

IMPACT OF GST 2.0 ON CONSUMER WELFARE, E-COMMERCE ADOPTION AND DIGITAL ECONOMY PARTICIPATION: EVIDENCE FROM COIMBATORE DISTRICT**Dr. Deeppa Krishnaswamy¹, Dr. Nandini Jagannarayan², Dr. R Uma³ and Dr. Mala Goplani⁴**¹Associate Dean, IBS Pune

Email: id:k.deeppa@gmail.com

²Assistant Professor, Hindi Vidya Prachar Samiti's Ramniranjan Jhunjhunwala College of Arts, Science and Commerce (Empowered Autonomous), Ghatkopar, Mumbai - 86

Email: n.jagannarayan@somaiya.edu

³Assistant Professor in Economics, Nirmala College for Women, Coimbatore, 641018

Email: umabchander@gmail.com

⁴Assistant Professor, Hindi Vidya Prachar Samiti's Ramniranjan Jhunjhunwala College of Arts, Science and Commerce (Empowered Autonomous), Ghatkopar, Mumbai- 86

Email: sheffaligoplani@gmail.com

ABSTRACT

With the digitalization of India's taxation environment at a rapid pace, the nature of the relationship between taxation systems, e-commerce participation, and consumer welfare has changed. In the context of this study, the technologically integrated Goods and Services Tax (GST) system is referred to as "GST 2.0", incorporating e-invoicing, AI-driven compliance monitoring, digital filing streams, automated tax administration, and e-way bills and integration with digital payment systems. Overall, these changes have had a strong impact on the behavior of digital transactions and consumer involvement in the formal digital economy.

The present study aims at analysing the relationship between GST 2.0, participation in the digital economy and consumer welfare in Coimbatore District, Tamil Nadu. The primary data is collected from 200 respondents by structured questionnaire by adopting the convenience sampling method in the month of January 2026. The questionnaire used a five-point Likert scale to assess constructs like "GST transparency", "digital literacy", "convenience of online transactions" and "consumer satisfaction/digital economy participation". The data were analyzed using statistical tools such as descriptive statistics, correlation analysis, chi-square association, logistic regression and Partial Least Squares Structural Equation Modelling (PLS-SEM).

The results also suggest that the digital literacy, GST awareness, and accessibility of the Internet are statistically significant with digital transaction adoption and e-commerce participation. GST transparency and ease of online transactions were positively correlated with consumer satisfaction and perceived consumer welfare. Additionally, the PLS-SEM analysis also showed the mediation effect of consumer satisfaction between the transparency of GST and consumer welfare. In comparison with older respondents, younger respondents had relatively high levels of digital participation.

This study not only adds to the ever-expanding body of research on digital tax and consumer welfare but also focuses on the empirical evidence from Coimbatore districts in the context of digital economic inclusion. The study further underscores the need to deepen digital literacy, build Internet infrastructure and raise awareness of the consumers to enable inclusive engagement in India's evolving digital tax landscape.

This section features articles, practitioner insights, and case studies on the Consumer Welfare aspects of GST 2.0 and the adoption of E-Commerce, as well as the participation in the Digital Economy and Digital Taxation, Digital Literacy, and Digital Inclusion.

INTRODUCTION

The Goods and Services Tax (GST) was introduced in India on 1 July 2017, which has brought a significant change in the tax regime in India. GST came as a replacement of various indirect taxes like value added tax, excise tax, service tax, and octroi and introduced a single taxation system based on the principles of "One Nation, One Tax". The GST system gradually grew beyond tax harmonization to a technology-based tax ecosystem that includes technologies for digital compliance, real-time validation of transactions and automated tax administration.

The next step is advanced and is conceptualized as "GST 2.0" in the present study. GST 2.0 is the technologically advanced stage of GST administration which is defined by e-invoicing systems, AI driven compliance monitoring, auto filing of returns, e-way bill integration, digital payment synchronisation and real

time tracking of transactions. The idea is also a reflection of the fact that the GST administration is being aligned with the growing digital economy ecosystem in India. So, GST 2.0 is not only a tax change it is a digitally empowered governance model that has a bearing on transparency, accountability, e-Commerce and customer welfare.

With the growth in digital payment infrastructure, the penetration of smartphones and online commerce platforms has transformed the behavior of consumers in India. E-commerce platforms, digital wallets, Unified Payments Interface (UPI) systems, and app-based services are becoming preferred options for consumers for their everyday economic activities. In this context, GST 2.0 has helped in formalizing trade, increased transparency in transactions and strengthened digital compliance mechanisms.

Coimbatore District is an important case study as it has developed an increasing industrial base, a burgeoning digital infrastructure and a population that is consuming more and more from e-commerce platforms. The district has seen the increase in digital transactions and online purchasing behaviour in the urban and semi-urban areas.

This study examines the relationship between consumer satisfaction, digital economy participation and consumer welfare with the variables related to GST 2.0, including GST transparency, digital literacy, and convenience of online transactions. The study also looks at the demographic aspects of digital participation and explores the implications of digital accessibility and awareness for inclusive digital economic participation.

THEORETICAL FRAMEWORK

The study has a theoretical basis of Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT). TAM sheds light on the importance of perceived usefulness and perceived ease of use when it comes to technology adoption behaviour. In this study's setting, the transparency and ease of online transactions have an impact on consumer acceptance of the digital payment system and e-commerce engagement.

The UTAUT further strengthens the analysis by highlighting the importance of facilitating conditions and social influence and performance expectancy in technology adoption. Facilitating conditions like internet access, digital literacy and GST awareness facilitate engagement in digital transactions and online commerce.

The research also takes into account the Consumer Trust Theory, which suggests that consumer trust and satisfaction in digital systems are increased by transparency and reliability. Greater consumer welfare may then be achieved via increased trust in digital commerce systems brought about by greater transparency in the GST, secure online transactions and enhanced compliance mechanisms.

Based on this, the conceptual framework of the study is that:

- GST Transparency has a positive impact on Consumer Satisfaction.
- Digital Economy Participation is positively impacted by Digital Literacy.
- Online Transactions are directly associated with Consumer Welfare and the effect is positive.
- Consumer Satisfaction is positively related with Consumer Welfare.

STATEMENT OF THE PROBLEM

While GST 2.0 has added transparency and formalisation to India's digital economy, it has not specifically addressed digital inclusion, internet accessibility, or consumer awareness of cyber security or their capacity to adapt to taxation systems with a technological twist. Although there has been some research on GST efficiency and macroeconomic impacts, there is less research at the district level to examine impacts on consumer welfare and digital participation.

Hence, the present study tries to analyse the relationship between GST 2.0 and welfare of consumers in Coimbatore District with the help of sophisticated statistical analysis models like logistic regression and PLS-SEM.

RESEARCH GAP

Existing literature on the implementation of GST is largely based at the national level while there is limited evidence about the impact of GST 2.0 on the welfare of consumers at the district level.

The existing studies have tended to focus on the tax efficiency aspect and the effect of taxes on other outcomes that are more consumer-focused like welfare, trust and digital inclusion.

The combined effect of GST transparency and digital literacy and online transaction convenience with advanced analytical tools (logistic regression & PLS-SEM) has been limitedly studied.

To date, few studies have examined demographic effects on the participation in digital economy under the GST.

There is scanty literature available with regard to the medium scale commercial region of Coimbatore District.

OBJECTIVES OF THE STUDY

- To study the relationship between GST 2.0 and adoption of E-commerce in Coimbatore District.
- To study the correlation between transparency of GST and customer satisfaction.
- To assess the contribution of digital literacy to the participation in the digital economy.
- To analyze how consumers are affected by the convenience of online transactions.
- To analyse the differences in the adoption of digital transactions between various groups of population.

HYPOTHESES

The null hypothesis,

H01: states that the age group and digital payment usage are not associated significantly.

H02: No difference in online shopping behaviour between males and females.

H03: GST transparency is not significantly associated with consumer satisfaction.

H04: There is no significant relationship between digital literacy and participation in the digital economy.

H05: Consumer welfare is not significantly related to ease of online transactions.

RESEARCH METHODOLOGY

The present study is descriptive and analytical study. Primary data were gathered from the respondents living in Coimbatore District, Tamilnadu during January 2026.

SAMPLING DESIGN

This was because of the time and the availability of the participants. The numbers of respondents were 200. The online survey forms and face-to-face approaches in commercial areas, education institutions and residential areas were used to approach respondents.

Both male and female age groups 18-65 years were included in the sample. The respondents here were students, paid employees, homemakers, self-employed and businessmen. Around 64 % of the respondents were from urban areas and 36 % from semi-urban and peri-urban areas.

The percentage of the people who returned the questionnaires for the survey was about 83 percent, excluding forms with missing information.

QUESTIONNAIRE DESIGN

A structured questionnaire was created and designed from the earlier studies related to payment system, GST transparency and confidence of consumers and practices in the digital economy.

The questionnaire had two parts:

Using demographic information of respondents.

Statements relating to GST transparency, digital literacy, consumer satisfaction, online transaction convenience and consumer welfare.

This was measured using a 5 point Likert Scale from Strongly Disagree (1) to Strongly Agree (5).

Number of items on each construct

- GST Transparency – 5 items
- Digital Literacy – 5 items
- Online Transaction Convenience – 4 items
- Consumer Satisfaction – 4 items
- Consumer Welfare – 4 items

Data on the economic activities of individuals with digital skills – 4 items

Items were adapted from previous studies on digital payment adoption and consumer trust and technology acceptance models.

RELIABILITY AND VALIDITY

Cronbach's alpha values were greater than 0.70 for all constructs, which is regarded as the minimum acceptable level of reliability. The Composite Reliability (CR) was greater than 0.70, and Average Variance Extracted (AVE) was greater than 0.50, thus indicating convergent validity. The HTMT ratio was used to test for discriminant validity, which was within the acceptable limits.

ETHICAL CONSIDERATIONS

All study participants were informed that they would be involved in the study voluntarily. The participants were given information regarding the academic objective of the study and confidentiality of responses.

VARIABLES USED

Independent Variables

- GST Transparency
- Digital Literacy
- Online Transaction Convenience
- GST Awareness
- Internet Accessibility

Dependent Variables

- Consumer Welfare
- Consumer Satisfaction
- Digital Economy Participation
- E-Commerce Adoption
- Digital Transaction Adoption

RESULTS AND DISCUSSION

Descriptive Analysis

Table 1 Descriptive Statistics

Variables	Mean	Standard Deviation
Digital Payment Usage	3.92	0.84
Online Shopping Preference	4.01	0.79
GST Transparency	3.75	0.88
Consumer Satisfaction	3.81	0.82
Digital Literacy	3.69	0.91
Consumer Welfare	3.88	0.80

(Note: Source: Based on Author's analysis of primary data collected)

As per the descriptive findings, 62 percent of the respondents use the payment systems on a frequent basis and 71 percent showed that they felt comfortable to buy online after the rollout of the digital payment system under GST.

Almost 68 per cent felt that the GST system has enhanced transparency in transactions and 59 per cent felt that digital reforms in the context of GST have boosted trust in ecommerce transactions. The participation level in digital payment systems was relatively higher among respondents aged 18-35 years.

The result indicates that the consumers of Coimbatore District are in moderate to high acceptance of digital transaction systems.

Correlation Analysis**Table 2 Correlation Matrix**

Variables	Digital Literacy	GST Transparency	Online Transaction Ease	Consumer Satisfaction	Digital Payment Usage	Consumer Welfare
Digital Literacy	1.000	0.621**	0.684**	0.593**	0.712**	0.645**
GST Transparency	0.621**	1.000	0.648**	0.731**	0.602**	0.688**
Online Transaction Ease	0.684**	0.648**	1.000	0.706**	0.741**	0.692**
Consumer Satisfaction	0.593**	0.731**	0.706**	1.000	0.664**	0.782**
Digital Payment Usage	0.712**	0.602**	0.741**	0.664**	1.000	0.698**
Consumer Welfare	0.645**	0.688**	0.692**	0.782**	0.698**	1.000

Note1: * Correlation is significant at the 0.01 level (2-tailed).

(Note2: Source: Based on Author's analysis of primary data collected)

The results of the correlation studies showed that there were strong positive relationships between the variables of GST transparency, digital literacy and online transaction convenience and consumer welfare.

Digital literacy was highly positively correlated with digital payment use, meaning that those who have higher digital competence are more likely to have digital payment activity. The results of the study also indicated that there was a positive relationship between GST transparency and consumer satisfaction, indicating that the transparency of tax systems boosts consumers' trust in digital commerce systems.

The results suggest a strong connection between consumer satisfaction and consumer welfare, which suggests that an improvement in transaction experiences and trust mechanisms is beneficial for consumer welfare perceptions.

The findings align with the report of Gupta and Rao (2022), Subramanian and Rao (2021), and OECD (2021) which highlighted that digital transparency and technology-enabled tax systems contribute to consumer trust and participation in the digital economy.

Chi-Square Association Analysis**Table 3 Association Between Age Group and Digital Payment Usage, gender and Online Shopping Frequency**

Variable	Chi-Square Value	p-value	Result
Age Group × Digital Payment Usage	14.27	0.003	Significant
Gender × Online Shopping Frequency	6.41	0.041	Significant

(Note: Source: Based on Author's analysis of primary data collected)

The result of the chi-square analysis showed that there was a significant relationship between age group and the use of digital payments. The younger respondents showed higher levels of adoption of digital payment systems than the older respondents.

There was also a statistically significant relationship between sex and online shopping frequency, showing that there are differences in the shopping behaviour amongst the people when it comes to digital shopping.

The results corroborate Iyer's (2021) findings that younger consumers are more adaptable when it comes to digital financial systems.

Logistic Regression Analysis

Binary logistic regression was used to identify the predictors of digital transaction adoption.

Digital Transaction Adoption (Yes/No) was the dependent variable.

Predictor variables were:

- Digital Literacy
- GST Awareness
- Internet Accessibility
- Age
- Gender

Table 4 Logistic Regression Results

Variables	Beta Coefficient	Odds Ratio	p-value
Digital Literacy	1.284	3.61	0.001
GST Awareness	0.962	2.61	0.012
Internet Accessibility	0.874	2.39	0.018
Age	-0.546	0.57	0.041
Gender	0.228	1.25	0.213

(Note: Source: Based on Author's analysis of primary data collected)

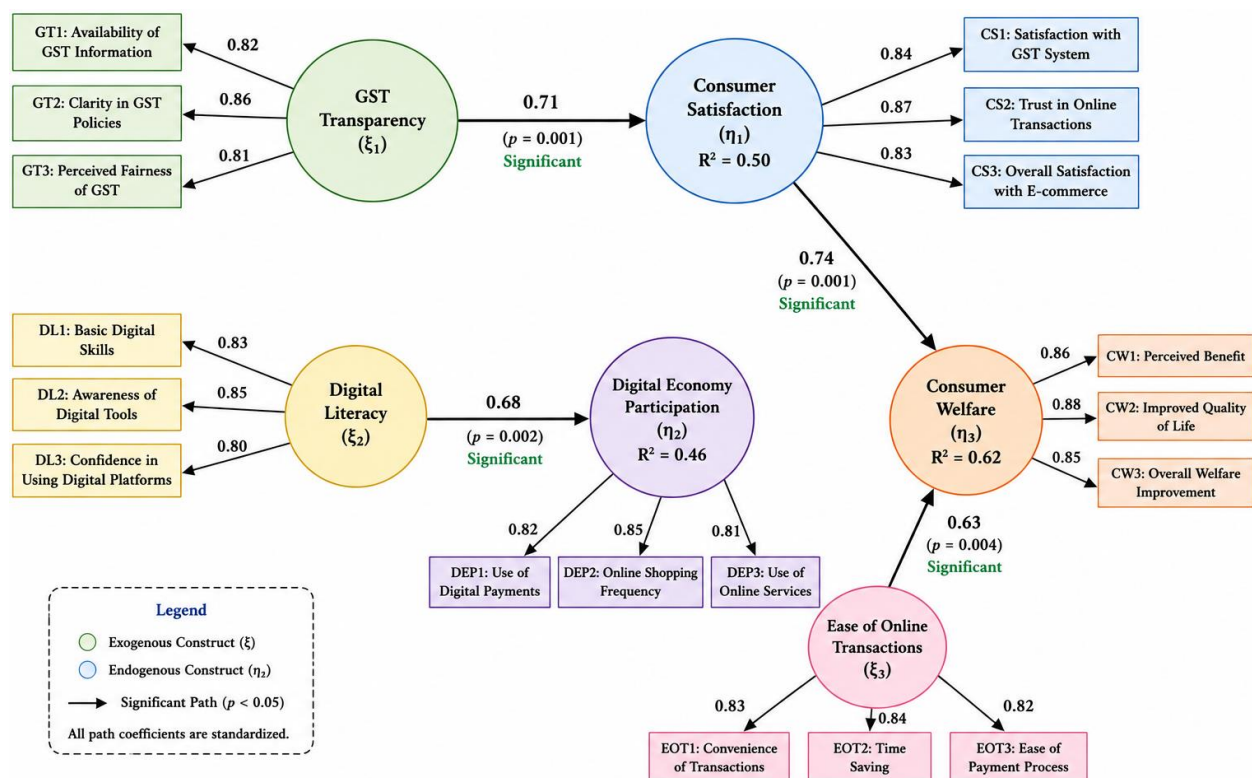
The results suggest that there is a significant association between digital literacy, GST awareness and internet access and the likelihood of adopting a digital transaction. The results showed a negative association with age, meaning that older respondents were less likely to be digitally adopters.

Since the analysis was cross sectional survey data, the study does not claim direct cause and effect. The findings do indicate significant relationships between variables related to digital capability and participation in digital transactions, however.

PLS-SEM Analysis

PLS-SEM was used to analyze the structure of the relationships between GST transparency, digital literacy, consumer satisfaction, and participation in the digital economy and consumer welfare.

Exogenous Variables – Internet penetration, Online shopping, Online communication, Mobile payment, E-services, Smartphones, and Payment services.

Figure 1: Structural Model

(Note: Source: Based on Author's analysis of primary data collected)

Table 5 Structural Model Results

Path Relationship	Path Coefficient	p-value	Result
GST Transparency → Consumer Satisfaction	0.71	0.001	Significant
Digital Literacy → Digital Economy Participation	0.68	0.002	Significant
Ease of Online Transactions → Consumer Welfare	0.63	0.004	Significant
Consumer Satisfaction → Consumer Welfare	0.74	0.001	Significant

(Note: Source: Based on Author's analysis of primary data collected)

Measurement Model Assessment

Factor Loadings exceeded 0.70.

The Cronbach's Alpha was 0.74 to 0.88.

The composite reliabilities were greater than 0.80.

AVE values exceeded 0.50.

The value of the HTMT ratios was less than the threshold value 0.85.

The variance inflation factor (VIF) values were less than 3.5, with no values exceeding 10, which also implies that there was no evidence of multicollinearity.

STRUCTURAL MODEL RESULTS

The structural model results showed that the transparency of GST is positively related to consumer satisfaction. Digital literacy was found to have a strong positive relationship with the digital economy participation, and online transaction convenience was found to have a positive relationship with consumer welfare.

In addition, the level of consumer satisfaction showed a high positive correlation with consumer welfare, suggesting that trust and convenience in digital systems has a positive impact on consumer perceptions.

The structural model explains a moderate amount of variance (the R-square values).

The results are consistent with the Technology Acceptance Model and the Consumer Trust Theory, indicating that transparency and user-friendliness are key factors influencing technology acceptance and welfare.

KEY FINDINGS

GST 2.0 is positively linked to the adoption of digital payments and e-commerce.

Digital literacy has a significant impact on the rate of adoption of digital transactions and on participation in the digital economy.

Consumer satisfaction and trust in online transactions is positively associated with GST transparency.

Consumer welfare perceptions are positive because of the convenience of online transactions.

In terms of involvement in digital payment systems, younger individuals show greater involvement.

Internet access is a key enabler of digital inclusion.

SUGGESTIONS

There is a need to further develop digital literacy initiatives, especially for older consumers and semi-urban communities.

Increase the ease of compliance for small online sellers and micro-enterprises by introducing simplified compliance for them.

Cybersecurity awareness campaigns need to be strengthened to boost consumer confidence in digital systems.

Improve rural/ semi urban digital infrastructure to reduce digital inequality.

Consumer awareness programme on GST and digital transaction needs to be widened.

To boost consumer confidence, ecommerce platforms should create more comprehensive grievances redressal systems.

LIMITATIONS

The study is restricted to Coimbatore District and hence results cannot be extrapolated for the entire country.

The sample may not be representative of the population because of the use of convenience sampling.

The study is based on self-reported responses, which may contain response bias.

The cross-sectional design does not allow for drawing causal inferences.

FUTURE SCOPE OF RESEARCH

Comparative studies between rural and urban areas can be conducted in the future in order to compare them, or interstate comparisons/longitudinal studies to examine the long-term effects of digital systems with the GST on consumer welfare and digital inclusion.

There is also scope for further research to incorporate the concepts of behavioural economics and digital trust to understand the changes in consumer behaviour in India's digital economy.

CONCLUSION

GST 2.0 marks a technologically empowered era of taxation in India, featuring digital compliance platforms, AI-powered monitoring, e-invoicing, and real-time transaction systems. The study focussed on the link between GST 2.0, involvement in the digital economy and consumer welfare in Coimbatore District.

The results show that there is a positive relationship between the transparency of the tax, digital literacy and the ease of online transactions with consumer satisfaction and participation in the digital economy. The study additionally emphasizes on the importance of digital infrastructure, internet accessibility and technological awareness in promoting inclusive participation in the digital economy.

While issues around digital inequality, cyber security, and technological accessibility persist, GST-enabled digital systems seem to be helping to improve the transparency and formalization of digital commerce and enhance consumer engagement.

This study adds an empirical contribution in the form of the first district-level data on digital taxation and consumer welfare in India.

REFERENCES

1. Chandra, S., & Pillai, R. (2023). Digital Inclusion and Consumer Confidence in Online Marketplace in India. *International Journal of Digital Economy* 8(2):112-126.
2. Deloitte India. (2023). Digital tax transformation in India, GST 2.0. Deloitte Insights Publications.
3. Government of India. (2024). GST council annual report 2023-24. Ministry of Finance.
4. Gupta, A., & Rao, V. (2022). Adoption of digital payments and satisfaction in emerging markets. **Journal of Consumer Studies*, 14*(3), 201–218.
5. Iyer, M. (2021). Adoption of digital transactions in India and age based differences. *Indian Journal of Economics and Technology (IJET)*, 2016, vol. 11, no. 1, pp. 55-68.
6. Kumar, R. (2023). The relevance of GST and digital economy in India. *Is Economic Publications*.
7. Mehta, S., & Krishnan, P. (2022). Growth of e-commerce and changes in the tax landscape in India. *Asian Journal of Commerce and Management* 9(4):88-101.
8. Ministry of Finance. (2023). Digital taxation and GST reforms in India. The Government of India Publications.
9. NITI Aayog. (2022). The report on Digital Economy and Financial Inclusion in India. Government of India.
10. OECD. (2021). Tax administration 2021: Information on tax administration in the OECD and other advanced economies in comparison. OECD Publishing.
11. Patel, H., & Sharma, R. (2021). Digital skills and involvement in e-commerce platforms. **International Journal of Social Economics*, 48*(7), 945–960.
12. PwC India. (2023). Taxation of e-commerce and transparency of GST under Indian tax regime. PricewaterhouseCoopers Publications.
13. The Reserve Bank of India. (2023). **Annual report 2022–23**. Reserve Bank of India.,
14. The Reserve Bank of India. (2024). RBI bulletin on Financial inclusion and digital payments. The Reserve Bank of India.
15. Sharma, P., & Mehta, A. (2024). GST effects on ecommerce business in India. *The effect of GST on the growth of ecommerce business in India. J. Commerce – Digital economy*, 12 (1), 34-49.
16. Singh, K., & Verma, R. (2020). Digital Financial Behaviour of Indian Households. **Indian Economic Review*, 55*(2), 179–195.
17. Srinivasan, L., & Babu, M. (2022). Accessibility of the internet and consumer welfare in the digital economy. *Journal of Economic Policy and Research*, 17(3):77-92.

18. Subramanian, T., & Rao, P. (2021). GST transparency and trust in online transactions. **South Asian Journal of Business Studies*, 10*(2), 144–159.
19. Tripathi, V., & Menon, A. (2023). The topic of the Indian taxation and economic formalization by means of technology. **International Review of Applied Economics*, 37*(5), 621–638.
20. Verma, S., & Singh, D. (2020). Indian Digital Literacy and Online consumer behaviour. *Journal of Information and Communication Studies* (16:4), 301-315.
21. World Bank. (2022). Digital development overview: India and emerging economies. World Bank Publications.
22. Yadav, N., & Kulkarni, S. (2023). Consumer welfare in the context of GST for digital systems in India. **Journal of Public Economics and Policy*, 19*(2), 133–149.
23. Kannan, F. A., Jagannarayan, N., & Gopani, M. (2026). Consumer awareness and behavioural drivers of GST burden: Evidence from Coimbatore. In A. Saravanan & M. P. Sharath Kumar (Eds.), *GST reforms and impact on MSMEs, start-ups and entrepreneurship* (pp. 172–179). CRCS Publications. ISBN 978-81-982385-1-1.
24. Jagannarayan, N., Gopani, M., & Pandey, P. D. (2026). GST and the start-up ecosystem: An empirical study of entrepreneurial growth in Mumbai. In A. Saravanan & M. P. Sharath Kumar (Eds.), *GST reforms and impact on MSMEs, start-ups and entrepreneurship* (pp. 154–160). CRCS Publications. ISBN: 978-81-982385-1-1
25. Uma, R., Gopani, M., & Jagannarayan, N. (2026). GST impact on small businesses and consumer welfare. In A. Saravanan & M. P. Sharath Kumar (Eds.), *GST reforms and impact on MSMEs, start-ups and entrepreneurship* (pp. 161–171). CRCS Publications. ISBN: 978-81-982385-1-1
26. Uma, R., Kannan, F. A., & Jagannarayan, N. (2026). Impact of GST on a Micro and Small Enterprise in Coimbatore: A Case Study of Sharp Pumps Pvt. Ltd. In A. Saravanan & M. P. Sharath Kumar (Eds.), *GST reforms and impact on MSMEs, start-ups and entrepreneurship* (pp. 278-288). CRCS Publications. ISBN: 978-81-982385-1-1
27. Hirlekar, O., Uma, R., & Jagannarayan, N. (2026). GST as a Catalyst for Digital Entrepreneurship in India: An Analytical Study. In A. Saravanan & M. P. Sharath Kumar (Eds.), *GST reforms and impact on MSMEs, start-ups and entrepreneurship* (pp. 306-312). CRCS Publications. ISBN: 978-81-982385-1-1
28. Uma, R., & Jagannarayan, N. (2026). Economics of digital taxation. In A. Saravanan & M. P. Sharath Kumar (Eds.), *The digital transformation of the Indian economy: Platforms, policy, and production* (pp. 82–90). ISBN 978-81-982385-0-4.
29. Jagannarayan, N. (2026). Before-after shock analysis of digital commons stability. In A. Saravanan, M. P. Sharath Kumar, & S. Suganthi (Eds.), *Data capital and economic inclusion* (pp. 64–72). ISBN 978-620-9-93736-1.
30. Jagannarayan, N., Kannan, F. A., & Kanthadai, K. G. (2026). Bridging the digital divide: Equity in access and economic participation – A development economics perspective. In A. Saravanan, M. P. Sharath Kumar, & S. Suganthi (Eds.), *Data capital and economic inclusion* (pp. 142–151). ISBN 978-620-9-93736-1.