Digital leadership transformation in India

by

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Abstract

This research study examines digital leadership transformation in India. The purpose of this study is to provide an understanding of the current state of digital leadership in India and to explore the factors driving the transformation of digital leadership. A secondary data analysis approach was used to investigate the current state of digital leadership in India. Data was collected from existing literature, reports, and statistical databases. The findings of the study indicate that digital leadership transformation in India is being driven by the rapid adoption of digital technologies, the increasing availability of digital talent, and the need to develop innovative strategies and solutions for a prosperous future. Furthermore, the study found that digital leadership transformation is also driven by the need to enable a culture of innovation, create a more agile and adaptable organization, and enable more effective decision-making. The research provides insights into the current state of digital leadership transformation in India and highlights potential areas for further research.

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List of Abbreviations

AI- Artificial Intelligence

BI- Business Intelligence

CDI- Coalition for Digital Intelligence

CEO- Chief Executive Officer

CRM- Customer Relationship Management

CXO- Chief Experience Officer

DQ- Digital Quotient

DX- Digital transformation

GDP- Gross Domestic Product

HCL Technologies- Hindustan Computers Limited Technologies

HR- Human Resources

ICT- Information and Communications Technology

IEEE SA- Institute of Electrical and Electronics Engineers Standards Association

IoT- Internet of Things

IT- Information Technology

JAM- Jan Dhan Aadhar Mobile trinity

JSTOR- Journal Storage

KPI- Key Performance Indicator

LMX- Leader-Member Exchange

MeitY- Ministry of Electronics and Information Technology

NeGP- National e-Governance Plan

OCB- Organizational Citizen Behaviour

OECD- Organization for Economic Co-operation and Development

OT- Occupational Theory

PDF- Portable Document Format

R&D- Research and Development

ROI- Return On Investment

SMEs- Small and Medium-sized Enterprises

SMS- Short Message Service

TCS- Tata Consultancy Services

TRA or ToRA-Theory of Reasoned Action

UPI- Unified Payment Interface

USD- United States Dollar

Chapter 1: Introduction

1. Introduction

This qualitative study applies an exploratory approach to study the issues and difficulties arises when implementing digital leadership as a replacement for traditional leadership in India. The study will also concentrate on the challenges that the nation is currently experiencing as it implements the digital transformation strategies and leadership techniques in the organization. For doing that, the study acknowledges and draws the results from the existing literature done by prominent researchers, managers, practitioners, and human resource development scholars in the evolution of digital transformation and leadership techniques.

Through the various studies done in the area of digital transformation, Promsri (2019) states that the terms "digital leadership" and "the digital leader" must be distinguished when talking about digital leadership. The term "digital leadership" resembles the available digital resources of an organisation which are used judiciously to meet its organizational goals. The individual who is in charge of using the digital resources of the company and monitors the efficiency of their implementation is known as a digital leader (Promsri, 2019). A competent digital leader will be conscious of the corporate objectives and understand how their duties contribute to them. The use of technology to improve a company's ability to respond to changing client demands and internal operational needs will also be examined by these digital leaders.

Accordingly, a digital leader will be the one to drive this success through the employment of new, quick, and regularly changing digital technologies, which is why it's so important to have digital leadership in place. Digital leadership is hence, of paramount importance as it enables organizations to optimize their workflows and operational procedures, thereby allowing for the swift uptake of new technologies, products, and services. Furthermore, it is also instrumental in the preservation of existing systems and IT processes that are integral to the organization's legacy, as well as fostering innovation. As a standard premise, these are some of the most specialised advantages of digital leadership that provide it with its highest value.

a) Digital Culture **-** To enhance their productivity, many corporate departments will need various digital technologies. This may be accomplished within the organisation by leveraging a competent digital leader who offers the teams the best-in-class tools and techniques at the

necessary times. Let us use Google Drive as an illustration. Google Drive is a tool that businesses may use to create and view documents with specialised data. Remote workers can additionally collaborate and share papers using this platform. People can instantly see who added, updated or removed any kind of information because every alteration is preserved.

b) Employee Productivity – Although the tools a company has access to are intended to boost productivity, without digital leadership to encourage their use, employees may find it difficult to put them into practice and make the most of them (Promsri, 2019). The team will be able to concentrate on using technology in a secure manner and in accordance with business requirements thanks to digital leadership.

c) Customer Satisfaction – A happy consumer won't have any reasons to go to a rival company, but an unhappy one will. By enhancing ease, speed, and customer support opportunities, digital leadership can aid in this. A consumer will become more and more satisfied with the company's goods or services as a result.

d) Enhanced Revenue Generation – Ensuring that providing best-in-class timely services to as many customers as possible is viewed as the best mode to gain better revenue generation for the business and there are several ways by which digital leadership could drive this. Some of them are:

- ***Improved Customer Retention Rate –*** Customers are more likely to be satisfied and stay as customers if businesses can better serve them with digital tools.
- ***Increasing the Number of Customers Served –*** The operational costs will be reduced thanks to the use of digital tools.

There is a relationship between leadership and country culture, according to the study. Even though it is crucial for leadership to shape culture and be a part of performance-related cultural processes, culture is also a requirement for leadership. The history of national culture is extensive, and it plays a crucial role in creating shared meanings and values for future generations. According to research, there is a significant correlation between the national culture and the expectations of leaders in terms of their behaviour (Sheninger, 2019). Therefore, it

becomes crucial to take the cultural environment into account in order to facilitate a smooth transition from traditional to digital leadership.

A review of historical leadership patterns and the status quo is necessary to plan the next steps toward digital leadership because India is at the forefront of transformation and progress in terms of incorporating technology in management. The terminus of this thesis is to discuss the particular issues and difficulties that arise when implementing digital leadership as a replacement for traditional leadership. It also offers recommendations for the same in terms of particular competencies. The main theoretical foundation for this thesis has been thought to be the LMX hypothesis.

1.1 Background of the study

1.1.1 The concept of Digital Leadership

Based on the evidence of a Ritter (2015) study, digital leadership is the strategic use of a company's digital assets to further the aims and objectives of the organisation. It's vital to give a general review of digital leadership before delving deeply into how the introduction of digitalization has changed leadership patterns in India. These days, Indian business organisations must make investments in technology equipment and digital systems in order to maintain their competitive edge. These technological tools and systems will hasten to manufacture and improve communication, giving them a stable competitive advantage. Businesses are allegedly moving toward effective digitization.

According to the evidence provided by Sagbas and Erdogan (n.d.), a successful digitization plan necessitates a capable digital leader who can influence the workforce toward digitization. It should be emphasised that digital leadership focuses on changing people's behaviours and ways of functioning within a specific commercial organisation through digital means. In order to effectively create an organization's business strategies, Gorton (2018) found that digital technology and procedures must be integrated. In order to do this, organisations in India are putting a focus on skill development for their leaders as a continual process so that they can fully understand digital trends, tools, systems, etc.

The digital leaders of India focus on creating collaboration to achieve digital transformation, according to the Afshar (2021) report. They view India as a favourable location for technological innovation and application. The leaders of India's IT sector get together and work together to create the path for India's transformation to digital leadership. In addition, the on-campus form of employment has given way to the remote work paradigm, particularly in the IT sector. It should be noted that in such a situation, India's digital leadership has switched toward thoughtful, adaptable improvements in times of crisis.

In their efforts to promote digital leadership, the leaders of Indian commercial organisations have also given attention to employee engagement and mental health issues. Additionally, studies show that 95% of business organisations have accelerated their transition to digital transformation (The Economic Times., 2020). The number of digital leaders in India has climbed

by 12.3% as of 2018, while the percentage of digital adopters on the Indian subcontinent has risen to roughly 33.5% by 2018 and will reach 55.3% by 2020 (Economic Times., 2020). The digital leaders in India also continue to create a strategic framework that aids in the efficient application of technology. Thus, there is a greater chance that this will contribute to creating a sustainable and welcoming atmosphere in business.

1.1.2 Basic Qualities of a Digital Leader

Digital leadership in today's environment is a clear balancing act that needs a certain set of talents to be successful for the leader in question, their organisation, and the workforce as a whole. Success in this digital era is strongly dependent on leadership development, according to a Deloitte survey indicating that 42% of significant organisations name it as a critical focus (Brett, 2020). The basic qualities of a digital leader embark:

a) Communication – Digital leaders could develop a robust network of communication across the different levels of the company by leveraging digital technologies. Digital leaders are required to keep a strategic plan in position and they must be aware of the nature, demands and pain points of their target audience before they could adopt this. For example, online conferences. Due to their busy schedules and potential travel, managers can participate virtually in meetings held within their organisation. They can communicate virtually with anyone and stay current with the latest developments in this way.

b) Vision – It is simpler to enlist the employees in the needs and expectations of the company if the firm's vision is well defined since they will start to accept what the company know and believes in (Brett, 2020). One of the essential qualities that distinguish digital leaders from the competition is this.

c) Digital Literacy – Digital business models are disrupting and reinventing industries, but many organisations do not think they have the leaders, operating systems, or capabilities to do so. These companies' needs require CEOs who are aware of them. “We require a new kind of leader," as described by Deloitte, who is younger, nimbler, and cognizant of the myriad obstacles that may well be presented to them in their position.

d) Strategy – In addition to having a crystal clear vision for fostering future growth, the most effective digital leaders will also have a plan in place that enables them to foster an internal digital culture that is open to change. A comprehensive strategy underpinning the digital agenda is essential if this is to truly take place.

e) Innovation – Leadership needs to be open to experimenting with cutting-edge technology that will assist their teams to advance in the always-changing digital environment. Leaders must adopt a fluid and adaptable strategy while developing a digital workforce in order to achieve this. Although there will be preconceived risks, such as adopting new technology before the competitors, the outcomes could be very worthwhile (Rüth and Netzer, 2020). The following topic, taking risks, is directly related to this.

f) Risk-Taking – Organizations must be careful not to prioritize speed and innovation over tried-and-true technology, but taking calculated risks is an indigenous component of digital leadership. The "CEO of Facebook", Mark Zuckerberg, backed this idea by stating that, the biggest danger is not willing to take any risk. In a world that is undergoing rapid change, keeping safe is the one strategy that is sure to fail".

g) Adaptability – A digital leader must possess the capability of adapting to the ongoing changes in their respective business or sectors and be always ready to take necessary actions in a manner consequent to minimise the impacts of those changes on their organisation (Rüth and Netzer, 2020). A leader, who refuses or is not able to keep pace with the adaptation of new entities, is quite likely to bring the company to a disastrous fate.

h) Talent Spotting – Digital business executives must be able to identify the areas of their organisation which require modifications and where the talent is lynching behind. Both people and technology are essential to embark on the same.

The information provided above should make it evident that the administration of any organisation requires effective leadership. In addition to influencing and motivating the team to work toward goals, efficient leadership aids in maximising efficiency so as to achieve company goals.

1.1.3 Skills fostering digital leadership

In order to input, organise, and integrate digital resources, one needs to have the knowledge and the ability to comprehend the information required from digital technology sources (Bresciani et al., 2021). Numerous articles about the various skills in digital have been written in the past, but three always stand out as being necessary for digital leaders to have or take into account in their approach. These are:

a) Programming – For digital leaders, programming is an essential ability because they need to have a basic understanding of it in order to assist their projects.

b) Project Management– One of the best technical abilities a digital leader may possess is the ability to successfully coordinate resources, money, and people. A competent project manager is blessed with the potential to complete projects quickly and assign the right team members to duties. The significance of this is that by assembling the right team, issues that may arise along the route may be resolved.

c) Business Intelligence and Big Data Analytics – This offers companies with vital datasets that could be utilised for retaining market share as well as elaborating the competitive advantage. Big Data analysis is essential to corporate operations. Large data sets must be evaluated in order to find relationships, highlight desirable clients, and calculate ROI (Petry, 2019). Correct data analysis leads to more effective sales as well as greater prospects for revenue generation.

d) Information Security – In every firm, security is a major concern. Data breaches can entail serious consequences, including losing consumers and harming the reputation of the brand. As a result, all digital leaders must take technical security specialists into consideration both before and after a task.

1.1.4 The Digital Roadmap

A digital roadmap must be put into action by all digital leaders. An overview of the business objectives and the digital initiatives that can assist them to achieve them are provided in this document. Essentially, it serves as the guide for taking decisions that are all in line with the digital strategy. Both short-term and long-term goals will be included. It needs to specify who the major players are and who is responsible for what. It should offer precise, succinct counsel

on the activities that the company needs to prioritise, and it should subsequently be distributed throughout the company.

a) Defining digital strategy **-** One must begin by having a clear idea of what he/she hopes to accomplish with it. This could involve things like brand amplification, rising sales, or bettering consumer satisfaction. Following such, newer objectives can be specified.

b) Setting a deadline **-** Once the strategy has been created and outlined, it's crucial to choose a time period for its completion. The digital plan should specify the deadlines for both the project's overall completion and its individual components. Realistic expectations are also crucial.

c) Identify stakeholders **-** One needs to specify who will be in charge of what in order to keep the roadmap on course. The digital leader must guarantee that the stakeholder is committed to and involved in the strategy.

d) Setting KPIs **-** It is essential if one wants to gauge the effectiveness of the strategy and identify any areas that may need to change or fall behind. Data are essential in this. Progressive leaders are individuals that have a wider perspective and look beyond their company. They take a look at potential issues and see opportunities. Priority must be given to the wellness of their employees and clients (Kane et., 2019). A progressive leader will have specific characteristics, which include:

- ***Setting the example*** **-** By setting an exemplary instance of leadership, one may create the conditions for the kind of leadership he/she desires and can expect to see in his/her company. Additionally, it establishes a standard that he/she can direct others to uphold.
- ***Sharing Vision*** **-** If the employees don't believe it or comprehend it, one cannot expect them to follow. Collaboration is essential for ensuring a unified approach to achieving the desired end result, as it gives employees the assurance that they are all striving towards the same goal with a shared understanding.
- ***Acknowledging Success*** **-** Honouring accomplishment and celebrating it expresses thanks to those who achieve it. People are inspired by their accomplishments. Recognizing success encourages those behaviours, which in turn causes the organisation as a whole to repeat them.

1.1.5 An outlook of India's Digital Leadership Domain

Over the years, leadership has drawn a lot of interest from academics, businesspeople, educators, and government officials. As a result of changes like industrialization, globalisation, and most recently digitalization, the concept of leadership has undergone a tremendous lot of change. Given the numerous changes that the internet and cloud computing have brought about in organisational systems and procedures around the world, it is prudent to comprehend the relationship between digitalization and leadership in order to predict how leaders should position themselves to meet future challenges.

Leadership is a concept that is constantly changing, just like technology, which is what leads to digitalization. Western civilizations are conducting the majority of these queries well. As technology is developing and has a big impact on how daily activities are carried out as a result of digitalization, it is more important to examine the relationship between digitalization and leadership in eastern cultures, particularly India. As per the views of Prince (2018), with more than 40% of Indians having internet access, and thanks to the efforts of both the public and commercial sectors, India is on the path to becoming a technologically advanced nation.

India also has the greatest population of online users. In these difficult, tumultuous times, leaders find it difficult to lead. To lead successfully in the digital age, it is crucial to assess the skills, knowledge, and abilities that leaders currently possess as well as those that they still need to develop. Leader-member interchange is thought to be an important notion to consider when examining the whole framework of Indian traditional leadership. In order to adapt to digital developments, it is suggested that Indian leaders have a "creative personality" after discussing the issues and gaps.

The price decline expanded accessibility of internet connections, and the growing use of smart gadgets all contributed to the rise in internet usage. India has approximately 560 million subscribers, second only to China, and the typical user watches 17 hours of content on social media platforms per week (Mas & Sri Darma, Gede, 2020). Rapid digitalization has also been significantly aided by the Indian public sector. Businesses have been strongly encouraged to go digital by initiatives like Aadhaar, the digital identification programme, and the "Goods and Services Tax Network". Innovative business practices have led to competitive pricing across the

board in the private sector, as seen with Jio's aim to bundle its mobile services with inexpensive devices. Data consumption has increased by 153% since 2013 when data costs fell by 95% (McKinsey, 2019).

Today's leaders must possess the knowledge and acumen to comprehend the current digital requirements, modernize their own and organizational processes to meet those needs, predict future demands, and prepare their followers for the changing digital times. Moreover, they must be able to lead in a way that takes into account the needs of their followers in the digital realm, while also preserving the cultural environment in which this interaction occurs. To accomplish this, leadership skills are essential. In the Indian context, competencies often overlap with skills, but they involve more than just this.

The term "competency" refers to a confluence of information, skills, values, attitude and standards. Competencies are more than just the ability to perform activities correctly under ideal circumstances. An effective leader is capable of functioning at their highest level regardless of the situation, be it favourable, unfamiliar, or unforeseen. Competencies, in the opinion of Erpenbeck and Rosenstiel (2003), involve engaging in creative thought processes and are the outcome of the dispositions occurring due to self-organization in human interaction. One's capacity for self-organization can be used to determine competencies. Skills, knowledge, and talents can all be directly assessed; however, the skills can only be indirectly measured or observed in the past by taking into account personal preferences, reviewing performance data and monitoring real behaviour. Competent leadership behaviour may be based on the ability to carry out tasks in an unfamiliar and uncertain environment.

As entailed by Bharadwaj et al. (2013:490), "Competencies are based on the foundation of knowledge, constitute values, disposed of as abilities, consolidated through knowledge and realized on the basis of will". In light of this idea of competencies, research into the skills that conventional leaders need and the skills that the new digital world will require of them will be important. There is a discrepancy between what leaders can provide and what the digital world wants, according to studies conducted in the Indian context. The LMX theory, its relevance in the digital world, the digitization processes in India, the challenges faced by leaders in meeting digital expectations, and finally, competencies for digital leadership were all examined by the writers in an effort to narrow the gap (Bharadwaj et al., 2013).

A relationship-based, two-way activity, leadership is similar to other social interactions. Consequently, theories like the leader-member exchange (LMX), which views leadership as a multidimensional social procedure and therefore enables manipulation by various factors like the cultural context of the relationship, are supplanting, if not completely replacing, the uni-dimensional leadership theories that concentrate only on the leader (leader characteristics and styles).

1.1.6 Traditional Indian leadership

India has been incorporating beliefs and methods from all over the world with regard to governance and administration for ages. One of the earliest comprehensive treatments of concepts related to financial management, trade and commerce, and human resource management may be found in the treatise "Arthshastra." Whether intentionally or not, these concepts have now permeated national organizational thinking (Rangarajan, 1992; Sihag, 2004).

By 250 A.D., Roman-style organised governance had spread to India as a result of greater trade and the development of diplomatic relations. Following that, the Gupta Dynasty contributed to the development of laws and rules for management and governance systems for a number of centuries. Later, starting around 1000 A.D., Islamic monarchs had a significant impact on many facets of trade and commerce in the nation. The next significant factor that affected India's managerial history for nearly two centuries was British colonial authority (Chatterjee, 2007).

Thus, the emergence and operation of leadership in India continue to be significantly influenced by the ideals of leadership that emerged from these ancient wisdom ideologies. Modern Indian management is influenced by the complexity of contemporary global ideas while also being grounded in traditional knowledge. Despite the fact that most societal values are still firmly rooted in antiquated ideologies, business aims and principles of global relationships have begun to permeate management. There are possibilities and problems present during this time of transition.

1.1.7 LMX (Leader-Member Exchange) in the Indian context

Studies focusing on LMX in non-western contexts have often found limited relationships between leader trust, workplace happiness, OCB, and procedural fairness and LMX, indicating

that culture matters when it comes to LMX results. Since cultural norms are so difficult to change or adapt to, leaders often struggle to do so. As a result, leaders work hard to create new symbols that are in line with the current societal beliefs (González-Navarro et al., 2020).

Removing hierarchies by open communication, developing collaborative tools, and selectively employing new workers who help to realise the organization's mission. The general cultural orientation of India (in terms of being a collectivistic society), the conventional leader-member interaction pattern (marked by significant power distance), and the leader's role are essential factors to take into account while using the LMX in the Indian context (from a predominant paternalistic tradition). Individualism-collectivism and the power distance both have an impact on the LMX findings (Anand et al., 2011).

1.1.8 The Indian way of digital leadership transformation

The internet and digital technology have become more and more ingrained in people's daily lives over the past several years. India's path to growth began with the 1950 strategy, which included five-year goals for achieving self-sufficiency and a focus on rapid industrialisation. Smart industrialisation, which focused heavily on creating practical digital advances, came along with rapid industrialization. From this perspective, it is important to note that before 1980, India's IT sector solely consisted of hardware items, and the software business was still in its infancy. The software sector experienced substantial expansion as a result of trade liberalisation and the removal of entry-level restrictions (Cuts-international.org. 2022).

In addition, the Indian government launched a number of programmes including Digital India, Make in India, Skill India, etc. that contributed to the country's continued digital transformation. In a nutshell, the themes that sparked India's digital transformation journey over the past 75 years have been the replacement of human labour with smart power, the emergence of smart industry, and India's aim to create a cashless, paperless, and faceless economy. The goal of Indian firms was then followed by the statement that they wanted to distinguish out from the competition by offering clients an experience rather than merely a product or service. With these developments, the Indian government has taken several significant actions and implemented substantial policies that have influenced India's transition to a digital economy.

According to Gupta and Auerswald (2019), the strategic digital revolution in India included a large amount of demonization. Following it, there has been a significant acceleration in institutional and economic evolution. Due to the Indian government's strategic decision, there has been a considerable digital change as a result of the rise in the use of digital payments. There are also a number of other instances where, over the past ten years, the nation has undergone a digital transition. Before delving further, it's vital to note that India has more than 500 million internet users, which has made the nation's transition to the digital age much simpler.

India is thought to be the world's digital consumer market with the quickest rate of growth, and its digital connectivity's are rapidly expanding, according to a report by Jayswal (2022). However, inconsistent business adoption has been observed (Srinivas and Mahal, 2017). The UPI and Rupay card transactions are growing in popularity, however, there is a critical need to develop these businesses internationally. However, it should be emphasised that certain people, mainly in rural or semi-rural areas, still prefer cash transactions despite the surge in digital transactions or internet purchases.

The Digital India initiative and India stack had played a significant part in the several steps in India's journey toward digital transformation. The government sought to make internet connection accessible to all Indians through this mission so that each individual may have their own digital identity. It has been noted that this action has made it possible for about 99% of the population to sign up for Aadhar, which was later expanded to encompass financial inclusion. This has additionally assisted in making it possible to convey government benefits directly to the people, improving public participation at a lesser cost. This initial step of giving citizens digital identities is shown to have evolved into a digital stack composed of compatible software layers for enabling additional digital payments (India Brand Equity Foundation, 2021).

As a result, this has made it easier for the Indian government's Jan Dhan scheme to open more than 350 million bank accounts. Additionally, it has been calculated that almost 85% of Jan Dhan account members now use their accounts to seek credit or to save money. India's population of 1.2 billion has had access to smartphones in recent years. It has also made it easier to implement the "Jan Dhan Aadhar Mobile trinity (JAM)", which allows people to access their bank accounts on mobile devices and represents a significant step in the country's digital transformation.

In addition, the formalisation of the economy and the government of India's tax reform measures are seen as additional significant steps in this direction. By formalising the economy and integrating digital technologies, the government has been able to more easily identify the approximately 225.000 shell businesses that, despite carrying out only minor functions, have a significant cash flow. Additionally, it has helped the Indian government and banking industry address issues with account verification, anonymity, deceit, etc. In addition, the data produced by the digital economy has assisted in strengthening the nation's tax system.

One such example of it that has further assisted in decreasing the complexity associated with taxes is the implementation of the GST, a single national tax. With more than 12 million business firms registered as of 2019, this has further contributed to making conducting business in India easier. It should be noted that India's ranking on the "World Bank's Ease of Doing Business Index" increased from 142 to 63 in 2019. Based on the evidence provided by Lakshminarayanan (2020), the increase in the number of IT businesses operating in India recently has further increased, creating a lot of employment prospects.

India also started its "Digital Health Mission" on 15th August 2020 to integrate digital technologies like cloud computing, AI, IoT, etc. into the healthcare industry. Despite the fact that these shifts initially caused uncertainty and complexity, people have progressively begun to accept these changes and have fully embraced digital technologies as a whole. According to a report by Varindia (2020), as of 2019, cybercrime rose by roughly 63.5% in India due to the country's growing digital transformation. Although they have many advantages, the rising cyber security risks on the Indian subcontinent can be seen as a serious setback in the age of the digital revolution.

1.2 Research Problem

Most of the studies in the literature indicates that the digital transformation in India is an outcome of a clear value alignment between the core beliefs that individuals hold. Additionally, the operating values and experiences towards the desire to adopt a fundament attitude for effective fulfilment of performance criteria.

India's market is a major player on the international stage, and government funding for the Digital India programme is enabling the full potential of the internet. Despite the fact that Indian business executives continue to experience good performance today, many of them still grapple with what their organisations should mean by "digital." A sample of more than 2,600 Indian executives is compared to the digital leadership profile in Korn Ferry's report. According to the research, for their organisations to experience true and lasting digital change, Indian leaders must adopt a fundamental attitude shift (Cahyadi and Magda, 2021). Great digital leaders not only provide results now, but they also lay the groundwork for success in the future. India's market demand will only grow; thus businesses are scrambling to gain a competitive edge.

The inclination for structure among Indian leaders currently limits their power to engage and inspire their people in uncertain circumstances and foster new thinking, despite the fact that they are highly driven by challenges and have a demonstrated ability to do so. Additionally, it discourages curiosity, self-assurance, and taking risks by encouraging the "safe" way rather than allowing room for more innovative thinking and iterative decision-making. Indian leaders find it difficult to evolve with the times since they feel more at ease in particular situations. This reduces their ability to adapt to the complex digital environment (Prince, 2018). To lead in the digital age, they must become more at ease in this area. Additionally, it will provide them with the assurance to take the risky decisions necessary to get their while assisting them in creating a compelling vision for the enterprise's digital future.

As previously said, if the digital divide in the Indian context is closely examined, the digital gap in Indian business can be understood to some extent. Digital gaps arise in India as a result of uneven growth and corporate advancement brought on by the digitization process. In order to determine if the modern ICT-based technology paradigm supports the development or raises more barriers in the Indian context, Maiti et al. (2020) examined the challenges of digitalization and development in India.

1.3 Purpose of the Research

For the entire Indian subcontinent, the shift from Industrial Revolution 4.0 to digital transformation was a significant change. Digital transformation is currently a hot topic due to the rising trends of technical innovation, globalisation, and greater internet usage in all spheres of society, from businesses to households, education to health care. The automation and digitization of everything in business have resulted in several changes to business strategies, models, and processes. According to a study by Porfrio et al., (2021), the use of computers to manage digital data is where the digital transformation of businesses began. With the expansion of internet access since then, numerous digital technologies have evolved.

Artificial intelligence, cloud computing, social networking, big data, and other digital technologies are developing quickly. In this regard, it must be noted that every digital transformation necessitates the need to modify the workforce, professional competencies, leadership philosophies, organisational structures, etc. Digital transformation is frequently led by people or groups of persons within a business (Parikh, 2021). In light of the arrival of the digital revolution, it becomes necessary to delve deeply into the topic of the transformation of leadership.

"Digital India," the government of India's flagship programme, has recently supported the digital change in India and served as a catalyst for it. In addition, a number of other projects have been launched with the goal of achieving effective digital transformation in many areas of the economy (Kaka et al., 2019). This study will look at a number of digital transformation-related issues in order to examine changes, trends, and viewpoints in Indian leadership cultures. India's status as a developing nation and the country's digital transformation scenario has been covered in this study.

The use of various technologies to support digital leadership, digital transformation, and digital leadership tools have also been researched. The variables that are most likely to affect the adoption of technology for digital transformation have been thoroughly discussed, and then several pertinent digital leadership models and theories have been presented. These are then followed by the current leadership and digital transformation trends in India, and at the end, there is a summary of these studies.

Along with the notable increases in numbers, the nation has experienced notable changes in policy during the past few years. According to studies and statistics, a significant number of people have recently been lifted out of poverty, and the number of middle-class families has been rising (ET Now Digital, 2021). India is becoming one of the world's largest marketplaces for MNCs due to the rise of the middle class. In recent years, India has been ranked as the second market for smartphone manufacturers and the fifth largest market for automobiles. The nation is still working toward achieving more advancements in terms of talent acquisition, skill development, technology adoption, national income, social welfare improvements, etc., which could pave the way for a booming digital transformation therefore, this study would play a crucial role in underpinning the best practices, strategic directions and risks associated to adopting, implementing and managing the same. This study would provide a detailed explanation of why India is currently viewed as a developing nation with the hope of quickly moving up to the top three nations in the world and its relation to digital leadership transformation.

1.4 Significance of the Study

This research is essential to the digital transformation of organisations since it will give current companies a new transformation path model by developing digital leaders who will strengthen their corporate cultures and digital competencies. On the other side, this study will encourage the new construct of "co-creation strategy" before it was formed from the marketing theory by extending the new paradigm of co-creation to include it in the strategy to expand (Plotnikov, 2022). The greatest method to hasten the shift is through cooperation and co-creation. In rebuttal to economic evolution ushered forward by digital technology, it will accelerate the advancement of strategic management theory.

Discussing the role of digital leadership in developing co-creation strategy and business model innovation is another of the study's major purposes. This is owing to the significance of the role of digital leadership in fostering different business models and cooperation through harnessing co-creation, in addition to the limits of earlier studies on the subject of the function of digital leadership in connection to business model innovation. It is crucial to take into account the analysis route of efficacy when determining if business model innovation has a specific or implicit link to digital leadership. Co-creation has been used as a means of mediating the relationship between emerging business models and digital leadership.

The rationale of this study is to advance knowledge, add priority transformation initiatives for management in managing digital transformation, and help scholars identify the best course of action for an established company's transition to digital service. The most essential thing for leaders today to understand is how to lead by taking into consideration adherents' requirements related to the digital world without undermining the cultural component in which this sort of interaction takes place. Today's leaders must grasp current digital needs, be able to address those wants by modernising themselves and organisational procedures and be able to foresee future requirements, be capable of anticipating their adherents for the changing digital times. In order to accomplish this goal, strong leadership abilities are essential (AlNuaimi et al., 2022).

Competencies are frequently used interchangeably with skills, especially in the Indian setting, but they go beyond that. With the help of this study, the conventional barriers to understanding, adopting and managing digital leadership transformation in the Indian context can be viewed in a

better way so that decision-making bodies could foster a seamless digital leadership transformation.

1.4.1 Literature Gaps Observed

- Limited research on the impact of digital transformation on leadership styles and practices in India.
- Scarce literary opinions from recent research on the role of leadership in driving successful digital transformation in Indian organizations.
- Insufficient investigation into the skills and competencies required for digital leaders in the Indian regional/localized organizational contexts.
- Limited research on globalization and globalization driver aspects that might affect implementing digital transformation initiatives within Indian organizations.
- Scarcity of studies exploring the cultural and societal factors that influence digital leadership transformation in India.
- Limited research on the ethical considerations and implications of digital leadership transformation in India.
- Lack of empirical evidence on the effectiveness of digital leadership development programs in driving successful digital transformation in Indian organizations.
- Inadequate exploration of the role of digital leaders in promoting employee engagement and well-being in the Indian workplace.

Addressing these gaps through research can help provide insights and recommendations for developing effective digital leaders and promoting successful digital transformations in Indian organizations.

1.5 Research Aim, Objectives and Questions

A review of historical leadership patterns and the status quo is necessary to plan the next steps toward digital leadership because India is at the forefront of transformation and progress in terms of incorporating technology in management. The aim of this paper, therefore, is to discuss the particular issues and difficulties that arise when implementing digital leadership as a replacement for traditional leadership. It also offers recommendations for the same in terms of particular competencies. Essentially, the goal of the study is to determine how important digital leadership transformation is for a growing country like India. The study will also concentrate on the challenges that the nation is currently experiencing as it implements digital transformation, as well as the leadership techniques that must be modified to get around these challenges.

1.5.1 Objectives

The below objectives have been formulated for the study:

- To investigate the idea of digital leadership transformation
- To examine the requirement for digital leadership in a developing country like India
- To analyze steps taken by the Indian government to improve digital technology in the country
- To explore the connection between leadership and digital transformation
- To identify the issues with the digital transformation that Indian business entities are facing
- To provide leadership tactics to reduce the difficulties related to digital transformation challenges

1.5.2 Research Questions

The following questions will be addressed by the study in accordance with the set objectives:

- What is the digital transformation of leadership?
- Why is digital leadership required in a developing country like India?
- What are the initiatives taken by the Indian Government to empower the nation to become more digitally advanced?
- How do leadership and digital transformation relate to each other?

- What obstacles do Indian business organisations have to overcome in terms of leadership and digital transformation?
- In what ways can these digital transformations and leadership transformation challenges be mitigated?

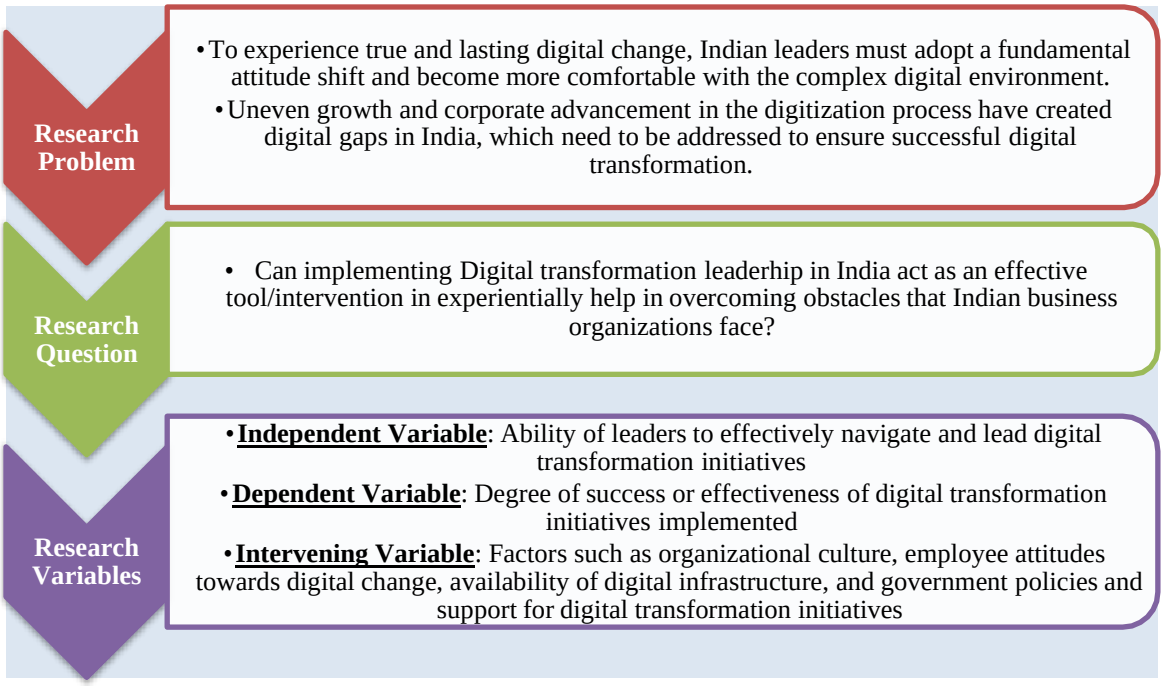

Figure 1: Confirming and Refuting Research Problem, Questions, and Variables.

(Source: Self-developed)

1.6 Thesis Structure

The introduction chapter of the thesis introduces all the theoretical underpinnings of the investigation by outlining prior work and constructs variables. The second chapter is the literature review chapter and it includes an in-depth evaluation of a cohort of literature (previous studies and possible future developments in line with digital leadership transformation). This chapter will help the readers understand the breadth of the study topic while also aiding the researcher to identify the time-based knowledge gaps that are present in relevance to the topic theories. The methodology chapter will define the pathway chosen by the researcher to conduct the study. It includes the specific philosophy, approach, design, data collection and analysis techniques and the ethical considerations that have been chosen by the researcher for conducting the study. The fourth chapter provides presents the outcomes that were generated and discusses them in line with previous secondary works of literature already evaluated to substantiate their authenticity and validity. The conclusion, ramifications, and recommendations for further research will be covered in the last chapter of the study. A pictorial representation of the thesis structure has been given below in the form of a flowchart (Figure 1).

Figure 2: Dissertation Structure

(Source: Self-developed)

Chapter 2: Literature Review

2.1 Chapter Introduction

The translation from Industrial Revolution 4.0 to digital transformation was an extreme change case for the entire Indian subcontinent. With the ever-rising trends of technological innovation, globalization, and increased internet use in every facet of society, starting from households, education, and health to business, digital transformation is becoming a buzzword these days. In business, digital transformation has led to several changes in business strategies, models, and operations, with everything becoming automated and digitized. According to a study by Porfírio et al., (2021), digital transformation in businesses has started with using computers to manage digital data. Since then, various digital technologies have emerged with increasing accessibility to the internet. Digital technologies like Artificial Intelligence, Cloud computing, social media, Big Data, etc., are evolving rapidly. In this regard, it must be said that every digital transformation calls for the need to transform people, skills, leadership styles, business processes, etc. Parikh (2021) opined that individuals or groups often drive digital transformation within an organization. Accordingly, there comes the need to dive deep into the aspect of the transformation of leadership with the advent of digital transformation.

In India, the flagship program of the Government of India, "Digital India," has acted as a catalyst in upholding digital transformation in recent years. Along with that, several other initiatives are taken to achieve effective digital transformation in different facets of the economy (Kaka et al., 2019). This study will cover several aspects of digital transformation to analyze changes, trends, and perspectives of leadership cultures in India. In the literature review section, topics like India's position as a developing country and the digital transformation scenario of the country have been discussed. Additionally, the adoption of different technologies for facilitating digital transformation, digital leadership, and digital leadership tools has also been studied. A detailed discussion has been provided on the factors that are likely to impact the adoption of technology for digital transformation, followed by some relevant digital leadership models and theories. These are further followed by the recent trends in leadership and digital transformation in India and a summary of these studies.

2.2 India as a developing country

India is one of the fastest-growing countries in the world regarding scientific productivity, technological developments, and economic growth. India has shown remarkable progress in the last decade in terms of economic growth. In 2010, the Indian subcontinent was in the ninth position on the basis of nominal GDP. Remarkably, with a wide range of developments in the manufacturing, industrial, agricultural sectors, etc., and considerable investments in infrastructure, R&D, and technology adoption, India is now considered the sixth largest country in the world as of 2022. According to a report by Dimitropoulou (2022), India's GDP is estimated to be around $3.25 trillion making it the sixth-largest country after the USA, China, Japan, Germany, and the UK. As per the report by India Brand Equity Foundation (2022), India is expected to be in the top three positions in the world in terms of economy in the next 10-15 years with its strong partnerships and robust democracy.

Apart from the significant improvements in numbers, the country has also witnessed remarkable policy shifts in the last few years. Studies and reports suggest that in the last years, a considerable mass of people has been brought out of poverty, and the number of middle-class families has been increasing considerably (ET Now Digital 2021). This increase in the number of the middle class has made India one of the biggest markets for MNCs in the world. In recent years, India has been regarded as the fifth-largest market for cars and the second market for smartphone manufacturing companies. Correspondingly, India has emerged as the third-largest unicorn base comprising 100 unicorns with a valuation of about US$332.7 billion.

In terms of demographic structure, India is again going through the "Golden Age of Demographic Dividend" with a considerable increase in the working-age population. As per the report by Thakur (2019), this transition in the demographic structure of India has is expected to sustain till 2055, approximately 37 years. This, in turn, is likely to be a possible indicator of the country's potential growth in the near future. Additionally, as per the evidence given by Dewan (2020), around 77% of the business organizations in India have moved toward technological innovation to attain higher organizational performance and resilience. With this rise in adopting technological innovation, businesses in India have also increased the thrust on digital adoption. It has been estimated that businesses are paving the way to enhance their revenue from digital products and services in the last three years, leading toward further digital transformation. This

acceleration in adopting digital transformation has been increasingly becoming prevalent in large organizations and SMEs. Studies also suggest that India has progressively been heading toward a disruptive technology culture in the last decade.

According to the "Economic Times" report by Roy Chaudhury (2022), international entrepreneurs consider India a significant investment destination with its progressive changes in digital and IT sectors, manufacturing, infrastructure, etc. It has been revealed in the report that around 500 UK-based businesses have been rooted deeply in India, employing more than 400,000 in the last ten years approximately. It has also been observed that businesses in India have been investing in skill development programs for their employees in the last decade. On the other hand, the government has launched several skill development programs and schemes to provide adequate training for youth in market-relevant skills in the last ten years. These studies and figures drive that India has been going through considerable developments in the last decade. The country is still planning toward further development in terms of skill enhancement, talent acquisition, technology adoption, national income, improvements in social welfare, etc. Correspondingly, this drives the fact that India is regarded as a developing country in the world with the expectation of attaining a top-three position shortly.

2.3 Digital transformation in India: Ups and Downs

In the last few years, the internet and digital technologies have been increasingly embedded in people's daily lives. India started its development journey with the 1950 strategy, which aimed toward rapid industrialization coupled with five-year plans for attaining self-sufficiency. With rapid industrialization came innovative industrialization under which business enterprises put a significant focus on making concrete digital moves. In this context, it must be mentioned that before 1980, the IT sector of India only comprised hardware products, and the software industry was not much developed. With trade liberalization and the relaxation of barriers to entry, the software industry showed rapid growth (Cuts-international.org. 2022). Apart from that, the government of India took several initiatives like Digital India, Make in India, Skill India, etc., that further led to India's digital transformation. In a nutshell, the trends that helped in initiating India's Digital journey include the replacement of manpower with smart power with the advent of smart industrialization, followed by India's mission to become a cashless, paperless and faceless economy (India's Digital Transformation Journey over the last 75 years | Team Talk, 2021). This was further followed by the aim of the objectives of Indian businesses to sell an experience to their customers rather than just a product or a service, to stand out in the global competition. With these trends, some major steps and policies from the side of the government of India have influenced this transition toward a digital transformation for India.

Gupta and Auerswald (2019) opined that demonization in India was a significant part of the strategic digital transformation. After that, the institutional and economic evolution had been accelerated considerably. This strategic move of the government of India has increased the use of digital payments, leading to a significant digital transformation. Along with that, there are several other examples for which the country has witnessed a digital transformation in the last ten years. Before going deep into these, it is important to mention that India comprises more than 500 million internet users, making it considerably easier for the country to go through digital transformation. According to a study by Jayswal (2022), India is considered the fastest-growing digital consumer market in the world, and digital connectivity is improving dramatically. However, business adoption has been found to be uneven (Srinivas and Mahal, 2017). The Rupay card and the UPI transactions are increasingly gaining momentum, but there is an utmost need to expand such businesses globally. However, it must be noted that despite the rise in

digital transactions or online payments, some people, mainly in rural or semi-rural areas, still prefer cash transactions.

According to Gupta and Auerswald (2019), among the different moves in the digital transformation journey of India, the Digital India mission and India stack have played a vital role. With this mission, the government tried to make internet access affordable to every Indian so that they could possess their own digital identity. It has been observed that this step has enabled around 99% of the citizens to enrol themselves in Aadhar, which was further included in financial inclusion (Fifteenth & Sabha, 2011). This has further helped enable the transfer of government benefits directly to the citizens, thereby enhancing citizen engagement at a lower cost. This step of providing digital identity to the citizens has proved to have transformed into a digital stack consisting of interoperable layers of software for enabling further digital payments. Accordingly, it has facilitated the opening of more than 350 million bank accounts under the Jan Dhan scheme of the government of India (Mantri & Dhan, 2020). It has been further estimated that around 85% of the Jan Dhan account holders use these accounts to access credit or savings. In recent years half of the citizens of India have access to smartphones. It has further facilitated the implementation of the Jan Dhan Aadhar Mobile trinity (JAM), through which people can access their bank accounts via mobile phones, posing a significant move in the country's digital transformation (Mantri & Dhan, 2020).

Additionally, the formalization of the economy and the tax reform policies of the government of India post-demonetization is considered another important move in this regard. Formalizing the economy by incorporating digital technology has facilitated the government in identifying the around 225.000 shell companies that perform small activities but have a large flow of funds. It has also benefited India's government and banking sector in dealing with problems associated with verifying accounts, anonymity, duplicity, etc. Apart from that, the data generated from the digital economy has helped improve the country's tax structure. The imposition of GST, a single nationwide tax, is one such example that has further helped reduce tax-related complexities. This has further led to ease of doing business in India, with approximately more than 12 million registration of business enterprises as of 2019. It must be noted that India's rank has jumped from 142 to 63 in 2019 in terms of the "World Bank's Ease of Doing Business Index". According to a study by Lakshminarayanan (2020), this improvement in the ease of doing business has further

raised the number of IT companies operating in India, recently generating huge employment opportunities.

Additionally, On September 27, 2021, India has also launched its "Digital Health Mission" integrating the healthcare sector with digital technologies like cloud computing, AI, IoT, etc. Even though these transitions have created confusion and complexities in the initial imposition stages, people have gradually started accepting these changes, embracing digital technologies wholeheartedly. As per a report by Varindia (2020), with the increasing digital transformation in India, cybercrimes have increased by 63.5% approximately as of 2019. Despite having several benefits, these increasing cyber security threats in the Indian subcontinent can be considered a significant downturn that needs to be noticed in the digital transformation era.

2.4 Digital Leadership transformation in India

A variety of factors influences digital leadership transformation in India. Among these factors, the critical ones are listed and briefly listed below.

2.4.1 Technology adoption

Technology adoption is an integral part of digital transformation leadership in India. With the advancements in digital technologies, business organizations have almost forgotten about operating their business processes offline, or without integrating technology with these processes. Similarly, these changes in business processes and the integration of technology in business have also made it necessary for organizational leaders to adapt to changing business environments. In India, changes in leadership patterns or changes in technology adapted by leaders to effectively manage a global workforce have also been observed (Hazem and Zehou, 2019). According to an article by Guha (2018), significant changes have been observed in the communication technologies prevailing in the field of business these days. Initially, business organizations in India used to utilize fax machines, telephones, surface mail, etc. to communicate among themselves. With the improvements in digital technologies, businesses have started using SMSs, emails, and video conferencing tools like Zoom, Google Meet, and several chat software tools these days. These technologies have made it convenient for leaders to manage a large global workforce effectively. These tools have made it easier for a leader at one corner of the world to manage the employees sitting at the other corner of the world.

Additionally, an organization's leaders had to be physically present in the workplace to manage the other employees. Technological innovations like the invention of smartphones, tablets, and laptops have made it easier for them to work flexibly and manage employees without being present physically in the workplace. Most importantly, the adoption of cloud computing software has made it easier for leaders to conveniently store several confidential and important information related to the organization. Apart from that, digital transformation has led to the adoption of Big Data Analytics in business organizations. It has made it easier to track several data and analyze them to come up with an effective business strategy. Initially, it was a complex process to manage large amounts of data and analyze them thereby impacting business decisions and strategies. Prior to the digital transformation in India, leaders of business organizations used

to hire or recruit employees offline, leading to complex and time-consuming onboarding processes (Schwarzmüller, et al., 2018). The adoption of technologies like cloud computing, Big data and video conferencing tools has made these processes quick and simplified in recent years. These days, leaders are also using big data analytics to track employee performance, which has been found to enhance employee motivation and organizational performance. Further, organizations in India are providing skill enhancement programs to the leaders such that they are likely to face hindrances in utilizing technological innovations efficiently.

2.4.2 Digital Leadership

According to a study by Ritter (2015), digital leadership can be regarded as the use of the digital assets of an organization strategically in order to achieve organizational goals and objectives. Before going deep into the transformation of leadership patterns in India with the advent of digitization it is important to provide an overview of digital leadership as well. Business organizations these days in India are striving to attain a competitive advantage which has made it essential for them to invest in technical tools and digital systems. These digital systems and tools are to speed up their production and enhance communication thereby leading to a sustained competitive advantage. It can be said that businesses are moving toward efficient digitization. As per the evidence given by Sagbas and Erdogan (n.d.), an effective digitization plan calls for an efficient digital leader who is likely to guide the employees toward digitization. It must be noted that digital leadership deals with the transformation of people and their ways of working in a particular business organisation by digital means. According to a report by Gorton (2018), effective digital leadership requires the integration of digital technologies and processes to shape the business strategies of an organization. To do so, businesses in India are focussing on skill development as a continuous process for their leaders such that they are able to develop a complete understanding of digital trends, tools and systems, etc.

As per the report by Afshar (2021), the digital leaders of India focus on making collaboration to attain digital transformation. They consider India as a suitable place for innovation and deployment of technological practices. The leaders of the IT industry of India gather and collaborate among themselves to pave there to digital leadership transformation in India. Apart from that, the IT industry especially has shifted from an on-campus model to a remote work model. It must be mentioned that in such a scenario the digital leadership of India has shifted

toward empathetic, flexible and deliberate changes in situations of crisis. The leaders of the business organizations of India have also focussed on employee engagement and mental health issues in driving toward digital leadership. Studies also reveal that around 95% of business organizations have moved toward digital transformation at a faster pace (The Economic Times. 2020). The Digital Transformation Index shows that the percentage of Indian companies considered digital leaders has grown by 12.3% as of 2018, and the percentage of companies considered digital adopters in India has risen to 33.5% in 2018 and 55.3% in 2020 (www.ETCIO.com, 2020). Additionally, the digital leaders in India s keep on developing a strategic framework that helps in the effective use of technology. This in turn is more likely to help in making a sustainable and inclusive environment in the field of business as a whole.

2.4.3 Digital Leadership Tools

With the advent of digital transformation, digital leaders are often found to leverage different tools and software that helps in managing their everyday tasks efficiently. This software and tools are the real game-changers for businesses in the era of digital transformation. These tools are divided into four major categories on the basis of the services or benefits that it provides to businesses.

2.4.3.1 Virtual Communication Software

Effective communication is one of the prerequisites that determine the success of an organization. With the help of digital or virtual communication tools, important information can be centralized which in turn is likely to enhance the productivity of business organizations. Digital transformation has led to innovative virtual communication tools that benefit employees and leaders by not constraining them within the limits of a physical office. According to a report by Jacobs (2019), when it comes to managing a global workforce, nothing seems to be better than the digital communication tools through which leaders are able to conduct meetings, webinars, etc. for their employees (Panel, 2021). Some of the significant virtual communication tools that have been gaining significant momentum in the era of digital transformation include Zoom, Google Meet, Skype, Slack, etc. All these provide services like video conferencing across the globe, chat processes, sharing video, audio and information along with a screen-sharing

facility. These have helped leaders in conducting meetings from one part of the world with employees sitting in other parts of the world.

2.4.3.2 Team and Project management Software

This software is used by businesses in planning, scheduling and allocating resources for a particular project along with managing the continuously changing environments in the field of business. According to a report by Rollings (2022), project and team management software play a vital role in benefitting business organizations and their leaders by tracking the progress of campaigns, projects, resource allocation, etc. It also helps in tracking the performance of the employees while assigning tasks across the organisation. Additionally, this software helps leaders or project managers to control costs and budgets associated with a project while facilitating remote collaboration of teams to follow a hybrid work model across the organization. This software includes Wrike, ClickUp, Zoho, Asana, Microsoft Project, etc. For instance, Zoho is a CRM based that is used by leaders for managing purchases, leads and pipelines whereas Wrike is used for the purpose of creating custom team workflows (Krishna, 2022). Similarly, Asana and Microsoft Project are task management programs that help in creating, tracking and assigning tasks while saving costs, time and energy.

2.4.3.3 Business Intelligence tools

Digital transformation has led to the emergence of several business intelligence tools and software. According to an article by Haije (2022), these tools have helped leaders of organizations in understanding market trends and in deriving insight from several data. These insights and trends are further utilised by the leaders to come up with a strategic business decision thereby leading to higher organizational performance. Identifying patterns or trends from mountains of data was previously the task of individuals with expertise in advanced business analytics. The emergence of these BI tools has now made it easier for every leader to access and obtain a complete understanding of growth patterns, market trends, demand forecasting, etc. Some of the significant BI intelligence tools that have been found to be adopted by businesses mostly include Microsoft Power Bi, Zoho Analytics, Tableau, Oracle Bi, QlikSense, etc. Among these Microsoft Power Bi, is a web-based analytics tool that is mostly known for data visualization and identification of trends and can be accessed from anywhere.

Similarly, Tableau is also known for making data discovery and visualization. It supports several data sources including MS Excel, MS SQL, Google Analytics and Salesforce, Oracle, etc. All these BI tools have paved the way for digital leadership transformation facilitating leaders in effective decision-making from different corners of the world.

2.4.3.4 Recruitment Management tools

With digital transformation, the recruitment and onboarding processes of organizations have also been digitized. The digital recruitment tools have made it easier to identify and share resumes with hiring avengers and team members. These tools have made it easier to comment on interview feedback along with the proper organization of the next steps of an onboarding process (LumApps. 2022). All these have made it easier for recruitment managers and leaders to come up with informed and collective decisions. Some of the important recruitment management tools include Smart Recruiters and Talent Soft mostly used these days. These tools have made it convenient for the recruitment teams and HR of an organization to save time from interviewing unqualified candidates and from sifting through the resumes of the candidates.

2.5 Factors influencing Technology Adoption

Technology adoption is a significant factor that drives digital transformation. However, technology adoption is not a simple process, as there are several attributes that play a major role in this regard. Some of the significant factors that have a major influence on the process of technology adoption have been listed briefly and discussed below.

2.5.1 Perceived Usefulness

As opined by Sugandini, et al. (2018), perceived usefulness is considered a significant factor that is linked with attitude formation toward the adoption of certain innovations or digital technologies. It must be mentioned that perceived usefulness can be regarded as the extent to which individuals believe that the adoption of new technology is likely to have a positive impact on their performance. Perceived usefulness is usually attributed to five significant indicators. These indicators include the time and effort-saving aspects associated with the adoption of technology. In this regard, it has been considered that the less time required or the efforts required to use that technology by employees and leaders in the business processes the more the perceived usefulness. Cost reduction has been regarded as another factor likely to have an influence on perceived usefulness. The less the cost associated with the adoption of technology, the higher the perceived usefulness of that technology.

As per the evidence given by Paganin and Simbula (2021), the more the perceived usefulness or more the leaders find it to be useful in terms of reducing their effort, time and money, the more they try to perceive it. According to Odigie (2020), if employees and leaders of the business organization find themselves to be isolated or observe that new technology is likely to have a negative influence n their culture, society and personal life, then they usually try to resist it. In such a scenario they are more likely to believe that the new technology would be less useful to them. Accordingly, it tends to create a vicious cycle in which the technology remains unused resulting in a further decline in the perceived usefulness of that technology. All of these lead to the fact that perceived usefulness tends to be related directly to the adoption of a particular technology as a whole.

2.5.2 Perceived Ease of Use

Perceived ease of use can be referred to as the extent or degree to which an individual, be it an employee or leader believe that new technology would require less effort for them. According to a study by Nugroho (2016), perceived ease of use for a new technology tends to be influenced by factors like simpler operational processes, ease of remembering the operation flexibility of operation and adequate training for the employees and leaders of the organization. In this context, it must be mentioned that the simple the operational process of new technology or the easier it is for the user to access that digital tool or technology the more the perceived ease of use for that technology.

Similarly, the easier it is for the users to remember the operational process of technology the more they try to perceive that technology. On the other hand, the flexibility of operation tends to have an impact on perceived ease of use since people these days tend to show preference towards technological tools that can be accessed from anywhere anytime. An important point must be noted here that the more skilled enhancement training is provided to individuals the easier it becomes for them to perceive a technology (Ritz, et al., 2019). Additionally, it must be mentioned that the easier it is to access a technological tool for an individual the higher the perceived usefulness of that technological tool (Alharbi and Drew, 2018). Accordingly, both the perceived ease of use and perceived usefulness are likely to have a direct impact on technology adoption which in turn is more likely to pave the way to digital transformation as a whole.

2.5.3 Emotions

According to Shanab and Shanab (2021), emotions are considered a determining factor for technology adoption. It can be referred to as an integrated feeling state that involves motor preparedness, psychological changes and cognitions about actions. It also includes all those inner experiences that emerge with the arrival of a situation. It must be mentioned that emotions are closely related to self-efficacy which leads to technology adoption among individuals in a society.

As per the evidence given by Zhai and Yu (2020), self-efficacy is considered the belief of an individual to perform a certain task efficiently by means of new technology. In such a scenario, individuals tend to adopt a particular technology on grounds of their belief that they would be

able to deal with that technology efficiently. On the other hand, in situations where individuals in society possess a fear of using a new technology efficiently, they most often try to resist such technologies. Another article by Aquina (2022) suggests that people tend to become attached emotionally to certain technologies and their willingness to adopt a new technology depends more on what they feel about it rather than what they know or are being told about it. This drives the fact that emotions act as a driving force toward technology adoption.

2.5.4 Sociocultural aspects

Socio-cultural aspects play a significant role in influencing the willingness of individuals in a society to adopt new technology. These aspects include the customs, lifestyles and values of individuals in a society. In a situation where individuals find that their values, customs or beliefs are being threatened by the adoption of new technology, they intend to resist it (Graf-Vlachy, et al., 2018). On the other hand, if people find the technology to be aligned with their culture, values and beliefs then they tend to be more willing to adopt that technology as a whole. In this way, socio-cultural aspects act as a determining factor in technology adoption.

2.5.5 Perceived Behavioural Control

Perceived behaviour control is the main distinction between Planned Behaviour and Reasoned Action Theories. In this context, perceived behavioural control can be referred to as the perception of individuals of their ability to perform a certain behaviour. It must be mentioned that the lesser obstacles individuals are required to face in adopting new technology, the higher the perceived behavioural control it gets for individuals (Taherdoost, 2018). With higher perceived behavioural control, individuals tend to show greater willingness to adopt that technology and vice versa. Accordingly, perceived behavioural control acts as a determining factor of technology adoption as a whole.

2.6 Digital Leadership Theories and Models

2.6.1 Digital leadership "DQ." Model

"DQ or Digital Quotient" is referred to as a full-scale set of cognitive, technical, socio-emotional and meta-cognitive competencies which are entrenched in the universal moral values and which allow individuals to harness the scopes and counter the challenges of digital life. The DQ structure is aggregated across more than 25 format leadership frameworks regarding digital skills and literacy. The DQ framework establishes a general structure, taxonomy and language spanning digital skills, readiness and literacy which can set a benchmark and reference that could be adopted across varying sectors and nations globally. The "DQ Framework" was endorsed and acclaimed at an international level by the "Coalition for Digital Intelligence (CDI)", established in 2018 by the IEEE SA, OECD and the DQ. Institute in close collaboration with the "World Economic Forum", with the motive to encourage digital skills and digital literacy throughout the globe. A pictorial representation of the conventional DQ model has been given below in figure 1.

Figure 3: Digital leadership "DQ." Model

(Source: Global Standards – DQ institute, 2022)

Being an integral and robust framework for supporting digital leadership, the DQ consists of 24 digital abilities. The centre of interest is on 8 censorious areas of digital life – use, identity, security, safety, literacy, emotional intelligence, communication, literacy and rights. These 8 areas could be advanced at their levels such as creativity, citizenship and competitiveness.

- Citizenship's centre of interest is on primary levels of skills required for using technologies in safe, responsible and in ethical ways.
- Creativity permits the process of finding solutions to complex issues through the creation of new technologies, knowledge and content.
- Competitiveness's point of interest is on new methods to change the economy for the wide benefit and changing of communities.

2.6.2 Lean Leadership Development Model

Leadership is the creative and courageous response to any specific challenge and lean leadership is no different. "No massive change occurs in the absence of a challenge", said Martin Luther King. As a system of methods used in this area of study, Lean is concentrated on offering consumers in the most well-organised way possible by providing maximum value to them. For that reason, any manager who is set on attaining these requirements puts heavy importance on continuous improvement (Seidel et al., 2019). The issue with consistent enhancement is that it is hard to strengthen mentally with traditional leadership strategies which rely heavily on concentrated micro-management and decision-making. It can be said that a "lean leader" is essentially a "teacher" rather than a manager. To make the methodology work within organizations, the leader needs to empower, motivate and boost the morale of his/her team.

Rigid importance to be put on culture is crucial to make the lean leadership model work. Among the most vital elements of that might be transparency and trust. Even if it is a ceremonial leadership role or not, it should be made sure by leading by example and living by what is taught. As a guiding figure, one needs to identify that the team, which seems to work directly on the product or service, can offer some of the best ideas for carrying out future improvement. However, it must be ensured that for encouraging every individual to share their ideas, thoughts

and perceptions they might possess, they must be provided with liberty and the necessary resources.

Figure 4: Lean Leadership Development Model

(Source: Management Meditations on Lean Management, 2022)

There are six distinct functions of lean leaders, each of which plays a vital role in implementing lean principles within the day-to-day operations of an organization.

1. Establish External/Business Strategy

Business strategy is referred to as a response to external opportunities and threats, both empowering and then establishing internal capabilities. The lean culture and leadership is not excluded from the business strategy but are instead a significant medium for enhancing the internal capabilities of the business which would in turn empower the company to initiate efficient business strategies (Management Meditations on Lean Management, 2022).

2. Establish Internal Culture Strategy

In a business, the external strategy is referred to where the business wishes to reach, while the internal strategy is referred to those specific things that are needed by the business to reach the desired target (Netland et al., 2019). Strategy can only be acquired if there exists a good balance between the internal capabilities and culture to the strategy. Here, the main point is that one cannot achieve a business strategy if he/she does not have the necessary culture and capabilities. The absence of this balance creates abrasion which essentially leads to waste generation, not lean.

3. Lead System Design

Quite frequently the hindrances which develop waste and interruption within the process are identified at the initial level. These can be both technical as well as social and are essentially the partnerships with the suppliers, the existence of staff and warehouses and the blueprint of the facility. Also, there are varying levels of management which make decisions corrupt, rob the dignity of the employees and also demolish their ability to deal with problems. Precisely, it can be said that they are the problems of the system which demand decorated thinking. This is where the role of a lean leader comes into existence which allows him/her to identify the need for a robust framework and system for perfectly aligning with the proposed business strategy and develop a process of redesign (Management Meditations on Lean Management, 2022).

4. Being the Model

Leadership can be defined as modelling the most desirable behaviour. Lean leaders are expected to practice and promote the fundamental principles of lean management including "continuous improvement" and "respecting the people". The ability to harness the change in culture is having a direct relationship with the ability of a leader to be the role model of that culture (Management Meditations on Lean Management, 2022).

5. Coaching and developing others

A leader also has the responsibility of a coach/mentor. One of the core functions of a leader is to identify and develop the capabilities of others. Precisely, the more the capability of others, the easier the task of the leader. With the assistance of continuous improvement processes, individual capabilities can be enhanced to a greater degree. The process of continuous

improvement is not just limited to the production/manufacturing processes but also spans the aspects of individual development, which is basically the intrinsic desire to personally improve skills and core competencies oneself (Holweg and Maylor, 2018). Therefore, it is crucial for the leader to essentially become a coach and propagate an organisational culture which is a kind of service towards others.

6. Accountability and motivation

In the desire to establish a positive organisational culture, the leaders need to be accountable for their as well as the actions of others. Even if an organisation is having a culture of self-directed teams, the leader is fully accountable for ensuring that those teams are fully accountable for producing the optimum level of performance. Apart from that, the guidance of the leader acts as a key motivator for others within the team. Employee appraisal is therefore another core responsibility of a leader which essentially focuses on motivating employees by providing benefits, timely remuneration, involvement in decision-making processes, etc (Management Meditations on Lean Management, 2022).

2.6.3 Theory of Reasoned Action

The "Theory of Reasoned Action (TRA or ToRA)" is having the primary aim to illustrate the relationship between behaviours and attitudes within varying human actions. The theory was developed by Icek Ajzen and Martin Fishbein back in 1967 and was essentially derived from prior research in the domain of social psychology, attitude theories and persuasion models (LaCaille, 2020). The "Theory of Reasoned Action" is primarily used for predicting the way by which people would behave on the basis of their pre-existing behavioural intentions and attitudes. The decision of an individual is to capture a specific behaviour which is entirely based on the results of the individual expectations that would emerge as an outcome of performing the individual behaviour.

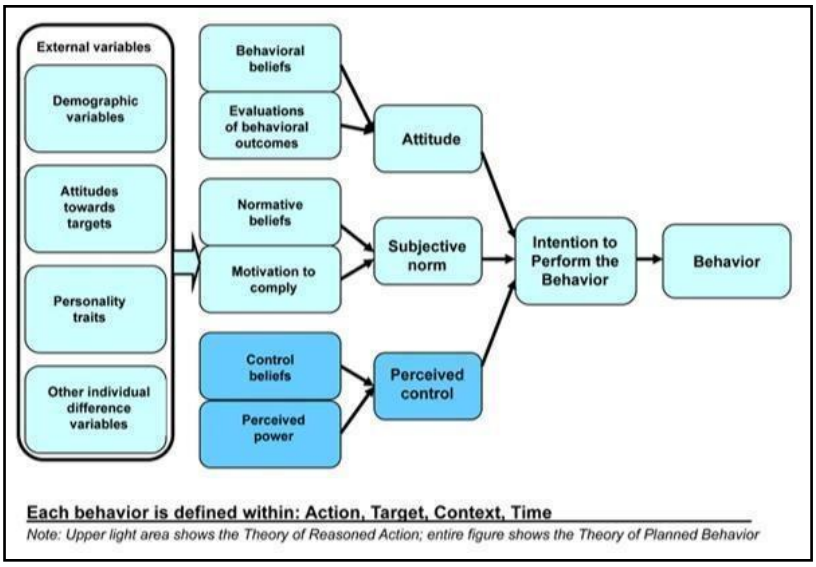

Figure 5: Theory of Reasoned Action/Planned Behaviour

(Source: Theory of Reasoned Action: Simply Psychology, 2022)

The fundamental aim of the TRA is to offer an in-depth understanding of the voluntary behaviour of individuals by investigating the underlying basic motivation for performing a relevant action. As per the TRA, the intention of an individual to perform a voluntary behaviour is the primary predictor of whether or not they are actually performing that specific behaviour. In addition, the "normative components", which are basically the social norms spanning the action of the individual, contribute to whether or not the individual would actually display the behaviour. The theory holds that the intention to engage in a particular conduct comes before the actual behaviour. The idea that engaging in the activity will produce a certain consequence gives rise to this particular intention, which is referred to as the "behavioural intention." Since these intents "are driven by attitudes to actions and subjective standards," behavioural intention is crucial to the idea (Mi et al., 2018). The TRA suggests that "stronger intentions could result in enhanced effort for displaying the behaviour, which in turn escalates the likelihood for the behaviour to be performed".

2.7 Studies relative to leadership and digital transformation trends in India

In recent years, digital transformation in India has shifted from a '"should have" to an "essential revolution" with significant changes in the leadership styles in the ever-changing business environment. Certain transformations in digital technologies and leadership skills have been observed in India that are worth mentioning. According to an article published by India Today (2019), there are approximately 49% of business organisations in India put major emphasis on reskilling and upskilling their leaders to help them adapt themselves in the era of digitization. These organisations consider upskilling and reskilling their leaders as the sole objective of the different leadership development programs that they conduct within the workplace. With the emergence of the global Covid 19 pandemic, the year 2020 has changed the way of working in business organisations. With that came the hybrid business model or remote working facilities for the employees. Initially, this had created ambiguities but gradually businesses, leaders and employees adapted to such a work structure. Accordingly, certain changes in leadership trends were also observed in the year 2020. As opined by Roy (2022), organisations have put a major focus on building the right culture that would suit the hybrid work model. It was observed that in a hybrid work model, employees tend to face virtual micro aggression and difficulties in communicating among themselves thereby resulting in conflicts. In such a scenario leaders were found to shift in-person communication within the workplace to virtual communication by means of digital technologies. In India, the use of virtual communication tools like Google Meet, Skype, and Zoom, has become much more prevalent enabling leaders in conducting meetings and guiding employees of co-workers to attain higher organisational performance.

Another significant trend in the leadership pattern of India with the advent of digital transformation includes the adoption of a changed mindset among the leaders. The business environment has been changing continuously. In such a scenario the leaders of the business organisations have been trying their best to keep themselves flexible such that it gets easier for them to come up with strategic decisions (Jaiswal, 2021). In this regard, it must be mentioned that the Covid 19 pandemic, which had impacted the lives of people globally, had made it essential for leaders of business organisations to put a major focus on employee well-being (Forum, 2020). Business organisations have made it essential for the leaders to make strategic decisions regarding the work-life balance of the employees followed by looking into the fact that

they get flexible working hours along with some wellness programs while abiding by the organisational goals and objectives. Additionally, a shift in the leadership style in the business organisations operating in the Indian subcontinent has also been observed in recent years. It must be mentioned that leaders these days are putting major emphasis on building internal communication among employees. Leaders are also found to put focus on upholding the creative environment and building a collaborative work environment among its employees such that employee motivation is taken into consideration. All these lead to the fact that the leadership patterns in the business organisations of India have been found to shift toward a democratic style of leadership.

2.7.1 Digital transformation trends in India

With digital transformation, there have been certain technological trends have also been observed in India. These have been listed briefly.

2.7.1.1 Adaptation of the Hybrid Cloud Architecture in business

The hybrid cloud structure has been used because of its unique feature of dealing with the heavy bulk of data collected from different means. This has also helped business organisations in India to comply with confidentiality and data privacy standards. According to a study by The Economic Times (2021), around 99% of the business organisations operating in India have been found to use hybrid cloud architecture. It has significantly helped in the effective management of cloud operations along with the proper digitization of their goods and services. Hybrid cloud architecture has become a significant trend in India as it has been found to play a vital role in improving customer experiences and resilience in business along with a reduction in security risks as a whole.

2.7.1.2 The increasing popularity of big data analytics in businesses

Big data analytics has become a buzzword in the era of digital transformation across the globe. Business organisations in India have also not been exempted from its benefits as well. According to a study by Dialani (2020), it has been estimated that the size of the Indian Analytics market accounts for about US $375 million indicating the increasing significance of Business analytics tools among business organisations in India (Vijai, et al., 2019). It must be mentioned that,

especially, the pandemic situation has increased the adoption of predictive and prescriptive analytics in the business organisations of India (Bhonsle, 2022). It has been observed these analytics tools have helped businesses in understanding growth patterns along with making predictions about future market trends.

2.7.1.3 Artificial intelligence in business processes has been gaining momentum

Artificial intelligence has become a buzzing technology in the field of business in India in recent years. Businesses have been found to benefit from AI-based tools in areas including machine learning, speech recognition, robotics, language processing, etc (India, 2022). With the help of Artificial intelligence, business enterprises in India have been adopting biometric security solutions, self-enhancing chatbots, conversational AI, etc. Automated ML solutions of artificial intelligence have also been observed as a significant trend in the era of digital transformation in India.

2.7.1.4 Increasing focus on data protection and cybersecurity

The increasing trends of digitization and the increasing use of digital tools have led to cybersecurity as a significant matter of concern in India. Studies reveal that in recent years several cases of data breaches, major IT outages and certain cybersecurity threats, malicious acts and hacking attempts were observed among the business organisations operating in India (India, 2022). This has made it for businesses these days to adopt intrusion detection, antivirus strategies, security identification and password protection policies thereby safeguarding the privacy and interest of the employees and customers of the organisation as a whole.

2.7.1.5 Blockchain technology

Blockchain technology has been significantly gaining momentum among the business organisations of India. One of the widely adopted blockchain technologies among business enterprises in India includes supply chain tracking, database management and recruitment handling. Organisations in India essentially utilize the technology to avoid supply chain disruptions, data security and protection and to lessen digital contract forgery (Bhonsle, 2022). The technology has also helped in the faster retrieval of data utilizing distributed ledgers system, something which exceeds the capability of generic database management systems. Studies reveal

that business organisations in India like TCS, Tata Motors, Infosys, Reliance Industries and Tata Steel have been found to embrace blockchain technology within their business processes in recent years. Along with that Wipro, HCL Technologies and Tech Mahindra are also some examples of organisations adopting blockchain technologies in the digital transformation phase of India.

2.8. Leadership 4.0: Digital leaders in the age of industry 4.0

The modern world is continually undergoing various technological transformations. In one way or another, these changes have a substantial impact on altering human history and trajectory. Three separate industrial revolutions have occurred throughout history, and most recently, Industry 4.0, the fourth, was born (Adebayo et al., 2019). The Internet of Things, or IoT, services are what is driving this fourth revolution. Many new opportunities can be established by fusing this new idea with the conventional manufacturing setting. Different industries have already adapted to this change in a variety of ways. Industry 4.0 technologies are being steadily adapted by digital leaders from a variety of industries.

The newly coined term "IIoT" mainly refers to the extensive use of an expansion of IoT technology and services in the industrial sector. Big data, machine learning, and M2M, or "machine-to-machine" connections, are highlighted by the IIoT idea. Additionally, it helps businesses and industries complete the connected tasks with much greater dependability and efficiency. Based on the evidence provided by Aheleroff et al. (2020), the term "IIoT" refers to a variety of contemporary industrial applications, including high-performance software-based manufacturing, robots, and medical devices. Simply put, IIoT expands upon the typical internet functionality of tangible objects and consumer electronics that are normally associated with the IoT. It is a pretty unique technique since it combines operational technology with information technology.

IoT, or the Internet of Things, is the most recent and popular term for the software sector. Industry 4.0 and IoT are closely related. The modern world today has been greatly influenced by these two concerts. The Internet of Things (IoT), which is a network of interconnected smart items such as wireless sensors, mechanical and electronic equipment, and their interaction with the virtual world and data via the Internet, has benefited many different industrial sectors in numerous ways (Bligh-Wall, 2017). IoT simplifies a number of CPS communication operations based on smart principles. Since the fourth industrial revolution, the industrial structure's evolution has advanced significantly. Since then, many things have changed, including the most recent one, known as Industry 4.0. Physical cybernetics and Internet of Things technology are the main forces behind this revolution.

As mentioned by Boyes (2018), the growing idea of Industry 4.0 also includes additional import-related components, some of which are listed below:

- **Big Data:** This term refers to the analytical behaviour of the user, predictive analysis, and several other media that use notably huge volumes of data to provide pertinent outputs and metrics.
- **Cloud computing:** It is the process of using Internet infrastructures to swiftly and efficiently manage configurable resources with little to no human contact.
- **Cognitive computing:** This method involves analyzing a variety of AI systems and signals, including that speech recognition, natural language processing, and human-machine interactions.
- **Cyber Physical System:** CPS is essentially a system made up of hardware and software components that are connected to one another yet operate at different scales and display a variety of outputs and functions depending on the given situation.

It is not at all strange that the main concern is related to its security given that industry 4.0 and IoT are related to one another via the interconnection of various systems and devices. The use of IoT devices is growing rapidly day by day, which inevitably causes an increase in security concerns. If this type of problem is not addressed at the beginning, it will be very difficult to solve. The IT sector is creating cutting-edge, effective technologies with strong security standards, like encryption and network security, to address these growing concerns (Oberer and Erkollar, 2018).

A significant lack of relevant standards has been a barrier to both Industry 4.0 and IoT technology. The idea of owning smart gadgets is fantastic, but each smart device requires a different protocol and format for data recording. Because of this, their incorporation into an automated sector is both expensive and complex. Working on various protocols and architectures connected to standard communication are several manufacturing behemoths including Eclipse Foundation, Bosch, and others. The common goal of these initiatives, which include MQTT, PPMP, OPC, and UA, is to help the smart devices on the factory floor interact with one another by using a standard data format. The difficulty of creating a standard data model will, however, also rise as there are more data types available (Mihardjo et al., 2019). The integration of information technology, the development of talent, and the use of still-emerging technologies are

some additional hurdles for both IoT technology and Industry 4.0. However, the amalgamation of appropriate digital leadership and the power of industry 4.0 can be well harnessed.

Digitalization affects all aspects of business, including production, communication, logistics, and human resource management. It's crucial to employ cutting-edge strategies to make the most of digitalization, networked smart devices, and the creation of new channels for collaboration and communication. The two cornerstones of Industry 4.0 are innovation and competitiveness. Organizations need to adapt their skills to address new issues. Another option to change management, which is a sequential concept, is design thinking. This is an iterative strategy linking analytical and creative methodologies. Based on the views of Hizam-Hanafiah et al. (2020), promoting the creation of novel thoughts and ideas is crucial for increasing an organization's potential for innovation and competitiveness. Finding and adopting the necessary technology, as well as a lack of digital culture and skills within the company, are important obstacles to Industry 4.0.

An extreme scenario for the entire Indian subcontinent was the transition from Industrial Revolution 4.0 to digital transformation. Digital transformation is currently a popular buzzword due to the constantly growing trends of technological innovation, globalization, and increased internet use in every aspect of life, from businesses to households, education, and health care (Mihardjo et al., 2019). As everything becomes automated and digitized in the company, there have been many changes made to business strategies, models, and procedures.

Using computers to manage digital data is where the digital revolution of enterprises began, claims a report by Porfrio et al. from 2021. With the expansion of internet access since then, numerous digital technologies have evolved. Artificial intelligence, cloud computing, social media, big data, and other digital technologies are all developing quickly. In this regard, it must be noted that every digital transformation necessitates the need to modify the workforce, professional competencies, leadership philosophies, organizational structures, etc. According to Parikh (2021), individuals or groups frequently spearhead digital transformation within a business.

Industrial organizations must create a strong digital culture and make sure that the shift is driven by clear leadership. In order to succeed, organisations must create a leadership 4.0 culture. In

addition to the field of information technology, digital technologies have an impact on how companies are run and the leadership philosophies that are used. To lead in the era of industry 4.0, use the term "Leadership 4.0." Digital leaders refer to these leaders of Industry 4.0. Digital leadership is not a trait shared by all IT firm executives. As opined by Mihardjo et al. (2019), Industry 4.0 and the Internet of Things are flourishing in Germany, the country that serves as a model and is where the technology began. However, does this imply that the managers of these (German) businesses are inherently digital leaders. The industry the business operates in does not define a leader in the digital space. Everything hinges on the management philosophies of the leaders and their ability to foster creativity and innovation while retaining their workforce.

The term "digital leadership" (also known as "leadership 4.0") refers to a quick, cross-hierarchical, team-oriented, and collaborative strategy that places a heavy emphasis on innovation. The capability to utilize new methods and tools, for instance, design thinking, as well as one's own personal competency and perspective are crucial qualities for 4.0 leaders (Mihardjo et al., 2019). The methodology of "Design Thinking" helps designers develop appealing solutions to challenging issues. In order to create a desired future, a design mentality is an action- and solution-focused. To develop and implement strategies that increase revenue, productivity, and customer satisfaction, as well as to keep a company ahead of the innovation curve, it could be utilized as a step-by-step process in business management. Businesses must adapt their thinking in light of Industry 4.0.

The "4.0 leadership style for digital leaders" would be akin to the democratic style when comparing it to the "University of Iowa Leadership Styles". In a democratic leadership style, the boss actively involves the workforce in decision-making and promotes employee input. In a 4.0 leadership style, the leader encourages individuals and teams to work decentralized while participating less actively themselves (Boyes, 2018). Teams and employees should operate actively, independently, creatively, and innovatively with fewer leader interventions.

According to the "University of Michigan Leadership Styles", the "4.0 leadership style for digital leaders" is analogous to the employee-centred approach. A supportive leadership approach and interaction facilitation are measured by the employee-centred leadership style. On innovation and people, the 4.0 leadership style is centred. By fostering their creative potential, the centre of

focus employees inspire them to collaborate in inventive teams and offer the company fresh solutions.

The transition to Industry 4.0 is an evolutionary process in which technologies must be modified to meet the new demands of innovation management, manufacturing and new business models must also be created for new locations, new markets, new commodities and services, as well as new forms of cooperation and collaboration. There isn't a single optimum leadership approach that applies to all circumstances. There must be an agreement in a way that makes workers more content with their managers. With the help of behavioural leadership research, there has been a trend toward placing more emphasis on the human side of the business in order to boost overall productivity and efficiency (Boyes, 2018). To lead in the era of industry 4.0, the term "Leadership 4.0", is used. Fast, team-oriented, cooperative and cross-hierarchical, are all characteristics of the 4.0 leadership style for digital leaders, which places a high emphasis on innovation.

Today's leaders need to have the skills and expertise necessary to comprehend the present digital requirements, modernize organizational and internal procedures to fulfil those needs, anticipate future expectations, and prepare their subordinates for the evolving digital era. As per the view of Boyes (2018), they must also be able to lead while keeping in mind the requirements of their followers in the digital sphere and the cultural context in which this engagement takes place. Leadership abilities are necessary for this to be accomplished. In the Indian context, competencies and skills frequently coincide, but their scope extends beyond this.

Information, skills, values, attitudes, and standards come together to make up "competency." Competencies go beyond simply having the capacity to carry out tasks correctly under ideal conditions. No matter the circumstances, whether they are favourable, unknown, or unforeseen, an effective leader is able to perform at their maximum level. According to Erpenbeck and Rosenstiel (2003), competencies include using creative thinking processes and are the result of the dispositions that emerge as a result of self-organization in human interaction. One can assess a person's competencies by looking at their potential for self-organization. Talents, knowledge, and skills can all be evaluated directly; however, the skills can only be tested inferentially or seen through historical performance data, real-world observation, and consideration of individual

preferences. The ability to perform duties in a strange and unsettling situation may be the foundation of competent leadership behaviour.

2.9. Characteristics and Skills of Leadership in the Context of Industry 4.0

The transition to a digital industrial revolution is what is known as "industry 4.0." The merger of the actual and virtual worlds in this setting is referred to as the "digital environment," which also refers to the process of digitizing processes. Mass customization, velocity, and improvement in quality and productivity are all predicted benefits of the digital industrial revolution (Guzmán et al., 2018). The manufacturing systems' flexibility will also be increased. In the meanwhile, the businesses will have to make investments in machinery, ICT, data analysis, and the integration of all data along the value chain if they want to reap these benefits. These investments are not only costly, but they also run the risk of throwing steady process chains out of balance or causing major disruptions by altering and intervening in them at all levels of value generation.

Leadership is essential to the process of making the broad-ranging strategic decisions that businesses in Industry 4.0 must undertake at all organizational levels. To recognise the patterns and signals presented by network data in this situation, future leaders will need to be more responsive. They ought to convey a coordinated message from a number of agents in a setting that is constant through growth, change, and opportunity (Guzmán et al., 2018). These leaders must support connected networks and organizations in order to understand the science of connectivity and organizational network learning.

For each Industrial Revolution, Kelly (2018), illustrates phases that define leadership (IR). Charismatic leadership, according to the first IR, refers to how a leader acts and inspires an organization through their deeds and other traits. The second IR was significantly influenced by top-down, directive leadership that is characterized by scientific management, which assumes a top-down approach. The third IR employs relational leadership to encourage followers' autonomy for original thoughts and cross-group cooperation (Kiel et al., 2017). This management approach is based on transformational leadership theories. Another hallmark of the third IR is "transactional leadership", which is more expressed and recognised when followers' goals are achieved. With regard to leadership, the fourth IR calls for both previously required and newly required traits.

Beyond transformational leadership, Industry 4.0 requires other things. Additionally, learning and innovation must have a stronger, more targeted focus. Haddud and McAllen (2018), place a

strong emphasis on the significance of learning more about the traits and abilities that make effective leaders in digital environments, as well as how to match your leadership philosophies to the demands of these environments. Because of this, identifying leadership traits in the context of Industry 4.0 becomes a crucial issue. A characteristic of someone is defined as "a notable attribute or aspect of something." As a result, leaders will have a better understanding of how they should behave in such a setting as they deal with the disruptive changes brought on by smart production systems and assist Industry 4.0's transition process.

The ability to perform an action successfully is referred to as having a skill. This term encompasses both physical and mental proficiency that is connected to knowledge or understanding of a subject. Own a skill refers to having applicable knowledge an individual has gained through training, experience, and practice. The ability to act, anticipate markets and trends, make wise business decisions, and adjust plans in a digital environment requires CEOs to adapt or strengthen these skills (Kane et al. 2018). But as predicted by Industry 4.0, leaders need to get ready by updating their skills, knowledge, and understanding of the qualities that can be useful to them in their work in a digital and responsive world.

Understanding the leadership abilities needed to associate them as the drivers for the essential qualities necessary by leadership 4.0 as mentioned in the preceding section is crucial to figuring out how to develop leaders for I4.0. Different cognitive abilities, personalities, temperaments, and emotional regulation skills in addition to identities and values derived from one's personal experiences and cultural background, all have an impact on how one develops leadership skills.

Mumford et al. (2007) developed a methodology to group leadership skills. To categorize these talents, four groups were made: "1) The cognitive skills, which executive leaders require to understand the complex behaviour of patterns that require innovative thinking, strategic problem solving, and decision-making; 2) The interpersonal skills, which are defined as goal-directed behaviours used in face-to-face interactions, in order to bring about a desired state of affairs; and 3) the business skills, which include planning, negotiating, and management of one's own resources, as well as 4) the strategic skills which involves the financial and managerial skills." Each of these four leadership skill categories is a separate set of skills, as seen in figure 5.

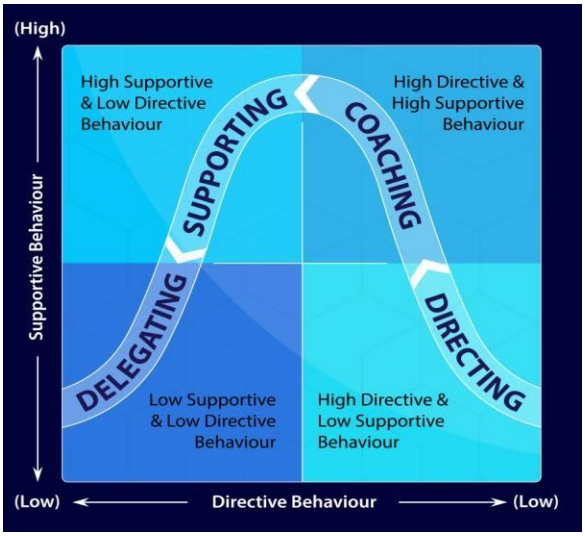

Figure 6: Four Groups of Leadership Skills

(Source: Mumford et al., 2007)

Based on interviews with successful leaders of big firms, startups, and non-profit organizations to learn more about their perspectives on what it takes to become a leader, Ashkenas and Manville (2018) identified six leadership skills. According to their research, these skills include: "1) shaping a vision for focusing and challenging the team; 2) translating the vision into clear strategy about what action to take and what not to; 3) recruiting, developing, and rewarding a team of great people; 4) focusing on measurable results; 5) promoting innovation and learning to sustain the team or organization; and 6) leading yourself." Instead of relying solely on reading books, taking courses, or attending seminars, the authors contend that the key to mastering these leadership abilities is continuous practice and actual experience.

Two skill set profiles of 4.0 leadership for the hotel industry were discovered by Santo et al. (2019); one was more concerned with interpersonal relationships, and the other was more concerned with technological literacy. The essential leadership abilities are addressing customer complaints, teamwork, listening, connections with subordinates and consumers, maintaining a professional look, leveraging digital technologies for their job, and being able to deal with change (Santo et al., 2019). The identification of two 4.0 leadership skill profiles and the corresponding talent will force hospitality businesses to offer new leadership development programmes to help businesses succeed (Santo et al., 2019).

A study by MIT Sloan in partnership with Deloitte about employment in the digital era found that greater than 90% of those asked, including analysts, executives, and managers, underlined the significance of upgrading skills for a minimum of one time, per year to be able to seamlessly function within a digital landscape (Kane et al., 2018). To adopt abilities that contribute to the environment of the fourth industrial revolution in this setting, training and preparation are crucial. A new organizational culture at work can therefore result from learning new skills.

Global leadership abilities are more in demand as a result of a company's foreign expansion because both business and culture are becoming more complex. In order to improve their strategic decision-making, leaders in the global corporate environment need to comprehend topics beyond management abilities. When compared to the domestic system, the international ecology functions differently (Fatehi and Vaezi, 2021). Therefore, it is crucial for leaders to comprehend the distributive forces that have the potential to have an impact on an organization's commercial operations. In the highly competitive business environment, a leader's capacity for global thinking is a crucial factor in successful leadership.

A thorough comprehension of common denominators is necessary while making worldwide strategic decisions in order to cultivate a global point of view. A domestic leader must have a thorough awareness of the domestic market alone. However, a leader at the international level needs to be aware of the potential effects of their decisions on an organization's operations in the global market. Global executives must comprehend how their strategy choices may affect both their consumer's and the workplace's cultural values (Mendenhall et al., 2020). Global executives must comprehend how their choices are influenced by cultural issues and why they must respect the cultures of the markets they operate in.

Through adherence to cultural norms, leadership can assist corporate organisations in achieving their goals. Prior to making decisions, executives must place a strong focus on having a thorough understanding of foreign exchange management, local regulations, and customs. Before making an international decision that will benefit an organisation, the world's leaders conduct market research. According to Sousa and Rocha (2019), for leaders to make strategic decisions that will benefit business organisations, they must first recognise the opportunities and threats present in the global business market. Then, they must modify and improve those decisions. Business organisations won't be able to make precise strategic judgements at a certain time without

influential global executives. One of the key elements in an organization's success at the global level is leadership. The necessary decisions cannot be made and implemented inside commercial organisations without actual leadership skills.

Global leaders must be adaptable enough to alter their leadership philosophies and make wise decisions as necessary. An effective leader understands how to assist a company to reduce ambiguous risks by making sound strategic decisions. A clear idea, a defined purpose, and determination in addition to energy are also necessary for leaders who make strategic decisions. Leaders that have a thorough awareness of the situation can make successful strategic judgements. The correct leader can manage complicated operations at the international level, and effective management requires practical leadership abilities appropriate for every ambiguous circumstance.

2.10 Role of Digital Leadership in fostering Organizational Change

A digital leader works as the altering agent or change person who could manage the process of the organization effectively and efficiently. The trends of change have been compelling the company to review as well as revaluate the current advancements of technologies and the expectations of the consumers to understand, adapt as well as implement the various changes in the model of the business. The word “change” implies alteration, for making something better or different or transforming pre-existing things by the addition of values. Change might be certain actions that have directions for doing newer things or amending things.

Organizational changes or alterations imply that the companies are undergoing transformation (Khan et al., 2016). For the improvement in the internal as well as the external functionality, the company requires alterations or changes which demands time. The changes in the organization are important, however, those companies that do not change cannot survive for a longer time in the market. The changes in the organization provide various benefits as this proves the financial performance, improves competitiveness, leads to the enhancement of the employees, improves the satisfaction of the consumers, as well as leads the company for sustainability and continuous improvement. The benefits of the organizations are mentioned above and also not each person in the organization could get these benefits from the organizational changes, however, the various changes that are being made in the company would make the company stronger.

The process of change is challenging as well as significant for the companies which could lead the organization to success. This could also make the company capable of meeting the demands of the future for competing with the other rivals or competitors in the market in an efficient way. The changes for the companies are essential in dealing with the various diversities as well as with the various complicated market situations. The varied forces which influence the company for the changes also force in creating the expectations of better services and improved efficiency, which are generally the external forces for innovation. When the changes in the organization are planned well as well as done in a structured method it leads to organizational innovation and also continuous improvement (Mansaray, 2019).

The process of organizational changes should be managed in keeping the organizations moving for the new vision of the organization as well as the objectives and the aims of the company. In

the present days, organization trends are being altered in a quick and rapid way in the whole world and companies that do not change could not survive. Nowadays, organizations are facing the “external and the internal forces pressures” which create inevitable changes. This is the pressure on the companies to balance the varied forces. This is also very significant for the company in managing the expectations and the expectations and demands of the employees, the management, as well as the consumers, hence there is always the necessity for changes in meeting these expectations (Deshler, 2016).

In the current organizational technologies, the rules for the success and development of organizations are being exponentially changed. The company requires innovation and change in response to altering the environment. The organizational innovations required to identify the newer methods in dealing with the varied things, that might lead to the organization for the provision of the “collective resources” for innovation. Innovation could be defined as the alterations in the varied methods of doing things for creating useful new things. This could be seen as the alteration in the services and products which involves the various evolutions of capabilities, features and the introduction of the “new to the world”.

The level of innovation has also been investigated from varied angles as well as aspects by varied researchers that include economic, technology, market and consumer trends, political and social environment, global environment, behaviour, organizational culture as well as the organizational changes which are the broad ranges of approach by which the innovation could be viewed from the point of view of the organization. Innovation implies growth as well as the improvement of the performance of the company, which could lead the company to change in the organization. It has also been claimed that the change in the organization might lead to innovation in the organization as the successful change in the organization leads to the increase in the personal creativity level of the company which is the main factor for becoming the base of the innovation of the organization (Malhotra, 2018).

Creation and populating change in the organization is the basis of a successful business. This is guided by the various objectives of the business as well as the unbiased making of decisions. Digital leadership at each level is crucial for accomplishing an efficient and effective company. The leaders could also ensure that the proper strategic methods and objectives are being identified as well as articulated in the process of organizational design, responsibilities,

considering roles, interfaces, individual skills and also authorities. The presence of seasoned and well-respected digital leadership helps to guarantee sound foundations for the organization's population and structure as well as acceptability by the company's stakeholders.

When it comes to managing change, communication and decision-making skills are essential. This is true whether there are organisational changes, a need to refocus priorities, or a need to "change cultural behaviours." The team's leaders should be able to inspire and motivate them to accept change. The best way to do this is through good communication that includes the justification for the changes as well as the importance of the desired objectives. Decision-making is one of the skills that leaders have and successful organizational leaders make the best decisions for the companies in every situation (Modus-group.com, 2020). The leaders are also passionate about their vision and also infect the other employees with the energy and motivation to achieve the goals.

2.11 Stage-wise classification of Digital Leadership implementation and monitoring organisational effectiveness

Digital leadership is significant as this is the crucial management function which aids directly the resources of the organization for the improvement in efficiency as well as to achieve the goals of the business. Effective leaders also provide clarification of the various purposes, and inspire, guide and also motivate the company for realizing its vision and mission. Understanding the role of leaders could aid in contributing to achieving the objectives of the organization. Digital leadership is necessary as this sets a clear and transparent vision as well as communicates with colleagues and subordinates. The clear mission and vision provide a better understanding of the direction of the company as well as create a realization of the varied responsibilities and roles.

Leadership also serves varied functions that are vital for organizational success (Indeed Editorial Team, 2020). The most significant and essential function of digital leaders is to give the vision of the organization. The digital leaders also explain the mission and also vision as well as what the employees of the organization should achieve. The teams of the organization that the leaders want include multi-talented employees who have the correct amount of skills as well as experience for delivering the outcomes. However, most companies select leaders for directing the energy of the teams for more efficiency.

Several key components of organisational effectiveness involve digital leadership characteristics, multicultural management style organisational culture as well as executive motivation. digital leadership has a direct impact on the relationships in the organisations as well as their success and the leaders are capable of determining the values, culture, employee motivation and change tolerance within the organisation which are major factors affecting the organisational effectiveness (Lee, 2018). Effective leaders within the organisation mostly influence the effectiveness of the organisation by motivating as well as inspiring the workforce and the leaders provide a clear vision regarding the strategic direction of the company to create a loyal and committed workforce.

The charismatic leadership style within the organisation is often used by effective leaders in motivating the interwar force for accomplishing various jobs through various inspirational speeches describing the vision and mission of the company. When the employees witness the

personal commitment of the leader towards the organisation through their hard work and innovative approaches towards the problem-solving process, the employees also acquire those characteristics within themselves (Germano, 2021). Digital leaders further provide a broad range of incentives to the employees for increasing their productivity which overall results in better organisational effectiveness.

Appropriate digital leadership with their organisations recognise the importance of collaboration among the team members which is the carrier of several team-building exercises for ensuring the team members are valued and respected. Apart from that, effective leaders minimise the distractions of the employees helping them in managing the transitions to new technology or working systems along with taking feedback on several organisational issues (Meraku, 2017). This makes the employee more dedicated by making them a part of the decision-making process along with making them adapt to changes more quickly. Lastly, the presence of effective digital leadership is capable of maintaining the subordinates in helping them in developing their digital leadership skills by presenting various workshops which ensures that the subordinates are capable of taking over when the time comes. This enables the leaders in contributing to the long-term effectiveness of the organisation to appropriate succession planning along with helping the employees in maintaining a healthy work-life balance as well as to epitomise significant standards of ethical behaviour.

Appropriate digital leadership within any organisation is the collection of various processes used by an individual for coordinating various resources in accomplishing the organisational goal. Leaders develop the plans followed by securing various resources at the required along with allocating the resources and correcting several gaps to gain favourable outcomes (Leonard, 2019). Effective leaders develop plausible plans according to the situation along with recognising the various definitions within the organisation. Good digital leadership is required at various levels to have optimum organisational effectiveness.

- **Planning**

The planning stage involves the role of the leader in determining the actions of the subordinates that are required by the organisation for accomplishing the goals (Duggan, 2021). The presence of an effective leader results in appropriate planning for which leaders need to have the

capabilities and understanding in creating relevant courses of action for achieving the organisational goals at minimum cost in terms of labour time and other resources without sacrificing their effectiveness and other legal and ethical standards of the organisation.

- **Organising**

The organising stage involves the role of the leader in securing the required resources along with developing the various patterns of behaviour required for utilising the resources to their optimum potential. The resources involve equipment, human labour, cash as well as other commodities and the presence of appropriate digital leadership ensures the optimum use of these resources preventing any wastage and resulting in favourable outcomes (Duggan, 2021). Good digital leadership also ensures the recruiting of appropriate human resources along with setting up proper processes to use the resources effectively and efficiently which results in better organisational effectiveness.

- **Directing**

This is the most recognisable and visible digital leadership role and is the determinant of all the various factors required for accomplishing the organisational goals followed by marshalling the required resources at every level of the organisation (Duggan, 2021). The presence of good digital leadership within the organisation enables the ability to analyse the circumstances along with determining the course of action required under the circumstances followed by working towards the goals why directing the various available resources in accomplishing every step of the goal effectively and efficiently which involves the motivating of various subordinates to enhance their performance and effectiveness within the organisation.

- **Monitoring**

The monitoring stage is another crucial role of the leader in developing various measures for gauging the performance of the organisation along with recognising the errors that act as barriers in achieving the goals along with mitigating them. The absence of these measures prevents an organisation from being effective or efficient since any error can result in a delay in the processes which can hold the significant operations of the organisations at various levels resulting in major losses (Duggan, 2021). The presence of good digital leadership within the

organisation involves the leaders being proactive about any such deficiencies within the organisation along with testing various processes to improve the deficiencies immediately to ensure the smooth flow of various operations.

2.12 Challenges faced by Digital Leaders in Modern Times

With technological advancements pushing the walls and boundaries of what can be done and how quickly it can be done, digital leaders need to keep pace with the changes and need to constantly evolve and adapt. Digital leadership is an important factor that shapes and moulds a business organisation to achieve its mission, goals and objectives in sync with the goals and objectives of its employees. Some of the key challenges faced by digital leaders these days have been discussed. This analysis shall help understand the problems and reason behind the issues so that proper steps can be taken to mitigate them and make better decisions in the future.

- **Adapting to the fast-changing work dynamics**

Technology is the biggest driver that compels changes within a business organisation. Influential leaders are constantly on the lookout for greater visibility on how changes and transformation can affect not just the brand and business but also its mission, vision, value proposition, organisational activities and human resources. It is the responsibility of the leader of an organisation to influence the business and cultural changes within the workplace. According to Mack Story, "Everything changes today faster than ever before. Developing leaders with 360 degrees of authentic influence at all levels that not only support change, but who also embrace, lead, and ultimately initiate positive change is the most effective way to confront change." As per Mack, changes are the only constant and it happens at every level the requirements of leaders are also felt at every step (DeakinCo., 2017). Thus, it should be the key trait of a leader to be able to change his actions according to the changing requirements of the environment. Self-awareness is also important to understand and evaluate their own skills and realise how they are doing and what changes need to be made in their own style of management. Adaptation, more pivoting and more transformation and changes are required. Flexibility is the key to all problems. It is not necessary that digital leadership styles today would be relevant ten years from now, thus, it is important to adapt and diversify with changing cultures and needs. One has to be ready to change, evolve and transform.

- **Confusing sustainable digital leadership with profiteering**

Climatic impacts and environmental and labour problems are continuously pushing business organisations towards creating more sustainable and greener products and processes. A particular

organisation’s success or failure cannot be evaluated or judged only based on the recent or last sales report. In recent times, the public and consumers have more visibility and news on how a brand or company conducts its business. Consumers are expecting more than quality products and reasonable prices from businesses these days. It has become a big challenge for organisational leaders to keep making profits while conducting business in an ethical manner. An ideal digital leader shall be able to guide and follow the business activities that benefit the environment and community while still earning adequate revenue for the company and its employees. Leaders of yesterday fail to understand that it is not just their job to make a profit but also to make sure that all laws, policies and regulations are adhered to while making money. Leaders have confused the concept of digital leadership with money-making.

- **Staying Agile with Advancement in Technology**

Agile digital leadership and management is more than just attending terms. Keeping pace with changing technological landscapes refers to more than just investing or getting hands on the newest and trendiest tools and equipment. Great leaders are attentive to what their subordinates and employees tell them and keep themselves prepared to not only change the business models but also transform themselves. An outdated and ancient digital leadership style or approach can keep a business separated and aloof from the market’s opportunities. Leaders are still following old techniques for employee motivation, encouragement and retention. This hinders the process of development and brings the business to stand still. Leaders think it's their job to get things done and are seldom taking initiative to do it themselves or learn newer methods of doing it. A digital leader has to practice what he preaches. Otherwise, the plan might backfire.

- **Remote Employee Engagement**

During and post-Covid pandemic, many business organizations have started to hire employees to permanently work from home. A few years ago this concept was not just alien but it was thought that working from home was only impossible. Employees were expected to come to the office five to six days a week and constantly report to their seniors and leaders about their whereabouts and job progress. However, with the transition to remote employee engagement, leaders have found themselves in a stiff situation. The number of employees working from home is increasing each day (Silva, 2021). Leaders though had an entire year to get used to this transformation and

to embrace various tools of collaboration and networking. Still, some are finding it very difficult to get used to virtual engagement instead of the physical availability of employees. Digital leaders are finding it difficult to monitor and evaluate work productivity due to the different and dispersed geographical locations of their employees. It is the leader's job to keep everyone updated on information and happenings, but it has become difficult due to the increased space. Especially for industries like automobile, manufacturing, etc., it has become almost impossible to keep everyone in the loop and still ensure productive sales.

- **Creating a Safe Environment for Employees**

Adjusting to the new normal post-pandemic was really hectic. It was not just about seismic shifts but the outbreak forced organisational leaders to re-learn ways of getting the workforce back into offices in the post-pandemic world. It has become imperative for leaders to look for and create a safe and hygienic work environment and space for the workers and it is also their responsibility that each employee contributes to it. Asking for sanitation and office help to sanitise the desks before the arrival of employees is easy but getting to keep that hygiene maintained throughout the day is what becomes the real challenge (InitiativeOne, 2021). Digital leaders need to take initiative to set new rules and office standards that shall help prevent further complications.

2.13 Impact of Digital Leadership Styles on Employee Satisfaction and Performance

Digital leadership plays an important role in an organisation, irrespective of its industry or sector. Therefore, a close knitted positive relationship between the employees and the management is vital for any business organisation to ensure that it's recognised and valued and its turnover is increased. The current discussion looks forward to discussing the effects of good digital leadership and its impact on employee retention and satisfaction (Nidadhavolu, 2018). Though business leaders have substantial effects and influence the performance of employees, their own practices might make it difficult for them to encourage the workforce and get high-quality work done.

Each digital leadership style has its own unique effects on the performance and satisfaction of the company's employees. When working on a project that needs effective performance but only for a short time, the autocratic method can be helpful. Leaders who can project authority are more equipped for situations where the need to hire new personnel arises. They are better at finding solutions to problems and can make the best of challenging circumstances. The democratic approach is suitable for both long-term and short-term goals. Here the leader lets the employees decide and take actions that they think are necessary for the present scenario. This digital leadership style works on the format and mechanism of feedback. Under this style, employees have greater freedom and flexibility. This is the most suitable form for organisations that have trained and skilled employees (Cizreliogullari et al., 2017).

The satisfaction level of employees is also more because they have free will. No solutions are forced by the leaders but are only advised or opinionated. This form of digital leadership style gives rise to future leaders and happy employees that have a positive impact on employees. Whereas the participative approach to digital leadership is comparatively less effective in the short term but is useful when it comes to the long term and has a positive impact on employee performance and job satisfaction. This form of digital leadership style gives rise to a positive work environment that encourages creativity. It can be seen that there is no best style or type of leadership, but leaders need to analyse the situation and then assess and ascertain which form would be the best suitable for the current circumstances.

Job satisfaction has recently gained a lot of buzz in the corporate sector. HRM policies, CRM strategies and almost everything are centred on the objective of job satisfaction. It looks like gone are the days when money or financial rewards were the driving force behind people looking for jobs (Advanced Resources, 2020). Work-life balance and satisfaction with the job have gained increased recognition, and every organisation is looking for ways to make sure their employees are satisfied and content with their job role and remuneration.

According to Ellickson and Logsdon (2017), job satisfaction refers to the degree to which employees of an organisation enjoy doing their work. The current interest in the topic of job satisfaction is primarily focused on how it impacts an employee's commitment to the company, turnover and absenteeism. It remains one of the most studied subjects when it comes to organisational research. Digital leadership has a strong impact on the attributes and attitudes of workers towards their job roles, and performance satisfaction. Organisational commitment among employees can be enhanced through good leadership. This increases the psychological attachment that the employee has towards the leader or mentor and also towards the company.

Digital leadership style or behaviour plays a major role in enhancing the employee's motivation levels. This makes him happier and more satisfied with his current position within the organisation. Digital leadership is all about networking and social interaction that influences people to bring out the best in them. Good management of a company's human resources helps in driving employee satisfaction and loyalty towards the organisation. This can also indirectly affect customer satisfaction rates (Narikae et al., 2017). Satisfied and motivated employees work harder and deliver better performance as compared to the ones who feel less challenged or appreciated in their job. Though the number of research in this field is limited and the ones available are mostly limited to healthcare sectors.

Employee performance also has a direct link to good digital leadership styles. A great digital leadership style translates to the conduct of a guide and mentor towards the employees and it motivates them by showing them a clear purpose for their goals. It is dependent on how much a leader can influence their subordinates to put their best foot forward for their personal and professional benefit. Digital leadership has the ability to impact satisfaction and helps in building the trust of the workforce in the company as well as the dedication of the staff (Rasool, 2015). Management style, digital leadership and employee performance are all interconnected.

Effective digital leadership is an excellent way to ensure the development of management personnel and also helps with a competitive advantage. The correct form of style helps an organisation achieve its existing aims and objectives because employees work hard for it. Broadly speaking, employee performance in management and digital leadership is almost similar to work and performance inside the business organisation (Clifton, 2017). Business owners and the Board of Directors attribute their achievements to good digital leadership and management style. When employees find out that their leaders are exhibiting care and concern towards them, automatically their desire to work increases and also allow them to perform their job much better.

2.14 Influential Indian leaders fostering Digital Leadership Transformation

In the past few years, India has seen a surge in digital leadership transformation. This is due, in part, to the efforts of influential Indian leaders who have recognized the importance of the digital age and have worked to ensure that their country is prepared for it. They are using their power and influence to help their organizations embrace new digital technologies and adapt to the rapidly changing digital landscape (Jadhav and Mahadeokar, 2019). By doing so, they are helping to ensure that India is well-positioned to compete in the global economy and take advantage of the many opportunities that digital technologies offer. The leaders who are leading the charge on digital leadership transformation come from all walks of life. They include business executives, government leaders, academics, and more. They are diverse in terms of gender, age, occupation, and region. But they all share one common goal: to help their organizations become more successful in the digital age. They have pursued this goal by instituting policies that encourage digital adoption, building a digital infrastructure that is scalable and reliable, and training a new generation of leaders who are skilled in using technology. Below are some of the most influential leaders who are driving digital leadership transformation in India.

- **Narendra Modi and India's digital revolution**

Narendra Modi, the current Prime Minister of India, has been a driving force behind the country's digital revolution. He has championed the use of technology to improve governance and connect with the population. Under Modi's leadership, India has made significant strides in the field of digitalization. The government has launched several initiatives to promote the use of technology in all aspects of life. These initiatives include the Digital India Program, which aims to make India a digital powerhouse, and the Make in India Program, which encourages businesses to manufacture products in India. The country has also seen a surge in the number of digital startups (The Wire, 2018). This is due in part to the government's efforts to create a favourable environment for startups, as well as its initiatives to provide funding and mentorship.

From the very beginning of his tenure, Modi has been a vocal advocate of Digital India, a campaign to bring the benefits of the digital age to all Indians. He has recognized the importance of the internet in creating jobs, boosting economic growth, and improving public services

(Statesman News Service, 2022). Modi has also emphasized the need for Indians to be digitally literate. He has launched several programs to promote digital literacy, including the MyGov app and the Digital India challenge. As a result of Modi's efforts, India is rapidly becoming a digital powerhouse. Modi has also been a strong advocate of the use of social media in governance. He is one of the most-followed world leaders on Twitter, and his speeches and statements are often broadcast on social media platforms such as Facebook and YouTube. Through his actions, Modi has shown that he is committed to using technology to improve the lives of all Indians (Mygov.in, 2022). Modi has proven himself to be a visionary leader who is fully committed to pursuing digital leadership transformation.

- **Ratan Tata's legacy of pioneering digital transformation**

Ratan Tata is a pioneer of digital transformation in India. Under Ratan Tata's leadership, the Tata Group was one of the first companies in India to adopt digital technologies. They were early adopters of email, the internet, and mobile technologies. Ratan Tata also championed the idea of "digital inclusion," which means that everyone would have access to digital technologies. He recognized that this would be essential for India's economic growth and social development.

Ratan Tata, one of India's most influential leaders, has spoken out about the need for digital transformation. He has stated that businesses must embrace the digital age or risk being left behind. He believes that technology is the key to unlocking growth and that companies must focus on innovation in order to stay competitive (Chakravarti, 2022). Tata is not alone in this view. Many other Indian leaders are also fostering a culture of digital leadership transformation. This is helping to ensure that India is poised to take advantage of the opportunities offered by the digital age.

He has urged businesses to embrace new technologies and said that those who do not would be left behind. He has also spoken about the need for individuals to be digitally literate and has called for more emphasis to be placed on education in this area (Chakravarti, 2022). Tata's vision for the future is one in which businesses and individuals are pioneers in digital transformation. Ratan Tata's legacy would be one of pioneering digital transformation in India.

- **Manoj Tiwari: Harnessing innovation for social change**

Manoj Tiwari, a leader in the Indian government, is a strong proponent of digital transformation. Through his policies and initiatives, he has been able to implement initiatives for social impact. He believes that India needs to move away from its traditional ways of doing business and embrace more modern solutions. Mr Tiwari has pushed for India to take advantage of the latest innovations in technology and embrace digital solutions. Through his leadership, India has seen a rapid expansion in the use of technology to increase educational opportunities, facilitate healthcare delivery and improve the quality of life for citizens (PTI, 2018). By embracing digital transformation, Tiwari believes that India can create an economy that is competitive on an international level and continue its ascent as an emerging global power.

Manoj Tiwari, an Indian leader known for his work in the performing arts, is also a proponent of digital leadership transformation. Tiwari believes that technology can be used to drive social change and improve the quality of life for all Indians. He has launched several initiatives to harness the power of technology for the benefit of society, including a mobile app that connects people in need with service providers, and a website that provides information on government schemes and services. Tiwari's efforts have helped to make India a global leader in the use of technology for social good. His vision for the future involves harnessing innovation to foster social change and aid in economic progress.

His ideas include leveraging technology to solve problems, as well as creating a culture of shared knowledge and collaboration between individuals, organizations, and governments. He believes that fostering a digital economy is key to driving social and economic development. He encourages the use of open data and open-source platforms to promote transparency, create more efficient processes, and promote entrepreneurialism (PTI, 2018). Additionally, he advocates for increased usage of artificial intelligence, blockchain technology, and machine learning algorithms so that India can truly become a digital leader in the global economy.

- **Kiran Mazumdar-Shaw: Technology for the betterment of healthcare**

One influential Indian leader who is promoting digital leadership transformation is Kiran Mazumdar-Shaw. As the founder of Biocon, India’s first biotechnology company, she has made it her mission to make healthcare accessible to all Indians. She has been a passionate advocate for using technology in the healthcare sector and works hard to bridge the gap between

technological innovations and the healthcare industry (Nature.com, 2014). Her vision for a healthier India includes using technology to provide quality care to everyone, regardless of their economic status. She believes that leveraging technology can help improve access to healthcare, reduce costs, and improve efficiency. Her efforts have been praised for their potential in fostering digital leadership transformation in India on both political and social levels.

She has launched a number of initiatives, including the Aarogyasri initiative and the Swasth initiative, both designed to provide quality healthcare services to citizens at a reduced cost. She has also been at the forefront of introducing next-generation technology and data analytics techniques into medical practice. Through her initiatives, she has enabled doctors to access patient records more quickly and efficiently, paving the way for rapid diagnosis and improved outcomes.

Kiran Mazumdar-Shaw believes that digital transformation needs to be used to improve healthcare services and outcomes for patients. This is especially relevant in India as it shall help bridge the gap between those who can access advanced care and those who cannot. By leveraging technology such as digital diagnostics, health monitoring devices, and artificial intelligence-enabled solutions, Mazumdar-Shaw desires to make healthcare more efficient and accessible for all Indians (Mazumdar Shaw, 2021).

- **Azim Premji's contribution to promoting professional digital education**

Azim Premji, the chairman of Wipro Limited, has been a pioneer in his efforts to promote professional digital education. He has established the Azim Premji University which offers professional degree programs, continuing education and research in digital leadership. This university has built up a strong network of industry partners to ensure that students are exposed to best practices and emerging trends in the world of digital transformation. Furthermore, the university provides financial aid and tuition waivers to underprivileged students who wish to pursue an education in the field of digital leadership (Charania, 2018). In this way, Azim Premji is encouraging more individuals from all walks of life to pursue a career in this field and drive forward India's digital transformation initiatives.

Premji's ideas centre on the idea that companies need to be flexible and open-minded when it comes to digital transformation because it's something that affects everyone. He believes that

investments need to be made in increasing the digital literacy levels of citizens across all sectors if India is to truly adopt a culture of innovation and technological advancement.

He is a strong advocate for professional digital education, and his vision for the future involves making India an IT powerhouse that is capable of competing with the world's best. Premji has been very proactive in leveraging technology to drive innovation at Wipro and has committed himself to invest in education initiatives both in terms of projects as well as monetary donations. His contribution to India's digital transformation is invaluable and inspiring (Paul and Basole, 2021).

India's digital leaders stand out due to their distinctive outlook on technology and their openness to trying new things. They see technology as a tool to empower people and bring about social change rather than as a tool for efficiency. They are continuously looking for new ways to use technology to enhance people's lives and are not hesitant to experiment with new platforms and tools. Indian digital leaders are likewise attempting to foster an innovative and creative culture. They think that innovation encompasses problem-solving in novel and creative methods as well as the creation of new goods and services (Sheninger, 2019).

India has become the hub of digital transformation, especially within the last decade. As a result, some of India's most influential leaders are utilizing their knowledge and skills to nurture future digital leaders. These leaders are leveraging the power of technology to create talent pipelines and influence change within the country. By nurturing these future digital leaders, these Indian leaders are creating a generation of entrepreneurs, business owners, and innovators who can positively impact India's development agenda (Hanna, 2018). Furthermore, they are helping to develop a culture of innovation and entrepreneurial spirit across the country. Through their support, these influential Indian leaders hope to create sustainable change in India by transforming the future with new ideas and technology.

Therefore, India is a land of diversity with a plethora of cultures, religions, and languages. This diversity is also reflected in its leaders, who have made significant contributions in the fields of politics, business, and social work (Neeley and Leonardi, 2022). These leaders have been at the forefront of fostering Digital Leadership Transformation in India and have helped it emerge as a global powerhouse. Their ideologies and vision for the future have played a crucial role in

shaping India's digital landscape and in making it one of the most connected countries in the world. The contributions of these leaders would continue to be instrumental in India's journey to becoming a global leader in the digital age.

2.15 Summary of the Chapter

Digital transformation in India has shifted from becoming a buzzword to a critical strategic priority across the different facets of society. From reviewing the previous literature, an overview has been obtained of India's progress in terms of technology adoption, GDP, income, etc. Studies suggest that the industrial revolution 4.0 has brought with it several technological advancements, especially digital technology tools that have played a vital role in shaping the digital transformation in India. It has also been observed the outbreak of the Covid 19 pandemic has shifted the economy towards adopting digital tools for operating business processes. Business organizations and leaders have been found to put a major focus on the hybrid work model. In such a scenario leaders have adopted several virtual communication tools for interacting with the employees via digital means. The prevalence of using communication tools like Zoom, Google Meet and Skype, etc. within the business environment has increased considerably in India. Another important aspect that has been obtained from the study is the increasing use of business analytics tools among organizations in India. The use of tools like Microsoft Power Bi, Zoho Analytics, Tableau, etc. has been found to gain momentum in recent years thereby enabling digital transformation in India.

Apart from that, the study has also put major stress on determining the factors that influence technology adoption in society. On studying these factors, it has been observed that perceived usefulness and perceived ease of use tend to be interlinked in influencing individuals to adopt a new technological tool. On the other hand, socio-cultural aspects and emotions have been found to determine the ability of an individual to welcome a new technology wholeheartedly. Perceived behavioural control has also been observed as a determining factor of technology adoption. Different models and theories that have been discussed put a major focus on operating technology in an ethical, safe and convenient way as a path toward digital transformation leadership. This is further followed by the Lean leadership model that discusses the lean principles associated with the establishment of an external business and internal cultural strategy. Additionally, certain trends like increasing use of Artificial Intelligence, Blockchain technology, cybersecurity awareness, etc. have been observed in the study as well. Conclusively, it has been observed from previous literature that the leadership patterns prevailing in India have been found to shift toward the democratic style of leadership with a special focus on digital trans gendering.

Such has allowed for more leadership diversification and enhanced the scope of women's leadership positions within organizations of the country.

India as a country is widely experimenting with remote work and virtualization, which calls for a paradigm shift within its organization's conventional leadership strategies. Leaders all over Indian organizations are sufficed with adequate digital literacy and organizational support so that they can later foster organizational excellence, business sustainability and prosperity.

Chapter 3: Research Methodology

3.1 Overview of the Research Problem

The research problem highlighted in the provided text is the need for Indian business leaders to adopt a fundamental attitude towards digital transformation to experience true and lasting change. The literature review suggests that digital transformation in India results from a precise value alignment between an individual's core beliefs, operating values, and experiences towards fulfilling performance criteria. However, Indian business executives still grapple with what their organizations should mean by "digital". The inclination for structure among Indian leaders limits their ability to engage and inspire their people in uncertain circumstances and foster new thinking. This reduces their ability to adapt to the complex digital environment.

Furthermore, the literature review highlights the challenges of digitalization and development in India, which lead to digital gaps arising from uneven growth and corporate advancement brought on by the digitization process. To address these issues, Maiti et al. (2020) suggest examining if the modern ICT-based technology paradigm supports the development or raises more barriers in the Indian context.

Examples supporting the study include a sample of over 2,600 Indian executives compared to the digital leadership profile in Korn Ferry's report. It shows that Indian leaders must adopt a fundamental attitude shift for their organizations to experience true and lasting digital change. The Digital India programme, enabled by government funding, is also noted as a major player in the international market, and businesses are scrambling to gain a competitive edge. The literature review emphasizes the need for Indian business leaders to become more at ease with digital transformation, take risks, and create a compelling vision for their enterprise's digital future in order to lead in the digital age.

3.2 Motivation for & Significance of this study

- Digital transformation is rapidly changing the business landscape in India, making it imperative for leaders to adapt and transform their leadership styles to stay competitive.
- Understanding the concept of digital leadership transformation is crucial to assess the readiness of Indian leaders to embrace this change and drive progress in their organizations.
- Despite India being at the forefront of technological advancements, limited research has been conducted on the impact of digital leadership transformation in the Indian context.
- This study will fill the research gap and provide valuable empirical data on the challenges and opportunities of digital leadership transformation in India.
- The study will explore the relationship between leadership and digital transformation, offering insights into how leaders can effectively manage digital transformation initiatives in their organizations.
- It will also identify the particular competencies and leadership tactics required to reduce the difficulties and challenges associated with digital transformation in India.
- By providing a comprehensive understanding of digital leadership transformation in India, this study will contribute to the field of organizational development and leadership studies.
- The findings of the study can be utilized by policymakers, business leaders, and other stakeholders to create effective strategies for promoting digital transformation and progress in India.
- The study's ultimate significance lies in its potential to guide Indian organizations in adopting and leveraging digital technologies for effective leadership, growth, and innovation.

3.3 Research Objectives and Questions

The below objectives have been formulated for the study:

- To investigate the idea of digital leadership transformation
- To examine the requirement for digital leadership in a developing country like India
- To analyze steps taken by the Indian government to improve digital technology in the country
- To explore the connection between leadership and digital transformation
- To identify the issues with the digital transformation that Indian business entities are facing
- To provide leadership tactics to reduce the difficulties related to digital transformation challenges

3.3.1 Research Questions

The following questions will be addressed by the study in accordance with the set objectives:

- What is the digital transformation of leadership?
- Why is digital leadership required in a developing country like India?
- What are the initiatives taken by the Indian Government to empower the nation to become more digitally advanced?
- How do leadership and digital transformation relate to each other?
- What obstacles do Indian business organisations have to overcome in terms of leadership and digital transformation?
- In what ways can these digital transformations and leadership transformation challenges be mitigated?

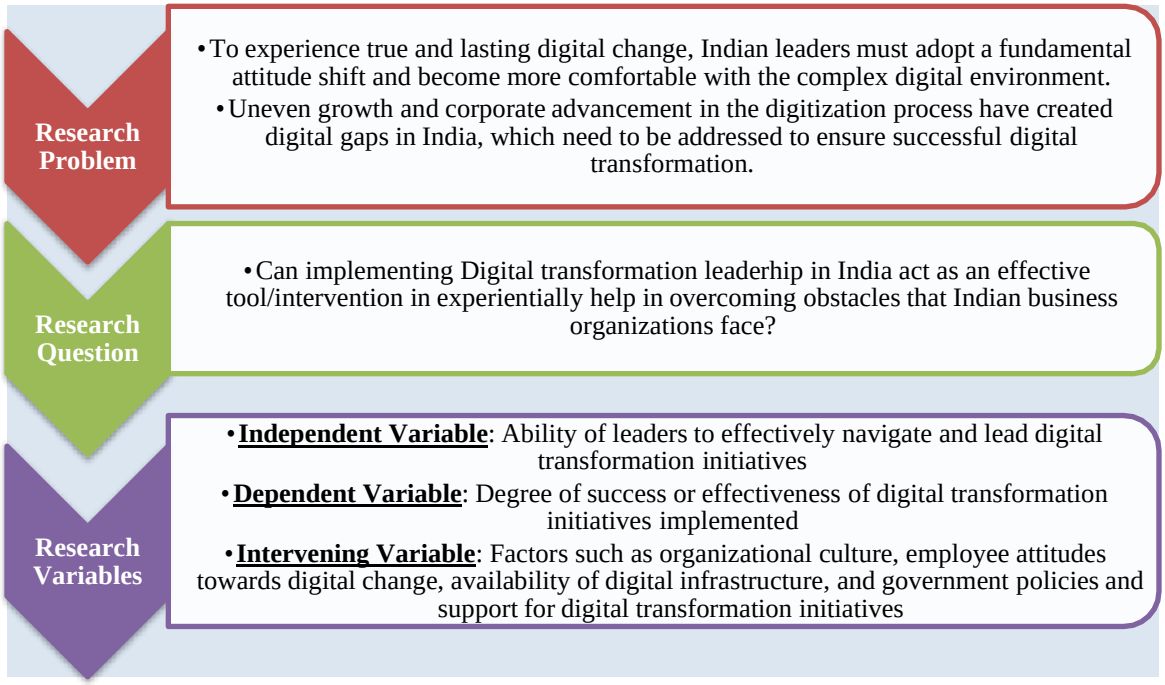

Figure 7: Confirming and Refuting Research Problem, Questions, and Variables.

(Source: Self-developed)

3.4 Introduction to Research Methodology

The "research methodology" refers to a broad category of approaches, strategies, ideas, and axioms that researchers take into account when they undertake their investigations. It also provides the moral guidelines the researcher follows to ensure the study's integrity and dignity at every stage of the investigation (Patel and Patel, 2019). The goal of the chapter is to give the audience a thorough and in-depth summary of the theories, concepts, and procedures used to carry out the study. The methods of data gathering and analysis, however, form the foundation of the chapter. The methodology chapter, according to Kumar (2018), is essential in showcasing the many choices made in lieu of other options and elaborating on why those choices are the best fit for the current study and the variables being evaluated. It gives a clear explanation of the rationale behind the choices the researcher took to support the current criteria and needs.

The importance of a research methodology chapter, according to Pandey and Pandey (2021), goes beyond simply highlighting the different techniques and convictions that were chosen. It also includes demonstrating why the alternatives were selected over other possible options and why they were the most appropriate and ideal for carrying out the research. Without a clear research methodology chapter or the selection of suitable methodologies or concepts, the study's scope may suffer, leading to the development of unclear findings that prevent the researcher from drawing firm conclusions. As a result, the study's dependability and authenticity will be questioned, raising major concerns about both its legitimacy and the accuracy of the results it produces.

3.5 Research Onion

The "Saunders Research Onion" idea and model require that methodological paradigms be thoroughly evaluated before being aligned with them. The researchers though, also mentioned that there is no set path or specific unitary roadmap for conducting research. Research procedures can be changed to suit the needs of the topic and the requirements of the research study.

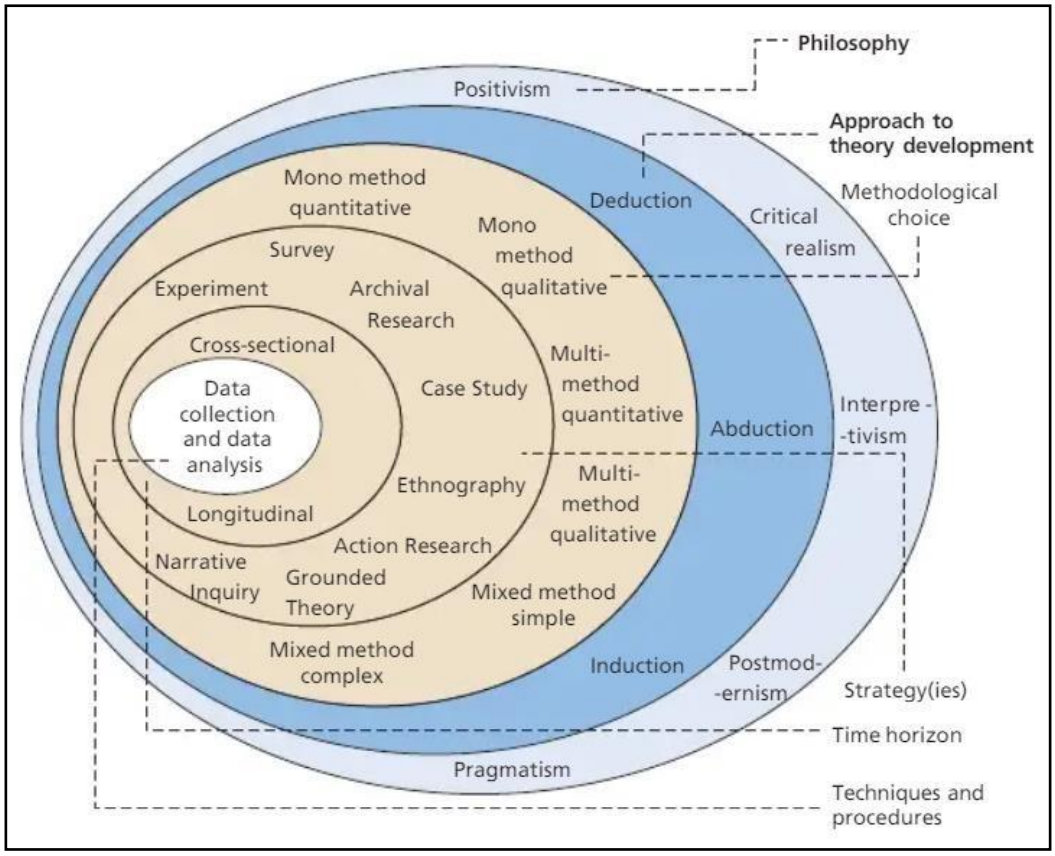

Figure 8: Research Onion

(Source: Saunders *et al.*, 2019)

The research onion, created by Saunders *et al.* (2007), emphasises the appropriate steps to be done in creating a proper research plan. Each onion layer, seen from the outside, represents a separate study stage, illuminating a more thorough sequence in which the various study methods are carried out. Every researcher must carefully evaluate the onion and specify the different actions they will undertake in order to build an efficient and practical research strategy.

It is necessary to define and present the research philosophy or research philosophy first. This creates an appropriate research foundation for the subsequent step, which involves developing an appropriate research approach. The next step entails selecting a suitable study plan, which is followed by the discovery of the fourth layer's time horizon. Determining the techniques used to gather the essential and pertinent data, which will be evaluated to produce the study's findings, is the fifth and last phase.

Using the research onion concept provides advantages such as creating a series of stages within which different data gathering may be explored as well as providing an example of the methods that can be used to illustrate methodological research (Saunders, 2007). In order to ensure that the same can be applied in almost any type of research approach, the research onion was created. As a result, it can be useful in a variety of contexts and dynamics. The plan ensures the researcher's flexibility in how they approach and conduct the study.

Based on the structure of the onion, the researcher separated the chapter into several pieces for this study. These factors include, among others, the research design, philosophy, methodology, approach, and data collection technique, as well as the data analysis methods, the use of documentation, the methods of interpretation, ethical issues, and the study's limits. The researcher has chosen to use the research onion model in the current study to make sure that the proper sequential stages are taken, the study's requirements are met, and a systematic and logical study is carried out.

3.6 Research Philosophy

Everyone has their own thoughts and viewpoints on what the essence of the truth is; yet, substantiating a distinct philosophy is necessary within scientific research domains for the audience to understand how the researcher arrived at his or her conclusions. This component of the research methodology is significant because it focuses less on the technical aspects of the study and more on the concepts and values that guide the researcher's thought process and technique of decision-making (Kivunja and Kuyini, 2017).

Every study has a foundation that is founded on a collection of conceptualizations and viewpoints (Žukauskas *et al.*, 2018). Clarifying the conjectures about the source of knowledge is a crucial part of research philosophy. Scholars are expected to explain how they go about trying to find the truth about the topic of their research because there isn't a single method that philosophers agree on for doing so. Therefore, the research philosophy is described as the viewpoint and methodology adopted by the researcher to collect, examine, and evaluate data in order to address the research question and draw conclusions.

The consideration following three crucial functions of the research philosophy is critical for scholarly and literary judgments.

Demystification: Identifying, evaluating, and illuminating any potential false premises, contradictions, or paradoxes is known as

Informing: Assisting researchers in understanding their place in the larger community of knowledge-producing endeavours while also assisting them in being aware of possible directions they could go in.

Method facilitation: Researchers in general, including economists, go through this process of analysing the mechanisms they use or could use in order to improve the methods that are already in use and/or to define the conditions under which they should be applied.

Kothari (2017) asserts that when performing their research, researchers have a choice between three different philosophical viewpoints. These three formats are **axiology, ontology, and epistemology**. The "theory of knowledge," which can be better understood as the numerous approaches, scope, dependability, and hypotheses connected to natural attributes that support the

researcher's theories and views, is the focus of epistemology. Axiology is defined as the "characteristics that can determine the inherent merit of a scenario or condition," while ontology deals with the "nature of reality."

The scientific process of **epistemology** is based on quantifiable and observable facts. It helps with generalizations that resemble laws and advances the topic of study by offering causal justifications and forecasts. Ontology is a genuine, impartial, and external approach built upon the idea that there is only one real world. The results produced are precise and well-organized. According to Easterby-Smith *et al.* (2008), axiology offers a value-free perspective that frees the researcher from attachment to any reality, allowing them to conduct independent research from a neutral standpoint and retain objectivity. The four major philosophical sub-domains of **positivism, realism, interpretivism** and **pragmatism** are all applied to epistemology. Practical considerations, such as the philosophical distinctions between studies that concentrate on numbers and facts and those that are based on literary judgements, have an impact on the specific choice of research philosophy.

A **positivist philosophy** is considerably structured, excellent for investigations with large sample sizes, and acceptable for both quantitative and qualitative studies. According to positivists, subjective knowledge can only be attained through sensory considerations, which can only be accomplished by careful analysis and evaluation. It is significantly more dependent on statistical findings that are presented as quantitative analysis and findings (Al-Ababneh, 2020).

In accordance with Crowther and Lancaster (2008), this philosophy enables the researcher to carry out an independent investigation while limiting all types of human interests and requires the researcher to focus on facts. The following tenets form the foundation of positivist philosophy.

- Inquiry methodology is consistent throughout science.
- The research should be capable of forecasting and demonstrating.
- The research should be empirically observable using standard human senses.

Since common sense and science may be distinguished from one another and the former should not be permitted to skew the results, it is important to maintain this differentiation. Science must be value-free and judged simply on the basis of reason.

The **realist philosophy** functions under the assumption that reality is distinct from the mind. The scientific method of knowledge development has served as the foundation for the philosophy's formulation. Direct realism and critical realism are two types of realism. Naive realism, commonly referred to as direct realism, transfers the appearance of reality into actuality. Simply put, it describes how the world appears to human senses. In contrast, critical realism maintains that people have real-world emotions and visions. It makes the claim that real-world images and experiences may not always be accurate and may even misrepresent reality. As per the views of Novikov and Novikov (2013), critical realists acknowledge the interaction and effect of the individual, the group, and the organization, in contrast, to direct realists who see the world as largely static and focus on a single level, which may be individual or multi-level research.

The **interpretivism philosophy** involves academics in determining the truth of the constituent parts, incorporating human interpretations into the research process. The only ways to access reality, which may already exist or have been socially established, according to interpretivism, are social creations like consciousness, language, shared values, and tools. By criticizing the positivist perspective in social sciences, interpretivism philosophy was developed (Crowther and Lancaster, 2008). Therefore, the interpretivism philosophy is more pertinent for doing qualitative studies than for doing so with quantitative research.

According to the **pragmatist philosophy**, ideas are only important if they support a certain course of action. Pragmatics accepts that there are various ways to interpret the world and conduct research and upholds the idea that there is no way to see the whole picture from just one point of view because different realities may coexist (Collins, 2010). According to the pragmatic philosophy, the research question is the most important factor in deciding the research philosophy. Positivism and pragmatism can both be combined into a single study project depending on the nature of the research subject. Furthermore, pragmatic studies can combine diverse methodologies, such as quantitative, qualitative, and action research approaches, with other research approaches and tactics (Saunders *et al.*, 2012).

Chosen Research Philosophy

For this particular study, the **positivist philosophy** has been selected by the researcher. A single person may employ a certain scientific method if it is required for the study's objectives, according to positivist philosophy. Depending on how crucial the tutor's assistance is in providing a solution to a certain problem, it is also a fantastic approach for the tutor to be prepared (Patel and Patel, 2019). The positivist notion facilitates the arrangement of numerous approaches by establishing knowledge of the constituents together with the comprehensive information that has aided, helped, or provided insight into the desired aim that may be successfully attained (Collins and Hussey, 2014).

The various needs and goals of the study may be satisfied in conjunction with positivist philosophy, and this method also helps in developing an accurate understanding of the utilization of digital leadership strategies and how the various frameworks under this aspect are being used by various Indian organizations. Positivism holds that a good measurement for research and data collection may be evaluated objectively by looking at what works best for that particular area of knowledge. Through this research philosophy, beneficial information based on natural occurrences, their characteristics, and relationships can be attained (Snyder, 2019). This offers a solid viewpoint founded on laws and principles of science while also enhancing the benefits, features, and capabilities of the researcher to increase the study’s efficacy.

3.7 Research approach

If defined simply, the research approach translates to the general plan of scientific study conduction. With close proximity to research philosophy, research approaches actually facilitate the researcher to choose such processes for data collection and data analysis that helps them validate and justify their generated findings for the study. Across most scholarly works of literature relative to the research approach, there have been three main approaches defined to fit in terms of conducting a scientific study. These are respectively: "**inductive approach, deductive approach and abductive approach"**.

The "**inductive** approach" or reasoning substantiates observational evaluation and proposal of theories after competition of the research process based on the observation-based results. Researches based on inductive approaches tend to demonstrate patterns-based development of explanations and testing formulated hypotheses based on the patterns identified (Woiceshyn and Daellenbach, 2018).

The **deductive** approach is considered as the research which is used by people in a typical manner for effectively associating with the investigation that is scientific. The respective researcher studies what the previous and the other researchers have executed and done, along with reading the existing theories of whatever phenomenon she or he has been studying and after that tests the particular hypothesis that significantly emerges from that number of theories. When a researcher selects the deductive approach it executes the steps which have been explained for the inductive research and reverse their significant order. It particularly initiates from a social theory that they have found compelling and afterwards tests their respective implication with the data accordingly (Pandey and Pandey, 2021).

The **abductive** approach is a particular logical process of generating observations along with seeking the significant hypothesis that can be a potential fit or elaborate those number of observations. "Simply put", a specific list of observations which has been conducted to be incomplete is effectively analyzed to develop the best amount of prediction, especially for the hypothesis to properly elaborate the different number of observations. This approach is considered to be a vital part of any process which is scientific and the proper development of

hypotheses. This research approach is appraised to be evening from the other two approaches which are inductive and deductive (Newman and Gough, 2020).

Chosen Research Approach

In this report, the **abductive research approach** has been selected as it explains the theory as well as the phenomenon that has been collected for the study by utilising the "qualitative methods of data collection and data analysis in an integrated manner". The abductive research approach helps with creating a probable conclusion from the information that has been acquired or gathered. This also creates a successive approximation along with that under this particular approach and explanation is the legitimate, if it has resulted as the best possible explanation from a particular set of known information on data. The abductive approach helps with creating a proper emphasis towards the digital leadership transformation in the region of India along with focusing towards the organisation's efficiency and success (Rinjit, 2020). The Abductive approach has properly explored the facts along with creating an efficient explanation of those numbers of facts. The abductive approach helps with allowing creativity as well as intuition to effectively inform the evolution which is theoretical, along with understanding the specifics and the particular generalisability of the different speculated phenomenon that would be helped with the given respective topic.

3.8 Research Design

The research design serves as the framework for the succeeding procedure that the researcher uses to carry out their investigation and find answers to their research questions. The best study design will dictate the selection of an appropriate methodological roadmap for carrying out the investigation and producing understandable conclusions. According to Basias and Pollalis (2018), a relevant study design enables the researcher to select the appropriate approaches in terms of the research's aim and objectives, methodology, methods of sampling, and data collection and analysis procedures.

As mentioned by Patel and Patel (2019), the research design has received numerous definitions in a variety of documents and records, much like the research approach. While some academics define research design as a combination of qualitative and quantitative research approaches, others define it as a set of decisions for carrying out data gathering and data analysis procedures. The researchers contend, however, that the most logical and cohesive research design is one in which the various methodologies and approaches used to conduct a study are integrated. A good study design should make sure to handle the research topic and questions as effectively as possible and produce the most unequivocal results possible.

The determination of the type of evidence needed to precisely illustrate the occurrence is necessary when collecting relevant evidence in the field of social events in order to solve the research problem or test research hypotheses. However, most of the time, researchers start the study far earlier than necessary and spend little time critically evaluating the type of information they need to answer their research question. Lack of consideration for study design frequently raises the likelihood of producing unconvincing and unsatisfactory results, which leads to a failure to address the research problem in its entirety (Patel and Patel, 2019).

When using academic and scientific techniques to investigate social issues, there are fundamentally two sorts of research designs that are used (Doyle *et al.*, 2020). These include **conclusive** and **exploratory** research designs.

The **conclusive** research design is pertinent for studies that aim to produce decisive conclusions, whereas the exploratory research design is appropriate for producing findings on topics that are not frequently examined and as a result, have little available data.

The **exploratory** research design is appropriate for investigations when the researcher is just looking to provide clarifications on the study's themes rather than generating any definitive opinions or formulating theories based on reliable evidence discovered throughout the study, as suggested by its name. Due to this, investigations that haven't had much prioritization in the past are the ones that should be conducted using an exploratory design. Instead of offering any concrete evidence, the goal of these investigations is to pinpoint the fundamental problem underlying the research subject and provide a deeper knowledge of it (Tuffour, 2017).

The conclusive research design is further subdivided into two distinct categories: **descriptive** and **causal** research designs. While causal or explanatory research is conducted in order to evaluate the breadth and nature of study variable relationships, they are literally “casual” in terms that ambiguity prevails within extents to undefined relationships.

Descriptive research design is distributed on the basis of the characteristic function of research conduction contexts. The sub-categories translate as **case study design, case series design, cross-sectional design, longitudinal design** and lastly **retrospective design**.

Chosen Research Design

The **retrospective** form of descriptive research design has been particularly selected for this study. Usually used within medical research domains, the retrospective design urges the researcher to build his/her study based on past data and information cohorts which are available with respect to the study’s dependable and undependable variables. It is also known as observational research, as the researcher is expected to observe, evaluate, transcribe and present with distinctive analysis that removes the substance of ambiguity and predictive fallacies relative to the study topic (Bhatia and Mohammed, 2021).

Digital leadership and leadership transformation is a vast domain that involves change implementation and the adoption of newer strategies. Constructive disruption is common in such cases which if required to be researched, involves thorough study and identification of the change adoption and readiness assessment of the demographic domain. India as a country has witnessed numerous such changes in the past, both in terms of leadership and digitalization. Therefore, the following design has enabled the researcher to freely study these timely changes, aiding with the option for critical evaluation and outcome generation.

3.9 Data Collection Method/Strategy

A data collection method is an approach for obtaining information for a research study. It is essential for any scientific or business research, as it provides the essential background on which the research can be based. As a result, acquiring data is essential to all streams. **Primary data collection** and **secondary data collection** are the two principal types of data collecting techniques that are divided based on the type of data being collected.

Primary data also referred to as raw data, is obtained directly from a source via experimentation, surveying, or observation. This information is typically divided into two categories, with the primary data collection techniques. Those are **qualitative** data collection and **quantitative** data collection. There are a number of different methods that can be used for primary data collection, each with its own advantages and disadvantages. The most common methods are surveys, interviews, focus groups, and observations. Each method has its own strengths and weaknesses, and it is important to select the right method for the particular study. Surveys are the most commonly used data collection method, and they are easy and inexpensive to administer. However, they are not very reliable because they rely on people's memories and perceptions. Interviews are more reliable than surveys, but they are also more expensive and time-consuming to administer. Focus groups are a mix of interviews and surveys, and they are more reliable than either one individually (Snyder, 2019). Observations are the most reliable data collection method, but they also require the most time and effort to administer.

Data obtained from sources other than the original source is referred to as secondary data. This data has already been processed and is readily accessible, indicating that someone has previously conducted analysis on the aspect of the study. “Books, journals, periodicals, newspapers”, and other such sources are usually used for secondary data reference. It might be unreleased data or material that has already been published (BYJUS, n.d.).

There is a multitude of secondary data collection techniques. A common secondary data collection method among these is ***content analysis***. It involves studying the content of documents or other media relevant to the research topic, aims and objectives in order to extract information. This can be done manually or by using software that automates the process. The advantage of the secondary data collection method is that it allows the respective researcher to

study a large amount of data quickly and efficiently. It can also be used to compare different sources of information, or to track changes over time (Patel and Patel, 2019).

Chosen Data Collection Method

The **secondary data collection method (content analysis)** has been chosen and it creates proper accessibility towards the existing number of information that it also helps with less consumption of time in comparison with the data collection which is considered to be primary. This form of data gathering makes it easier to evaluate data that has already been gathered and validated by a skilled statistician or researcher. With the help of this collection method, a huge amount of secondary data specific to "Digital Leadership Transformation in the Region of India" was collected. The data source particularly includes the sources that are accessible like books, newspapers, journals, the records of the government along with websites (Pallavi, 2020). A sufficient quantity of material was also evaluated from the organization's internal records and recent consultant media-based publications, and this made the research more accurate. Such readily available data assisted in reducing the extra costs associated with obtaining any kind of information that requires a subscription or payment, as well as the work required for the data-gathering phases of research studies.

3.10 Research Instruments/Tools

A research instrument is a tool that is used to collect data. There are a variety of research instruments that can be used, depending on the type of data that is being collected. There are questionnaires, surveys, interviews, focus groups, and observation instruments (Zawacki-Richter *et al.*, 2020). “Each of these instruments has its own strengths and weaknesses, and it is important to choose the right instrument for the job”. The wrong instrument can lead to inaccurate data and poor research results (Nayak and Singh, 2021).

Chosen Research Instruments/Tools

As this is secondary data-based research, the **hardware tools** that the researcher used are a personal computer and smartphone with internet connectivity and for the **software tools,** he utilized MS Office for editing, the Chrome browser and various secondary databases. These tools have effectively assisted the researcher in producing a quality study. Secondary databases like Google Scholar, ResearchGate, JSTOR and normal Google search engine searches were referred to for data browsing. Relevant and freely-accessible data files were downloaded in PDF formats, evaluated and then transcribed respectively to the predefined structure made for the study.

3.11 Data Analysis

Data analysis is the process of examining data in order to draw conclusions about it. This can include examining the data to see what it tells the researcher about a particular topic or subject or trying to identify patterns or trends in the data. Data analysis is an important part of any research project, and it is essential to make sure that the data is properly analyzed so that the researcher can trust the conclusions that he or she draws from it (Ngozwana, 2018). There are two different types of analysis **qualitative and quantitative data analysis**.

Qualitative research is a process that involves collecting data through interviews, focus groups, and observation. The goal is to get a detailed understanding of the problem or issue being studied. **Quantitative** research, on the other hand, is a process that involves collecting data through surveys, polls, and experiments. The goal is to measure the magnitude of the problem or issue being studied.

For this research study, a **qualitative data analysis** has been implemented. There are five main types of qualitative data analysis: "**content analysis, discourse analysis, narrative analysis, thematic,** and **grounded theory**" (Willmott, 2020).

Chosen Data Analysis Method

The **grounded theory-based analysis** has been chosen and it is appropriate for the research study. It helped with properly understanding the social world along with identifying the structures that have been underlined and the processes which give proper rise to them. Moreover, this analysis technique helped to prevent any sort of unanimous and/or hyper-realistic claims (Hoon and Singh, 2019). The generated findings were simply based on the previous studies and findings relative to the study topic and hence are true and valid.

3.12 Research Limitations

When discussing research limitations, it is important to consider the three main aspects of research: **design**, **execution**, and **interpretation**. Design limitations refer to the constraints that are placed on the researcher during the research process. These limitations may be due to budgetary constraints, time constraints, or logistical constraints. Execution limitations refer to the obstacles that are encountered during the data collection process. These limitations may be due to the fact that some data is not readily available, or that some data is not able to be collected due to ethical considerations. Interpretation limitations refer to the fact that the researcher is always limited by his or her own biases and worldview. These limitations can never be fully overcome, but they can be mitigated by considering multiple perspectives (Theofanidis and Fountouki, 2018).

A research limitation is a deficiency in a study that hinders its ability to provide accurate results.

There are many different types of research limitations, including sampling bias, measurement bias, and confounders. These limitations can take many different forms, such as selection bias, information bias, and confounding variables. Researchers have to take care to identify and mitigate the effects of research limitations in order to produce accurate and reliable results. While the discussion of research limitations has been comprehensive, it is by no means exhaustive. There have been countless other factors that can impact the results of a study. These have included the methods that are used to collect and analyze data, the selection of databases, and the environment in which the study is conducted. Moreover, research limitations are not static; they have been changing over time as new methods of data collection and analysis are developed. As such, it is important to constantly revisit and revaluate the limitations of this respective research (Greener, 2018).

While it is certainly possible to conduct extensive research in a short amount of time, it is not always feasible. ***Time constraints*** have limited the amount of research that can be conducted, which led to less-than-optimal results. This has been particularly problematic in academic circles, where this research has been seen as the basis for further study and knowledge. As for this particular research, the researcher felt the provided time to be slightly inadequate which has

limited the amount of research that can be conducted and has propagated to a cycle of less desirable research and further limitations.

Despite the many benefits of research, it is not without its limitations. One of the most significant limitations has been the ***monetary constraints***. Financial support or backing is of unexplainable importance as it suffices the means to collect and utilize more quality data from online databases. The researcher was limited by the amount of money he had to spend on the study's conduction. As a result, he had to choose freely accessible data sources and consider alternative types of data collection and analysis techniques.

Another common limitation of research has been the ***deficiency of literature***. When conducting a study, the researcher has often lacked a body of work to reference and build off of. This not only reduces the credibility of the study but also constrains the researcher to include the latest pieces of work. Such has hence led the researcher to conduct more rigorous data surfing to search for quality freely-accessible data sources which again took from the allotted time to finish the research study. This has also limited the scope and accuracy of the findings.

Last but a major constraint that the researcher faced was a ***hardware fault***. Due conduction of the work, there were many a time when the system crashed due to memory inadequacy, and power cuts. This posed a huge problem for the researcher in terms of data loss, frequent reorganization and corrupt file recovery.

3.13 Ethical Considerations

The significant ethical conductivity of particular research effectively includes the specific set of guidelines and the protocols that have been given out precise attention while executing this research study while properly ensuring legitimacy as well as integrity. While generating this particular study the respective researcher has given adequate attention towards the different number of ethical considerations (Vollstedt and Rezat, 2019).

- The researcher has given efficient attention to executing the study in an honest manner along with properly abiding by the integrity of the research according to the data collected or the approaches and the methods taken for the study's completion.
- All the different measures that are preventive have been properly followed to avoid any sort of accidental damage. Moreover, proper care has been taken towards illegal accessibility and theft of the data which are secondary or the varied number of information collected so as to maintain the study's uniqueness and viability (Charmaz and Thornberg, 2021).
- The data and the information have been extracted from authentic sources that are reliable.
- Each and every intellectual property in terms of data/information which has been implemented in this research study have been properly referenced and given an acknowledgement.
- The university guidelines have been properly followed throughout the study to avoid any sort of plagiarism, data mismanagement and citation mishaps.

3.14 Chapter Summary

Proper research methodology is the foundation of any good study. It is the process by which researchers gather and analyze data. It is used to answer questions and solve problems within a field of study. The type of methodology that is used often depends on the type of research question that is being asked. For example, if the question is exploratory, then a qualitative method such as interviews or focus groups might be used. If the question is more hypothesis-driven, then a quantitative method such as surveys or experiments might be more appropriate. Whatever the question, the goal of the research methodology is to produce reliable and valid results. There are many different research methodologies accessible, and each has advantages and disadvantages of its own. It is critical to pick the ideal method and apply it effectively for the work at hand. There are a number of factors that have been considered while devising the methodology of this particular study, including the nature of the data and the research aim, its objectives, questions and lastly purpose of study conduction.

To begin, the chapter efficiently presented the research onion, which resulted in a detailed review of the research techniques and paradigms. Saunder's research onion model was referred to as a foundational base but the researcher self-devised his methodology according to the options and choices that befitted him. Following that the positivist philosophy has been chosen. Positivism maintains that a proper measurement for study and data collecting may be objectively evaluated by examining what works best for that specific field of knowledge. This provides a solid viewpoint based on scientific laws and principles while also improving the researcher's advantages, traits, and capabilities to maximize the study's efficacy. Next, for the research approach, the abductive research approach has been implemented, which helps with the proper explanation of the phenomenon or theory that has been collected for the research study utilising the qualitative methods of data collection as well as the analysis in a particular integrated manner. Next, for the research design, the descriptive (retrospective) research design has been found to be the best suitable design and hence has been chosen for the study. The design has allowed the researcher to freely investigate these contemporaneous modifications, facilitating critical review and outcome production. The secondary data collection method has been effectively chosen for conducting this research study. The instruments and the tools in the research comprise hardware tools: personal computers and smartphones with internet

connectivity and software tools: MS Office, the web browser and various secondary databases for data surfing and gathering. As for the data analysis method, the study has been facilitated through the help of grounded theory-based analysis. It aided in correctly comprehending the social environment, as well as distinguishing the formations that were outlined and the processes that led up to them. Furthermore, this analysis approach aided in the avoidance of any type of unanimity and/or hyper-realistic assertions. Limitations of the study translated to the aspects of inadequate data availability or literature deficiency, discussion scope deficiencies, monetary constraints, time constraints and hardware faults. Lastly, in terms of ethical consideration in the methodology, all the relevant conductivities have been properly followed with utmost legitimacy along with avoiding any sort of unethical functionality. The researcher has taken care to avoid bias whenever possible and to report any potential biases they may have.

Correctly, applying a research methodology is essential for producing accurate results. The methodology has been formulated based on the type of resources available. The researcher first researched the specific aspect of scientific methods, processes and strategies of research conduction and then only began formulating the methodology for the respective study. The outcome methodology, although taken from the allotted time, resulted in a clear and precise roadmap on which the entire study was conveniently devised.

Chapter 4: Data Analysis

4.1 Chapter Introduction

This chapter entails the analysis of the collected secondary data based on the defined objectives and research questions of the study. The detailed data analysis has included previously evaluated data from the literature review and along the process paved the way for new data which has been thoroughly taken into consideration. Lastly, the conclusion section deals with the results that have been generated from the data analysis which can forge the way for future studies on the same domain.

4.2 Research Questions

The main question that the current study will try to answer is: Can implementing Digital transformation leadership in India act as an effective tool/intervention in experientially help in overcoming obstacles that Indian business organizations face?

To answer this question, the supporting research questions are:

- What is the digital transformation of leadership?
- Why is digital leadership required in a developing country like India?
- What are the initiatives taken by the Indian Government to empower the nation to become more digitally advanced?
- How do leadership and digital transformation relate to each other?
- What obstacles do Indian business organisations have to overcome in terms of leadership and digital transformation?
- In what ways can these digital transformations and leadership transformation challenges be mitigated?

4.3 Descriptive Exploration of the data as per objectives

4.3.1 The investigation of the idea of digital leadership transformation

Digital leadership transformation refers to the process of adapting to the changing landscape of business and technology and developing the skills and strategies needed to lead in a digital world. This may involve a range of activities, such as implementing new technologies and digital processes, developing new business models, and fostering a culture of innovation and

collaboration within an organization. Digital leaders are those who can embrace change and take advantage of new opportunities to drive business growth and success (Kane, 2019).

Presently, Indian business companies must spend on technology equipment and digital systems to maintain their competitive edge. By accelerating their output and enhancing communication, these digital systems and tools will give them a persistent competitive advantage.

Digital leadership involves a variety of skills and characteristics that are important for success in the digital world. Some key components of digital leadership include the ability to understand and utilize technology, the ability to adapt to change and stay up-to-date with the latest trends and developments in the field, strong communication and collaboration skills, and the ability to think strategically and make decisions that will drive the success of a digital organization. Other important components of digital leadership include the ability to inspire and motivate a team, strong problem-solving skills, and the ability to foster a culture of innovation and continuous improvement (Schiuma ET AL., 2021).

Digital transformation is changing the way people live and work while also giving them the tools they need to adapt to these changes. Every digital transformation necessitates a combination of technological, process, and human transformation (Vial, 2021). This idea has so many intricacies that one can become paralyzed by examination. The following seven components should make up digital leadership:

- Thinking about consumers, first
- Challenging the key beliefs
- Developing the right alignment with other leaders
- Being data-powered
- Employee empowerment
- Leading by example
- Communicating and inspiring employees and peers using networking

Many companies mistakenly think that digital transformation will reduce or replace their present human resources. Some approach digital transformations by presuming that the only sources of value are people and other human capital. Unfortunately, both approaches have flaws. Despite being essential to a digitalization initiative's accomplishment or failure, human resources are not the only component at work. A strong digital transformation leader has to have a broad base of particular expertise. They must have a strong emotional bond with and understanding of the service user (Matt et al., 2015). They also need to be aware of the business's strategic planning, operational processes, and supporting technologies.

Leaders' bold actions pave the road for a successful digital transformation. To do this, it may be essential to terminate a few geniuses who are roadblocks, identify and empower personnel with the expertise required to expedite the changes as they arise, and attract external talent to reinforce internal resources. Leaders must display critical qualities such as boldness and enthusiasm when it comes to motivating change within the business. For organizations, the CEOs are the prima face and augmenters of digital transformation.

4.3.2 The need for digital leadership in a developing country like India

There are several reasons why digital leadership is important in a developing country like India. First, the widespread adoption of digital technologies has the potential to improve the efficiency and effectiveness of businesses and organizations, which can help drive economic growth and development. Second, digital leadership can help bridge the digital divide and improve access to education, healthcare, and other essential services for people in rural and remote areas. Third, the use of digital technologies can help improve the delivery of government services, making them more accessible and efficient for citizens. Finally, digital leadership can help attract foreign investment and support the growth of the country's technology sector (Akpan et al., 2022).

The government's funding of the Digital India plan is enabling India's market to become a dominant force on the world stage in several ways. First, digital technology is helping to drive economic growth and development in India. For example, the use of digital tools and platforms has made it easier for businesses to connect with customers and sell their products and services, which has led to an increase in entrepreneurship and innovation. Additionally, digital technology has also made it possible for Indian companies to expand their operations and reach new

markets, both domestically and internationally (Rodgers, 2016). Although Indian business executives continue to experience good performance today, many of them still struggle with what "digital" means for their organizations (Reis et al., 2018). Also, even though Indian leaders are highly motivated by challenges and have a demonstrated ability to engage, inspire, and produce results in their teams, their likeliness for infrastructure currently limits their capacity to engage, inspire, and foster innovative thinking in their teams under uncertain circumstances.

Digital leadership is enabling companies to become more competitive on the global stage by providing them with the tools and capabilities they need to better serve their customers and outmanoeuvre their competitors. This is being achieved through the adoption of technologies such as artificial intelligence, machine learning, and data analytics, which are helping Indian businesses to improve their operations, increase efficiency, and gain a competitive edge in the global market. Additionally, the growth of the digital economy in India is also creating new opportunities for entrepreneurship and innovation, which is further driving the country's economic growth and global competitiveness (Benitez et al., 2022).

Additionally, it discourages curiosity, self-assurance, and taking risks by encouraging the "safe" way rather than allowing room for more innovative thinking and iterative decision-making. Indian leaders find it difficult to evolve with the times since they feel more at ease in particular situations. This reduces their ability to adapt to the complex digital environment. To lead in the digital age, they must become more at ease in this area. Additionally, it will provide them with the assurance to take the risky decisions necessary to get their while assisting them in creating a compelling vision for the enterprise's digital future.

4.3.3 Steps undertaken by the Indian government to improve digital technology in the country

Digital technologies and the internet have become more and more ingrained in people's daily lives over the past few years. India's development process began with the 1950 strategy, which emphasized rapid industrialization and five-year plans for achieving self-sufficiency. With quick industrialization came innovative industrialization, in which commercial enterprises heavily prioritized making practical digital moves. In this context, it must be noted that the software industry in India was largely undeveloped before 1980, and the country's IT sector only consisted of hardware products. The software sector experienced substantial expansion as a result of trade

liberalization and the removal of entry-level restrictions (Cuts-international.org. 2022). In addition, the Indian government has taken several steps to improve digital technology in the country. Some of these steps include:

- **Developing a national digital infrastructure:** The government has launched initiatives such as the Digital India program, which aims to provide high-speed internet connectivity to all citizens and improve access to government services online.
- **Promoting digital literacy:** The government has launched various initiatives to promote digital literacy among the population, such as the Digital Saksharta Abhiyan, which aims to train over 6 crore people in digital skills by 2020.
- **Fostering collaboration between academia and industry:** The government has promoted collaborations between academia and industry to accelerate the development and adoption of digital technologies.

The setting up of the National e-Governance Plan (NeGP), aims to create a common platform for the delivery of government services and improve transparency and accountability in the public sector (Dash and Pani, 2016).

The establishment of the Ministry of Electronics and Information Technology (MeitY), which is responsible for the formulation and implementation of policies related to the use of electronic and information technology in the country (Anand et al., 2018).

Collectively, it can be said that the trends that assisted in starting India's digital journey include the substitution of human labour with smart power with the introduction of smart industrialization, followed by India's aim to become a cashless, paperless, and faceless economy ("India's Digital Transformation Journey over the last 75 years | Team Talk, 2021"). The goal of Indian firms was then followed by the statement that to stand out in the global marketplace, they needed to provide their clients with an experience rather than merely a product or service. With the help of these developments, the Indian government's primary initiatives and policies have affected India's transition to a digital economy.

4.3.4 The connection between leadership and digital transformation

Digital transformation involves the adoption of digital technologies within an organization, leading to a significant shift in its operations and the way it delivers value to its customers. Leadership plays a crucial role in driving digital transformation initiatives within a company. Effective leaders can help to create a vision for the organization's digital future, communicate that vision to stakeholders, and motivate and guide employees as they work to implement changes and adapt to new ways of working (Loonam et al., 2018).

Sheninger (2019) asserts that there is a close connection between leadership and national culture.

Culture is a requirement for leadership, even though leadership needs to influence culture and participate in performance-related cultural processes. National culture has a long history, and it is essential for establishing universal meanings and values for upcoming generations. Research has found a strong connection between national culture and the expectations placed on leaders in terms of their conduct (Sheninger, 2019). To support a seamless shift from traditional to digital leadership, it is essential to consider the cultural environment. India is at the forefront of transition and growth when it comes to integrating technology into management, thus it is essential to evaluate historical leadership patterns and the existing quo before determining the next steps toward digital leadership.

For example, digital leaders can use technology to promote and facilitate communication and collaboration among people from different cultural backgrounds, which can help to break down cultural barriers and foster a more inclusive and diverse national culture. Digital leaders can also use technology to help preserve and promote traditional cultural practices, such as by using social media and other digital platforms to share and celebrate cultural heritage. Additionally, digital leaders can use technology to help people access information and resources that can help them better understand and appreciate different cultural perspectives, which can help to promote cultural understanding and tolerance. Overall, digital leadership can play a crucial role in shaping and influencing national culture in the digital age (Kane et al., 2019).

A competent digital leader who can persuade the workforce to adopt digitalization is required, according to the evidence presented by Sagbas and Erdogan (n.d.). It should be emphasized that the goal of digital leadership is to use technology to influence employees' behaviours and work

styles inside a particular commercial organization. According to Gorton (2018), it is essential to integrate digital technologies and practices while developing an organization's business strategies. To do this, organizations in India are focusing on the continuous improvement of their leaders' skills so that they can completely comprehend digital trends, tools, systems, etc.

4.3.5 The issues with the digital transformation that Indian business entities are facing

Technology adoption greatly affect digital transformation. However, several crucial variables make adopting new technologies a difficult process. Some of the crucial elements that, in India's situation, act as barriers have a significant impact on the adoption of technology. It was discovered after looking into these difficulties that people's opinions on a new technical tool's perceived utility and ease of use are frequently connected. On the other hand, it has been found that socio-cultural elements and emotions have an impact on a person's potential to fully adopt new technology (Verhoef et al., 2021). The perception of behavioural control has been demonstrated to have an impact on technology adoption. Many concepts and ideas that have been established place a high emphasis on employing technology in a moral, secure, and useful way as a method of establishing leadership in digital transformation.

There are several issues that Indian business entities may face when undergoing a digital transformation. These issues may include a lack of digital skills and expertise among employees, limited access to technology and digital infrastructure, and a lack of understanding of the potential benefits and drawbacks of digital technologies. Additionally, there may be concerns about the security and privacy of digital systems, as well as the potential for disruptions to existing business processes and the need for significant changes to organizational culture.

According to Rawal (2021), the digital transformation of Indian business entities has brought about many positive changes, such as increased efficiency and productivity. However, like any major change, it has also brought about some challenges and difficulties. Some of the issues that Indian businesses may be facing include:

- **A Lack of digital literacy and skills among employees:** Many Indian businesses may have employees who are not familiar with digital technologies or may not have the necessary skills to effectively use them. This can lead to a lack of adoption of digital tools and processes, which can hinder the progress of digital transformation. Moreover,

digital literacy and skills are important for individuals and businesses in today's digital world. In India, a lack of digital literacy and skills among employees can pose a challenge to the country's digital transformation. This can affect the adoption and effectiveness of digital technologies, and limit the potential benefits that they can bring (Vogelsang et al., 2019).

- **Limited infrastructure and connectivity:** In some parts of India, access to the internet and other digital technologies may be limited. This can make it difficult for businesses to implement digital tools and processes and can limit their ability to take advantage of the benefits of digital transformation. Thus, it is important for businesses to carefully consider and address these issues to ensure a successful digital transformation.
- **Resistance to change:** As with any major change, the digital transformation of Indian businesses can encounter resistance from employees who may be resistant to adopting new technologies and processes. This resistance can hinder the progress of digital transformation and make it more difficult for businesses to achieve their goals.
- **Security concerns:** Several security concerns are challenging India's digital transformation. One of the main concerns is the increasing threat of cyber-attacks, which have the potential to disrupt critical infrastructure and compromise sensitive data. Other concerns include the lack of secure online payment systems and the lack of trained cybersecurity personnel to defend against cyber threats. Additionally, there are concerns about the potential for surveillance and privacy violations as more and more personal data is collected and stored digitally. These security concerns are not unique to India, but they are particularly relevant in the context of India's rapid digital transformation (Manda and Ben Dhaou, 2019).

India as a nation is heavily experimenting with virtualization and remote work, which necessitates a paradigm shift in its organizations' traditional leadership practices. Organizational assistance and sufficient digital literacy are provided to leaders across all Indian organizations so they may later promote organizational excellence, economic sustainability, and success. In conclusion, it has been found in earlier studies that the leadership patterns currently in use in India are shifting toward a democratic type of leadership, with a particular focus on digital transgendering (Verhoef et al., 2021). This has made it possible to have more diverse leadership and expanded the opportunities for women to hold leadership roles in the nation's organizations.

4.3.6 Leadership tactics to reduce the difficulties related to digital transformation challenges

With the aid of digital transformation, McKinsey estimates that 20% to 50% more money can be made and 20% to 30% more customers are satisfied. These advantages have caused the market for digital transformation to expand quickly. According to a survey by Research and Markets, it is predicted to reach USD 3.3 billion by 2025 (Magenest, 2022). Disruptive technologies, which are urgently needed for Digital Transformation, can be successfully implemented by companies with innovation at their core. Developing an efficient digital transformation strategy calls for accuracy, know-how, and upending conventional company practices. As a result, when developing a digital strategy, several factors must be taken into consideration. Comprehensively, there are seven core aspects of a robust digital transformation strategy: "Strategy and Leadership, Culture Change and Communication Optimizing Processes, Data, Technologies, Team Structure, and Results".

Digital transformation can bring many benefits to businesses, but it can also bring challenges. Some common challenges related to digital transformation include a lack of understanding or buy-in from employees, difficulty integrating new technology, and security concerns.

To reduce the difficulties related to these challenges, leaders can take several different tactics. These can include:

- **Effective communication**

Communicating clearly and consistently about the goals and benefits of digital transformation and making sure that all employees understand why the transformation is happening and how it will benefit them and the company. Effective communication is key to overcoming the challenges of digital transformation in any country, including India. By effectively communicating the goals and benefits of digital transformation to all stakeholders, organizations can ensure that everyone is on the same page and working towards the same goals. This can help to build support and buy-in for the changes being implemented, which can make it easier to overcome any resistance or challenges that may arise (Fischer et al., 2020).

- **Involving employees in the process**

Engage employees early on and seek their input and feedback throughout the transformation. This can help to build buy-in and ownership, and can also provide valuable insights into potential challenges and solutions.

- **Provide training and support**

Ensuring that employees have the skills and knowledge they need to successfully use the new technology. This can include providing training, offering resources and support, and giving employees time to adjust to the new tools and processes.

- **Address concerns about security**

Digital transformation often involves the handling of sensitive data, so it's important to address any concerns about the security upfront. This can include implementing robust security measures and protocols, as well as educating employees about the importance of security and how to protect sensitive information, and investing in technology and infrastructure. Digital transformation often requires significant investments in technology and infrastructure. Leaders should make sure that the necessary resources are available to support the transformation, and that the technology is reliable, scalable, and easy to use (Ravichandran et al., 2016).

Overall, the key to reducing the difficulties related to digital transformation is effective leadership and communication. By involving employees, providing support and training, addressing security concerns, and investing in technology and infrastructure, leaders can help to ensure that the transformation is successful and brings the desired benefits to the organization.

The prerequisites are what the digital transformation strategy is all about. Leaders can make sure that their firm goes through digital transformation as smoothly as possible by developing an efficient, lucid, and strong digital transformation strategy. A customized road map for bringing about significant changes in business operations is the digital transformation plan. A significant amount of money, time, and technological know-how is needed. To minimize risks, a corporation should constantly make sure that teams are being managed by highly skilled and knowledgeable technical executives.

4.4 Chapter Conclusion

Digital leadership transformation in India is a growing trend that is driven by the need to keep up with the rapidly changing digital landscape and the ever-growing demand for digital services. Not only the trends are reflected within the business communities, but numerous government-based leaders are also emerging in the country who are helping businesses to understand the digital landscape and how to best utilize it to their advantage. Exemplar few would be the "CEO of Niti Ayog Amitav Kant", "Ravi Shankar Prasad- the Minister of Electronics and Information Technology", "Suresh Prabhu- Minister of Commerce and Industry", and "Arun Jaitly- ex-Minister of Finance" ("*Digital India: A programme to transform India into a digitally empowered society and knowledge economy, n.d.")*. These leaders and lots of others have played a key role in the development of the Digital India initiative and are working towards making India a global leader in digital transformation. With its large population, a vast pool of talented resources, and rapidly growing economy, India is well-positioned to take advantage of the opportunities presented by digitalization. However, the country still needs to address the challenges with its digital technology readiness, policy and regulatory aspects, investment strategies towards digital technology, and technological upskilling to enjoy long-term technological leadership sustainability.

Chapter 5: Findings and discussions

5.1 What is the digital transformation of leadership?

Digital transformation in India has recently gone from a "should have" to an "essential revolution." In India, it has been recognized that certain changes are occurring in both leadership abilities and digital technologies. Digital transformation has the potential to greatly improve the efficiency and effectiveness of many industries and businesses in India. By digitizing processes and operations, companies can reduce the need for manual labour, improve the accuracy and reliability of their data, and increase their agility and responsiveness to changing market conditions. This can help Indian businesses become more competitive on the global stage. Moreover, digital transformation has the potential to greatly improve the delivery of government services to the Indian people. By digitizing government processes and operations, the government can make it easier for citizens to access services and information, and reduce the need for physical interactions and paperwork. This can help improve the quality of life for many people in India, particularly those living in rural and remote areas (Rakshit et al., 2021). It can also help drive economic growth and development in India. As more businesses and industries adopt digital technologies, they can create new job opportunities and stimulate innovation and entrepreneurship. This can help drive the growth of the Indian economy and improve the standard of living for many people in the country.

5.2 Why is digital leadership required in a developing country like India?

Approximately 49% of commercial organizations in India, according to a 2019 India Times article (Forum, 2020). Today, place a high priority on reskilling and upskilling their leaders to assist them in adjusting to the digital age. These organizations view the upskilling and downskilling of their leaders as the only purpose of the many leadership development initiatives they carry out at work. The year 2020 has altered people’s thoughts because of the global Covid 19 pandemic.

The hybrid business model or employee remote working options followed that. This first led to ambiguities, but with time businesses, executives, and workers adjusted to this type of organizational structure. As a result, certain shifts in leadership tendencies were also noted in 2020. According to Roy (2022), organizations have concentrated heavily on creating the ideal culture that would be compatible with the hybrid work paradigm. Employees in a hybrid work

style have been found to frequently experience virtual micro aggression and communication issues, which can lead to confrontations. Leaders were observed to switch from face-to-face conversations to virtual communication using digital technology in such a situation. Online meeting platforms like Google Meet, Skype, and Zoom have grown significantly in India, enabling managers to facilitate meetings and assist staff members in achieving higher organizational performance.

With the arrival of digital transformation, the leaders in India are also adopting a new attitude, which is a significant trend in the country's leadership style. Continuous change is present in the corporate environment. It has led to the widespread adoption of technology in various industries, resulting in increased productivity, efficiency, and competitiveness. Many companies have embraced digital tools and strategies to improve their operations, reduce costs, and better serve their customers. This has led to the creation of new job opportunities and the growth of the tech sector in India (Srivastava, 2016). Digital transformation has also made it easier for companies to connect with global markets, allowing them to expand their reach and increase their revenue. To make it easier for them to make strategic judgments in this situation, business organization executives have been doing their utmost to maintain their flexibility (Jaiswal, 2021). In this regard, it is necessary to note that the Covid 19 pandemic, which had an influence on people's lives all over the world, had forced business organization executives to prioritize the welfare of their employees.

5.3 What are the initiatives taken by the Indian Government to empower the nation to become more digitally advanced?

Business organizations have made it crucial for leaders to decide strategically regarding the work-life balance of the employees, and then look into the fact that they receive flexible working hours along with some wellness programs while adhering to the organizational goals and objectives. Additionally, recent years have seen a change in the leadership style of business organizations operating on the Indian subcontinent. It must be noted that leaders today strongly emphasize fostering internal communication among the workforce. Additionally, it has been observed that leaders focus on preserving the creative environment and fostering a collaborative work environment among their staff so that employee motivation is taken into account. All of these factors contribute to the observation that the leadership patterns in Indian commercial

organizations are changing in favour of a democratic style of leadership (Kenge and Khan, 2020).

Over time, government officials, businesses, educators, and academics have all shown a great deal of interest in the topic of leadership. The idea of leadership has changed significantly as a result of transformations like industrialization, globalization, and most recently digitization. Understanding the connection between digitalization and leadership is prudent given the significant alterations that the internet and cloud computing have wrought in organizational systems and practices all over the world. This will help leaders anticipate how they should position themselves to face new challenges.

Just like technology, which gives rise to digitalization, leadership is a notion that is continually evolving. Most of these questions are being answered successfully by Western cultures. Examining the link between digitalization and leadership in eastern cultures, notably India, is more crucial because technology is evolving and has a significant impact on how daily activities are carried out as a result of digitalization. Thanks to the efforts of the public and private sectors as well as the fact that more than 40% of Indians have access to the internet, the country is moving toward technological superiority.

As of January 2022, India boasts a significant number of Internet users with 658 million, as reported by the World Population Review. Although it holds the second rank in the world for Internet users, it should be noted that only a fifth of its total population has access to the Internet (cnbctv18.com., 2022). Leaders find it challenging to lead in these turbulent, challenging times. It is essential to evaluate the skills, knowledge, and talents that leaders presently possess as well as those that they still need to improve if they want to lead effectively in the digital age. When analyzing the overall structure of Indian traditional leadership, the leader-member interchange is seen as a crucial concept to take into account. After discussing the problems and gaps, it is recommended that Indian leaders have a "creative personality" to adapt to digital advancements.

Internet usage increased as a result of lower prices, wider availability of internet connections, and an increase in the use of mobile devices. With 900 million subscribers, India is the second-largest market after China (Keelery, 2018). The average user spends 17 hours per week watching content on social media. The Indian public sector has greatly contributed to rapid digitization. Aadhaar, the digital identity scheme, and the "Goods and Services Tax Network" have all heavily encouraged businesses to become digital. Innovative business strategies have resulted in

competitive pricing across the board in the private sector, as demonstrated by Jio's goal to package its mobile services with affordable gadgets since 2013 when data costs decreased by 95%, and data usage has surged by 153%.

Today's leaders must understand current digital needs, be able to meet those needs by modernizing organizational processes and themselves, be able to speculate future demands, be able to prepare their followers for the changing digital times, and, most importantly, know how to lead by taking into account followers' needs of the digital world without destroying the cultural aspect in which this kind of interaction occurs. To accomplish this goal, effective leadership is essential. Although competencies and skills are frequently used interchangeably, particularly in the Indian context, they are more than that.

5.4 How do leadership and digital transformation relate to each other?

In India, the term "digital transformation" has gone from being a catchphrase to a crucial strategic priority for all facets of society. A summary of India's advancements in terms of technology adoption, GDP, income, etc. has been obtained from reviewing the prior literature. According to studies, there have been several technological advancements brought about by the fourth industrial revolution, particularly in the area of digital technology tools, which have significantly influenced India's digital transformation. The Covid 19 pandemic outbreak has also been noted to have influenced the economy's adoption of digital tools for managing business operations.

It has been observed that business organizations and leaders place a significant emphasis on the hybrid work model. In such a situation, leaders have embraced some virtual communication technologies to engage with the workforce online. The growing use of business analytics tools by enterprises in India is another significant finding from the study. The rise of business analytics has played a significant role in India's digital transformation by providing companies with the tools and insights they need to make data-driven decisions. With the help of business analytics, companies in India can better understand their customers, optimize their operations, and identify new growth opportunities. This, in turn, has helped drive the growth of the digital economy in India, as more and more companies are using data and analytics to improve their business operations (Ahmad et al., 2021).

In recent years, it has been observed that the adoption of products like "Microsoft Power Bi, Zoho Analytics, Tableau," etc. has increased, facilitating India's digital transformation.

In addition, the study has placed a lot of emphasis on figuring out the variables that affect how society adopts technology. Following an analysis of these variables, it was found that perceived utility and perceived ease of use frequently go hand in hand when persuading people to utilize a new technical product. The ability of an individual to embrace new technology, on the other hand, has been found to depend on socio-cultural factors and emotions. For example, one factor can be an individual's level of education and access to information about technology. Individuals who are more educated and have more access to information about technology may be more likely to embrace it. Another factor could be an individual's socioeconomic status. Individuals who are wealthier and have more resources may be more able to afford and access new technology, making them more likely to embrace it (Yu, 2018).

Emotions can also play a role in an individual's ability to embrace new technology. For example, if an individual is hesitant or anxious about using new technology, they may be less likely to try it out. On the other hand, if an individual is excited about the potential benefits of new technology, they may be more likely to embrace it.

5.5 What obstacles do Indian business organisations have to overcome in terms of leadership and digital transformation?

It has also been shown that perceived behavioural control influences how quickly people accept new technology. As a means of achieving leadership in digital transformation, several models and ideas that have been developed place a strong emphasis on using technology in a moral, secure, and practical manner. Transformational frameworks and models like “The Digital Transformation Framework from MIT Sloan Management Review (Bonnet and Westerman, 2021), “The Framework for Digital Transformation” by Gartner (Pihir et al., 2019), and a similar framework from McKinsey & Company (Bughin et al., 2017) all provide step-by-step guides for leaders looking to transform their organizations for the digital age. Following this comes the lean leadership model, which talks about the lean concepts connected to creating an internal and external corporate strategy.

Studies have also identified other trends, including the growing usage of artificial intelligence, blockchain technology, cybersecurity awareness, etc. These technologies have the potential to greatly improve various industries in the country, such as finance, healthcare, and supply chain management. By using artificial intelligence, companies in India can automate many of their processes, making them more efficient and cost-effective. Blockchain technology can be used to

create secure and transparent digital ledgers, which can be used in a variety of applications, such as tracking supply chain data and managing financial transactions. Additionally, as the use of these technologies grows, there is an increased need for cybersecurity awareness to protect against cyber-attacks and other security threats (Choithani et al., 2022).

Also, it has been noted from earlier literature that the dominant leadership patterns in India have shifted toward the democratic form of leadership with a special focus on digital transformation. India is a democratic country, and its leadership patterns have generally been democratic in nature. In recent years, the country has seen a shift toward digital technologies and the use of digital platforms for governance and leadership. This has led to a trend known as "digital transgendering," in which traditional hierarchies and power structures are being disrupted by the use of technology. As a result, there is now a greater diversity of leadership positions and there are more opportunities for women to hold leadership positions within the nation's organizations. India is largely experimenting with virtualization and remote work, which necessitates a paradigm shift in its organizations' traditional leadership practices. Organizational assistance and sufficient digital literacy are provided to leaders across all Indian organizations so they may later promote organizational excellence, economic sustainability, and success (Praharaj et al., 2018).

5.6 In what ways can these digital transformations and leadership transformation challenges be mitigated?

The phrase "competency" describes a synthesis of knowledge, aptitude, standards, and ideals. Competencies go beyond the simple capacity to carry out tasks correctly under ideal conditions. No of the circumstance, whether it is favourable, unexpected, or unforeseen, an effective leader can perform at their maximum level. Competencies are the result of dispositions that emerge from self-organization in human interaction and include engaging in creative mental processes. The ability to self-organize can be used to assess a person's competencies. Talents, abilities, and knowledge can all be evaluated directly; however, skills can only be evaluated inferentially or by historical performance data, observation of actual conduct, and consideration of individual preferences. The capacity to complete duties in a strange and unsettling situation may be the foundation of competent leadership conduct.

Competencies are based on values, are disposed of as abilities, are consolidated through knowledge, and are realized based on will. They are founded on knowledge. Research into the

competencies that traditional leaders need and the competencies that the new digital world would need of them will be significant in light of this concept of competencies. There is a discrepancy between what leaders can provide and what the digital world wants, according to studies conducted in the Indian context.

India is considered to be the fastest-growing digital consumer market in the world, and its digital connectivity is growing quickly. On the other hand, uneven business uptake has been noted. The "Unified Payment Interface" (UPI) and Rupay card transactions are becoming more and more common; however, these enterprises urgently need to expand overseas. It should be noted that despite the rise in digital transactions or internet purchases, some people, particularly in rural or semi-rural areas, still favour cash transactions. The many milestones in India's journey toward digital transformation had been greatly aided by the Digital India program and India stack. Through this project, the government aimed to provide every Indian with access to the internet so they could each have their digital identity.

The goal of digital transformation is collaboration, according to India's digital leaders. They see India as a place where technological innovation and application can flourish. India’s IT industry leaders meet and collaborate to forge the country's path toward digital leadership. Additionally, remote work has replaced the on-campus employment model, particularly in the IT industry. It is important to notice that India has shifted its digital leadership in this situation to smart, flexible advancements in times of crisis.

Chapter 6: Conclusion and Recommendations

6.1 Chapter Introduction

With respect to the research aims and questions, this chapter provides a summary of the important research findings. The importance and significance of this study are also discussed in this chapter. Finally, this chapter discusses the results of this study's ramifications and provides suggestions for future investigation.

6.2 Summary

People's lives and occupations are changing as a result of digital transformation, which is also providing them with the resources they need to adapt. A combination of technology, process, and human transformations is required for every digital transition. Many businesses wrongly believe that digital transformation would result in a reduction in or replacement of their current human resources. Some people approach digital changes by making the assumption that people and other forms of human capital are the only sources of value. Unfortunately, both strategies have shortcomings.

Digital leadership is crucial in a developing nation like India for a number of reasons. First, the widespread adoption of digital technology has the potential to increase enterprises' and organisations' productivity and effectiveness, which can promote economic growth and development. Second, digital leadership may aid in closing the digital divide and enhancing rural and remote residents' access to healthcare, education, and other vital services. Third, by utilising digital technologies, government services can be delivered more effectively and efficiently to residents. Finally, digital leadership can boost the development of the nation's technology sector and help it draw in international investment.

India's market is being given numerous opportunities to dominate the global scene thanks to the government's backing of the Digital India programme. First, India's economic development and progress are being supported by digital technology. As an illustration, the use of digital tools and platforms has facilitated business connections with clients and the sale of goods and services, which has increased entrepreneurship and innovation. Additionally, Indian businesses now have

the ability to expand their operations and access new domestic and international markets thanks to digital technology.

Even while Indian company executives continue to perform well today, many of them are still unsure about what "digital" means for their companies. Additionally, despite the fact that Indian leaders are highly motivated by challenges and have a track record of inspiring their teams to work together and achieve results, their preference for infrastructure currently restricts their ability to foster innovative thinking in their teams under a variety of challenging conditions.

By giving businesses the resources and skills necessary to better serve their clients and outwit rivals, digital leadership is enabling them to become more competitive on the world stage. This is made possible through the use of tools like artificial intelligence, machine learning, and data analytics, which are assisting Indian firms in streamlining their operations, boosting productivity, and gaining a competitive edge in the global market. In addition, as India's digital economy expands, new chances for entrepreneurship and innovation are being created, which is further boosting the nation's economic development and level of competitiveness on the world stage.

6.3 Implications

In India, the digital revolution has become the need for the hour. Leadership skills and digital technology are both undergoing certain changes, which have been acknowledged in India. Many Indian industries and enterprises stand to benefit tremendously from digital transformation in terms of increased productivity and efficiency. By digitising their processes and operations, businesses may cut back on manual labour, boost the accuracy and dependability of their data, and become more agile and responsive to shifting market conditions. This could boost the competitiveness of Indian enterprises in the international market. Additionally, the delivery of government services to the Indian people could be significantly improved because of digital transformation.

The government may simplify citizen access to services and information, cut down on the need for face-to-face encounters, and streamline administrative procedures through digitising processes and activities. Many Indians, especially those in rural and isolated areas, could benefit from an improvement in their quality of life as a result of this. It may also stimulate India's economic expansion and development. Digital technology adoption by more organisations and

industries has the potential to boost entrepreneurship and innovation while also opening up new job opportunities. This could spur economic expansion in India and raise the level of living for a large portion of the population. As per a 2019 India Times story, roughly 49% of businesses in India, place a high premium on retraining and upgrading their leaders today to help them cope with the digital age. These firms see the upskilling and downskilling of their leaders as the sole objective of the numerous leadership development programmes they implement at work.

The worldwide Covid 19 pandemic has changed people's perspectives on the year 2020. That was followed by the hybrid business model or choices for employee remote work. Initially, there were uncertainties as a result, but over time, companies, executives, and employees became accustomed to this style of organisational structure. Because of this, 2020 saw several changes in leadership trends. The ideal culture that would be compatible with the hybrid work paradigm has been a major focus for organisations. Employees with hybrid work styles have been observed to regularly struggle with communication problems and virtual microaggression, which can result in conflicts. Leaders have been seen to use digital technology to transition from face-to-face communication to virtual communication in such circumstances. India has seen a substantial increase in the use of online meeting tools like Google Meet, Skype, and Zoom, which allow managers to run meetings and help employees increase organisational performance.

The leaders in India are changing their attitudes as a result of the advent of digital transformation, which is a significant development in the leadership style of the nation. The corporate environment is one of ongoing change. It has prompted the broad use of technology across numerous industries, boosting their competitiveness and productivity. To boost productivity, cut expenses, and provide better customer service, many businesses have adopted digital tools and tactics. As a result, there are now more job prospects and India's tech industry is expanding. Additionally, digital transformation has made it simpler for businesses to connect with international markets, enabling them to broaden their reach and raise their revenue. Business organisation executives have been making every effort to keep their flexibility in order to make it easier for them to make strategic decisions in this situation. In this regard, it is important to remember that the Covid 19 pandemic, which affected people's lives all over the world, prompted business organisation executives to put the welfare of their employees first.

6.4 Recommendations for Future Research

- ***Initiating Cultural Change***

Digital transformation needs to be supported and embraced for the organization's culture to change over time. Over the past three years, 90% of the economy has undergone a digital transition. It's usual for individuals to be sceptical of the "new" and to resist change, so be prepared to respond to resistance. It would be difficult to promote a digital revolution in a country like India, where many daily tasks are still completed using outdated technology. The cornerstone for strong governance that will implement the digital transformation strategy is therefore building a team mindset among stakeholders from all points along the value chain, including IT, OT, sales, marketing, design, and more (Chong and Duan, 2020). The success of a company's digital transformation depends on a core group of "cheerleaders" who see the big picture. Keep in mind that any transition will meet challenges along the way; leaders must create an atmosphere where everyone grows from their failures and builds on their successes. When digital transformation projects are implemented, the daily job that employees do will alter.

- ***Technology Implementation Mapping***

Business strategy and not technology, is where a successful digital transformation should start. Making a thorough technological roadmap for both initial initiatives and subsequent projects is a key element of the digital transformation's success. Once the foundation for growth and success has been established, technology becomes a crucial tool, or lever, to help oneself accomplish the desired and stipulated organisational outcomes. To achieve digital transformation, a standard collection of DX technologies is required. These include:

- Robotics
- IoT
- Mobile
- Digital Twin
- Cloud
- Machine Learning and Artificial Intelligence
- Additive Manufacturing
- Augmented Reality

For the early DX use cases to be realised, one might need one or more of these technologies. Some of them might already be in use at any given organisation, but they aren't being used to their fullest capacity since some parts are lacking (Gobble, 2018). Technology projects frequently require the assistance of outside suppliers, who should be chosen with a long-term strategy in mind. Time-to-value can frequently be sped up by finding partners with the perfect blend of products and skills.

- ***Hiring Experts and Partners***

If the people guiding teams lack the knowledge, experience, and background in an organisation, there will be problems. People who have expertise have already learnt from previous experiences. They have a profound idea of what to do and what not to do, and that’s very valuable for an organisation to execute its digital transformation strategy. Avoiding "spot solutions," or technologies, that only solves a certain department's problem and are insufficient for enterprise-wide use, is a vital feature of this stage. When CXO's involvement in DX tech decision-making is present, the business strategic vision is protected (Albukhitan, 2020). Seeking out partners who can help the firm to accomplish the aim of making the digital transition, is thus of great significance. A company can seek out partners who can assist them to strengthen their key competencies and have expertise in that particular sector. To achieve the goals of digital transformation, it is essential to find partners who will advance projects and speed up results.

- ***Injecting Agility***

One trait of a business undergoing a digital transformation is agility. Setting up a planned roadmap is crucial, but the secret to success is being able and ready to change it as necessary to account for outcomes. At this time, we have a vision, a sizable coalition that backs it, a strategic use case, a technological roadmap, and partners who are motivated by the success of digital transformation. Before moving forward with a project at full speed, determine the key performance indicators (KPIs). Make sure that everyone involved in the project is informed of and accountable for providing the outcomes needed to deem the project successful (Vial, 2021). To ensure that everyone is learning while the digital transformation strategy is implemented, establish a strong feedback loop with stakeholders at the same time. Realizing that the process of digital transformation is one of continual evaluation, adjustment, and improvement.

6.5 Conclusion

Digital connectivity in India is expanding quickly, and it is thought that this country is the one with the quickest rate of growth in the global digital consumer market. The uptake of business has, however, been observed to be patchy. Rupay card transactions and UPI are both becoming more and more popular, however, these businesses must grow quickly internationally. It should be mentioned that despite the surge in digital transactions and online purchases, some people, especially in rural and semi-rural areas, still prefer cash transactions. The Digital India programme and India stack have significantly contributed to India's many accomplishments in its road toward digital transformation. The government wanted to give every Indian access to the internet through this project so that they could all have their own digital identities. The goal of digital transformation, in the opinion of India's digital leaders, can only be achieved by teamwork. They view India as a nation with a favourable environment for technological advancement and implementation. Indian IT industry executives come together to map out the country's path to digital leadership. Additionally, remote employment has replaced the on-campus employment model, particularly in the IT industry. The fact that India has shifted its digital leadership in this situation to crisis-related smart, adaptive innovations is noteworthy.

Reference List

Abu-Shanab, E.A. and Shanab, A.A., 2022. The influence of emotional intelligence on technology adoption and decision-making process. *International Journal of Applied Decision Sciences*, *15*(5), pp.604-622.

Adebayo, A.O., Chaubey, M.S. and Numbu, L.P., 2019. Industry 4.0: The fourth industrial revolution and how it relates to the application of internet of things (iot). *Journal of Multidisciplinary Engineering Science Studies (JMESS)*, *5*(2), pp.2477-2482.

Advanced Resources (2020). *How Leadership Affects Employee Performance*. [online] Advancedresources.com. Available at: https://blog.advancedresources.com/how-leadership-affects-employee-performance.

Afshar, V., 2021. Leadership lessons from one of India's most influential technology leaders. [online] ZDNet. Available at: <https://www.zdnet.com/article/leadership-lessons-from-one-of-indias-most-influential-technology-leaders/>

Aheleroff, S., Xu, X., Lu, Y., Aristizabal, M., Velásquez, J.P., Joa, B. and Valencia, Y., 2020. IoT-enabled smart appliances under industry 4.0: A case study. Advanced engineering informatics, 43, pp.1-14.

Ahmad, A., Alshurideh, M.T., Al Kurdi, B.H. and Salloum, S.A., 2021. Factors impacts organization digital transformation and organization decision making during Covid19 pandemic. In The Effect of Coronavirus Disease (COVID-19) on Business Intelligence. Springer, Cham, (pp. 95-106).

Akpan, I.J., Udoh, E.A.P. and Adebisi, B., 2022. Small business awareness and adoption of state-of-the-art technologies in emerging and developing markets, and lessons from the COVID-19 pandemic. Journal of Small Business & Entrepreneurship, 34(2), pp.123-140.

Al-Ababneh, M.M., 2020. Linking ontology, epistemology and research methodology. Science & Philosophy, 8(1), pp.75-91.

Alharbi, S. and Drew, S., 2018, November. The role of self-efficacy in technology acceptance. In Proceedings of the Future Technologies Conference, Springer, Cham, (pp. 1142-1150).

AlNuaimi, B.K., Singh, S.K., Ren, S., Budhwar, P. and Vorobyev, D., 2022. Mastering digital transformation: The nexus between leadership, agility, and digital strategy. Journal of Business Research, 145, pp.636-648.

Anak Agung Sagung, M.A. and Sri Darma, G., 2020. Revealing the digital leadership spurs in 4.0 industrial revolution. Asri, AASMAN, & Darma, GS, Revealing the digital leadership spurs in, 4, pp.93-100.

Anand S, Hu J, Liden RC, Vidyarthi PR., 2011. Leader-member exchange: recent research fndings and prospects for the future. The Sage Handbook of Leadership, Thousand Oaks, pp 311–325.

Anand, R., Medhavi, S., Soni, V., Malhotra, C. and Banwet, D.K., 2018. Transforming information security governance in India (A SAP-LAP based case study of security, IT policy and e-governance). Information & Computer Security, 26(1), pp.58-90.

Aquina, J., 2022. Emotion Powers Technology Adoption. [online] TTEC. Available at: <https://www.ttec.com/customer-strategist/resources/blog/emotion-powers-technology-adoption>

Basias, N. and Pollalis, Y., 2018. Quantitative and qualitative research in business & technology: Justifying a suitable research methodology. *Review of Integrative Business and Economics Research*, *7*, pp.91-105.

Benitez, J., Arenas, A., Castillo, A. and Esteves, J., 2022. Impact of digital leadership capability on innovation performance: The role of platform digitization capability. Information & Management, 59(2), pp.103590-103598.

Bharadwaj A, El Sawy OA, Pavlou PA, and Venkatraman N., 2013. Visions and voices on emerging challenges in digital business strategy. MIS Q 37(2), pp.633–661.

Bhatia, P. and Mohammed, S., 2021. Observational study design: Extending the standard. Journal of Anaesthesiology Clinical Pharmacology, 37(3), pp.317-318.

Bhonsle, V., 2022. Digital India 2022 – Major Technology Trends for Indian IT Industry. [online] Enterprise IT World. Available at: <https://www.enterpriseitworld.com/digital-india-2022-major-technology-trends-for-indian-it-industry/>

Bligh-Wall, S., 2017. Industry 4.0: Security imperatives for IoT—converging networks, increasing risks. Cyber security: a peer-reviewed journal, 1(1), pp.61-68.

Bonnet, D. and Westerman, G., 2021. The new elements of digital transformation. MIT Sloan Management Review, 62(2), pp.82-89.

Boyes, H., Hallaq, B., Cunningham, J. and Watson, T., 2018. The industrial internet of things (IIoT): An analysis framework. Computers in industry, 101, pp.1-12.

Bresciani, S., Ferraris, A., Romano, M. and Santoro, G., 2021. Digital Leadership. In Digital Transformation Management for Agile Organizations: A Compass to Sail the Digital World (pp. 97-115). Emerald Publishing Limited.

Brett, J., 2020. Evolving digital leadership. Ascent Audio.

Bughin, J., LaBerge, L. and Mellbye, A., 2017. McKinsey Special Collection Digital Strategy. McKinsey Global Institute.

BYJUS., n.d. *Data Collection Methods (Primary and Secondary Methods)*.

Cahyadi, A. and Magda, R. (2021). Digital Leadership in the Economies of the G20 Countries: A Secondary Research. *Economies*, [online] 9(1), p.32. doi:10.3390/economies9010032.

Chakravarti, S., 2022. Leadership Lessons From Ratan N. Tata. In Leadership and Followership in an Organizational Change Context (pp. 114-134). IGI Global.

Charania, A., 2018. ICT in education: indicators for meaningful integration in government schools. Learning Curve, (30), pp.18-22.

Charmaz, K. and Thornberg, R., 2021. The pursuit of quality in grounded theory. *Qualitative research in psychology*, *18*(3), pp.305-327.

Chatterjee, SR., 2007. Human resource management in India: 'Where From' and 'Where To?'. Res Pract Hum Resour Manag 15(2), pp.92–103.

Choithani, T., Chowdhury, A., Patel, S., Patel, P., Patel, D. and Shah, M., 2022. A Comprehensive Study of Artificial Intelligence and Cybersecurity on Bitcoin, Crypto Currency and Banking System. Annals of Data Science, pp.1-33.

Clifton, J., 2017. Taking the (heroic) leader out of leadership. The in situ practice of distributed leadership in decision-making talk. In Challenging leadership stereotypes through discourse (pp. 45-68). Springer, Singapore.

cnbctv18.com., 2022. *These 10 countries have the highest number of Internet users in 2022*. [online] Available at: https://www.cnbctv18.com/technology/top-10-countries-with-highest-internet-users-in-2022-15024571.htm.

Collins, H. 2010 "Creative Research: The Theory and Practice of Research for the Creative Industries" AVA Publications

Collis, J. and Hussey, R. 2014 "Business Research: A Practical Guide for Undergraduate and Postgraduate Students" 4th edition, Palgrave Macmillan.

Cr, K., 2020. Research methodology methods and techniques.

Crowther, D. and Lancaster, G. 2008 "Research Methods: A Concise Introduction to Research in Management and Business Consultancy" Butterworth-Heinemann

Cuts-international.org. 2022. Spotlight: Ups & Downs in India's Digital Transformation in the Last 5 Years | CUTS International - Consumer Unity & Trust Society. [online] Available at: <https://cuts-international.org/spotlight-ups-downs-in-indias-digital-transformation-in-the-last-5-years/>

Dash, S. and Pani, S.K., 2016. E-Governance paradigm using cloud infrastructure: Benefits and challenges. Procedia Computer Science, 85, pp.843-855.

DeakinCo. | Powering workplace performance. (2021). News - DeakinCo. | Powering workplace performance. [online] Available at: https://www.deakinco.com/resources/news/

Deshler, R. (2016). The Role of Leadership in Change Management. [online] AlignOrg Solutions. Available at: https://alignorg.com/the-role-of-leadership-in-change-management/

Dewan, N., 2020. Tech adoption taking place across all sectors, including SMBs: Microsoft-IDC study. [online] The Economic Times. Available at: <https://economictimes.indiatimes.com/small-biz/sme-sector/tech-adoption-taking-place-across-all-sectors-including-smbs-microsoft-idc-study/articleshow/79386503.cms>

Dialani, P., 2020. You are being redirected.... [online] Analyticsinsight.net. Available at: <https://www.analyticsinsight.net/top-10-big-data-analytics-organizations-in-india-for-2020/#:~:text=As%20per%20recent%20research%2C%20the,500%20organizations%20working%20in%20India.>

Digital India: A programme to transform India into a digitally empowered society and knowledge economy., n.d. [online] Available at: https://meity.gov.in/sites/upload_files/dit/files/Digital%20India.pdf.

Dimitropoulou, A., 2022. Economy Rankings: Largest countries by GDP, 2022 - CEOWORLD magazine. [online] Ceoworld.biz. Available at: <https://ceoworld.biz/2022/03/31/economy-rankings-largest-countries-by-gdp-2022/>

Doyle, L., McCabe, C., Keogh, B., Brady, A. and McCann, M., 2020. An overview of the qualitative descriptive design within nursing research. *Journal of Research in Nursing*, *25*(5), pp.443-455.

Dqinstitute.org. 2022. Global Standards – DQ institute. [online] Available at: <https://www.dqinstitute.org/global-standards/>

Duggan, T., 2021. Leadership & Organizational Effectiveness. [online] Your Business. Available at: <https://yourbusiness.azcentral.com/leadership-organizational-effectiveness-3563.html>

Easterby-Smith, M, Thorpe, R. and Jackson, P. 2008 “Management Research” 3rd ed,SAGE Publications Ltd., London.

Economic Times., 2020. *95% Indian firms have fast-tracked their digital transformation initiatives during the pandemic: Study*. [online] Available at: https://economictimes.indiatimes.com/tech/information-tech/95-indian-firms-have-fast-tracked-their-digital-transformation-initiatives-during-the-pandemic-study/articleshow/79423881.cms.

ET Now Digital. 2021. IEC 2021: How India's economy has evolved over the last decade and the road ahead. [online] Available at: <https://www.timesnownews.com/business-economy/economy/article/iec-2021-how-indias-economy-has-evolved-over-the-last-decade-and-the-road-ahead/736690>

Fatehi, K. and Vaezi, R., 2021. Verification of a measurement of international managers’ mindset. Review of International Business and Strategy.

Fifteenth, L., & Sabha. (2011). *42 STANDING COMMITTEE ON FINANCE (2011-12) THE NATIONAL IDENTIFICATION AUTHORITY OF INDIA BILL, 2010 FORTY-SECOND REPORT LOK SABHA SECRETARIAT NEW DELHI* (p. 1933). https://uidai.gov.in/images/report_of_the_departmental_standing_committee_on_finance_on_the_bill_13012017.pdf

Fischer, M., Imgrund, F., Janiesch, C. and Winkelmann, A., 2020. Strategy archetypes for digital transformation: Defining meta objectives using business process management. Information & Management, 57(5), 103262, ISSN 0378-7206, https://doi.org/10.1016/j.im.2019.103262.

Forum, I., 2020. Top Leadership Trends To Look Out For In 2021 - India Employer Forum. [online] India Employer Forum. Available at: <https://indiaemployerforum.org/2020/12/30/top-leadership-trends-to-look-out-for-in-2021/>

Germano, M., 2021. Leadership Style and Organizational Impact – Library Worklife:. [online] Ala-apa.org. Available at: <https://ala-apa.org/newsletter/2010/06/08/spotlight/>

González-Navarro, P., Talavera-Escribano, E., Zurriaga-Lloréns, R. and Llinares-Insa, L.I., 2019. Culture, Work, and Subjective Well-Being: The Role of LMX and Resilience in Spanish and Chinese Cultures. *International Journal of Environmental Research and Public Health*, [online] 16(24), p.4945. doi:10.3390/ijerph16244945.

Gorton, C., 2018. 6 Characteristics of Digital Leadership | Digital Leaders. [online] Digital Leaders. Available at: <https://digileaders.com/6-characteristics-digital-leadership/>

Graf-Vlachy, L., Buhtz, K. and König, A., 2018. Social influence in technology adoption: taking stock and moving forward. Management Review Quarterly, 68(1), pp.37-76.

Greener, S., 2018. Research limitations: the need for honesty and common sense. *Interactive Learning Environments*, *26*(5), pp.567-568.

Guha, D., 2018. 10 uses of technology in 21st century jobs. [online] India Today. Available at: <https://www.indiatoday.in/education-today/jobs-and-careers/story/10-uses-of-technology-in-21st-century-jobs-1358394-2018-10-08>

Gupta, A. and Auerswald, P., 2019. The Ups and Downs of India's Digital Transformation. [online] Harvard Business Review. Available at: <https://hbr.org/2019/05/the-ups-and-downs-of-indias-digital-transformation>

Guzmán, V.E., Muschard, B., Gerolamo, M., Kohl, H. and Rozenfeld, H., 2020. Characteristics and Skills of Leadership in the Context of Industry 4.0. Procedia Manufacturing, 43, pp.543-550.

Haddud, A. and McAllen, D., 2018, August. Digital workplace management: exploring aspects related to culture, innovation, and leadership. In 2018 Portland International Conference on Management of Engineering and Technology (PICMET) (pp. 1-6). IEEE.

Haije, E., 2022. Top 15 Business Intelligence Tools (BI Tools) | Mopinion. [online] Mopinion. Available at: <https://mopinion.com/business-intelligence-bi-tools-overview/>

Hanna, N., 2018. A role for the state in the digital age. Journal of Innovation and Entrepreneurship, 7(1), pp.1-16.

Harvard Business Review. (2018). *The 6 Fundamental Skills Every Leader Should Practice*. [online] Available at: https://hbr.org/2018/10/the-6-fundamental-skills-every-leader-should-practice.

Hayes, J., 2002. Interpersonal skills at work. Routledge.

Hazem, SM and Zehou, S., 2019, August. Organizational culture and innovation: A literature review. In 2019 3rd International Conference on Education, Culture and Social Development (ICECSD 2019) (pp. 465-472). Atlantis Press.

Hizam-Hanafiah, M., Soomro, M.A. and Abdullah, N.L., 2020. Industry 4.0 readiness models: a systematic literature review of model dimensions. Information, 11(7), 364. https://doi.org/10.3390/info11070364

Holweg, M. and Maylor, H., 2018. Lean leadership in major projects: from "predict and provide" to "predict and prevent". International Journal of Operations & Production Management.

Hoon, T.S. and Singh, P., 2019. A Practice in a Research Methodology Class. *Asian Journal of University Education*, *15*(3), pp.45-53.

Indeed Editorial Team (2020). What Is the Importance of Leadership? [online] Indeed Career Guide. Available at: https://www.indeed.com/career-advice/career-development/importance-of-leadership

India Brand Equity Foundation. 2022. Indian Economy: Overview, Market Size, Growth, Development, Statistics...IBEF. [online] Available at: <https://www.ibef.org/economy/indian-economy-overview>

India Today. 2019. 80% firms in India facing leadership talent shortage: Survey reveal top trends. [online] Available at: <https://www.indiatoday.in/education-today/news/story/how-are-companies-developing-leadership-skills-in-employees-survey-reveal-top-trends-1570923-2019-07-18>

India, S., 2020. Top Digital Transformation Trends That Will Rule 2021. [online] Available at: <https://www.spec-india.com/blog/top-digital-transformation-trends>

India, S., 2022. 7 Top Digital Transformation Trends You Should know - SAP India News Center. [online] SAP India News Center. Available at: <https://news.sap.com/india/2022/03/7-top-digital-transformation/>

InitiativeOne. (2021). 21 Leadership Challenges & How to Overcome Them. [online] Available at: https://www.initiativeone.com/insights/blog/leadership-challenges/

Jacobs, S., 2019. 12 Tech Tools for Virtual Meetings | Smart Meetings. [online] Smart Meetings. Available at: <https://www.smartmeetings.com/tips-tools/technology/85250/12-tech-tools-for-virtual-meetings>

Jadhav, V.V. and Mahadeokar, R., 2019. The Fourth Industrial Revolution (I4. 0) in India: Challenges & Opportunities. Management, pp.105-109.

Jaiswal, RR, 2021. Digital Marketing: Current Trends in India. Embracing change & Transformation: Vision 2025, p.60-63.

Jayswal, P., 2022. India and the Global Digital Transformation. [online] Times of India Blog. Available at: <https://timesofindia.indiatimes.com/readersblog/youth2020/india-and-the-global-digital-transformation-41772/>

Kaka, N., Madgavkar, A., Kshirsagar, A., Gupta, R., Manyika, J., Bahi, K. and Gupta, S., 2019. Digital India: Technology to transform a connected nation. [online] Available at: <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/digital-india-technology-to-transform-a-connected-nation>

Kane, G., 2019. The technology fallacy: people are the real key to digital transformation. Research-Technology Management, 62(6), pp.44-49.

Kane, G.C., Palmer, D., Phillips, A.N., Kiron, D. and Buckley, N., 2018. Coming of age digitally. MIT Sloan Management Review and Deloitte Insights, 59(5), pp.1-10.

Kane, G.C., Phillips, A.N., Copulsky, J. and Andrus, G., 2019. How digital leadership is (n't) different. MIT Sloan Management Review, 60(3), pp.34-39.

Keelery, S., 2018. *Topic: Internet usage in India*. [online] www.statista.com. Available at: https://www.statista.com/topics/2157/internet-usage-in-india/.

Kelly, R., 2018. Constructing leadership 4.0: Swarm leadership and the fourth industrial revolution. Springer.

Kenge, R.N. and Khan, Z., 2020. Assessment of the Leadership Styles and Its Deployment in Indian Organisations.

Khan, U., Ajaz, F., Khan, A., Khan, S. and Fatima, S. (2016). The Role of Leadership on Organizational Change. [online] Ssrn.com. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2880420#:~:text=A%20leader%20works%20as%20a,changes%20in%20their%20business%20model.

Kiel, D., Müller, J.M., Arnold, C. and Voigt, K.I., 2017. Sustainable industrial value creation: Benefits and challenges of industry 4.0. International journal of innovation management, 21(08),1740015, pp.1-34.

Kivunja, C. and Kuyini, A.B., 2017. Understanding and applying research paradigms in educational contexts. International Journal of higher education, 6(5), pp.26-41.

Kothari, C., 2017. research methodology methods and techniques by CR Kothari. Published by New Age International (P) Ltd, Publishers, 91.

Krishna, S., 2022. Most used enterprise tools for digital-first firms in 2022. [online] Analytics India Magazine. Available at: <https://analyticsindiamag.com/most-used-enterprise-tools-for-digital-first-firms-in-2022/>

Kumar, R. 2014. Research Methodology: A Step-by-Step Guide for Beginners. 4th Edition, SAGE Publications Ltd., London.

Kumar, R., 2018. Research methodology: A step-by-step guide for beginners. Sage.

LaCaille, L., 2020. Theory of reasoned action. Encyclopedia of behavioral medicine, pp.2231-2234.

Lakshminarayanan, A., 2020. The ups and ups of India's digital journey. [online] Business Today. Available at: <https://www.businesstoday.in/opinion/columns/story/indias-digital-journey-internet-boom-in-education-healthcare-and-more-digitisation-270483-2020-08-19>

Lee, C.S., 2018. Authentic leadership and organizational effectiveness: The roles of hope, grit, and growth mindset. International Journal of Pure and Applied Mathematics, 118(19), pp.383-401.

Leonard, K., 2019. Five Functions of Management & Leading. [online] Small Business - Chron.com. Available at: <https://smallbusiness.chron.com/five-functions-management-leading-56418.html>

Loonam, J., Eaves, S., Kumar, V. and Parry, G., 2018. Towards digital transformation: Lessons learned from traditional organizations. Strategic Change, 27(2), pp.101-109.

LumApps. 2022. 10 Essential Tools to Support Your Digital Transformation. [online] Available at: <https://www.lumapps.com/solutions/digital-transformation/digital-transformation-tools/>

Magenest, 2022. *Digital Transformation Strategies: Top Five Key Principles*. [online] Available at: https://magenest.com/en/digital-transformation-strategies/.

Maiti D, Castellacci F, Melchior A., 2020. Digitalisation and development: issues for India and beyond. In: Maiti D, Castellacci F, Melchior A., (eds) Digitalisation and development. Springer, Singapore.

Malhotra, K., (2018). Role of Effective leadership in Change Management. International Journal of Engineering Research & Technology, [online] 1(2). Available at: https://www.ijert.org/role-of-effective-leadership-in-change-management

Management Meditations on Lean Management. 2022. What is Lean Leadership?. [online] Available at: <https://www.lmmiller.com/lean-leadership/>

Manda, M.I. and Ben Dhaou, S., 2019, April. Responding to the challenges and opportunities in the 4th Industrial revolution in developing countries. In Proceedings of the 12th international conference on theory and practice of electronic governance (pp. 244-253).

Mantri, P., & Dhan, J. (2020). *Ideas and lessons from India*. https://www.microsave.net/wp-content/uploads/2020/05/PMJDY-1.pdf

Mansaray, HE., (2019). The Role of Leadership Style in Organisational Change Management: A Literature Review. [online] ResearchGate. Available at: https://www.researchgate.net/publication/334486140_The_Role_of_Leadership_Style_in_Organisational_Change_Management_A_Literature_Review

Matt, C., Hess, T. and Benlian, A., 2015. Digital transformation strategies. Business & information systems engineering, 57(5), pp.339-343.

Mazumdar Shaw, K., 2021. Kiran Mazumdar Shaw writes: Technology holds huge promise for healthcare in India in 2022. [online] Moneycontrol. Available at: https://www.moneycontrol.com/news/opinion/kiran-mazumdar-shaw-writes-technology-holds-huge-promise-for-healthcare-in-india-in-2022-7860691.html.

McKinsey Report., 2019 Digital India: technology to transform a connected nation. McKinsey Global Institute. https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/digital-india-technology-to-transform-a-connected-nation

Mehmet NECATI Cizreliogullari, Mehmet Veysi Babayiğit and Özlem Altun (2017). The Impact of Leadership Styles on Employees Performance in Organization. [online] ResearchGate. Available at: https://www.researchgate.net/publication/334603304_The_Impact_of_Leadership_Styles_on_Employees_Performance_in_Organization

Mendenhall, M.E., Žilinskaitė, M., Stahl, G.K. and Clapp-Smith, R. eds., 2020. Responsible global leadership: Dilemmas, paradoxes, and opportunities. Routledge.

Meraku, A., 2017. Role of Leadership in Organizational Effectiveness. Journal of Economics, Business and Management, 5(11), pp.336-340.

Mi, C., Chang, F., Lin, C. and Chang, Y., 2018. The theory of reasoned action to CSR behavioral intentions: The role of CSR expected benefit, CSR expected effort and stakeholders. Sustainability, 10(12), 4462, pp. 1-17.

Mihardjo, L., Sasmoko, S., Alamsjah, F. and Elidjen, E., 2019. Digital leadership role in developing business model innovation and customer experience orientation in industry 4.0. Management Science Letters, 9(11), pp.1749-1762.

Mihardjo, L.W.W. and Sasmoko, S., 2019. Digital transformation: Digital leadership role in developing business model innovation mediated by co-creation strategy for telecommunication incumbent firms. In Strategy and behaviors in the digital economy. IntechOpen.

Modus-group.com. (2020). The Role of Leadership in Organizational Change – Modus Strategic Solutions. [online] Available at: https://www.modus-group.com/the-role-of-leadership-in-organizational-change/

Mumford, T.V., Campion, M.A. and Morgeson, F.P., 2007. The leadership skills strataplex: Leadership skill requirements across organizational levels. The leadership quarterly, 18(2), pp.154-166.

Mygov.in., 2022. 6 Years of Digital India. [online] Available at: https://transformingindia.mygov.in/digital-india/.

Narikae, P. ole, Namada, Dr.J.M. and Katuse, Prof.P., 2017. ORGANIZATIONAL POLICY FRAMEWORK AND STRATEGY IMPLEMENTATION GAPS. International Journal of Business Strategies, 2(1), pp.56–74.

Nature.com., 2014. Healthcare Innovation: An Interview with Dr. Kiran Mazumdar-Shaw | The Success Code | Learn Science at Scitable. [online] Available at: https://www.nature.com/scitable/blog/the-success-code/healthcare_innovation_an_interview_with/.

Nayak, J.K. and Singh, P., 2021. *Fundamentals of research methodology problems and prospects*. SSDN Publishers & Distributors.

Neeley, T. and Leonardi, P., 2022. Developing a Digital Mindset. Harvard Business Review, 100(5-6), pp.50-55.

Netland, T.H., Powell, D.J. and Hines, P., 2019. Demystifying lean leadership. International Journal of Lean Six Sigma.

Newman, M. and Gough, D., 2020. Systematic reviews in educational research: Methodology, perspectives and application. *Systematic reviews in educational research*, pp.3-22.

Ngozwana, N., 2018. Ethical dilemmas in qualitative research methodology: Researcher's reflections. *International Journal of Educational Methodology*, *4*(1), pp.19-28.

Nidadhavolu, A. (2018). Impact of Leadership Styles on Employee Job Satisfaction and Organizational Commitment -A Study in the Construction Sector in India. [online] Available at: https://digitalcommons.wku.edu/cgi/viewcontent.cgi?article=3098&context=theses

Nugroho, YA, 2016. The effect of perceived ease of use, perceive of usefulness, perceive risk and trust towards behavior intention in transaction by internet. Business and Entrepreneurial Review, 9(1), pp.79-90.

Oberer, B. and Erkollar, A., 2018. Leadership 4.0: Digital leaders in the age of industry 4.0. International journal of organizational leadership.

Odigie, F., 2020. Socio-Cultural Factors in Technology Adoption. [online] Linkedin.com. Available at: <https://www.linkedin.com/pulse/socio-cultural-factors-technology-adoption-felix-odigie/>

Paganin, G. and Simbula, S., 2021. New technologies in the workplace: can personal and organizational variables affect the employees' intention to use a work-stress management app. International Journal of Environmental Research and Public Health, 18(17), pp.9366 doi: 10.3390/ijerph18179366

Pallavi, S., 2020. Research Methodology perspective in Management concept and implication for future trend. *Studies in Indian Place Names*, *40*(40), pp.372-377.

Pandey, P. and Pandey, M.M., 2021. Research methodology tools and techniques. Bridge Center.

Panel®, E., 2021. Council Post: 15 Tools And Resources Top Tech Leaders Use Every Day. [online] Forbes. Available at: <https://www.forbes.com/sites/forbestechcouncil/2021/05/28/15-tools-and-resources-top-tech-leaders-use-every-day/?sh=5bebbf5a6cf4>

Parikh, B., 2021. Council Post: Digital Transformation: Start With Strong Leadership. [online] Forbes. Available at: <https://www.forbes.com/sites/forbestechcouncil/2021/11/22/digital-transformation-start-with-strong-leadership/?sh=56b951dd1f57>

Patel, M. and Patel, N., 2019. Exploring Research Methodology. International Journal of Research and Review, 6(3), pp.48-55.

Paul, B. and Basole, A., 2021. Creating Udyog Sahayak Enterprises Network (USENET) for Employment Generation and Scale-up in the MSME Sector.

Petry, T., 2018. Digital leadership. In Knowledge management in digital change (pp. 209-218). Springer, Cham.

Petry, T., 2018. Digital leadership. In *Knowledge management in digital change*. Springer, Cham, (pp. 209-218).

Pihir, I., Tomičić-Pupek, K. and Tomičić Furjan, M., 2019. Digital transformation playground-literature review and framework of concepts. Journal of Information and Organizational Sciences, 43(1), pp.33-48.

Plotnikov, A., 2022. Digital Transformation Challenges and the Change Management Concept. Entrepreneurship and Small Business: Book of Abstracts, p.79-84.

Porfírio, J.A., Carrilho, T., Felício, J.A. and Jardim, J., 2021. Leadership characteristics and digital transformation. Journal of Business Research, 124, pp.610-619.

Praharaj, S., Han, J.H. and Hawken, S., 2018. Towards the right model of smart city governance in India. Sustainable Development Studies, 13(2), pp.171-186.

Prince, K.A., 2018. Digital leadership: transitioning into the digital age (Doctoral dissertation, James Cook University).

Promsri, C., 2019. The developing model of digital leadership for a successful digital transformation. GPH-International Journal of Business Management (IJBM), 2(08), pp.01-08.

PTI., 2018. Use social media to create awareness, not strife, says Manoj Tiwari. [online] The Indian Express. Available at: https://indianexpress.com/article/india/use-social-media-to-create-awareness-not-strife-says-manoj-tiwari-5250206/].

Rakshit, S., Islam, N., Mondal, S. and Paul, T., 2021. Mobile apps for SME business sustainability during COVID-19 and onwards. Journal of Business Research, 135, pp.28-39.

Rangarajan, LN (ed)., 1992. The Arthashastra. Penguin Books India.

Rasool, H.F., 2015. Leadership styles and its impact on employee's performance in health sector of Pakistan. City University Research Journal, 5(1).

Ravichandran, A., Taylor, K. and Waterhouse, P., 2016. Devops for digital leaders: Reignite business with a modern devops-enabled software factory (p. 173). Springer Nature.

Rawal, M., 2021. An analysis of covid-19 impacts on Indian education system. Educational Resurgence Journal, 2(5), pp.35-40.

Reis, J., Amorim, M., Melão, N. and Matos, P., 2018, March. Digital transformation: a literature review and guidelines for future research. In World conference on information systems and technologies (pp. 411-421). Springer, Cham.

Rinjit, K., 2020. Research methodology.

Ritter, J., 2015. What is digital leadership? - Definition from WhatIs.com. [online] SearchCIO. Available at: <https://www.techtarget.com/searchcio/definition/digital-leadership#:~:text=Digital%20leadership%20is%20the%20strategic,both%20organizational%20and%20individual%20levels>

Ritz, W., Wolf, M. and McQuitty, S., 2019. Digital marketing adoption and success for small businesses: The application of the do-it-yourself and technology acceptance models. Journal of Research in interactive Marketing.

Rogers, D.L., 2016. The digital transformation playbook: Rethink your business for the digital age. Columbia University Press.

Rollings, M., 2022. 60 Best Project Management Software For Teams In 2022. [online] Hive. Available at: <https://hive.com/blog/project-management-software/>

Roy Chaudhury, D., 2022. "India presents a great investment destination to any international business". [online] The Economic Times. Available at: <https://economictimes.indiatimes.com/news/economy/foreign-trade/india-presents-a-great-investment-destination-to-any-international-business/articleshow/88987369.cms>

Roy, B., 2022. 7 Prominent Leadership Trends For Companies in 2022. [online] Nurture an Engaged and Satisfied Workforce | Vantage Circle HR Blog. Available at: <https://blog.vantagecircle.com/leadership-trends/>

Rüth, R. and Netzer, T., 2020. The key elements of cultural intelligence as a driver for digital leadership success. Leadership, Education, Personality: An Interdisciplinary Journal, 2(1), pp.3-8.

SAĞBAŞ, M. and ERDOĞAN, F.A., Digital Leadership: A Systematic Conceptual Literature Review. İstanbul Kent Üniversitesi İnsan ve Toplum Bilimleri Dergisi, 3(1), pp.17-35.

Santo, V., SacavÃ, A., dos Reis, I.P. and Sampaio, M.C., 2019. 4.0 Leadership skills in hospitality sector. Journal of Reviews on Global Economics, 8, pp.105-117.

Saunders, M., Lewis, P. and Thornhill, A. 2012 “Research Methods for Business Students” 6th edition, Pearson Education Limited.

Saunders, M., Lewis, P., Thornhill, A., and Bristow, A. 2019. "Research Methods for Business Students" Chapter 4: Understanding research philosophy and approaches to theory development.

Schiuma, G., Schettini, E., Santarsiero, F. and Carlucci, D., 2021. The transformative leadership compass: six competencies for digital transformation entrepreneurship. International Journal of Entrepreneurial Behavior & Research, (ahead-of-print).

Schwarzmüller, T., Brosi, P., Duman, D. and Welpe, I.M., 2018. How does the digital transformation affect organizations? Key themes of change in work design and leadership. Management Revue, 29(2), pp.114-138.

Seidel, A., Saurin, T.A., Tortorella, G.L. and Marodin, G.A., 2019. How can general leadership theories help to expand the knowledge of lean leadership?. Production Planning & Control, 30(16), pp.1322-1336.

Sheninger, E., 2019. Digital leadership: Changing paradigms for changing times. Corwin Press.

Sihag, BS., 2004. Kautilya on the scope and methodology of accounting, organizational design and the role of ethics in ancient India. Account Hist J 31(2), pp.125–148.

Silva, A.D. (2021). Top 5 Challenges Leaders Face in 2021 and How to Mitigate Them. [online] Thriveglobal.com. Available at: https://thriveglobal.com/stories/top-5-challenges-leaders-face-in-2021-and-how-to-mitigate-them/

Simplypsychology.org. 2022. Theory of Reasoned Action. [online] Available at: <https://www.simplypsychology.org/theory-of-reasoned-action.html>

Snyder, H., 2019. Literature review as a research methodology: An overview and guidelines. Journal of business research, 104, pp.333-339.

Sousa, M.J. and Rocha, Á., 2019. Leadership styles and skills developed through game-based learning. Journal of Business Research, 94, pp.360-366.

Srinivas, V. and Mahal, R., 2017. Digital transformation: the next big leap in microfinance. PARIDNYA-The MIBM Research Journal, 5(1), pp.47-56.

Srivastava, P.C., 2016. LEADERSHIP STYLES IN WESTERN & EASTERN SOCIETIES AND ITS RELATION WITH ORGANIZATIONAL PERFORMANCE. Pranjana: The Journal of Management Awareness, 19(1), pp.60-76.

Statesman News Service., 2022. Benefits of digital transformation must reach all: PM Modi. [online] The Statesman. Available at: https://www.thestatesman.com/india/benefits-of-digital-transformation-must-reach-all-pm-modi-1503131510.html.

Sugandini, D., Purwoko, P., Pambudi, A., Resmi, S., Reniati, R., Muafi, M. and Adhyka Kusumawati, R., 2018. The role of uncertainty, perceived ease of use, and perceived usefulness towards the technology adoption. International Journal of Civil Engineering and Technology (IJCIET), 9(4), pp.660-669.

Suneja, K., 2021. No irregularities found in World Bank's 'Doing Business' data on India. [online] The Economic Times. Available at: <https://economictimes.indiatimes.com/news/india/india-will-continue-to-push-for-making-it-easier-to-do-business/articleshow/86303416.cms>

Taherdoost, H., 2018. A review of technology acceptance and adoption models and theories. Procedia manufacturing, 22, pp.960-967.

Teamcomputers.com. 2021. India's Digital Transformation Journey over the last 75 years | Team Talk. [online] Available at: <https://www.teamcomputers.com/team-blog/indias-digital-transformation-journey-over-the-last-75-years/>

Thakur, A., 2019. India enters 37-year period of demographic dividend. [online] The Economic Times. Available at: <https://economictimes.indiatimes.com/news/economy/indicators/india-enters-37-year-period-of-demographic-dividend/articleshow/70324782.cms?from=mdr>

The Economic Times. 2020. 95% Indian firms have fast-tracked their digital transformation initiatives during the pandemic: Study. [online] Available at: <https://economictimes.indiatimes.com/tech/information-tech/95-indian-firms-have-fast-tracked-their-digital-transformation-initiatives-during-the-pandemic-study/articleshow/79423881.cms>

The Economic Times. 2021. Nearly all Indian firms are using some form of hybrid cloud architecture: IBM. [online] Available at: <https://economictimes.indiatimes.com/tech/information-tech/nearly-all-indian-firms-are-using-some-form-of-hybrid-cloud-architecture-ibm/articleshow/87352345.cms?from=mdr>

The Wire., 2018. PM Modi Pushes for 'Truly Inclusive' Digital Access in Speech as India Handed G-20 Presidency. [online] Available at: https://thewire.in/government/modi-g-20-speech-digital-transformation.

Theofanidis, D. and Fountouki, A., 2018. Limitations and delimitations in the research process. *Perioperative Nursing-Quarterly scientific, online official journal of GORNA*, *7*(3 September-December 2018), pp.155-163.

Tuffour, I., 2017. A Critical Overview of Interpretative Phenomenological Analysis: A Contemporary Qualitative Research Approach. Journal of Healthcare Communications, 02(04).

Urcia, I.A., 2021. Comparisons of Adaptations in Grounded Theory and Phenomenology: Selecting the Specific Qualitative Research Methodology. *International Journal of Qualitative Methods*, *20*, pp.1-14.

Varindia, 2020. Digital India Shows 63.5% Increase In Cyber Crime Cases. [online] https://www.facebook.com/VARINDIAMagazine. Available at: <https://varindia.com/news/digital-india-shows-635-increase-in-cyber-crime-cases>

Verhoef, P.C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J.Q., Fabian, N. and Haenlein, M., 2021. Digital transformation: A multidisciplinary reflection and research agenda. Journal of Business Research, 122, pp.889-901.

Vial, G., 2021. Understanding digital transformation: A review and a research agenda. Managing Digital Transformation, pp.13-66.

Vijai, C., Suriyalakshmi, S.M. and Joyce, D., 2019. The Blockchain Technology and Modern Ledgers Through Blockchain Accounting. Adalya Journal, 8(12), pp.545-557.

Vogelsang, K., Liere-Netheler, K., Packmohr, S. and Hoppe, U., 2019. Barriers to digital transformation in manufacturing: development of a research agenda.

Vollstedt, M. and Rezat, S., 2019. An introduction to grounded theory with a special focus on axial coding and the coding paradigm. *Compendium for early career researchers in mathematics education*, *13*, pp.81-100.

Willmott, H., 2020. On research methodology. *The Journal of Organization and Discourse*, *1*(1), pp.1-4.

Woiceshyn, J. and Daellenbach, U., 2018. Evaluating inductive vs deductive research in management studies: Implications for authors, editors, and reviewers. Qualitative research in organizations and management: An International Journal.

www.ETCIO.com, 2020. *Digital transformation seen as critical business enabler in India: Study - ET CIO*. [online] ETCIO.com. Available at: https://cio.economictimes.indiatimes.com/news/corporate-news/digital-transformation-seen-as-critical-business-enbaler-in-india-study/79425083.

Yu, Z.O., 2018. Psychological security as the foundation of personal psychological wellbeing (analytical review). Psychology in Russia: State of the art, 11(2), pp.100-113.

Zawacki-Richter, O., Kerres, M., Bedenlier, S., Bond, M. and Buntins, K., 2020. *Systematic reviews in educational research: Methodology, perspectives and application* (p. 161). Springer Nature.

Zhai, Y. and Yu, W., 2020. A mobile app for diabetes management: impact on self-efficacy among patients with type 2 diabetes at a community hospital. Medical Science Monitor: International Medical Journal of Experimental and Clinical Research, 26, pp. e926719-1.

Žukauskas, P., Vveinhardt, J. and Andriukaitienė, R., 2018. Philosophy and paradigm of scientific research. Management culture and corporate social responsibility, pp.121-139.