International Journal of Applied Social Science
(An International Double Blind Peer Reviewed / Refereed Research Journal of Social Science)
Volume 13 (3 & 4), March & April (2026) : 190-194
Received : 13.02.2026; Revised : 27.02.2026; Accepted : 13.03.2026

RESEARCH PAPER
ISSN : 2394-1405 (Print)

DOI : https://doi-ds.org/doilink/05.2026-14957417/IJASS/13.3&4/190-194

Digital Transformation in Insolvency Resolution: Assessing the Role of Technology Under the Insolvency and Bankruptcy Code, 2016

SANJAY KUMAR KHEMANI*[1] AND M. C. SONI[2]
[1]Research Scholar and [2]Professor
Shri Khushal Das University, Hanumangarh (Rajasthan) India

*Corresponding Author

ABSTRACT

The rapid integration of digital technologies into legal and regulatory frameworks has significantly transformed insolvency resolution processes in India. This paper evaluates the role of digital transformation under the Insolvency and Bankruptcy Code, 2016 (IBC), with a specific focus on improving efficiency, transparency, and stakeholder engagement. Institutions such as the National Company Law Tribunal (NCLT) and Insolvency and Bankruptcy Board of India (IBBI) have increasingly adopted digital platforms for case management, e-filing, and virtual hearings, particularly accelerated during the COVID-19 pandemic. The study adopts a doctrinal and analytical approach to assess how technological interventions—such as online information utilities, electronic voting systems, and digital claim verification—have enhanced procedural efficiency while also identifying persistent challenges, including digital infrastructure gaps, cybersecurity risks, and uneven technological adoption. The paper concludes that while digitalization has strengthened the insolvency ecosystem, further reforms are required to ensure uniform implementation and long-term sustainability.

Keywords: Insolvency, Digital Transformation, IBC 2016, NCLT, E-Governance, Insolvency Resolution, Technology in Law

INTRODUCTION

The enactment of the Insolvency and Bankruptcy Code, 2016 marked a paradigm shift in India's insolvency regime by consolidating fragmented laws into a unified framework. Designed to ensure time-bound resolution of insolvency, the Code aims to maximize asset value, promote entrepreneurship, and balance the interests of stakeholders. However, the practical implementation of the Code initially faced challenges such as delays, procedural complexities, and capacity constraints of adjudicating authorities like the National Company Law Tribunal.

In recent years, digital transformation has emerged as a critical enabler in addressing these issues. The adoption of e-governance tools—ranging from electronic filing systems to virtual court proceedings—has redefined the operational landscape of insolvency resolution in India. The Insolvency and Bankruptcy Board of India has introduced several technological initiatives, including the use of Information Utilities (IUs) for storing financial information and facilitating quicker verification of claims.

The COVID-19 pandemic acted as a catalyst for digital adoption, compelling courts and tribunals to shift toward virtual hearings and online case management systems. This transition not only ensured continuity of legal processes but also highlighted the potential of technology to improve efficiency and accessibility. Digital tools have enabled faster communication among creditors, streamlined voting processes in Committee of Creditors (CoC) meetings, and enhanced transparency through real-time data availability.

Despite these advancements, the digital transformation of insolvency resolution is not without challenges. Issues such as inadequate digital infrastructure, lack of technical expertise among stakeholders, cybersecurity concerns, and resistance to change continue to hinder seamless implementation.

How to cite this Article: Khemani, Sanjay Kumar and Soni, M. C. (2026). Digital Transformation in Insolvency Resolution: Assessing the Role of Technology Under the Insolvency and Bankruptcy Code, 2016. *Internat. J. Appl. Soc. Sci.,* **13** (3 & 4) : 190-194.

Moreover, disparities in digital access across regions raise concerns about inclusivity and fairness (Armour and Deakin, 2020).

This paper seeks to critically examine the extent to which digital technologies have influenced the effectiveness of insolvency resolution under the IBC. It explores the benefits, limitations, and future prospects of digital transformation in strengthening India's insolvency framework.

Review of Literature:

The intersection of technology and insolvency law has attracted increasing academic and policy attention in recent years. Early studies on the Insolvency and Bankruptcy Code, 2016 primarily focused on its institutional framework, efficiency in resolution timelines, and impact on credit markets. Scholars such as Varottil (2017) emphasized the structural reforms introduced by the IBC, highlighting its role in improving creditor confidence and financial discipline.

Subsequent research expanded to evaluate implementation challenges. Mishra and Kapadia (2019) observed that delays in resolution processes were largely due to procedural inefficiencies and limited capacity of adjudicating authorities like the National Company Law Tribunal. These studies indirectly underscored the need for technological interventions to streamline processes.

With the growing emphasis on digital governance, recent literature has begun to explore the role of technology in insolvency frameworks. Reports by the Insolvency and Bankruptcy Board of India (2024) highlight the importance of Information Utilities in ensuring accuracy and reliability of financial data. Scholars such as Sahoo (2021) argue that digital platforms enhance transparency and reduce information asymmetry among stakeholders, thereby improving decision-making in insolvency proceedings.

World Bank (2020). International studies provide valuable comparative insights. Research on the United Kingdom and Singapore insolvency systems demonstrates how advanced digital infrastructure, including online case tracking and AI-based analytics, has significantly improved efficiency and reduced resolution timelines. These findings suggest that India can benefit from adopting similar technological innovations.

The COVID-19 pandemic has further accelerated scholarly discourse on digital transformation. Studies conducted during this period emphasize the effectiveness of virtual hearings and electronic voting systems in maintaining procedural continuity. However, authors like Bhattacharya (2022) caution against over-reliance on digital systems without addressing cybersecurity risks and digital divide issues.

Despite the growing body of literature, there remains a gap in comprehensive empirical analysis of digital transformation under the IBC. Most studies focus either on legal provisions or technological tools in isolation, with limited integration of both perspectives. This paper seeks to bridge this gap by providing a holistic evaluation of how digital technologies influence the efficiency and effectiveness of insolvency resolution in India.

Claessens and Klapper (2005) examined the use of bankruptcy systems across different countries and identified the legal, economic, and institutional factors influencing insolvency proceedings. Their study emphasized that efficient bankruptcy frameworks improve creditor confidence, facilitate business recovery, and support economic stability. The authors highlighted that countries with stronger legal enforcement mechanisms tend to have more effective insolvency resolution systems.

Djankov *et al*. (2008) analyzed global debt enforcement mechanisms and their impact on financial systems. The study revealed that effective debt recovery procedures significantly influence credit availability and investment growth. The researchers observed that delays in insolvency resolution adversely affect economic productivity and increase financial risks for creditors and institutions.

Theodore Eisenberg and Sundgren (2018) studied the growing role of technology in insolvency systems worldwide. Their research highlighted the adoption of digital platforms, electronic case management systems, and online filing mechanisms in insolvency proceedings. The study concluded that technological integration improves transparency, efficiency, and accessibility in insolvency administration.

Finch and Milman (2017), in their book *Perspectives and Principles*, explained the theoretical and practical dimensions of corporate insolvency law. They emphasized the importance of balancing the interests of debtors, creditors, employees, and society while designing insolvency frameworks. The authors also discussed the significance of modern legal reforms in ensuring effective corporate rescue mechanisms.

Goode (2018) discussed the fundamental principles

governing corporate insolvency law. The study highlighted the objectives of insolvency legislation, including asset maximization, equitable distribution among creditors, and business rehabilitation. The author emphasized that modern insolvency systems should focus on restructuring viable businesses instead of immediate liquidation.

Gupta and Singh (2021) examined the role of information utilities under the Insolvency and Bankruptcy Code. Their study found that information utilities facilitate faster verification of financial claims, reduce disputes among stakeholders, and improve transparency in insolvency resolution processes. The authors concluded that digital information management systems play a vital role in strengthening insolvency administration in India.

Narayan (2020) explored the digitalization of dispute resolution systems in India. The study discussed the opportunities offered by online dispute resolution platforms, virtual hearings, and digital documentation. It also identified challenges such as cybersecurity concerns, technological barriers, and limited digital literacy among stakeholders.

Objectives of the Study:

1. To examine the extent of digital adoption in insolvency resolution under the Insolvency and Bankruptcy Code, 2016.
2. To evaluate the impact of digital tools on efficiency, transparency, and timeliness of insolvency proceedings.
3. To analyze the role of institutions such as the National Company Law Tribunal and Insolvency and Bankruptcy Board of India in implementing digital systems.
4. To identify challenges associated with digital transformation in insolvency resolution.
5. To suggest policy measures for strengthening technology-driven insolvency mechanisms.

Hypotheses of the Study:

- **H_0 (Null Hypothesis):** Digital transformation has no significant impact on the efficiency of insolvency resolution under the IBC.
- **H_1 (Alternative Hypothesis):** Digital transformation significantly improves the efficiency of insolvency resolution under the IBC.
- **H_{02}** There is no significant relationship between digital adoption and transparency in insolvency proceedings.
- **H_{12}** Digital adoption significantly enhances transparency in insolvency proceedings.

METHODOLOGY

Research Design:

Descriptive and analytical research design based on both qualitative and quantitative approaches.

Data Sources:

- **Primary Data:** Structured questionnaire (responses from insolvency professionals, lawyers, bankers, and corporate stakeholders)
- **Secondary Data:** Reports from Insolvency and Bankruptcy Board of India, case laws, journals, government publications

Sample Size:

- 150 respondents

Sampling Technique:

- Purposive sampling (targeting experts involved in insolvency processes)

Tools and Techniques:

- Percentage Analysis
- Mean and Standard Deviation
- Correlation Analysis
- Regression Analysis
- ANOVA (Analysis of Variance)

Data Analysis and Interpretation:

The data reveals that 40% of respondents are highly aware and 30% are moderately aware, meaning a substantial 70% possess adequate knowledge of digital tools used under the Insolvency and Bankruptcy Code, 2016. This indicates that digital initiatives introduced by institutions like the Insolvency and Bankruptcy Board of India have achieved considerable outreach among stakeholders (Table 1).

Table 1 : Awareness of Digital Tools in Insolvency Process

Response Category	No. of Respondents	Percentage (%)
Highly Aware	60	40%
Moderately Aware	45	30%
Low Awareness	30	20%
Not Aware	15	10%
Total	150	100%

However, 30% (low + not aware) still lack sufficient awareness. This gap suggests that while digital systems are being implemented, their understanding is uneven, especially among smaller practitioners or regional stakeholders. Limited awareness may lead to underutilization of tools like e-filing and Information Utilities, thereby reducing overall system efficiency.

A combined 80% of respondents (46.7% strongly agree + 33.3% agree) believe that digitalization has reduced resolution time. This clearly supports the argument that digital tools—such as virtual hearings in the National Company Law Tribunal—have streamlined procedural delays (Table 2).

Table 2 : Impact of Digitalization on Resolution Time

Opinion	Respondents	Percentage
Strongly Agree	70	46.70%
Agree	50	33.30%
Neutral	15	10%
Disagree	10	6.70%
Strongly Disagree	5	3.30%

Only 10% expressed disagreement, while another 10% remained neutral, which may reflect cases where technological inefficiencies (e.g., connectivity issues, procedural delays despite digitalization) persist.

The strong agreement indicates that digital transformation has contributed to achieving the IBC's objective of time-bound resolution, which was a major challenge in the pre-IBC regime.

The mean values for key variables Efficiency (4.2), Transparency (4.0), and Accessibility (3.8)—are all above the midpoint (3), indicating a positive perception of digital transformation (Table 3).

Table 3 : Mean Score Analysis

Variable	Mean	Std. Deviation
Efficiency Improvement	4.2	0.85
Transparency Enhancement	4	0.9
Accessibility of Information	3.8	0.95

- Efficiency (4.2): Highest score, showing stakeholders strongly believe digital tools reduce delays and improve workflow.
- Transparency (4.0): Reflects improved visibility in processes like claim verification and creditor communication.
- Accessibility (3.8): Slightly lower, suggesting that while access has improved, digital divide issues still exist.

The standard deviation values (around 0.85–0.95) indicate moderate variation, meaning opinions are relatively consistent across respondents.

The correlation coefficients show a strong positive relationship (Table 4):

Table 4 : Correlation Analysis

Variables	Correlation (r)
Digital Adoption and Efficiency	0.68
Digital Adoption and Transparency	0.72

- 0.68 between Digital Adoption and Efficiency
- 0.72 between Digital Adoption and Transparency

These values indicate that as digital adoption increases, both efficiency and transparency also improve significantly. The slightly higher correlation with transparency suggests that digital systems—such as electronic records and real-time updates—are particularly effective in reducing information asymmetry.

This supports the idea that technology not only speeds up processes but also builds trust among stakeholders, including creditors and resolution professionals.

The regression coefficient (0.75) indicates a strong positive impact of digital tools on insolvency efficiency. The significance level ($p = 0.001 < 0.05$) confirms that this relationship is statistically significant (Table 5).

Table 5 : Regression Analysis

Variable	Coefficient	Significance
Digital Tools Usage	0.75	0.001

This means that digital transformation is not just correlated with efficiency—it is a predictive factor. In practical terms, increased use of digital platforms (e-filing, virtual hearings) leads to measurable improvements in resolution outcomes.

The high coefficient value suggests that a unit increase in digital adoption results in a substantial improvement in efficiency, reinforcing the importance of technology-driven reforms.

The ANOVA results show an F-value of 5.62 with a significance level of 0.003, which is less than 0.05. This leads to the rejection of the null hypothesis (H_0) (Table 6).

Table 6 : ANOVA Test

Source	F Value	Significance
Between Groups	5.62	0.003

This implies that there are statistically significant differences between groups—likely based on levels of digital adoption or stakeholder categories (e.g., lawyers,

bankers, insolvency professionals). It confirms that digital transformation has a meaningful impact across different groups, rather than being limited to a specific segment.

The test validates the overall research assumption that technology plays a critical role in improving insolvency outcomes.

RESULTS AND DISCUSSION

The findings reveal that digital transformation has played a crucial role in enhancing the effectiveness of insolvency resolution under the Insolvency and Bankruptcy Code, 2016. The adoption of e-filing systems, virtual hearings, and electronic voting mechanisms has significantly reduced procedural delays and improved stakeholder coordination.

The strong positive correlation between digital adoption and efficiency indicates that technological tools streamline workflows and minimize administrative bottlenecks. Institutions such as the National Company Law Tribunal have benefited from virtual court systems, which allow faster disposal of cases.

However, the study also identifies key challenges:

- Lack of uniform digital infrastructure across regions
- Limited technical expertise among stakeholders
- Cybersecurity and data privacy concerns
- Resistance to technological change

Despite these issues, the overall impact of digital transformation remains positive and significant.

Conclusion:

Digital transformation has emerged as a powerful enabler in strengthening insolvency resolution under the Insolvency and Bankruptcy Code, 2016. The integration of technology has improved efficiency, transparency, and accessibility, thereby aligning with the core objectives of the Code.

The empirical findings confirm that digital tools significantly reduce resolution time and enhance decision-making processes. However, to fully realize the benefits, policymakers and regulatory bodies such as the Insolvency and Bankruptcy Board of India must address existing challenges related to infrastructure, training, and cybersecurity.

Future reforms should focus on:

- Developing advanced digital platforms (AI-based case management)
- Strengthening cybersecurity frameworks
- Ensuring uniform digital access across all regions
- Continuous training for stakeholders

REFERENCES

Armour, J. and Deakin, S. (2020). Insolvency law and corporate governance: The digital shift. *Modern Law Review*, **83**(6) : 1123–1145.

Bhattacharya, S. (2022). Digital courts and insolvency resolution in India: A critical analysis. *National Law University Law Review*, **14**(3) : 120–145.

Claessens, S. and Klapper, L. (2005). Bankruptcy around the world: Explanations of its relative use. *American Law and Economics Review*, **7**(1) : 253–283.

Djankov, S., Hart, O., McLiesh, C. and Shleifer, A. (2008). Debt enforcement around the world. *Journal of Political Economy*, **116**(6) : 1105–1149.

Eisenberg, T. and Sundgren, S. (2018). Technology and insolvency systems: Global trends. *International Insolvency Review*, **27**(3) : 345–362.

Finch, V. and Milman, D. (2017). *Corporate Insolvency Law: Perspectives and Principles* (3rd ed.). Cambridge University Press.

Goode, R. (2018). *Principles of Corporate Insolvency Law* (5th ed.). Sweet & Maxwell.

Gupta, A. and Singh, P. (2021). Role of information utilities in insolvency resolution under IBC. *Indian Corporate Law Review*, 9(2), 78–95.

Insolvency and Bankruptcy Board of India (2024). *Annual Report 2023–24*. New Delhi: IBBI.

Mishra, S. and Kapadia, S. (2019). Operational challenges in IBC implementation. *Journal of Banking and Finance Law*, **12**(1) : 89–110.

Narayan, A. (2020). Digitalization of dispute resolution in India: Opportunities and challenges. *Journal of Legal Studies*, **18**(4) : 201–220.

Sahoo, M. S. (2021). *IBC: A Game Changer for Resolving Insolvency in India*. New Delhi: Taxmann Publications.

Varottil, U. (2017). Evolution of insolvency law in India. *Indian Journal of Corporate Law*, **5**(2) : 45–67.

World Bank (2020). *Doing Business 2020: Resolving Insolvency*. Washington, DC: World Bank Publications.

****