

# Digital Transformation And Its Impact On Traditional Business Models In India

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## Abstract

In the present day, digital transformation is taking place across all industries. Yet traditional Indian businesses are left behind, battling to transform in this digital age. Digital transformation is defined by Verhoef et al. (2021) as the change of how a company uses digital technology to formulate a new digital business model that facilitates more value creation and appropriation from the business. This study aims to explore the digital transformation of traditional Indian enterprises. A mixed methods concurrent triangulation model was employed to collect data from 55 different traditional Indian businesses through a survey, as well as five interviews with managers and business owners of businesses in the Delhi NCR and Haryana regions. The interviews were coded according to the six-phase approach established by Braun and Clarke (2006). Five major themes emerged from the interviewed data. They were digital transformation as a survival tool, the role of leadership, employee resistance to change, the cost-benefit analysis of digital tools and the J-curve theory, and the failures of digital systems in these legacy companies. As determined from the data collected from the survey, 81.8% of these companies had undergone a digital transformation of their companies. In addition, 94.5% of these companies had adopted cloud computing technology for data management. There was also a positive correlation between these companies' levels of digital maturity and their new revenue sources ( $r = 0.521$ ,  $p < 0.01$ ). The two major identified barriers to digital transformation among these companies were a lack of skills within the employees (mean of 3.45 out of 5) and lack of budget to enact such changes (mean of 3.36 out of 5).

Despite the recognition of the need for digital transformation among these companies (mean of 4.02 out of 5), their ability to enact digital transformation successfully is restricted by these identified barriers.

This study adds to the limited literature surrounding digital transformation within the context of India's traditional industries.

**Keywords:** digital transformation, traditional businesses, India, mixed methods, thematic analysis, SMEs, digital maturity, organizational resistance, Technology Acceptance Model, dynamic capabilities.

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## I. Introduction

In 1998, Kodak was employing over 170,000 people and maintaining a share of over 85% of the photographic film sales that occurred across the globe. However, four years later, the company had filed for bankruptcy. While the nature of photography had not waned, Kodak's failure to adapt to the digital world that it helped to invent led to the company's eventual bankruptcy. This story is by no means unique to Kodak. Such a narrative unfolds across numerous industries across the globe. Furthermore, this phenomenon is also occurring within the traditional businesses of India.

India presents an incredible opportunity to study the impacts of digital transformation on traditional business models. With the country having the largest youth population worldwide, India has started to see an exponential rise in people accessing the internet, surpassing 850 million people in 2024 alone (NASSCOM, 2024). Furthermore, digital infrastructure that has developed across the nation, such as the Unified Payments Interface (UPI) and Aadhaar, has yet to be replicated across the developing world. For instance, UPI had over 13,000 crore transactions in India in 2023-2024 (Gupta & Lahiri, 2025). However, the economy of India remains entrenched in several more traditional systems and businesses.

The growth of digital infrastructure in tandem with the continued existence of traditional business models in India has created one of the most prominent business model transformations occurring within the country today. According to Verhoef et al. (2021), the digital transformation of business and the innovation of various business models have led to alterations in the behaviors and expectations of consumers, negatively impacting numerous traditional businesses. Both Bharadwaj et al. (2013) suggest that these changes to the traditional business have forced a rethinking of the role of information technology in those companies. For Indian traditional businesses, whose MSME segment contributed around 31% of India's GDP and about 43% of exports in 2021-22 (Pandey, Kumar & Gupta, 2024), this rethinking is not optional: it is existential

As the rest of the world continues to publish and share research regarding the digital transformation of traditional businesses, there remains a lack of literature discussing the same regarding India's traditional businesses. According to Parra-Sánchez and Talero-Sarmiento (2024), while the scientific literature on digital transformation of small and medium sized businesses is rapidly growing, there is still a lack of literature regarding the digital transformation of traditional and family businesses, especially within the developing economies of Asia. Thus, motivation was found to discuss this crucial topic within the nation of India.

### **Research Objectives**

This study pursues four interconnected objectives:

- To assess the current extent and depth of digital technology adoption among traditional Indian businesses across multiple sectors.
- To measure the quantitative impact of digital transformation on revenue performance, operational efficiency, and new market access.
- To identify and contextualize the organizational, financial, and human barriers that impede successful digital transformation.
- To derive actionable strategic implications for business leaders, policymakers, and sector stakeholders based on integrated empirical evidence.

### **Research Questions**

The study is guided by four research questions:

- RQ1 (Descriptive): To what extent have traditional businesses in India adopted digital technologies in the last three to five years?
- RQ2 (Causal): What is the measurable impact of digital transformation on revenue, efficiency, and market position?
- RQ3 (Exploratory): What organizational, financial, and cultural barriers prevent traditional businesses from successfully implementing digital transformation?
- RQ4 (Prescriptive): What strategic approaches and organizational mindsets are associated with successful digital transformation in Indian SMEs and enterprises?

### **Significance of the Study**

The significance of this study is based on three factors. First, the specific population that is represented in this study (traditional Indian businesses) is underrepresented in the literature on digital transformation. Second, the use of triangulation methodologies is recommended for studying digital transformation as it allows for an understanding of the data through both the quantitative and qualitative aspects of the population (Creswell & Plano Clark, 2018). Finally, according to the Kyndryl 2025 Readiness Report for India, 75% of Indian organisations have experienced stalls in their innovation and AI initiatives after the completion of the proof-of-concept stage, and 63% of those organisations feel intense pressure to see a return on their investment in these technologies (Kyndryl, 2025). Thus, an understanding of the factors that contribute to the failure (or success) of these initiatives is beneficial for the hundreds of thousands of businesses in India that are undertaking such transformations.

## **II. Literature Review**

### **Theoretical Foundations**

The theoretical frameworks that will be employed in this study include the following: the Technology Acceptance Model (TAM), Dynamic Capabilities Theory, and Christensen's Disruptive Innovation Theory.

The foundation of TAM was proposed by Davis in 1989. According to Davis (1989), the perceived usefulness and the perceived ease of use of a particular technology by individuals within an organization are the factors that determine their acceptance of the technology. This framework can explain the reasons for the acceptance or rejection of digital technology by both the employees and the customers of these traditional businesses.

Dynamic Capabilities Theory, as advanced by Teece, Pisano, and Shuen in 1997, explains how organizations are able to gain a competitive advantage in an industry that is undergoing rapid digital transformation. Traditional industries that have experienced a rapid influx of competition from digital-native businesses have shown that despite the similar resources of these organizations, only some have been able to undergo a successful digital transformation. The authors propose that all organizations must possess three components to enable them to transform digitally: sensing environmental changes, seizing opportunities to take advantage of these changes, and reconfiguring their organizations to sustain these changes.

Christensen's Disruptive Innovation Theory, as proposed by Christensen in 1997, provides the context for the competitive threat that traditional Indian businesses are facing. Digital-native companies such as fintech

apps, e-commerce platforms, and EdTech companies are growing in number and scale. However, they do not compete with the traditional Indian businesses on the same dimensions. Lastly, Verhoef et al. (2021) argue that in the midst of a digital transformation, traditional companies have to make trade-offs between the existing methods of doing business and the new techniques that they have learned from their competitors. This trade-off exists in every interview that has been conducted for this research study.

### **Digital Transformation: Concept, Phases, and Global Evidence**

Bharadwaj et al. (2013) demonstrate that the notion of IT strategy being subordinate to business strategy is no longer tenable. Instead, the authors argue for the fusion of these two concepts — digital business strategy. For traditional Indian businesses that do not adopt digital business strategies, investment in digital technologies is essentially a wasted effort.

Verhoef et al. (2021) argue that there are three stages of digital adoption: digitization, digitalization, and digital transformation. While many companies skip stages, jumping from one to the next without a proper transformation process in the middle, the most common failure mode for organizations is simply the one described by the tuition centre's co-founder: being half-digital, half-manual.

Parra-Sánchez and Talero-Sarmiento (2024) conducted a scientometric analysis of the literature on digital transformation in SMEs. Their findings indicate that the predominant technologies in this field are cloud computing, AI, Big Data, e-commerce, and IoT technologies. More specifically, they reveal that most digital transformation literature focused on SMEs prior to 2019 investigated the implementation of specific digital technologies into SMEs. In the most recent literature between 2019 and 2025, however, research has shifted towards investigating digital transformation's impact on SMEs innovation performance. The findings of this study align with these recent developments in the literature in that while almost all SMEs in the study had adopted cloud computing technologies, adoption of AI and IoT technologies remained in their initial adoption phases.

### **Digital Transformation in India: Policy, Infrastructure, and Acceleration**

India's digital disruption has occurred via policy intervention and market dynamics without a Western market equivalent. The fragility of analog systems became clear: firms that could not shift at this speed became obsolete overnight, while those with even some digital infrastructure found themselves with a competitive advantage. The fragility of analog systems became evident: firms that could not make the adjustment at this pace immediately became obsolete, while those with even partial digital infrastructure gained a competitive edge. The pandemic's impact as a digital accelerator can be seen in all five interview contexts for this study, from the criminal lawyer who normalized virtual hearings to the farmer who has become more reliant on digital intelligence about market prices.

Researchers from Open Engineering, Pandey, Kumar, and Gupta (2024) found that in 2021-22, Indian SMEs constituted 31% of GDP and 43% of exports, but they suffer from critical structural constraints to digitalization. They note the skills gap as the most significant constraint: most of India's SME employees do not know basic digital tools, and the gap between high-skilled and low-skilled workers continues to grow with technological advancements. This finding, in particular, is directly validated by the quantitative results of this research since the skills gap barrier has the highest severity rating among all barriers assessed (mean = 3.45, SD = 1.03).

### **Cultural Resistance and the People Problem**

The oft-cited figure of 70% of digital transformation projects globally failing is generally attributed not to the software companies but to the resistance of the employees within these organizations (McKinsey & Company, 2022). Many of the businesses that have traditionally been established in India are centred around family owners who have centralized decision-making within the organization. Such a structure limits the agility of employees to test and implement changes required for digital transformation. Furthermore, employees are generally aware that introducing digital systems will threaten the knowledge of processes that they have accumulated over time, leading to passive resistance.

According to change management theory, specifically Kotter's model of eight steps to change management, organizations must form a leadership coalition and secure emotional commitment to the changes that are to be made to the organization before any changes are made to the structure of the company. Fewer than half of Indian organizations have change management strategies in place. Consequently, any implementations of new technologies are generally only implemented in the company in name, leading to the phenomenon of the tuition centre co-founder who had invested four lakhs of INR in an ERP system that reverted to paper registers within six months of implementation

### **Financial Barriers and the J-Curve Challenge**

For traditional businesses that have built their reputations on capital-conservative economic models, the digital transformation challenge is vastly different from that of technology companies or firms with the capital to weather the initial turbulence. According to the Kyndryl Readiness Report (2025), 63% of Indian organizations feel intense pressure to demonstrate a return on their investments in digital projects. Digital transformation follows a J-curve model for the returns that it generates for the organizations undertaking such transformation (Westerman, Bonnet & McAfee, 2014). It takes some time for firms to plateau and start generating returns from their digital transformation initiatives. For decades, traditional businesses have relied on the linear model of capital expenditures to determine the value of their offerings. Despite the benefits of data analytics and cloud platforms, 75% of Indian organisations have complained that their innovation and AI initiatives have stalled after the proof-of-concept stage, and 63% of them feel intense pressure to demonstrate immediate return on investments in their digital projects (Kyndryl, 2025).

### **Research Gap**

There are various studies concerning the digital transformation of SMEs in both the Western world and in India within the technology-native Indian business sectors. However, there are few studies that investigate the qualitative and quantitative digital transformation of SMEs in the traditional Indian business sectors. Authors Parra-Sánchez and Talero-Sarmiento (2024) note that there are few studies concerning the digital transformation of SMEs in emerging economies, with the majority of the research originating from Western Europe and North America. To date, therefore, there are no studies that investigate the digital transformation of SMEs in the traditional Indian business sectors using a mixed methods approach and presenting an Indian dataset to a field of study that is arguably in need of such research. Hence, the purpose of the current study is to provide such a research finding by interviewing 55 SMEs from five different traditional Indian sectors to investigate the extent of their digital transformation and its impacts.

### **III. Methodology**

The mixed-method approach that was used in this research study was the concurrent triangulation mixed methods design, as discussed by Creswell and Plano Clark (2018). This type of research design was used in part because the phenomenon that is to be studied is both quantifiable and qualitative – it is both a process that can be measured, but also one that cannot be fully captured by utilizing statistics alone. Thus, the integration of these two methods helps to increase the validity of the study (Creswell & Plano Clark, 2018).

The quantitative aspect of this research consisted of the development and distribution of a questionnaire that contained 30 different variables, which were distributed to 55 decision makers from different sectors within 55 different organizations located in India. These organizations represented various industries, such as manufacturing, banking, healthcare, technology, professional services, agriculture, education, logistics, and real estate. Each of the individuals that completed the questionnaires had roles within these organizations, such as CEOs, CTOs, operations heads, branch managers, and digital transformation officers. These individuals were selected using both purposive and snowball sampling strategies. The questions were primarily descriptive in nature, as well as utilized Pearson correlation analyses to determine the relationships between certain variables.

The qualitative aspect of the research consisted of five in-depth interviews that were conducted with the business owners or managers of five different traditional industries. These interviews were conducted face to face, and each took place between 48 and 58 minutes. The companies represented in these interviews were a large-scale farmer and landowner from Haryana, a private bank branch manager from Rohtak, an independent criminal law practitioner from Delhi, an independent educational center founder from the Delhi NCR, and an animal feed manufacturer and entrepreneur from Rohtak. These individuals were selected utilizing a purposive sampling strategy. Each of the interviews were conducted in both Hindi and English, as both languages and the speakers were understood by the research team. The interviews were recorded, and their transcripts were created and edited for clarity.

These qualitative interviews were analyzed utilizing the six stages of thematic analysis, as discussed by Braun and Clarke (2006). These stages include the processes of becoming familiar with the data, coding the data, analyzing the codes to recognize themes, reviewing the themes, defining the themes, and finally publishing the research report. Each interview was coded line-by-line, the lines were grouped according to the themes that emerged, the themes were reviewed of their relevance to the interview, the themes were defined, and then the research report was published. The five themes that emerged were recognized as consistent with the theories of the technology acceptance model (TAM), dynamic capabilities theory, and Kotter's model of change management. Finally, the research report was distributed to two of the interviewees to ensure that the content accurately reflected the interviews. All participants provided informed consent, and their identities were only used in the report should the individual agree to the use of their name.

## IV. Data Analysis And Discussion

### Introduction to Analysis

The findings from each of the two methods of investigation are presented and interpreted in this chapter. The results of the interview data are presented first, followed by the results of the survey data. Section 4.4 presents the results of testing the hypotheses with the Pearson correlation analysis. Section 4.5 presents the triangulation of the interview and survey results – the main findings of this dissertation. Section 4.6 presents examples from the Indian cases. Finally, Sections 4.7 and 4.8 present the implications of the study and its limitations.

### Thematic Analysis — Qualitative Data

#### Overview and Analytical Process

Thematic analysis is a method for determining themes within a data set (Braun & Clarke, 2006). This type of analysis is appropriate to use in this study due to the fact that it allows for the analysis of the interview responses without the need for a predetermined coding schema; the themes emerge from the data after analyzing the interview transcripts. The process involves reading the transcripts multiple times, coding each line of interview transcripts, grouping those codes into potential themes, and then determining the potential themes after several rounds of review. The result of this type of analysis is five themes, each of which is grounded in the data, the interviewees, and the research questions for this study.

#### Theme 1 — Digital Adoption as Survival Necessity

In the five interviews, it was clear that digital transformation was driven by a sense of existential threat to the business from another company that was digital native. Whether in EdTech, fintech, AgriTech, e-filing, or the feed manufacturing space, each company has a digital native company that threatens them from without. Furthermore, the threat from these external companies is consistent with Christensen's model of disruptive innovation, where a new entrant with a different way of structuring cost and service creates a threat to an industry with established competitive advantages (Verhoef et al., 2021)

*"I remember sitting in my office in 2019 and one of my senior teachers walked in and showed me their advertisement. A student could get full board coaching from their phone for a fraction of what we charge. That was the moment I stopped treating digital as a future problem. It became a today problem. — Ashutosh Ranjan, Co-Founder, Tuition Centre, Delhi NCR"*

The farmer (Monu, Haryana) said that three external forces were operating at the same time in the banking sector: the impact of UPI, fintech apps that changed small-ticket lending, and a new generation of customers who were digital natives who used Jan Dhan Kisan accounts as their first experience with banking.. The farmer (Monu, Haryana) stated that his access to real-time price data for his agricultural products via various agricultural apps had changed the game between him and the agents that he used to deal with when he sold his produce

#### Theme 2 — The Leadership Imperative

The factor that was attributable to the successful navigation of digital transformation for each organization was the leadership behind the transformation rather than the technology behind it. One of the steps identified within Kotter's (1996) model for effectively managing change is the creation of a guiding coalition. The interview data reveals details regarding the makeup of such a coalition as it was formed and operated within the organizations that were transforming themselves and their traditional industries. For the tuition centre, the commitment of the two founding partners, the leading one ahead of the other in their adoption of digital technologies, prevented the abandonment of the digital transformation initiative during its most painful implementation phase

*"My partner was ahead of me on this. He would say, we are running a fifteen-hundred-student institution on Excel sheets and registers — this is not sustainable. That alignment at the top is genuinely one of the reasons we have not completely given up during the hard periods. — Ashutosh Ranjan, Tuition Centre"*

To the criminal lawyer in Delhi, Pravin, the decision to invest three months of the junior staff's time into scanning thousands of historical cases was a decision that could have been made or deferred at any time. Indeed, such decisions are typically made within the firms themselves. Yet to the feed manufacturer in Rohtak, Rajesh Kumar, the lack of leadership over the digital agenda for the company was in itself a finding into the company's digital agenda: the company had a digital agenda in place but in a highly informal way, indicating the management of the feed manufacturer by its owner, whose attention to the business was the limiting factor in any initiative that the company pursued at any given time. Such a finding relates to the findings of Parra-Sánchez and Talero-Sarmiento (2024) regarding digital transformation within SMEs, wherein the characteristics of those managers were found to be one of the key factors that determined the outcomes of the SMEs' digital transformations.

### **Theme 3 — Human Resistance as the Primary Barrier**

Without exception, the interviewees indicated that the factor that presented the greatest challenge to the introduction of these technologies was the people component. Different staff members exhibited different forms of resistance to the changes that the technologies would require – from the fear amongst senior staff members of their competency relative to the new technologies, to the relatively passive resistance of administrative staff members who would ‘forget’ their passwords or find other reasons to revert to using the existing processes and technologies without the software automation, and even to the confessed fear of a senior bank staff member of his ability to keep up with the required processing speeds at his current stage in his career. Such a reaction is consistent with Davis’s (1989) TAM in that the technologies were perceived as having low levels of usefulness and ease-of-use, and that the threat to the competency of existing staff members was high – all factors which contribute to the rejection of the technology by those staff members.

*"We spent close to four lakhs on an ERP system. Six months later, that software was sitting on two computers and nobody was using it. My senior-most admin person felt threatened. She would forget her login. The system would hang. There was always a reason. — Ashutosh Ranjan"*

*"I had a senior officer tell me quietly: Ma'am, I am not worried about the work. I am worried that at this stage of my career, the speed of change will leave me behind. — Deepak, Branch Manager, Rohtak"*

The criminal lawyer (Pravin) points out another dimension of resistance existing within the institutional structure. The judge who was more familiar with working with the printed documents instead of the digital ones had an influence upon the entire court system. Thus, this dimension of resistance, which relates to the institutions and courts themselves, is an aspect of resistance that remains underappreciated in relation to the literature that exists on the topic of digital transformation in corporations, according to Pravin.

### **Theme 4 — ROI Uncertainty and the J-Curve Effect**

As with most traditional businesses, particularly those with conservative approaches to capital structure, it is very difficult to justify any investment in digital technologies without seeing a return on that investment. Indeed, the co-founder of the tuition centre described how the business was experiencing the J-curve that Westerman, Bonnet, and McAfee (2014) describe in their article on digital transformation: a period of significant investment and disruption to the business (the “valley” of the J-curve) without any discernable benefits. The emotional difficulty of experiencing this valley, rather than its financial difficulties, causes the leaders of the organization to lose confidence in the transformation process altogether.

*"Nobody budgets for the inefficiency of a half-finished transformation. Right now we have a half-digital, half-manual operation. My admin team enters fees into the software and into a register. That is double the work, double the time, and double the chance of error. — Ashutosh Ranjan"*

The farmer from Monu, Haryana provides perhaps the most vivid illustration of the ROI gap. The digital agricultural marketplace platforms promised better prices for his agricultural commodities but ended up delivering poor results. For example, there was a three-week delay in receiving the payments from an AgriTech platform that did not have the capital to manage payment delays. Furthermore, the grading of the agricultural commodities on the platform could not be guaranteed. Here, the farmer explains his preference for the mandi system despite the costs involved as compared to the digital marketplaces that failed to offer the same level of reliability in the transaction of his agricultural commodities. This example illustrates a cost-benefit analysis, not irrational behavior on the part of the farmer to avoid digital marketplaces for agricultural commodities.

### **Theme 5 — Infrastructure and Connectivity Deficits**

Another theme that emerges in the stories of agriculture and manufacturing but is largely absent in the stories of digital transformation efforts in the urban knowledge economy is the constraints of physical infrastructure. The farmer makes it clear during his failed transaction to sell his wheat that the internet signal in his town, eighty kilometres from Delhi, is not particularly reliable - an essential component of a digital system that did not account for such constraints on the physical infrastructure around the farmer

*"A digital system built for cities does not account for what ground reality looks like here. My son was frustrated. I was less surprised. — Monu, Farmer, Haryana"*

The feed manufacturer Rajesh Kumar described employed an informal system based on WhatsApp as a de facto enterprise resource planning (ERP) system to manage their operations because no digital system had been specifically designed for their type of business. Most of the existing digital tools in India are designed for urban environments with good digital connectivity and for individuals who are digitally literate. These systems have not been designed for India’s non-urban, traditional business environment. Pandey, Kumar, and Gupta (2024) report on the digital divide between the urban and rural SMEs in India in their research on SME digitalization needs in India.

**Survey Analysis — Quantitative Data**

**Respondent Profile**

A survey was conducted among 55 respondents from ten different industry sectors. The majority of the companies representing the industry sectors in the survey are small and medium sized organizations with between 10 and 249 employees (61.8%), followed by large organizations with 250 or more employees (29.1%), and microOrganizations with between 1 and 9 employees (9.1%). Most of the respondents are from the Delhi NCR region (approximately 60%), with some from the cities of Mumbai, Bangalore, and Pune. Overall, though, the majority of the companies are located within the Delhi NCR region, which reflects the focus of the research study on Delhi and its surrounding metro area.

**Table 1**  
*Respondent Demographic Profile (n = 55)*

Category	Sub-Category	n	%
Organisation Size	Micro (1-9)	5	9.1%
	Small (10-49)	18	32.7%
	Medium (50-249)	16	29.1%
	Large (250+)	16	29.1%
Industry Sector	Manufacturing & Production	10	18.2%
	Retail & E-commerce	9	16.4%
	Financial Services & Banking	8	14.5%
	Healthcare & Pharmaceuticals	8	14.5%
	Technology & Software	8	14.5%
	Professional Services	8	14.5%
	Other (Agriculture, Education, Logistics, Real Estate)	4	7.3%

**Digital Transformation Initiation and Progress**

A substantial majority of the organizations have initiated a digital transformation (81.8%, n = 45). This percentage is in line with the estimates for the United States by Kyndryl (2025). Of the organizations that have initiated the digital transformation, 40.0% (n = 22) are on track to completing the transformation, 23.6% (n = 13) are partially on track with the transformation, and 18.2% (n = 10) are behind schedule with the transformation. Furthermore, 18.2% (n = 10) of the Indian businesses that were surveyed have not yet initiated the digital transformation that they recognize as necessary for their organizations to remain competitive within their industries.

**Technology Adoption Rates**

Cloud computing was the leading technology in SMEs, with 94.5% of organizations using cloud-based technologies and software applications. AI and machine learning and big data analytics were used by 49.1% of organizations each. Enterprise resource planning (ERP) systems were used in 50.9% of responding organizations. The percentage of SMEs that adopted IoT technologies was lower at only 18.2%. The findings from these technologies are in line with the results of Parra-Sánchez and Talero-Sarmiento (2024), who found that SMEs in different parts of the world tend to adopt cloud and e-commerce technologies first, followed by AI and IoT technologies with a significant time lag.

**Table 2: Technology Adoption Rates Across Survey Sample (n = 55)**

Technology	n Adopted	Adoption Rate (%)	Rank
Cloud Computing	52	94.5%	1
ERP System	28	50.9%	2
AI & Machine Learning	27	49.1%	3 (tied)
Big Data Analytics	27	49.1%	3 (tied)
IoT Devices	10	18.2%	5

*Note.* Respondents could select multiple technologies; percentages are of the full sample (n = 55).

**Descriptive Statistics — Operational Impact and Barriers**

The Likert scale measurements of each of the items yielded the following scores: overall digital maturity was found to be a mean score of 3.56 on a scale of 1 to 5 (SD = 1.01), with a median score of 4 – indicating a positively skewed distribution of maturity levels within the organization. The process automation initiative was the lowest mean score (mean = 2.62, SD = 1.43), while the initiative to acquire new customer segments obtained the highest mean score (3.11, SD = 1.38). The skills gap within the organization received the highest mean score for a barrier to improvement (mean = 3.45, SD = 1.03), while budget constraints received the second highest mean score (mean = 3.36, SD = 1.02). The legacy systems internal IT infrastructure (and, thus, a technical rather than human resources related barrier) received the lowest mean score of all the items related to potential barriers to improvement (2.82, SD = 1.25) – consistent with the findings of the interview evidence regarding the main barriers to improvement within the organization.

**Table 3**  
*Descriptive Statistics — All Likert Variables (n = 55)*

Variable	Mean	SD	Median	Interpretation
Q6: Digital Maturity Level	3.56	1.01	4	Moderate-High
— OPERATIONAL IMPACT (1=None, 5=High) —				
Q7a: Process Automation Improvement	2.62	1.43	3	Low-Moderate
Q7b: Decision Speed Enhancement	2.80	1.46	3	Low-Moderate
Q7c: Cost Reduction Achieved	2.47	1.36	2	Low
Q8a: New Revenue Streams Created	2.78	1.50	3	Low-Moderate
Q8b: Product-to-Service Business Shift	2.84	1.32	3	Low-Moderate
Q8c: New Customer Segments Reached	3.11	1.38	3	Moderate
— BARRIERS (1=Not a Barrier, 5=Severe Barrier) —				
Q9a: Legacy Systems	2.82	1.25	3	Moderate
Q9b: Cultural Resistance	3.09	1.24	3	Moderate
Q9c: Skills Gap	3.45	1.03	3	Moderate-High ★
Q9d: Budget Constraints	3.36	1.02	3	Moderate-High ★
Q9e: Data Privacy Concerns	3.09	1.16	3	Moderate
— OVERALL PERCEPTION —				
Q13: DT Perceived as Essential	4.02	0.87	4	High
Q14: Confidence in DT Success	3.73	0.95	4	Moderate-High

Note. ★ indicates highest-rated barrier categories. All items measured on 5-point Likert scale.

**Revenue Outcomes Among DT Initiators**

Among the 45 organizations that had initiated the digital transformation of their businesses, the revenue outcomes of that transformation were mixed yet largely positive. Growth in revenue between 21-50% was achieved by 28.9% of those that had initiated the transformation, while revenue growth between 6-20% was achieved by another 28.9%. Thus, 57.8% of the organization initiators experienced a growth in revenue. An additional 13.3% saw revenue increase by 50% or more. Overall, then, **71.1% of the transformation initiators reported positive revenue growth**, while 17.8% reported no significant change and 11.1% (4.4% slight decline, 6.7% significant decline) reported a decline in revenue following the implementation of their digital transformation initiatives. Furthermore, while 4.02 out of 5 of the organizations surveyed stated that they believe digital transformation is an essential process for their organizations, they only had a mean perception of the likelihood of successfully executing such an initiative of 3.73 out of 5 – another significant finding in relation to the overall initiative to transform their businesses digitally.

**Table 4**  
Revenue Change Distribution — DT Initiators Only (n = 45)

Revenue Change Category	n	% of Initiators	Cumulative
Exceptional growth (> 50%)	6	13.3%	13.3%
Strong growth (21-50%)	13	28.9%	42.2%
Moderate growth (6-20%)	13	28.9%	71.1%
No significant change	8	17.8%	88.9%
Slight decline (-1% to -20%)	2	4.4%	93.3%
Significant decline (> -20%)	3	6.7%	100.0%

Note. Excludes 10 respondents who had not initiated DT (Q10 = 'No').

**Correlation Analysis and Hypothesis Testing**

A Pearson correlation analysis was performed to determine the relationships between digital maturity (Q6) and each of the performance and barrier variables, testing the four hypotheses that were tested in this study. The analyses supported Hypotheses 1, 2, and 3, and provided partial support for Hypothesis 4.

**Table 5**  
Pearson Correlation Matrix — Digital Maturity and Key Variables (n = 55)

Hypothesis	Variable Pair	r	Sig.	Supported?
H1: Higher digital investment → greater revenue growth	Maturity ↔ New Revenue Streams (Q8a)	0.521	p < 0.01	✓ Yes
H2: DT → operational efficiency (cost reduction > 15%)	Maturity ↔ Cost Reduction (Q7c)	0.341	p < 0.05	✓ Yes (partial)
	Maturity ↔ Process Automation (Q7a)	0.367	p < 0.01	✓ Yes
	Maturity ↔ Decision Speed (Q7b)	0.478	p < 0.01	✓ Yes
H3: Customer satisfaction positively correlated with digital adoption	Maturity ↔ New Customer Segments (Q8c)	0.412	p < 0.01	✓ Yes (proxy)
H4 (barrier inverse): Org size moderates DT-performance relationship	Maturity ↔ Legacy Systems Barrier	-0.473	p < 0.01	✓ Partial
	Maturity ↔ Budget Constraints Barrier	-0.308	p < 0.05	✓ Partial

Note. Two-tailed Pearson correlation. Significance threshold p < 0.05. Maturity scale: 1 (Low) to 5 (High). Barrier scale: 1 (Not a barrier) to 5 (Severe barrier).

The strongest correlation between digital maturity and two factors – the generation of new revenue for organizations (r = 0.521, p < 0.01) – indicates the support for the hypothesis of H1. Furthermore, the correlation between digital maturity and the improvement of decision speeds within organizations (r = 0.478, p < 0.01) indicates that the digital maturity of an organization indicates that the improvements in “intelligence” garnered from those digital technologies occurs prior to cost savings being attained by those organizations. Finally, the negative correlations between digital maturity, the number of legacy systems within an organization (r = -0.473, p < 0.01), and the budget constraints that organizations face in implementing those technologies (r = -0.308, p < 0.05) indicate that the more digitally mature an organization is, the more likely that they have eliminated the need for legacy systems and the more likely that their cost savings from those digital technologies justifies their budget allocations for those technologies - the major initial step in implementing such digital technologies.

**Triangulation Matrix — Integrating Qualitative and Quantitative Findings**

Within the current study, triangulation can be performed to determine in what ways the qualitative and quantitative data corroborate each other (validation), contrast with one another (divergence), or extend each other (addition of nuance to an existing finding). Table 6 presents such an analysis for each of the five main themes and findings of the quantitative analysis of this study.

**Table 6**  
*Triangulation Matrix — Qualitative Themes vs. Quantitative Survey Data*

Finding	Survey Data Says	Interview Data Says	Combined Interpretation
Human resistance primary barrier	Cultural resistance mean = 3.09; Skills gap mean = 3.45 — highest barrier scores; Legacy systems = 2.82 (lower)	'The system would hang. There was always a reason.' (Ashutosh); Senior banker feared being 'left behind' (Deepak)	People-centric barriers systematically outrank technical barriers. Training alone is insufficient — fear of obsolescence requires sustained leadership empathy.
ROI uncertainty / J-curve	Cost reduction mean = 2.47 — lowest operational impact score of all dimensions	'Nobody budgets for the inefficiency of a half-finished transformation.' (Ashutosh); Farmer describes inconsistent platform payments	Organizations exit the J-curve valley prematurely. Financial planning for transformation must explicitly model the valley period.
Digital adoption = survival	81.8% have formally initiated DT; DT perceived as essential = 4.02 (highest perception score)	'It became a today problem.' (Ashutosh); Bank manager cites three simultaneous competitive forces (UPI, fintech, Jan Dhan)	High initiation rate validates the survival narrative. But the gap between urgency (4.02) and confidence (3.73) signals implementation weakness.
Leadership as success driver	Higher maturity correlates with new revenue ( $r = 0.521$ , $p < 0.01$ ) — maturity reflects leadership commitment	'That alignment at the top is the reason we haven't given up.' (Ashutosh); Lawyer's scanning project was a deliberate leadership choice	Maturity is a leadership outcome, not a technology outcome. Statistical associations with revenue gains are proxies for leadership quality.
Infrastructure deficit (DIVERGENCE)	Survey instrument did not capture connectivity as a discrete barrier category — this gap is itself a finding	'A digital system built for cities does not account for ground reality here.' (Monu, Haryana)	Qualitative data surfaces a structural barrier systematically absent from standard DT survey frameworks. Urban-biased instruments undercount this constraint for non-urban SMEs.

*Note.* The final finding (Infrastructure Deficit) represents a divergence between the data strands, where qualitative data surfaces a barrier not captured by the quantitative instrument.

### Real-World Indian Examples of Digital Transformation

The experiences of the interviewees are contextualized by the sectoral transformations occurring within India. HDFC Bank's shift from a bank focused on transactional activities to one focused on digital advisory is reflective of the experiences of the bank's branch manager interviewee. HDFC Bank's digital transformation is often referenced in India as a template for traditional banks to digitize to compete with fintech.

Reliance Jio's foray into the Indian telecommunications industry in 2016 represents the Christensian mode of disruption in the Indian context. By providing a telecommunications service with drastically different benefits (near zero prices for data plans) and telecommunications plans, Reliance Jio caused a transformation in every sector using telecommunications services—including the agricultural sector and retail industries in India.

Companies like BYJU'S and Unacademy, which were cited by the co-founder of the tuition center interviewee, have radically altered the education sector in India. BYJU'S, for example, attracted over 150 million registered users for its educational platforms. Companies in the agricultural sector, such as DeHaat and AgroStar have also emerged as companies that seek to disrupt the traditional mandi-arthiya sector in India, with varying degrees of success in the various rural areas of the country that have limited connectivity to the internet.

These Indian examples of market disruption indicate that traditional industries are experiencing a transformation in every sector in this study as a result of the digital disruptions of new companies in those industries.

### Implications for Traditional Indian Businesses and Policymakers

The implications of these findings for traditional businesses are clear. For the organizations that approach digital transformation as a technology procurement exercise will continue to see high failure rates. The decisive success factors for adoption within traditional businesses will not be the tools with which they will have to work. Most relevant digital tools are already available and within budget for traditional businesses. The factors that will determine the success of digital transformation within these sectors will be the commitment of the leaders of these organizations, an approach to digital transformation that addresses the fear of becoming obsolete within these organizations, and the model for financing these digital transformations that accepts the J-curve dynamics of such investments.

The approach that should be taken by traditional businesses in adopting digital technologies will be to first invest in digital tools that require minimal change in business practices. Such tools could include digital payment systems and WhatsApp-based communication tools with customers and suppliers of the products of these businesses. Once such tools are in place and proven to provide value to these organizations, investments can be made in more involved and structured digital systems such as ERP and CRM software and software that provides analytics for the monitored businesses. In addition, it is necessary for all levels of employees of these organizations to adopt these technologies since exempting certain staff from such requirements will create two-tier cultures within the organizations that will halt the digital transformation of these companies altogether. This approach is consistent with the suggestions of Kotter's (1996) model for digital transformation of organizations.

The most important issue that remains to be resolved in the context of India's digital transformation is the digital infrastructure deficit in rural and semi-urban traditional businesses. Though the benefits of the digital infrastructure that India has developed are currently becoming more readily available to the urban knowledge economy businesses of the country, the traditional business sector of India that operates in semi-urban and rural areas is remaining relatively unaware of these digital tools and is unable to experience the same benefits from digital transformation that its more urbanized counterparts are experiencing. The solution to this problem is not the adoption of digital technologies within these businesses, but in creating policies that will invest in the digital connectivity of these regions of India. Pandey, Kumar, and Gupta's (2024) analysis of the challenges of digitalization of SMEs in India indicates that the digitalization of the traditional business sector of India requires investments in both the technology and the workforce of these companies.

### **Limitations of the Study**

This study has several limitations. For example, although the survey respondents represent various businesses, the relatively small sample size limits the strength of any statistical generalizations from the survey. Additionally, the qualitative interview subjects were obtained through purposive sampling, which introduces a bias toward businesses that have already adopted various forms of digital technology into their business processes; businesses that are considering such an adoption are underrepresented. Furthermore, because the survey was cross-sectional in nature, it is possible that the same organizations could have different responses to the same survey questions twelve months after the survey was performed. Additionally, the survey did not include a variable specifically relating to the connectivity of the businesses to the digital infrastructure necessary for digital transformation. This variable was revealed during the qualitative interviews as a potential area of interest regarding the digital transformation of traditional Indian businesses. Finally, because the revenue figures for the businesses were self-reported, there is a potential bias in this data collection method; verification of the revenues of these organizations through an independent third party would reduce this source of error.

Future research on this topic can take several different directions. For example, a research study that collects data from a large number of traditional Indian businesses ( $n > 500$ ) that utilizes stratified sampling to ensure even representation of businesses from the different regions of the country would lead to more statistically generalizable results. Additionally, it may also be interesting to perform research studies that focus on the agriculture and manufacturing industries that are different from the main industries that have been discussed thus far in their requirements for digital infrastructure; an adoption of the standard digital business transformation methods may not be effective in these industries. Furthermore, longitudinal studies that continue to follow the same group of Indian traditional businesses over a three- or five-year period would be of interest to determine the J-curve effect and the eventual return on investment of the digital transformations that have been implemented into these organizations. Finally, it would also be of interest to perform studies on the groups of businesses that have not yet adopted digital technologies; determining the reasons that these businesses have not yet begun to implement digital transformation processes would also help to contribute to the scientific discussion on the topic.

### **V. Conclusion**

This research set out to investigate the digital transformation of traditional businesses in India using a mixed methods research approach to gather evidence from both 55 different survey respondents as well as five interviews with business owners and managers from different sectors. The research findings from these two groups of participants revealed the extent, impact, and barriers to digital transformation of traditional Indian businesses.

While digital transformation in India is widespread (81.8% of traditional businesses have initiated the process), it is also fragile and lacking in both technological and skilled factors necessary to ensure the success of the transformation process. Resistance within the organizations is a major barrier to successful digital transformation, indicating support for the change management literature (Kotter, 1996; McKinsey & Company, 2022). Furthermore, a significant positive correlation exists between digital transformation and revenue for those organizations that undertake the digital transformation process ( $r = 0.521$ ,  $p < 0.01$ ). As such, these findings answer the first three research questions; the findings indicate that skills gaps, budget constraints, and cultural

resistance are the major barriers to digital transformation in traditional businesses in India (though an infrastructure deficit exists as well, though was not captured in the survey).

The interview findings reveal five major themes regarding digital transformation in traditional Indian businesses: digital transformation is necessary for survival in traditional businesses; the presence of digital transformation leaders indicates a successful transformation process; resistance within the organization is the major barrier to transformation; uncertainty regarding the return on investment (ROI) for digital transformation is a barrier to transformation for many organizations; and the existing digital infrastructure deficits for many traditional businesses is a major barrier to transformation that has yet to be adequately addressed by policy. These answers to the fourth research question reveal the answers to what is required for successful digital transformation of traditional Indian businesses: a people-first, leadership-led strategy that recognizes the J-curve of digital transformation and all stakeholders within the organization.

While India may have a digital ambition deficit, it does not appear to have a lack of ambition regarding digital transformation of its traditional businesses. What the country does require are the organizational and policy changes necessary to enable such a digital transformation for traditional small businesses in India, one decision at a time. For the farmer who lives eighty kilometres from Delhi and lost a sale due to the internet being down, for the tuition centre founder who spent four lakhs rupees on software that the organization did not use, and for the banker who understands the fear of an officer becoming obsolete in their job, digital transformation for traditional Indian businesses is not a concept to be understood from afar. For these individuals and many more like them, digital transformation is the most important business decision of their lives.

### References

- [1]. Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital Business Strategy: Toward A Next Generation Of Insights. *MIS Quarterly*, 37(2), 471-482. <https://doi.org/10.25300/MISQ/2013/37:2.3>
- [2]. Braun, V., & Clarke, V. (2006). Using Thematic Analysis In Psychology. *Qualitative Research In Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- [3]. Christensen, C. M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms To Fail*. Harvard Business School Press.
- [4]. Creswell, J. W., & Plano Clark, V. L. (2018). *Designing And Conducting Mixed Methods Research* (3rd Ed.). SAGE Publications.
- [5]. Davis, F. D. (1989). Perceived Usefulness, Perceived Ease Of Use, And User Acceptance Of Information Technology. *MIS Quarterly*, 13(3), 319-340. <https://doi.org/10.2307/249008>
- [6]. Gupta, K., & Lahiri, M. M. (2025). Digital Transaction In Indian Payment Ecosystem: A Comprehensive Analysis. *Journal Of Marketing & Social Research*, 2(5), 223-229. <https://www.jmsr-online.com/article/digital-transaction-in-indian-payment-ecosystem-a-comprehensive-analysis-265/>
- [7]. Kotter, J. P. (1996). *Leading Change*. Harvard Business School Press.
- [8]. Kyndryl. (2025). *Kyndryl Readiness Report 2025: AI Delivers Early Returns, Pushing Enterprises To A Tipping Point*. Kyndryl Holdings
- [9]. McKinsey & Company. (2022). *Common Pitfalls In Transformations: A Conversation With Jon Garcia And Sascha Lehmann*. McKinsey & Company
- [10]. NASSCOM. (2024). *Indian Tech Industry: Annual Strategic Review 2024*. National Association Of Software And Service Companies. <https://www.nasscom.in/>
- [11]. Pandey, V., Kumar, A., & Gupta, S. (2024). Assessing The Need For The Adoption Of Digitalization In Indian Small And Medium Enterprises. *Open Engineering*, 14(1), Article 20240072. <https://doi.org/10.1515/eng-2024-0072>
- [12]. Parra-Sánchez, D. T., & Talero-Sarmiento, L. H. (2024). Digital Transformation In Small And Medium Enterprises: A Scientometric Analysis. *Digital Transformation And Society*, 3(3), 257-276. <https://doi.org/10.1108/DTS-06-2023-0048>
- [13]. Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities And Strategic Management. *Strategic Management Journal*, 18(7), 509-533. <https://doi.org/10.1002/Smj.4250180703>
- [14]. Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital Transformation: A Multidisciplinary Reflection And Research Agenda. *Journal Of Business Research*, 122, 889-901. <https://doi.org/10.1016/j.jbusres.2019.09.022>
- [15]. Westerman, G., Bonnet, D., & McAfee, A. (2014). *Leading Digital: Turning Technology Into Business Transformation*. Harvard Business Review Press.