



# A Study on Exploring the Impact of Technological Innovation on Financial Service At Sri Karuppana Finance Corporation

Ms. Sudharsan J, Ms.Vaishshave S

*School of Management Studies  
Karpagam College of Engineering  
Coimbatore*

Date of Submission: 09-07-2024

Date of Acceptance: 24-07-2024

**ABSTRACT:** Advancements in Technology within the Financial Services Sector Financial services have emerged as a result of technological innovations' focus on digital transformation, quickly changing the conventional financial services industry. Technological Innovations usage is fast expanding globally due to its disruptive character and widespread acceptance by participants who are underserved by traditional financial service providers. The objective of this research is to get further insights into the payment and financing innovations implemented by technological advancements in finance firms. Additionally, the study aims to examine the correlation and importance of regulatory frameworks in maintaining equitable ecosystems. In order to do this, a thorough survey was conducted using research publications that were published in peer-reviewed journals throughout the 2018–2023 timeframe, which saw a surge in interest in karuppana finance. The results of this study add to the theoretical frameworks for the financial services industry and show how technology developments will shape business in the future.

**KEYWORDS:** Technological Innovations, payments; financing; introduction to financial services

## I. INTRODUCTION

Banks, insurers, and other financial services companies have been able to restructure their businesses and find new methods to better serve their customers thanks to new technologies. The financial services sector has seen a transformation in recent decades due to innovative products ranging from payment methods like credit and debit cards to transaction processing like online and phone banking, saving options like investment funds and structured products, e-commerce for financial assets, risk management strategies, and more. To enable new services and capabilities, financial services companies need to seize the opportunities

presented by innovation and further integrate disruptive technologies like artificial intelligence (AI), robotics, sophisticated analytics, the cloud, and blockchain. For empirical analysis, the study uses quantile regressions, fixed effects, and panel corrected standard errors. The findings demonstrate that technology advancements have a favorable and noteworthy impact on Africa's financial deepening in terms of banks' ability to mobilize deposits and provide credit to businesses. Additionally, compared to lower levels, the technological indicators have a significant and favorable impact on higher levels of bank loan to the private sector. When comparing a high level of bank deposits to a low one, the only factor that was determined to have a substantial and favorable impact was the number of branches. These findings suggest that ICT advancements can be used by African governments and development partners to boost financial deepening and revitalize loan finance, which is small and medium-sized businesses' main source of funding.

## II. OBJECTIVES OF THE STUDY

1. Investigating how Sri Karuppana Finance Corps in Erode is affected by technological innovation in the financial services sector
2. To look into how technology advancements affect Karuppana Finance Corporation's financial results
3. To determine which technology advancements Karuppana Finance Corporation's financial services .
4. To research the elements influencing the financial firm's adoption of cutting-edge technologies

## III. LIMITATIONS OF THE STUDY

1. The researcher ran into a number of obstacles that made it difficult to obtain the data the study needed.
2. Due to the short research period, the researcher had time constraints that prevented them from conducting a more through information.
3. For the most part, the responders were preoccupied Owing to official obligations, time was a big worry.



4. The information needed was related to areas of feelings, emotions, attitudes, and perceptions, so the researcher also had trouble getting information from the respondents.

#### IV. STATEMENT OF THE PROBLEM

The idea that technology innovation directly influences performance improvements has been a core tenet of a lot of recent research in operations improvement and operations learning. In order to maintain operations and reduce risks, banks must have efficient processes in place to deal with unforeseen events and use technology advancements for strategic management in the banking industry. Developing nations with low literacy rates and

underdeveloped higher education systems frequently encounter significant challenges in integrating new technologies for innovation development because they lack the necessary human capital to capitalize on advancements in science, technology, and engineering. Innovative projects frequently entail high risk, protracted gestation periods, and enormous financial resources to share risks and costs; consequently, ownership policies that restrict direct investments frequently impede private sector or foreign participation in innovations in technology.

#### V. REVIEW OF LITERATURE

**Chien-Chiang Lee (2022)**<sup>1</sup>Rapid growth in the demand for global energy has raised concerns about energy security and climate change. Based on statistical data of 30 provinces in China from 2000 to 2018, this paper takes energy security as the focus, adopting a fixed effect model, random effect model, instrumental variable estimation, and panel threshold model to systematically verify the influence of the relationship between financial development, technological innovation, and their interaction term on energy security. Through a series of empirical analyses, endogeneity tests, and robustness tests, the findings suggest that China's energy security is enhanced by financial development and technological innovation. Specifically, financial development can improve energy security through technological innovation. At the same time, there is a

nonlinear threshold effect between financial development and energy security due to differences in technological innovation between regions.

**Michael Appiah et al (2022)**<sup>2</sup>The value of natural resource exploitation increased because of economic advancement, which drives industrialization. When natural resources are overexploited through farming, mining, or deforestation, it can negatively impact the environment and have financial repercussions for the nation in the long run. Therefore, this study examined the impact of technological innovation, industrialization, foreign direct investment (FDI), and financial development on natural resource extraction. This study utilized the augmented mean group (AMG), common correlated effect mean group (CCEMG), and Dumitrescu and Hurlin causality methods to analyze a panel of OECD countries from 1990 to 2021. The paper discovered that innovation significantly decreases natural resource extraction while financial development expands it. However, when controlling for interactive relationships among the variables, this study discovered that innovation independently increases resource extraction. The study also discovered through our causality tests that resource extraction has bidirectional relationships with all its determinants, except for FDI, where it exhibits a unidirectional relationship. Our findings have significant implications for the environment. Extractive activities, though necessary for industrialization, hamper the environment.

**Rong Wang et al (2018)**<sup>3</sup> Economic progress has tended to influence the procedures of industrialization, which has augmented the assessment of exploited renewable energy-intensive resources through the appliance of technology. Exhaustive deployment of these renewable energy-intensive resources through technological innovation, financial development, foreign direct investment (FDI), and non-renewable and alternative energy can have a significant influence on the environment. In view of this concern, this research scrutinizes the effect of technological innovations, financial development, renewable and non-renewable energy, and FDI inflows, on ecological footprint in the case of 14 developing European

<sup>1</sup>**Chien-Chiang Lee (2022)** - Energy Economics, Financial development, technological innovation and energy security: Evidence from Chinese provincial experience, Volume 112, August 2022, 106161.

<sup>2</sup>**Michael Appiah et al (2022)** -Resources Policy, Enhancing natural resource rents through industrialization, technological innovation, and foreign capital in the OECD countries, Volume 89, February 2024, 104520.



Union economies. To do this, panel data for these countries from 1995 to 2020 are used. Due to the presence of cross-sectional dependency and slope heterogeneity, this research utilizes a battery of second-generation panel econometric tests, namely the Augmented Mean Group (AMG), and Common Correlated Effects Mean Group (CCEMG) estimators to discover the emphasized association.

**Huwei Wen (2023)<sup>4</sup>** Digital technology is profoundly changing the international economic and trade pattern, and digital service trade is increasingly becoming an important carrier of transnational knowledge spillover. This study investigates the relationship between digital service trade and technological innovation. Based on the panel data of 131 countries from 2005 to 2020, empirical results show that digital service trade significantly promotes technological innovation. This study shows that digital service trade can promote technological innovation through four mechanisms: increasing income incentives, accelerating knowledge spillover, triggering trade liberalization, and promoting financial deepening. The results of panel threshold model show that economic development, urbanization, and population aging can lead to regime changes in the innovation effect of digital service trade. In addition, the results of heterogeneity test show that national characteristics such as economic development, per capita income, industrialization, and economic freedom, influence the innovation effect of digital service trade.

**Jun-won Lee (2023)<sup>5</sup>**This study analyzes the effects of innovation and innovation characteristics on the survival of Small and Medium-sized Enterprises (SMEs) in the service industry. After analyzing around 22,300 innovative SMEs in Korea's service industry using Kaplan-Meier analysis, it is confirmed that the better the overall technological prowess (T-grade), the longer the survival period until delinquency (overdue payments for more than three months) and default. The technological innovation characteristics that significantly affect the survival period are derived using a time-dependent Cox model. Owner capability, productization capability, and profit prospects are found to positively affect the survival period of excellent SMEs, while R&D

capability, technology superiority, and market status are found to have a negative effect.

## VI. RESEARCH METHODOLOGY

### VII. Data Source:

Data collection primarily relies on using questionnaires to gather primary data directly from participants. This involves distributing structured surveys to collect responses, ensuring clarity and relevance of questions.

### VIII. Question Types Used:

The questionnaire consists mainly of closed-ended questions, where respondents select from predefined answer options. This method was chosen for its easiness and cost efficiency to collect responses using a sample. A survey was taken in super market.

### IX. Period of Study:

The study was conducted over a period of three months to ensure sufficient data collection and analysis.

### X. Sampling Techniques:

"Convenience sampling" is the sampling strategy employed in this study, whereby the population element chosen for sample inclusion is determined by accessibility. One could describe it as convenient

### Sampling unit:

customers were targeted to ensure a representative sample.

### Sampling Size:

Given the nature of the data collection, the sample size is certified. With a population size of 180, the primary data from the previous five years provides the basis for data collecting. The De Morgan law states that 120 is the sample size at a 95% confidence level.

### Methods of data collection data sources:

Primary data collection.

### Analytical tools and methods:

Statistical analysis is a scientific tool that helps collect and analyze large amounts of data to identify common patterns and trends to convert them into meaningful information. In simple words, statistical

<sup>4</sup>**Huwei Wen (2023)** - Socio-Economic Planning Sciences, Does digital service trade boost technological innovation, Volume 88, August 2023, 101647

<sup>5</sup>**Jun-won Lee (2023)** -Journal of Innovation & Knowledge, Influence of technological innovation characteristics on the survival period of SMEs in the service industry, Volume 8, Issue 4, October–December 2023, 100422.



analysis is a data analysis tool that helps draw meaningful conclusions from raw and unstructured data. The commonly used statistical tools for analysis of collected data are:

- Percentage Analysis
- Chi-square
- Analysis of variance (ANOVA)
- Correlation Analysis

### **PERCENTAGE ANALYSIS**

Percentage analysis is used to segregate and classify the data in the questionnaire based on the number of percentage of respondents falling into each category. It makes analysis and comparison of data easier.

This formula used to calculate simple percentage analysis is as follows

$$\text{Percentage} = \frac{\text{Number of respondents}}{\text{Total no of respondents}} \times 100$$

### **CHI SQUARE**

Chi square has been used in the study to analysis the significant relationship between variables. The null hypothesis of our hypothetical study is that variables are not associated with each other. The chi square test allows us to test this hypothesis.

### **ANALYSIS OF VARIANCE (ANOVA)**

Analysis of Variance (ANOVA) is a statistical method used to test differences between two or more means. It compares the amount of variation between groups with the amount of variation within groups..

### **CORRELATION ANALYSIS**

Correlation analysis in market research is a statistical method that identifies the strength of a relationship between two or more variables



**XI. DATA ANALYSIS AND INTERPRETATION**  
**DEMOGRAPHIC PROFILE OF RESPONDENTS - PERCENTAGE ANALYSIS**

Descriptive statistics	particulars	No.of. respondents	percentage
Gender	Male	74	61.2
	Female	47	38.8
	<b>TOTAL</b>	<b>120</b>	<b>100.0</b>
Age	Below 30 years	37	30.6
	31- 35 years	55	45.5
	36 - 40 years	15	12.4
	Above 41years	14	11.4
	<b>TOTAL</b>	<b>375</b>	<b>100.0</b>
Educational qualification	Diploma	42	34.7%
	Graduate	40	33.1%
	Professionals	24	19.8%
	Others	15	12.4%
	<b>Total</b>	<b>120</b>	<b>100.0%</b>
Marital status	Married	100	82.6
	Unmarried	20	17.4
	<b>TOTAL</b>	<b>120</b>	<b>100.0</b>
Monthly income	Below 2 lakhs	21	32.2%
	2-3 lakhs	170	28.9%
	3-5 lakhs	165	20.7%
	Above 5 lakhs	19	18.2%
	<b>TOTAL</b>	<b>120</b>	<b>100.0%</b>

**Interpretation:**

About 61.2% of respondents are male, while 38.8% are female. The sample seems to have a slightly higher representation of females. Majority of respondents (45.5%) fall within the age range of 31-35 years, indicating a younger demographic. Most respondents (37.7%) have completed diploma education. Majority of respondents (82.6%) are married person A considerable proportion of respondents (32.2%) earn between Below 2 lakhs.

**CHI SQUARE ANALYSIS**

H<sub>0</sub>: There is no significance relationship between Age of the respondents and Reason for prefer the technological innovation.

**Case Processing Summary**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age * Reason for prefer the technological innovation	121	100.0%	0	.0%	121	100.0%



**Age \* Reason for prefer the technological innovation  
Cross tabulation**

Count		Reason for prefer the technological innovation				Total
		Digital future	Paperless transfer	Quick transfer	Time savings	
Age	Below 30 years	37	0	0	0	37
	31-35 years	0	42	13	0	55
	36-40 years	0	0	11	4	15
	Above 41 years	0	0	0	14	14
Total		37	42	24	18	121

Chi-square test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.498E2 <sup>a</sup>	9	.000
Likelihood Ratio	245.258	9	.000
Linear-by-Linear Association	106.455	1	.000
N of Valid Cases	121		

a. 7 cells (43.8%) have expected count less than 5. The minimum expected count is 2.08.

**Symmetric Measures**

		Value	Asymp. Std. Error <sup>a</sup>	Approx. T <sup>b</sup>	Approx. Sig.
Nominal by Nominal	Phi	1.437			.000
	Cramer's V	.830			.000
	Contingency Coefficient	.821			.000
Ordinal by Ordinal	Kendall's tau-c	.859	.030	29.087	.000
N of Valid Cases		121			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

**Interpretation:**

The significant value (2.08) is > greater than the P value (0.000). Hence null hypothesis is accepted so there is no significant relationship Age of the respondents and Reason for prefer the technological innovation.

**CORRELATION**

The table shows that the relationship between Annual income and Satisfaction level of resource mobility.



**Correlations**

		Annual income	Satisfaction level of resource mobility
Annual income	Pearson Correlation	1	.958**
	Sig. (2-tailed)		.000
	N	121	121
Satisfaction level of resource mobility	Pearson Correlation	.958**	1
	Sig. (2-tailed)	.000	
	N	121	121

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**NONPARAMETRIC CORRELATIONS**

**Correlations**

			Annual income	Satisfaction level of resource mobility
Kendall's tau_b	Annual income	Correlation Coefficient	1.000	.952**
		Sig. (2-tailed)	.	.000
		N	121	121
	Satisfaction level of resource mobility	Correlation Coefficient	.952**	1.000
		Sig. (2-tailed)	.000	.
		N	121	121
Spearman's rho	Annual income	Correlation Coefficient	1.000	.976**
		Sig. (2-tailed)	.	.000
		N	121	121
	Satisfaction level of resource mobility	Correlation Coefficient	.976**	1.000
		Sig. (2-tailed)	.000	.
		N	121	121

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Interpretation:**

This is a positive correlation. There are relationships between Annual income and Satisfaction level of resource mobility.

**ANOVA**



**NULL HYPOTHESIS**

**H<sub>0</sub>:** There is no significant relationship between qualifications and agree level of utilizing the growth of business.

**ALTERNATIVE HYPOTHESIS**

**H<sub>1</sub>:** There is a significant relationship between qualifications and agree level of utilizing the growth of business.

**Descriptives**

Qualification	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	Between-Component Variance
					Lower Bound	Upper Bound			
Strongly agree	44	1.05	.211	.032	.98	1.11	1	2	
Agree	48	2.21	.410	.059	2.09	2.33	2	3	
Neutral	10	3.00	.000	.000	3.00	3.00	3	3	
Disagree	11	3.64	.505	.152	3.30	3.98	3	4	
Strongly disagree	8	4.00	.000	.000	4.00	4.00	4	4	
Total	121	2.10	1.020	.093	1.92	2.28	1	4	
Mode Fixed Effects			.327	.030	2.04	2.16			
Random Effects				.644	.31	3.89			1.340

**Test of Homogeneity of Variances**

Qualification

Levene Statistic	df1	df2	Sig.
18.533	4	116	.000

**ANOVA**

Qualification	Sum of Squares	df	Mean Square	F	Sig.
Between Groups (Combined)	112.439	4	28.110	263.573	.000
Linear Term	76.615	1	76.615	718.385	.000
Unweighted	107.658	1	107.658	1.009E3	.000
Weighted	4.781	3	1.594	14.943	.000
Deviation	12.371	116	.107		
Within Groups	12.371	116	.107		
Total	124.810	120			





## HOMOGENEOUS

Agree level of utilizing the growth of business	N	Subset for alpha = 0.05				
		1	2	3	4	5
Student-Newman-Keuls <sup>a</sup> Strongly agree	44	1.05				
Agree	48		2.21			
Neutral	10			3.00		
Disagree	11				3.64	
Strongly disagree	8					4.00
Sig.		1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 13.909

### Interpretation:

From the above analysis, we find that calculated value of the F-value is a positive 263.573 value, so H1 accept. Since the P value 0.000 is less than  $< 0.05$  regarding there is a significant relationship between qualifications and agree level of utilizing the growth of business.

## VIII. FINDINGS SUGGESTIONS AND CONCLUSION

### FINDINGS

Majority 45.5% of the respondents age group between 31 – 35 years. Majority 61.2% of the respondents are Male. Majority 82.6% of the respondents are married person. Majority 32.2% of the respondents are annual income of Below 2 lakhs. Majority 33.1% of the respondents are invest between 2-5 years. Majority 34.7% of the respondents are Qualified in Diploma. Majority 31.4% of the respondents are provide technical benefits of Convenience. Majority 44 .6% of respondents are affecting factor for External potential sourcing. Majority 27.3% of the respondents are Knowledge developed the technological innovation. Majority 33.1% of respondents are Highly Satisfied the resource mobility. Majority 34.7% of the respondents are Reason for prefer this innovation Paperless transfer. Majority 39.7% of the respondents are Agree that utilize technological innovation for business growth. Majority 37.2% of the respondents are Good opinion for improve the quality of service. Majority 32.2% of respondents are Satisfied the simplicity of process. Majority 30.6% of the respondents are Agree that Overall competitiveness. Majority 27.3% of respondents are Challenged faced by Digital

transformation. Majority 24% of the respondents are Regularity technology innovative financial service. Majority 30.6% of the respondents are Satisfied the productivity and Improve data management. Majority 36.4% of the respondents are Agree that Experience ownership. Majority 38% of the respondents are Agree that Security solution.

### SUGGESTIONS

1. Technological innovation can be seen as a double-edged sword with respect to sustainable development. There is no doubt that much of the improvement in human welfare over the past century can be accounted for by technological innovations in areas such as public health and agriculture.

2. However, many of the major sustainability issues facing the globe today are the unintended result of technical advancements, particularly those that aim to increase the exploitation and production of natural resources.

3. Technical innovation plays a critical role in a wide range of issues outlined in the previous sections and is highlighted here because of its critical relevance to both short- and long-term economic, societal, and environmental sustainability. It can be argued that, given fixed scientific and technological achievements and financial investment in science and technology, appropriately reducing human resource investment is conducive to economic



growth, reducing the cost investment in the process of scientific and technological innovation, to promote economic growth.

### CONCLUSION

Nearly every aspect of our life has become more comfortable thanks to technology. In the banking and financial services sectors, this is also true. In the banking and financial services industry, technology has made the processes of giving and receiving services easier. In summary, companies enhance competition within the financial markets, offer services that conventional financial institutions either do not offer at all or very inefficiently, and expand the customer base for these services. Competition almost always increases efficiency and attracts new players to the market. It is inevitable that the financial market as we know it will shift. The bottom conclusion may very well be that neither of the major banks is controlling how services in this sector are developed going forward. The fact that new generations are creating new forms of communication on a daily basis may be the only factor we need consider when attempting to forecast the direction of the financial or any other industry. In summary, technology has aided in the rapid growth and prosperity of the banking and financial services industry. Customers are also benefiting

[5]. **Cohen. (1995).** Innovation, Firm size and Market Structure (pp. 42). London School of Economics

from technology, since they may access banking and financial services via their phones or mobile devices, or at their workstation. As a result, technology has benefited this industry in several ways.

### REFERENCES

- [1]. **Atalay. (2013).** The Relationship between Innovation and Firm Performance: An empirical evidence from Turkish Automotive Supplier Industry. *Proceedia social and Behaviour Science*, 75, 226-235.
- [2]. **Bank, W. (2013).** What makes a good science and technology project: commissioned consultant report.
- [3]. **Bean, C. a. C. (1996).** British Economic Growth since 1945: Relative Economic Decline and Renaissance. In C. a. Toniolo (Ed.), *Economic growth in Europe since 1945* Cambridge. Cambridge University: Press for centre for Economic Policy Research
- [4]. **Bresnahan, B. a. H. (1998).** Information Technology workplace Organization and the Demand for skilled Labour Firm-Level Evidence NBER Working paper
- [6]. **Freeman. (2014).** The management of innovation and Technology. *Journal of Innovation and Technology*.