this scenario, customer acquisition and retention is most toughest activity to the banks. The present study is taken to assess and measure the effect of products & services, process, technological and positioning innovations on customer engagement. For this purpose, a semi structured questionnaire was developed and distributed to the bank customers i.e., SBI, CANARA, ICICI and HDFC Banks in Warangal district of Telangana state. The researcher applied a non-probability convenient sampling technique with a final sample of 465 customers of respective banks. The data was analyzed through SPSS -26 versions and applies correlation & multiple regression analysis. The study found that Process and Technology innovations has a high positive significant relationship at 0.01 percent level and process innovation and positioning innovations has significant impact on customer engagement under the study.

Keywords: Products & Services Innovation, Process Innovation, Technological Innovation, Positioning Innovation and Customer Engagement.

Introduction:

Banks are the base of the Indian economy and vital to its growth. To reach the masses and increase profitability through competitive advantage, banks are continuously acquiring new business (customers) and implementing novel innovations in products & services, processes, technology and positioning. For example, the banks introduced ATMs in the 1960s and began accepting electronic card payments in the 1970s. While 24/7 Internet banking was popular in the 2000s, mobile "banking on the go" became more popular in the 2010s **(Biswas, S., et al. 2019, Chung, V., Gomes, M., Rane, S, Shin, S, Thomas, R 2020)**. On the other hand, the demonstration (announced 8 November 2016) has transformed the Indian economy into a digital econom0y. Demonetization is process of replacing the old currency with new currency by central (RBI bank in the country. In simple terms, these currencies are scrapped, banked, or replaced with new currency. This historic event (demonetization) forced all consumers, businesses and banks to accept and create cashless digital payment platforms in India. All Indians now have more choices and channels to accept and access cashless transactions according to their needs such as: UPI, BHIM, NEFT, IMPS etc., this process is continued and accelerate in the post-Covid era. These days, as technology develops, banks are adopting the latest innovations to provide their customers with better digital banking services, offering more engagement, experience and satisfaction. In this scenario, customer relationship management is essential for banks to attract new customers and keep existing customers in their business. CRM is often described as a concept, process, tool, set of methods, system, or software, but the goal of CRM is always the same Understanding customers and their needs, improving customer interactions, and building strong trust that is rewarded in the form of loyalty. The bank's core agenda is to improve the service to customers and inspire loyalty. CRM is therefore a broad concept that organizations use to create, manage, and satisfy their customer contacts. Maintaining strong relationships with customers is paramount for banks today.

1.1 **Impact of Products & Services, Process, Technological and Positioning Innovations on Customer Engagement:** For all organizations and businesses to continue to be successful and functional, they must increase their capacity for innovation to continually create new systems, processes, products, or services. Banks are also subject to this rule. Banks are early adopters of technology in delivering their services and use different channels such as automated teller machines, telephone banking, online banking, mobile banking, as well as near field communication to provide their services (**Laukkanen, 2016; Shankar and Kumari, 2016).** Banks currently operate in a highly competitive environment on international markets due to the widespread influence of technology. The banking sector has grown from a regional to an international level. Customers have moved from acceptance to satisfaction. Since there is fierce competition everywhere, economies benefit from surpluses rather than profit shortages. **(T. B. Chinnappa, N. Karunakaran, & 2022).** In this scenario, the aftermath of demonetization prompted people to adopt modern technologies for all financial transactions. India's economy has undergone a digital transformation as a result of demonetization. It highlights the conversion of all cash transactions into digital transactions. The phrase "digital economy" is now widely used. The conventional economy, which is what is meant by the term "digital economy," The impact of digital technologies on society is growing, including the internet, mobile connectivity, cloud computing, big data, machine learning, and artificial intelligence. Artificial intelligence (AI), block chains, the Internet of Things (IoT), Chatbots - robots, smart manufacturing, data analysis, and prediction are just a few of the new digital technologies that are constantly being developed. The term "digitalization" is used in this context to describe how business operations, communications, and relationships have changed, becoming more digital. In the current environment, banks must closely monitor customer trends, expectations, needs, and their requirements in digital era. Thus, customer engagement and experience is important to banks to maintain sustainable and long relationship with customers. Customer engagement is about continuously nurturing the relationship between business and consumer that goes far beyond the transaction. This is a purposeful and consistent approach by companies that adds value to every customer interaction, thereby increasing loyalty. To enhance customer journeys across mobile and web channels, several financial institutions have recently invested a sizable amount of money in digital and analytics transformations. Customers interact with their financial institutions by contacting customer service, visiting branches, utilizing websites and mobile apps, and communicating via chat and email. By demonstrating that financial institutions will meet customers wherever they are, providing excellent service across channels improves the overall customer experience. In this context, the present study aims to measure the effect of Products & Services, Process, Technological and Positioning Innovations on Customer Engagement in Select Banks at Warangal District.

2. Review of Literature:

- **Mbama, C. I., & Ezepue, P. O. (2018),** has conducted the study to examine customers' perceptions of digital banking (DB), customer experience, satisfaction, loyalty and financial performance (FP) in UK banks. The research consists of a survey of UK bank customers' perceptions and use of banks' financial reports to obtain FP ratios by applying the multivariate factor analysis, structural equation modeling and analysis of variance tests to explore research hypotheses. The study reveals that the main factors determine customer experience in DB are service quality, functional quality, perceived value (PV), employee-customer engagement, perceived usability and perceived risk. There is a significant relationship among customer experience, satisfaction and loyalty, which is related to FP.
- **Shankar, A. (2021),** in his research aims to examine the impact of mobile banking (m-banking) application interactivity on consumer engagement. The study also analyses the moderation effects of perceived security concerns, consumer innovativeness, and consumer involvement. The study employed a 2 (interactivity: high versus low) × 2 (perceived security concern: high versus low) × 2 (consumer innovativeness: high versus

low) x 2 (consumer involvement: high versus low) between-subjects experimental design among 376 Indian mobile banking users. The results indicate that interactivity positively impacts consumer engagement in m-banking applications.

- **Chauhan, S., Akhtar, A., & Gupta, A. (2022),** conducted the research that aims to demonstrate digital banking’s influence on customers’ evaluation of service experience and develop a framework identifying the most significant variables of digital banking that influence the financial performance of banks. The study found that Customer experience (CE) is determined by functional clues (functional quality, trust and convenience), mechanic clues (website attributes, website design, perceived usability) and humanic clues (customer complaint handling). The study is furthered to combine CE with the service profit chain model.
- **Srivastava, V., Kishore, S., and Dhingra, D. (2021),** conceptually described the future of technology and customer experience. Over the past decade, customer experience management has gradually become the most important activity for enterprises. Businesses are increasingly leveraging ubiquitous and easy-to-use technologies to enhance the experience of today's time-constrained customers, demanding greater convenience and choice. So it's no surprise that disruptive technologies such as smart phones, virtual and augmented reality, cloud computing, big data analytics, the Internet of Things, artificial intelligence, and robotics are being incorporated into the design of customer experiences. The purpose of this chapter is to provide an overview of the technologies that have changed the landscape of customer experience. To illustrate how India, a rapidly developing economy, is using technology to improve the customer experience, this chapter uses two cases from very different backgrounds: private banks and public sector transport. Contribute to this by introducing.
- **Thomas, A. (2020),** has conducted the research to focus on the phenomena of techno-fusion of emerging technologies creating new opportunities, business models and unique strategies for global banking and financial service organizations. This research applies qualitative and inductive research methods with critical reflection before and after implementation of convergence and digital integration strategies. The SBI case study applies this research strategy on the premise that banks need to be agile in changing environments in order to improve their value proposition and competitive differentiation objectives. Research methodology included collaborative research and multi-level analysis using data collection techniques to comprehensively review archives, informal interviews, questionnaires, and observations to identify synergistic process improvement paths. The technological convergence strategy pulls multiple business and technology processes (project, strategic, IT, Cloud, AI and business process management) at the organizational, divisional or functional level generating new opportunities and threats, new business models and unique growth strategies for global banking and financial services organizations.

3. Methodology of the study

- **Research Design:** The present study is descriptive in nature and uses mixed research design i.e., both qualitative and quantitative research design. At first level, existing literature on innovations in banking products & services, process, technological is studied. In next level, a survey is conducted through distribution of questionnaire.
- **Sampling Technique and Sample Size:** A non probability sampling method is adopted and a convenient sampling technique is used in the present paper. The sample size is large and infinite as banking customers are high in Warangal district; the researcher uses William Cochran's (1977) sample size determination formulae. According to that, the minimum sample size is 384. In this study, the researcher has taken 600 sample size related to 4 banks i.e., 2 Public sectors (SBI & Canara) and 2 Private sectors (ICICI & HDFC). Out of 600, 135 are non response and incomplete filled questionnaires are removed and treated as invalid. The final sample size is 465.
- **Research Instrument:** A semi structured questionnaire is developed after literature survey. Considering the purpose of the study, the sort of information required, and the benefits and drawbacks of questionnaire and previous researches, self administered close ended structured questionnaire was decided to be used for collecting data from customer.
- **Need of the study:** Digitalization plays important role in customer engagement and customer experience in banking sector. Innovations in Technology lead to enhance the products and services of the banks to attract new customers and retain the existing customers. In this context, banking products and services, process, technological innovations made competitive advantage to the banks in acquisition of market share. Opening a bank account through online in easy steps, Updation of KYC in simple documents, SMS Alert for Withdrawal and Balance enquiry, Payments through UPI, Apps and IMPs are few examples in Products & Services Innovations. Now days, banking communication is shifter from call centers to Chatbots, Whatsapp etc. The present study is important to customers, bankers and policy makers to identify the various customer engagement choices through innovations.

- **Objectives of the study: The objectives of the study are:**

1. To assess the relationship between Innovations in Products & Services, Process, Technology, Positioning and Customer Engagement.
2. To measure the influence of Products & Services, Process, Technology, Positioning Innovations on Customer Engagement.

- **Scope of the study:** The scope of the study is to assess the impact of products & services, process, technological and positioning innovations on customer engagement is select banks i.e., SBI, Canara, ICICI and HDFC Banks. The study is conducted in Warangal District only.
- **Hypotheses of the study:** Hypothesis is the basic assumption or statement under the study. The researcher frames the assumptions and tests to accept or reject the null

hypothesis. The following are the hypothesis formulated by the researcher under the study.

H_{01}: There is no significant relationship between Process, Technology, Positioning, Goods & Services, and Customer Engagement

H_{02}: There is a significant impact of Products & Services, Process, Technological and Positioning Innovations on Customer Engagement

4. Data Analysis and Interpretation

Correlation Analysis between Products and Services Innovation and Customer Engagement.

Hypothesis Statement – 2:

H_{01}: Process, Technology, Positioning, Goods & Services, and Customer Engagement do not significantly influence each other.

H_{1A}: Process, Technology, Positioning, Goods & Services, and Consumer Engagement have a major link.

Table 4.1 Correlation Statistics between Process, Technology, Positioning, Products & Services and Customer Engagement

Variables	Statistics	Product &Services Innovation	Process Innovation	Technology Innovation	Position Innovation	Customer Engagement
Product & Services Innovation	Correlation	**0.798***				
Process Innovation	Correlation	0.417**	**0.556***			
Technology Innovation	Correlation	0.362**	0.740**	**0.822***		
Position Innovation	Correlation	0.348**	0.606**	0.693**	**0.767***	
Customer Engagement	Correlation	0.198**	0.508**	0.487**	0.550**	**0.872***

Note: **.Correlation is significant at the 0.01 level (2-tailed). *Reliability Statistics

Table 4.49 shows correlation analysis and reliability statistics. Taking into account the reliability statistics (Cronbach's Alpha), Customer engagement is 0.872, Technology Innovation is 0.822, Products & Services Innovation is 0.798 and Positioning Innovation is 0.767 is very high. Process Innovation's α is 0.556 is moderate in the present research.

Correlation Analysis Interpretation:

- **Process, Positioning, Technological and Products & Services Innovation:**
- **Process and Technological Innovation:** Pearson product correlation between process innovation and technology innovation is moderately Positive and significantly statistically significant ($r = 0.737$, p 0.01). Thus, H_{1A} was supported. This demonstrates that a rise in process innovation is accompanied by a modest rise in technology.
- **Process and Positioning Innovation:** Pearson product correlation between process innovation and positioning innovation is moderately Optimal and statistically significant ($r = 0.60$, p 0.01). H_{1A} was therefore supported. This demonstrates how a slight increase in positioning innovations follows a rise in process innovations.
- **Process and Products & Services Innovation:** Pearson product correlation between process innovation and products & services innovation is low ($r = 0.41$, p 0.01) Positive and statistically significant. H_{1A} was therefore supported. This demonstrates how a rise in process innovation is accompanied by a decline in the innovation of goods and services.
- **Technological Innovation and Positioning Innovation:** Pearson product correlation between Technological Innovation and Positioning Innovation is high (r=0.693, p0.01) Positive and statistically significant. H_{1A} was therefore supported. This demonstrates that rising technology innovation fuels rising positioning innovation.
- **Technological and Products & Services Innovation:** Pearson product correlation between Technological and Products & Services Innovation is low (r=0.362, p0.01) Positive and statistically significant. H_{1A} was therefore supported. This demonstrates that a rise in technological innovation is accompanied by a relatively slow rise in new goods and services.
- **Products & Services and Positioning Innovation:** Pearson product correlation between Technological and Products & Services Innovation is low (r=0.348, p0.01) Positive and statistically significant. H_{1A} was therefore supported. This demonstrates that an increase in product and service innovation results in a relatively little increase in those innovations.
- **Process, Positioning, Technological and Products & Services Innovation and Customer Engagement**
- **Products & Services Innovation and Customer Engagement:** Pearson product correlation between products & services innovation and customer engagement isvery ($r = 0.198$, p 0.01) Low positive and statistically significant. H_{1A} was therefore supported. This demonstrates how an increase in new products and services can result in a slight rise in consumer engagement.
- **Process Innovation and Customer Engagement:** Pearson product correlation between process innovation and customer engagement ismoderately ($r = 0.508$, p 0.01) Positive and statistically significant. H_{1A} was therefore supported. This demonstrates that rising process innovations are associated with a mild rise in customer engagement.

- **Technological Innovation and Customer Engagement:** Pearson product correlation between technological innovation and customer engagement ismoderately Optimal and statistically significant (r = 0.48, p 0.01). Thus, H_{1A} was supported. This demonstrates how a little boost in consumer engagement is caused by a rise in technological advancements.
- **Positioning Innovation and Customer Engagement:** Pearson product correlation between positioning innovation and customer engagement is moderately (r = 0.550, p 0.01) Positive and statistically significant. H_{1A} was therefore supported. This demonstrates that rising process innovations are associated with a mild rise in customer engagement.

4.2 Impact of Products & Services, Process, Technological and Positioning Innovations on Customer Engagement

Alternative Hypothesis – H_{2A}: There is a significant impact of Products & Services, Process, Technological and Positioning Innovations on Customer Engagement

Table 4.49 Model Summary of Regression Analysis

Model	R	R^2	Adjusted R^2	S.E of the Estimate
1	**0.596[a]**	**0.355**	**0.349**	**0.56163**

Source: Primary Data; Note: Pos Inn: Position Innovation, PSI: Products & Services Innovation, Proc Inn: Process Innovation, Tech Inn: Technological Innovation.

The dependent variable Customer Engagement was regressed on predicting variables of Products & Services Innovation, Position Innovation, Process Innovation and Technological Innovation. The independent variables Process Innovation and Positioning Innovations significantly predicts the customer engagement, F (4, 461) = 63.266, $p<0.05$, It suggests that the two study-related factors have a big impact on client engagement. Also, the $R^2 = 0.355$ shows that the model accounts for 35.5% of the variation in customer engagement. Further, it may be understand that each factor significantly predict the customer engagement at individual level. But collectively, process innovation and positioning innovations have high impact on customer engagement. The below table shows the summary of findings.

Table 4.50 Summary of Multiple Regression Analysis

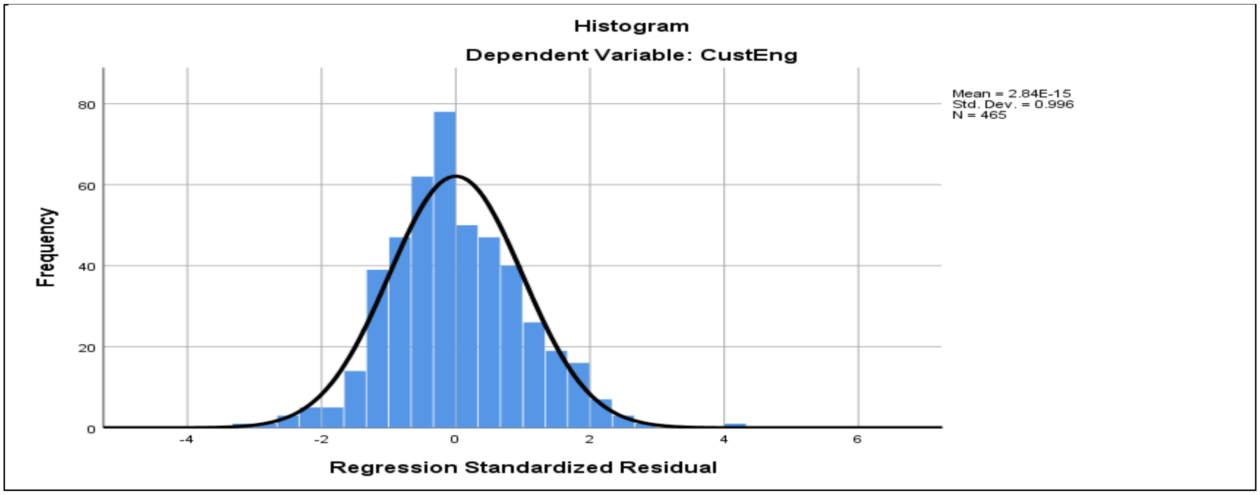
Hypothesis	Regression Weights	B	t	p – value	Hypothesis Supported
H_{02}	PSI $\longrightarrow$ CE	-0.63	-1.522	0.129	Not supported, Accept the Null Hypothesis
H_{02}	Proc Inn $\longrightarrow$ CE	0.271	4.665	0.000	Yes, Reject the Null Hypothesis
H_{02}	Tech Inn $\longrightarrow$ CE	0.051	0.818	0.414	Not supported, Accept the null hypothesis

H_{02}	Pos Inn ⟶ CE	0.371	6.998	0.000	Yes, Reject the Null Hypothesis
R^2	**0.355**				
F	**63.266**				

Source: Primary Data

The below histogram shows the Regression standardized residual of Dependent variable: CE and Independent variables: Products & Services Innovation, Process Innovation, Technological Innovation and Positioning Innovation.

Fig.4.5: Histogram of Regression Standardized Residual of Customer Engagement with Products & Services Process innovation, technological innovation, positioning innovation



The equation for the dependent variable Consumer Engagement is presented as follows in light of the aforementioned findings:

$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu_i}$

Customer Experience = 1.204 – 0.63 (PSI) + 0.271 (Proc Inn) + 0.051 (Tech Inn) + 0.371 (Pos Inn).

5. Results and Discussion:

Reliability statistics shows inter consistency between variables under the study (α >0.70) are acceptable level except process innovations ($0.5>\alpha<0.6$). Considering the correlation analysis, Process innovation and Technology Innovations has a high positive significant relationship at 0.01 percent level and positioning Innovation and Technology Innovation has a moderate positive strong relationship under the study. Multiple regression analysis shows that process innovation and positioning innovations has significant impact on customer engagement under the study. Further, the researcher suggests studying these innovations impact on customer experience, satisfaction and loyalty in the banking sector.

5.1 Limitations of the study

- The study is based on the qualitative research and primary data collected by developing a questionnaire through online and offline. The sample respondents may have some personal biases in the responses.
- The sample technique adopted under the study is non probability convenient method. The sample technique has its own limitations.
- The study is conducted in Warangal city only and confined to SBI, CANARA, ICICI and HDFC Banks only. Remaining banks customers are ignored under the study.
- The study is conducted for the short-term period and data collected from the respondents in the months of Nov –Dec 2022.

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