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Research Article

Impact Of Cloud Computing on The Employees Cloud Adaptation in Information Technology Across All Industry

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ABSTRACT

This paper aims to understand the impact of cloud computing service adaptation on the employees working in the information technology industry. In this study, the impacts of technology, organization, and environmental variables on the adoption of cloud computing are examined through the lens of the Technology Acceptance Model and the Technology Organization Environment framework. It aims to investigate factors influencing the adaptation and proposes a model to derive the positive adaptation on the IT employees by investigating the external variables identified. The study further aims to show the significance of adaptation, in achieving the organizational goals, for ensuring sustainable growth in changing technology.

The paper did a survey on focused groups using the open-ended questionnaire backed by solid theory, with the employee's representing entry, middle and senior management having experience in cloud computing. The data cleansing was done by correcting, transforming before analysis, and preparing graphs, charts, tables out of it for explanations, flows and propositions.

The findings indicate that the three factors positive impact the adaptation on the employees where organizations support makes a tremendous promising & guaranteeing entry in the process. The research findings suggest that among cloud computing service providers, AWS emerges as the predominant choice among employees within organizations.

Due to the selected research methodology, slight variations in research outcomes may arise depending on the data obtained from different industry sectors. Therefore, researchers are encouraged to test the proposed propositions further. The same model can apply to different groups to extend the research further.

This paper includes implications for adaptation of cloud computing service for the organization, falling which could be resulting in losing in sustainable growth in the technological war, which may further impact the changing business scenarios.

Keywords: Impact on cloud adaptation, Impact on technology adaptation, Impact on organizational adaptation, Impact on environmental adaptation.

1. Introduction

Cloud computing serves as a substitute for local servers and personal computing devices, offering storage and computing capabilities for running applications. Typically, organizations either develop or procure software and servers to facilitate business operations and store vital business data and information [1]. The maintenance of those software, hardware and networking, access to the application is completely controlled by a group of specialized people called administrator, network administrator [2]. In case of any problems these technicians fix the problems and make sure these software's and equipment keep running to support the business. Also, organization does buy and renewing software licenses, upgradation, applying software patches in time to time. [3-5].

Cloud computing offers a variety of service models, allowing organizations to opt for software as a service (SaaS) or platform as a service (PaaS). The software as a service approach addresses certain challenges encountered within these organizations. Organization buys cloud services by a cloud computing service provider, through authorization, the organization can access software needed to manage its day-to-day needs and staff work [6-8]. The staff of the organization only needs to have internet connection and a computer or a device that can access the internet and connect the applications online, to use them to manipulate a piece of work [9]. The staff with authorized admission have the option of downloading, uploading, or saving any work in the cloud storage. So, the burden of maintaining local hardware set up, networking, hiring experienced professional is no more required for the organization, hence, reduction in huge cost of maintenance [10-13]. In case of startup, small organization they can get into a contact and use cloud infrastructure within few clicks and provisioned the necessary infrastructure within few minutes [23].

Cloud computing takes away the burden from the shoulder of the organizations of procuring software and software licenses [14]. More to that, they keep the responsibility of the software up to date, apply constant patch update on time to time and made repairs where there is a breakdown. Employees are only left to perform the job or task; the management of these tasks are left to a cloud server provider, or a main administrator controlled by cloud provider. This helps the organization to improve productivity and concentrate on core business than spending resources and money in managing software and hardware to operate [15-17].

The implementation of a cloud computing system triggers a redefinition of the organizational structure. With this new system, there is a notable change in work role [18]. This change in work role means new responsibilities to individuals. Cloud computing provides alternatives to job posts for the employees in the organization [19]. Cloud computing is disadvantageous in the sense that it does changes the work role, and the way role is used to perform the job responsibility. This takes away the work of the employee previously used to maintain computer software, hardware, networking owned by the company. Similarly, a novel approach is devised wherein employees are tasked with ensuring that the appropriate software and hardware are available for organizational tasks [20-22].

Cloud computing security relies significantly on both cloud server security and access control, constituting a shared responsibility for organizations [24]. The robust security measures implemented by the cloud provider are continually updated, making breaches impossible. It is therefore very crucial for the organization to maintain strict access control to the resources by leveraging proper policy for the roles or work they perform [25].

The infrastructure and resource capacity of the cloud is limitless, Organization can scale up and down depending on the need [26]. The software resources can be scaled up and down based on the peak usage times of day, week, month, or year for certain applications. Being flexible, the organization will save cost from maintaining systems that are unnecessary during inactive times. Organizations will save money by moving cloud computing due to it scalability and adds more flexibility to its infrastructure. Cloud computing also ensures that companies only pay for the data what is being used. As a cloud office lowers the maintenance of IT costs and frees up administrative tasks of the IT staff from that of a company legacy system [27].

Cloud computing gives organization the ability to keep up with ever changing technology, able to update any software or platform as new versions when they are released [28]. Organization producing various business innovation to overcome the challenges encountered, which opens a new area of business to be served and generate revenue out of it. Innovation also contributes to the country, society standard of living and economy to grow.

Cloud computing opens a new way of interactions with computers and internet and changing the way we used to use it [26]. Individuals are learning new skills and technology to be competitive in the ever-changing technology and process space. The technology is reaching out to individual and make them dependent on dayto-day use which is having some good and bad things to the life of individual. Individuals started using cloud space as storing data which they used to store in local hard drive which was never been exceptionally reliable solution [29]. The collaboration, meetings with friends and family changing the way it used to be before. Individuals working in remote place, away from family and members can connect by easily with the invention of new services and technology. The adverse effect is on the job point of view, as some jobs are getting vanished due to change in technology and cloud computing, people working on that are getting impacted. The mental, sociological, physical health is badly impacted due to the easy access of information and impact of the job [30].

1.1. Problem Statement

Cloud computing is an on-demand service of cloud-based computational processes that are provided via the internet, including software, IT resources, network, processing power, and data storage that are accessible remotely under security control. The development of cloud computing that has emerged from the shift to remote computing, and where small payments for services are charged, creates the possibility of flexible placement of software and hardware. Flexible, scalable, elastic, and easy to maintain, cloud services result in reduced costs, improved efficiency, and better resource utilization. Creating a community-driven approach serving for resource distribution, improves the usage and makes it possible to provide instant service, which results in reduced operational and capital costs. This technology is known as game changer, and its impact on individual, society and organizations are significant. On the one hand, there are many studies on how cloud computing affects the IT experts, but there's a void in the literature prompting the need to investigate the influence of the environment, organization, and technology changes on employee well-being and mental stress.

1.2. Dissertation Goal

The economic impact of cloud computing in India is profound with billions of revenues and thousands of direct jobs created that will certainly contribute to the GDP. In the era of cloud-based smart data analytics solutions, retailers can improve customer-centricity, optimize expenditures, inventory planning and supply chain management. The number of digital and technology-related positions such as data scientists, product managers, artificial engineers, and cloud architects is expected to increase in all the industries, based on the public cloud services. Fresh job titles are introduced, such as private cloud developers, integration specialists, and security and compliance experts, as cloud providers continue to expand their operations. Empirical research on the cloud computing impact on individuals in organizations shows the challenges in environmental, organizational, and technological adaptation. The purpose of this research is to assess the effects of these factors on employees and provide strategies for stakeholders to devise plans to mitigate the negative effects and build organizational resilience.

1.3. Research Question

The study was initiated to acquire a deeper understanding of the effects of cloud computing on organizational employees. The following research questions were formulated:

- What factors influence employee's adaptation to cloud technological shifts?
- What are the consequences of these factors on employees?
- What preventive measures should individuals and industries adopt to mitigate these impacts?

1.4. Research Gap

The theoretical model as well as literature on cloud adaptation has steadily grown in many marketing literatures and been proposed by various researcher over the past years. However, the literature has not yet explored the below aspects.

- There is no study conducted earlier to understand adaptation of the impact of the cloud computing services on the employees of the organization.
- The factors that are responsible for impacting the employees due to change in technology.
- The contribution of the service providers to the employees to adopt the technology change.
- Factors that help employees and organization to be benefitted from the technological change by adaptation of new technology.

1.5. Research Objective

The primary objectives of the thesis work are outlined as follows:

- Assessing the impact of changes in information technology on cloud computing.
- Evaluating the impact of shifts in the business environment on cloud computing. Investigating the impact of alterations in organizational operations on cloud computing.

1.6. Research Hypothesis

- H01: Technology has no impact on Cloud Adaptation.
- H02: Organization has no impact on Cloud Adaptation.
- H03: Environment has no impact on Cloud Adaptation.
- H04: Relative Advantage of technology adaptation has no impact on Cloud Adaptation.
- H05: Perceived Benefits of technology adaptation have no impact on Cloud Adaptation.

- H06: Compatibility of technology adaptation has no impact on Cloud Adaptation.
- H07: Complexity of technology adaptation has no impact on Cloud Adaptation.
- H08: Technology Readiness of technology adaptation has no impact on Cloud Adaptation.
- H09: Satisfaction with existing systems of organizational adaptation has no impact on Cloud Adaptation.
- H10: Top management support of organizational adaptation has no impact on Cloud Adaptation.
- H11: Organizational Readiness of organizational adaptation has no impact on Cloud Adaptation.
- H12: Employees' information system knowledge of organizational adaptation has no impact on Cloud Adaptation.
- H13: Competitive pressure of environmental adaptation has no impact on Cloud Adaptation.
- H14: Industry of environmental adaptation has no impact on Cloud Adaptation.
- H15: Market Scope of environmental adaptation has no impact on Cloud Adaptation.
- H16: Customer Interaction of environmental adaptation has no impact on Cloud Adaptation.
- H17: External Information systems support of environmental adaptation has no impact on Cloud Adaptation.

1.7. Conceptual Framework

To comprehend the influence of cloud computing, the following model is proposed for analysis to assess its effect on employees. These factors are technology, organizational and environmental. This model was primarily developed by going through various research papers. Below figure represents the research model that is used for the thesis to study the impact of cloud computing on employees.

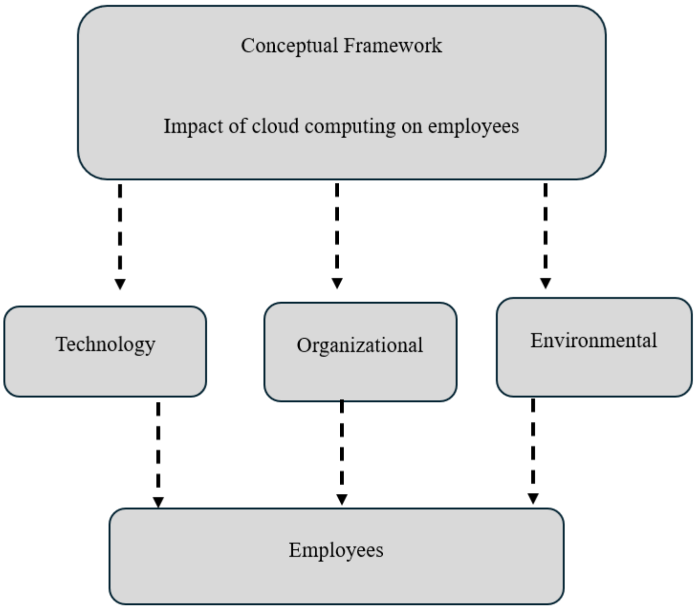

Figure 1.1 Conceptual Model

1.8. Relevance & Significance

This study is focused on how different generations of employees are affected by technology adaptation in IT industries in India. It covers major issues like Relative Advantage, Perceived Benefits, Compatibility and Organizational Readiness, along with demographic factors. Besides, it also examines the role of intermediaries. i.e., organizations, service providers, and others. Cloud computing provides an opportunity to much simplify the infrastructure issues that a business must deal with, giving the business a chance to focus on its core functions. This redesigned method is usually an efficiency booster that operates by dedicating all the attention to the business functions with very little time spent on support tasks.
As the world of business is changing rapidly and companies that leverage the cloud technology can adopt quickly new process and tools to compete with those at the forefront of innovation. Cloud technology enables a stronger, more secure business response to changing market conditions by innovating new tools, technology, and process to use. It helps employees to perform their job easily which can function as satisfaction to the job.

Cloud computing helping the individuals in learning new skills and technology to be competitive in the everchanging technology and process space. This helps the organization to generate more business by serving the customer by moving their workloads to cloud. Due to which demand of cloud professional are increasing, so as the salary of the employees.

Cloud computing enables employees to work remotely. The virtual desktops that are hosted in cloud environment is used to access files from anywhere, at any time. Cloud enables organizations to provide secure remote access for its employees to work remotely. This adds more flexibility in working and increase in productivity of the remote workforce.

Cloud computing revolutionizes global connectivity, bridging remote locations and enabling instant communication worldwide. This shift enhances livelihoods and family life by fostering constant connection and improving mental well-being through instant access to loved ones.

1.9. Scope

The scope of the thesis work are as follows:

- Analyze the impact on the employee due to change in technology.
- The study is conducted on the employees in the organization located in all over India. ☐ The study is restricted only on the employees working using cloud computing service.
- The data collection is done using google forms, email, phone call etc.

1.10. Out of Scope

Following are the list of work which was not considered for the analysis:

- Does not cover the impact on the organization, cost, and economy.
- Does not cover the impact of modern technologies other than cloud computing.
- Does not cover the impact outside India.
- Does not consider the technological skills of the person.
- Does not consider the other than IT employees as respondent.
- Does not examine the impact on individuals who are not employed in information technology-related roles.

1.11. Assumption & Limitation

- All the responded of the data collected are somehow related to information technology.
- The study exclusively focuses on employees and does not extend to businesses, organizations, or the economy.
- Participants are randomly selected from a list of IT organizations across major cities, as published by the Government of India.
- It is presumed that respondents possess awareness of various cloud computing services and vendors.
- The motivations behind respondents providing the information remain undisclosed.

1.12. Issue & Challenges

- The study presents a challenge in locating and contacting employees who utilize cloud computing services as respondents.
- The adaptation model considered for the study was initially developed by Alshamaila, Y., Papagiannidis, S., and Li, F., who applied it to measure cloud adaptation.
- One of the data collection methods is administration of survey by sharing questionnaire link through email. This method of data collection is having a barrier of low or no responses most of the time even after following up with repeated no of times or landing into the junk folder of the email.
- Another issue arises from the fear of spam or phishing emails when responding to the survey. There is a high likelihood of recipients deleting the email invitation containing an embedded link in the message body.

2. Review of Literature

This section consists of various literature focuses on various similar areas of work to assist the researcher to define the research problem to establish rational and framework behind. The review helps to capture the relevant background on the Cloud Computing related research work performed on various topics that includes the innovation, disruptive, impact on business, client, and economy. This section also represents the outcome of the various research work, methodologies, techniques, concepts, ideas, model, economy, industry, sustainability relevant to the context of the study.

Impact of cloud is a broad term that refers to the impact on economic, environmental, industrial, social, data security, technology, and the labour market due to cloud services, as captured in OECD (2014-08-19), and the role of government policy. Y. Hung et al. (2019) investigated cloud computing transformation and the development of industries by investigating the technical trends of rising cloud computing technologies. The findings from his research work indicate that intelligence and automation are the core problems in cloud computing, which need more exploration to address business needs. Konstantinos Katsantonis et al. (2015) captured the economic benefits, growth of a country, and contribution to economic growth due to cloud computing adoption. According to Dr. Laveesh Bhandari et al. (2012), it is proposed that defining government policies aimed at reducing the cost of cloud computing services in India is imperative for further economic growth. Three service models—the deployment model and distributing computing—are the key market players. Average spending on cloud services in Europe and APAC and employee strength are the impacts of using the economic model. In their DSGE calculation model, Etro, Federico et al. (2009) demonstrate that cloud computing is poised to drive substantial growth in the European Union, offering government's potential benefits through its adoption. Additionally, this paper underscores the role of cloud computing in facilitating business creation and alleviating the fixed costs associated with entry capital. This also talks about the significant impact on job creation and the contribution to the growth of the economy. In the paper Harm-Jan Steenhuis et al. (2012) provide, there is a connection between technology and economic development. Reamer, A. (February 28, 2014) highlights how the necessary conditions for technological innovation, fostered by collaboration among government, universities, and businesses, have contributed to economic growth. Meanwhile, Saykol, Ediz. (2014) delves into the social and economic significance, emphasizing the creation of a novel business model leveraging cloud computing services. Otilia Dimitriu et al. (2015) focused on cloud accounting solutions with respect to business and accounting to enable all business owners, auditors, and accountants to collaborate by accessing recent financial data.

In their paper, John Prakash Veigas et al. (2019) explores the opportunities and challenges presented by cloud computing, examining its impact in India and the corresponding government regulations concerning taxation, data privacy, and security. Meanwhile, Maarten Goos et al. (2018) center their discussion on the effects of technology on the labor market and propose specific policies aimed at achieving economic equilibrium. Digital revolutions are characterized as an elaborative interaction between worker skills and digital capital from a geographical point of view. The results suggested that there will be changes in job quality and prices for workers to fulfil consumer demand for products and services. In their study, Bart Nieuwenhuis et al. (2017) offers an industry-oriented solution to address the effects of disruptive cloud computing technology, advocating the adoption of best practices to leverage its benefits. The transition to cloud-based enterprise software systems is expected to impact every stakeholder within the network. Technical consulting will still be relevant due to security, migration, definition, customization, and mobile application development. In their study, S. V. Patrick Wauters et al. (2016) put forth a policy aimed at quantifying the economic ramifications of cloud computing on users, analyzing outcomes under both pessimistic and optimistic scenarios. Vaibhav Kamal Nigam et al. (2016) investigated the adoption of HIPAA guidelines and the challenges of security and interoperability as major bottlenecks in the healthcare industry. The bottleneck can be suppressed through the implementation of best practices in the design and deployment of cloud-based systems. Thamer Al-Rousan et al. (2015) illuminates the educational sector, revealing how institutions can enhance flexibility for their systems, students, and staff, and achieve greater success in research areas through the utilization of cloud computing. The significance of non-public cloud computing in the education industry was underscored through the simulation of real scenarios in this paper.

Meanwhile, Najla Niazmand et al. (2015) conducted a focused investigation within the banking industry to examine the impact of cloud computing on reducing energy consumption. The model proposed by him shows significant cost reductions by adopting appropriate technology and services offered by cloud computing. Ruoning Qian et al. (2014) suggested the formulation of an overall organizational IT strategy, and careful planning is needed to accept the changes due to cloud computing. The enormous impact on the entire organization can be mitigated through careful strategic planning and positioning. Dr. Lakshmi Devasena et al. (2014) delved into the adoption and ramifications of cloud computing technology within small and medium enterprises, aiming to spur business development. They suggested that cost reduction can be achieved through gradual implementation of business strategies and eventual adoption of cloud-based technology. L. Morgan et al. (2013) identified nine primary factors and 15 sub-factors influencing the adoption of cloud computing, categorizing them into technological, organizational, and environmental domains. In a study by Khadair Hmood et al. (2013), the positive impact of cloud computing on sales and marketing was underscored.
Additionally, they explored the associated business benefits and challenges, predicting an increase in customer value proposition due to declining service costs. Thomas Boillat et al. (2013) examines how transitioning from on-premises software packages to cloud services impacts various components of business models, such as client price proposition, resource base, price configuration, and cash flows. Their analysis synthesizes strategic decisions for enterprise software package vendors and offers guidance for developing sustainable business models. Mohd Rahul et al. (2012) assert that companies can enhance profitability through better utilization of software and hardware resources by adopting cloud computing, thus expediting adoption and innovation. The reduction of costs can be optimized by using appropriate resources that are needed by the organization. Jenni Myllykoski et al. (2013) investigated the various business transformation models to incorporate cloud computing technology by developing a new business concept model that delivers through software licensing and co-creation. The transformation brings major changes to cost structures and revenue streams and requires

changes in time, planning, and execution. The analysis indicates that the cloud as a business places specific demands on firms that affect all the elements of the business model. John Conley et al. (2011) compared various cloud computing architectures, grid computing, virtualization, and broadband networking. The result provides software, infrastructure, and cloud computing models suitable for the organization to explore. The economic implications of cloud computing were examined, with a proposal suggesting that greater economic benefits could be realized in both the "wholesale" and "retail" facets of cloud computing.

Hasimi Sallehudin et al. (2015) asserted that despite the slow adoption within organizations, the concept of cloud computing offers numerous advantages. A conceptual model was developed by integrating the diffusion of innovation and IT personnel characteristics. The primary factors influencing cloud adoption include relative advantage, compatibility, and personal IT knowledge. Rohani, M.B. et al. (2015) delineated numerous factors and barriers affecting the adoption of cloud computing within technology transfer offices operated by organizations. They employed the "Diffusion of Innovations and Technology Organization Environment" theory to assess cloud computing adoption. Hemlata Gangwar et al. (2015) proposed a framework for cloud computing adoption utilizing the TAM-TOE model, making a significant contribution to adoption literature. Their model suggests the adoption and enhancement of critical areas by empowering technology professionals to take effective measures within their organizations. Emad Abu-Shanab et al. (2014) conducted an investigation into various aspects of the cloud computing environment, including risks, factors influencing adoption, security, privacy, trust in brands, and reputation. They concluded that the most crucial issue pertains to data and trust. The findings show that security, privacy, and prior experience have low concerns among the younger generation, and brand equity will be influenced by trust levels in the brand. Yazan Alshamaila et al. (2013) contributed to the cloud adoption process by SME by adopting Technology, Organisation, and Environment (TOE). The study identified several factors crucial to SME adoption of cloud computing services, including "relative advantage," "uncertainty," "geo-restriction," "compatibility," "trial ability," "size," "top management support," "prior experience," "innovativeness," "industry," "market scope," "supplier efforts," and "external computing support". Cloud providers must create a healthy environment to improve SME interaction and remove any misunderstanding of the technology. Alemayehu Hailu et al. (2012) examined varied factors that influence cloud computing adoption by evaluating their perceptions in developing countries. The result shows all the factors have a significant positive impact on adopting cloud computing, and the technology factor has the most impact on making the decision. Theodora Issa et al. (2010) conducted a study on the cloud computing environment utilizing the PESTEL framework. The findings of the study highlight the direct impact on "sustainability," "future implications, and limitations of adopting cloud computing" in an "effective eco-friendly manner" to mitigate carbon footprint. This technology presents a positive influence that organizations should consider for future business sustainability. Patrick Y. K. Chau et al. (1997) conducted research on the adoption of open systems infrastructure and its associated side effects. The proposed model outlines seven factors influencing adoption within organizations. The study's outcome suggests that organizations should prioritize "ability to adopt" over "benefits from adoption". The organisations should not adopt a "reactive" attitude rather than a "initiative-taking" attitude in adopting open source and newer technologies. The study considers the below factors to study and investigate further for cloud adaptation. The Technology Acceptance Model (TAM), introduced by Davis et al. (1989), is a widely recognized model employed in the information technology field to comprehend the processes of adoption and usage. TAM explains the relationship between technology acceptance and its adoption (Autry et al., 2010). It explains the behavioural intentions of users and their usage across a variety of contexts (Hong et al., 2006). The model suggests a number of factors influence their decision to use new technology, including perceived usefulness (PU) and perceived ease of use (PEOU), as mentioned by Chen and Tan (2004) and Au and Zafar (2008). These two factors in TAM do not have much impact on the cloud computing adaptation of employees in the organisation, as the inclination towards cloud adoption is mostly driven by business. The Technology Organisation Environment (TOE) framework (Louis G. Tornatzky and Mitchell Fleischer, 1990) was developed to examine organisation-level processes and technology adoption and implementation of various information technology products and services. As elucidated by Hossain and Quaddus (2011) and Oliveira and Martins (2010), the TOE framework offers advantages over other adoption models in terms of technology innovation and value creation. This framework serves as a crucial theoretical guideline for organizations in adopting information systems. This framework is not confined to any restrictions imposed by industry or size (Wen and Chen, 2010). Holistically, this framework provides a better adoption framework, implementation challenges, value chain activities, and post-adoption diffusion in the organisation to develop capabilities in the organisation using technology (Wang et al., 2010; Salwani et al., 2009).

3. Research Methodology

This quantitative study aimed to develop a novel model for assessing the impact of cloud computing on employees across various scales of industries in India. This section outlines the methodologies and techniques employed for data collection in the study, focusing on the research purpose, approach, strategy, data collection methods, sample selection, and data analysis. The figure below illustrates the research methodology contributing to the study's findings.

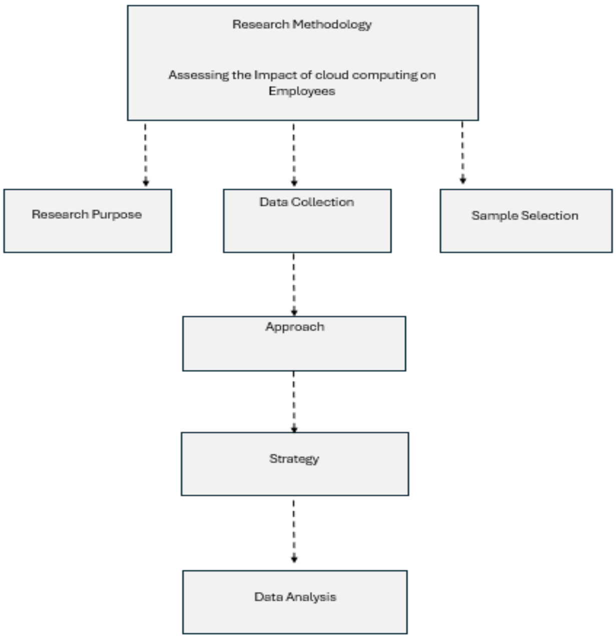

Figure 3.1 Research Methodology Flow

3.1. Research Purpose

The research is focused on cloud computing's influence on IT staff in the major cities of India, and the stages involved are examining, describing, and making theoretical conclusions. Starting with exploration for observation, proceeding to data collection and analysis, and ultimately terminating in research questions is how it is ended the study. **Validity & Reliability**

3.2. Research Approach

There are two different research approaches while working with information i.e. qualitative and quantitative. Qualitative research is associated with describing, and to use words rather than numbers as the base of analysis. The utilization of quantitative methodology ensures that the current study follows a scientifically validated approach. It involves employing quantitative methods to gather and analyse data obtained from a judgmental sample population.

3.3. Research Strategy

Research frameworks such as (i) case studies, (ii) experiments, (iii) surveys, and (iv) the historical study design is available based on the types of study objectives. This is where we could send a research questionnaire connected with Google Form links to employees' private emails to get some quantitative data type. The aim of survey was to determine and measure or quantify data from the population using the sample.

3.4. Data Collection

The primary data sources for information collection encompass literature, scientific articles, reports, along with various techniques such as documents, diaries, interviews, questionnaires, attitude formularies, and observations. The rules that were followed for formulating the questionnaire are.

- Use of simple, easy, and clear words ☐ Clear aims of the research ☐ Avoid lengthy questions.
- Sequence of question
- Non sensitive questions that might not affect the responder.
- Avoid hidden alternatives in the questions.
- Avoid included presumptions.
- Avoid double-faced questions.

The research questionnaire was formulated by applying the above rules and structured, close format questions were formulated.

3.5. Sample Selection
The sampling technique that was used for the sample selection from the population mean is called judgemental sampling. The following step will elucidate the process of selecting respondents for the study's questionnaires.

- Choice of Organization
  The objective of this thesis was to enhance comprehension of brand positioning within information technology organizations. The selection of the organization was random and conducted from major cities in India.
- Choice of Respondents
  Respondents were chosen based on their expertise and unique contributions to the investigated area. The selection process involved judgmental sampling, considering the technical nature of the study and the expected level of knowledge from respondents.

3.6. Data Analysis
From data gathered by means of primary sources involves the steps of pre-processing, which include cleansing, choosing, simplifying, whereas transformation. By doing this, data is transformed into a form, which can be easily analysed, and results are deduced. Analysis consists of arranging the data, taking note of regulations, putting those data in context, and suggesting hypotheses that are well-founded.

3.7. Research Design
The survey questions were based on a standardized database that used not only demographic data, but also cloud adaptation and technological impact. Data has directly impacted research questions determining main hypothesis and employee influence across groups. Scrutiny evaluated technical, organizational, and environmental facets for fundamental comprehension.

3.8. Population Sample
The research population primarily comprised Indian employees who regularly engage with cloud environments in their daily activities, with survey participants drawn from these organizations. A simple cross-sectional research design was chosen, involving a single data collection from a specific number of respondents. The research employed a judgmental survey method to gather data online. The sample count was calculated on the below formula:

$$N = \frac{z^2(pq)}{e^2} \quad (1)$$

Where N = sample size z = the standard error linked with the selected confidence level (typically 1.96) represents the coefficient ensuring the probability to ensure the results. p = the variability or standard deviation (typically 0.5) denotes the proportion of respondents possessing the necessary characteristics.

$q=1-p$ (1-0.5 = 0.5) (2)

e = the acceptable sample error, typically 5%, represents the maximum allowable error or limit of error, Confidence level typically 95%.

$$n = \frac{(1.96)^2(0.5)(0.5)}{(0.05)^2} = \frac{3.8416*0.25}{0.0025} = \frac{0.9604}{0.0025} = 384 \quad (3)$$

Sample Size = 384

Thus, we opted to determine the sampling size, considering the following parameters: a 95% probability coefficient (z = 1.96) to ensure results, a maximum permissible error of ±5% with a p value of 0.5. Consequently, we concluded that the necessary sample size was 384 subjects.

3.9. Measurement Instrument
The model employed in this study harnesses the influence of cloud computing as delineated in the model. Subsequently, a scale was devised to evaluate employees utilizing cloud computing services. This scale comprises three dimensions derived from research conducted by various scholars.

Independent Variables
- Relative Advantage
- Perceived Benefits
- Compatibility
- Complexity
- Technology Readiness
- Satisfaction with existing systems
- Top management support

- Organizational Readiness
- Employees information system knowledge
- Competitive pressure
- Industry
- Market Scope
- Customer Interaction
- External Information systems support

Control Variables

- AWS
- Azure
- Google Cloud
- IBM Cloud

Dependent variables

- Cloud Adaptation

3.10. Research Model

The following model was formulated for further investigation, delving into various research papers to discern the effects of cloud adaptation on employees.

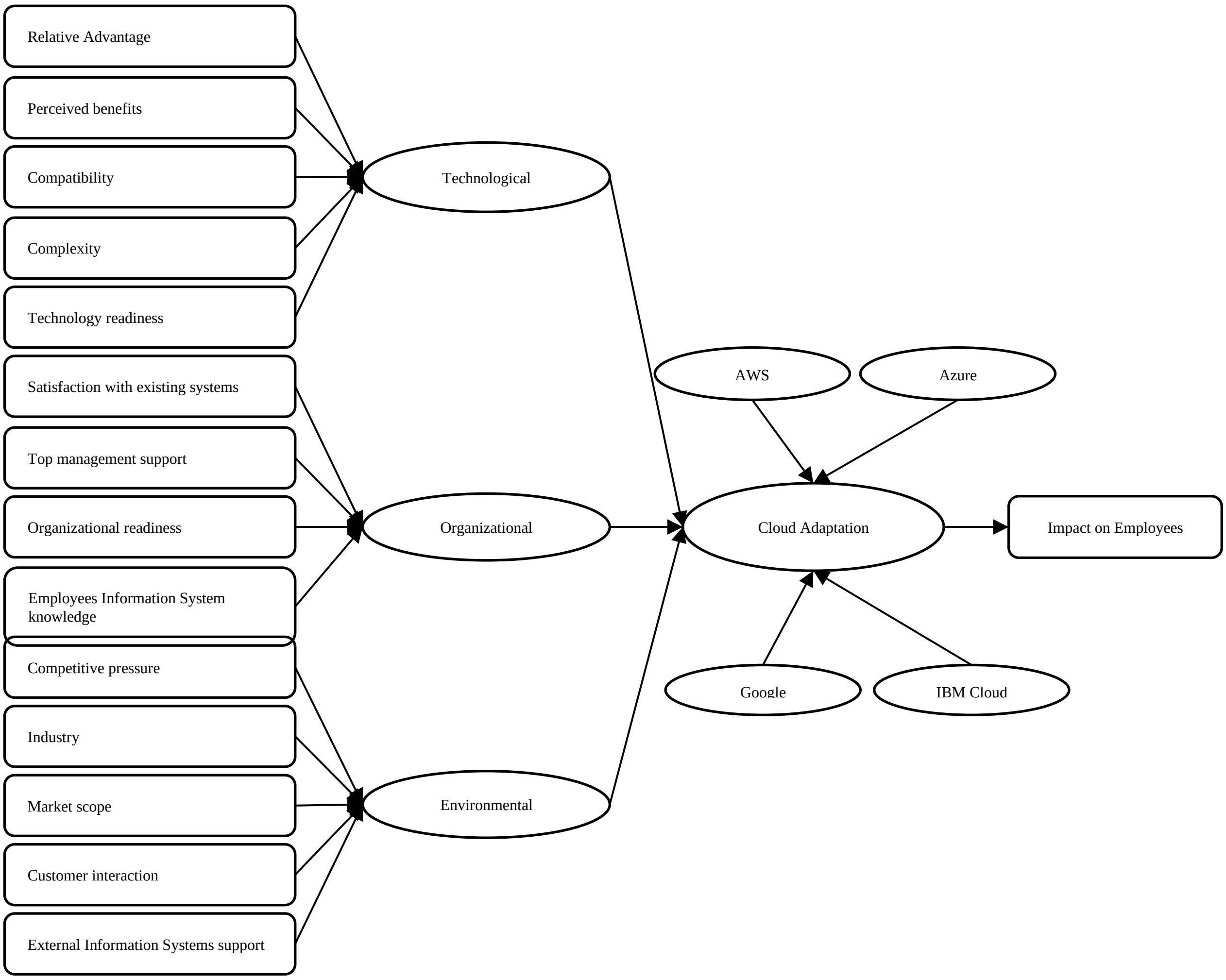

Figure 3.6: Research Model

3.11. Statistical Tools

- SPSS

- AMOS

4. Data Analysis

4.1. Socio Demographic Data

It is observed that most of the responder chosen falls under the 100k to 200k income range having age range 31 to 40 years and most of them are Male.

Table 4.2 Socio demographic frequency distribution table

Category		Frequency	Percentage
Organization Size	Small (10-49)	142	28.7
	Medium (50-249)	132	26.7
	Large (>250)	220	44.5
City	Bangalore	54	10.9
	Bhubaneswar	55	11.1
	Chennai	50	10.1
	Delhi	55	11.1
	Hyderabad	48	9.7
	Kochi	50	10.1
	Kolkata	71	14.4
	Mumbai	50	10.1
	Pune	61	12.3
Age Range	20 to 30	116	23.5
	31 to 40	195	39.5
	41 to 50	163	33.0
	51 to 60	20	4.0
Gender	Female	136	27.5
	Male	358	72.5
Income Range	<20,000	44	8.9
	20,000 to 50,000	39	7.9
	50,001 to 1,00,000	147	29.8
	1,00,001 to 2,00,000	147	29.8
	2,00,001 to 5,00,000	115	23.3
	>5,00,000	2	.4
Industry Domain	Banking and Financial Service	83	16.8
	Education	2	.4
	Energy &Utility	25	5.1
	Food & Beverages	10	2.0
	HealthCare	40	8.1
	Information Technology	20	4.0
	Insurance	103	20.9
	Manufacturing	32	6.5
	Media & Entertainment	4	.8
	Retail	70	14.2
	Telecom	64	13.0
	Transportation and Logistics	19	3.8
	Travel & Hospitability	22	4.5
Job Role	Architect	127	25.7
	Consultant	55	11.1
	Developer	104	21.1
	Director	33	6.7
	Executive	34	6.9
	Manager	64	13.0
	Support Specialist	7	1.4
	System Analyst	70	14.2

4.2. Descriptive Statistics

A test was conducted on the sample data to measure the descriptive statistic and figure out the normality of each of the difference scores. Normality is defined as per the standard data captured and published by different statisticians. Having a skew ≤ ±2.00 and a kurtosis ≤ ±7 is statistically proven to be good to establish that the collected data is within the range of the normal curve. Among the differences in scores, the skewness obtained from the sample data ranges from -0.026 to -1.180, which meets and fulfils the assumption. Kurtosis derived from the sample data ranges from -0.570 to 1.358, also meeting the assumption. Therefore, the conclusion can be drawn that normality is met for all the constructs for the five different scores.

Table 4.2 Descriptive statstics data

	N	Minimu	Maximu	Mean	Std. mm Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Perceived Benefits	494	1	7	5.03	1.498	-.426	.110	-.652	.219
Relative Advantage	494	1	7	5.03	1.503	-.426	.110	-.647	.219
Compatibility	494	1	7	5.02	1.494	-.405	.110	-.692	.219
Complexity	494	1	7	5.03	1.501	-.403	.110	-.708	.219
Technology Readiness	494	1	7	5.04	1.497	-.415	.110	-.691	.219
Top management support	494	1	7	5.04	1.493	-.403	.110	-.751	.219
Satisfaction with existing systems	494	1	7	5.04	1.497	-.415	.110	-.722	.219
Organizational Readiness	494	1	7	5.05	1.488	-.406	.110	-.728	.219
Employees information system knowledge	494	1	7	5.04	1.491	-.397	.110	-.738	.219
Industry	494	1	7	5.03	1.500	-.407	.110	-.705	.219
Competitive pressure	494	1	7	5.05	1.493	-.425	.110	-.684	.219
External Information systems support	494	1	7	5.05	1.491	-.389	.110	-.757	.219
Market Scope	494	1	7	5.04	1.497	-.393	.110	-.764	.219
Customer Interaction	494	1	7	5.04	1.491	-.405	.110	-.731	.219

The Kolmogorov-Smirnov and Shapiro-Wilk tests were conducted to determine the factors considered for the analysis of Relative Advantage, Perceive Benefits, Compatibility, Complexity, Technology Readiness, Satisfaction with existing systems, Top management support, Organizational Readiness, Employees Information System Knowledge, Competitive Pressure, Industry, Market Scope, Customer Interaction and External Information systems support are normally distributed. The results indicate that the data is normally distributed ($p < 0.05$).

Table 4.3 Normality measurement table

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Perceived Benefits	.183	494	.000	.920	494	.000
Relative Advantage	.179	494	.000	.920	494	.000
Compatibility	.185	494	.000	.920	494	.000
Complexity	.182	494	.000	.920	494	.000
Technology Readiness	.185	494	.000	.919	494	.000
Top management support	.190	494	.000	.917	494	.000
Satisfaction with existing systems	.186	494	.000	.918	494	.000

Organizational Readiness	.186	494	.000	.918	494	.000
Employees information system knowledge	.183	494	.000	.919	494	.000
Industry	.184	494	.000	.919	494	.000
Competitive pressure	.189	494	.000	.918	494	.000
External Information systems support	.187	494	.000	.917	494	.000
Market Scope	.188	494	.000	.917	494	.000
Customer Interaction	.188	494	.000	.918	494	.000

a. Lilliefors Significance Correction

4.3. Measuring validity of the instrument

The widely accepted validity classification is of three types: content validity, criterion-related validity, and construct validity. Content validity is measured by judgmental or panel evaluation. This shows that the content of the items adequately represents the universe of all relevant items under study. Criterion-related validity is measured by conducting correlation analysis on the concurrent and predictive data. The same instrument was used by many researchers and applied in different industries. Therefore, it can be said with confidence that the measuring instrument used in this research has proven construct validity.

Validity was measured by testing convergent validity and discriminant validity. The convergence validity test was conducted by factor analysis, average variance extraction (AVE), and composite reliability (CR). The fact that the factor loadings are above 0.7 indicates that the factor loading was optimal. All the AVE ratings were above 0.5, which means that errors are less. CR ratings for the factors above 7 shows that factors are valid.

Table 4.4 Construct validity table

Factor	Item	Factor Loading	Composite Reliability	AVE
Technology	Perceive Benefits Relative Advantage Compatibility Complexity Technology Readiness Top management Support Satisfaction with Existing Systems	.92 .92 .91 .91 .91 .91 .91	.962	.835
Organization	Organizational Readiness Employees Information System Knowledge Industry Competitive Pressure	.93 .92 .90 .90	.955	.842
Environmental	External Information Systems Support Market scope Customer Interaction	.91 .93 .92	.961	.832

The table below illustrates that all diagonal values exceed their corresponding horizontal and vertical values, indicating high reliability and validity as the results are close to 1.0.

Table 4.5 Discriminant validity table

	Technology	Organization	Environment
Technology	0.87734329		
Organization	0.803729242	0.854408348	
Environment	0.834883779	0.794586529	0.848169555

4.4. Reliability of the measuring instrument

The internal consistency of the survey form was measured by measuring the dependableness of the reliability instrument, i.e., by using the Cronbach alpha test. In today's world, the most common statistic used to evaluate internal consistency has a range of reliability levels greater than 0.70. The Cronbach alpha result shows an excellent alpha value (.904). This means that the reliability of the measuring instrument has been statistically proven.

Table 4.6 Overall Reliability table

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.904	.914	14

Table 4.7 Reliability measurement table

Research Variable	N	α
Technology	5	0.918
Organization	4	0.898
Environment	5	0.936

5. Results & Discussion

The result section will present a summary of data collected across different locations and reports generated from the collected data and analysis made to determine the effect of Cloud Computing on employees' adaptation in the Information Technology sector across all industries. Moreover, discovering employees' needs is also offered; in doing so, the organizations may easily create initiatives to facilitate cloud service adoption while minimizing the impact on employees and meeting the organizational goals. For research question and six hypotheses built; structural equation modelling and confirmatory factor analysis were performed in SPSS and AMOS, analysing the effect of Technology, Organization and Environment on Cloud Computing Adaptation. The standardized path weights from the model were evaluated for significance using a t-test. This was done to ascertain the strength of the factor loading as perceived by employees. Accepting the alternative hypothesis and rejecting the null hypothesis occurred if the measured item significantly varied from the standard value.

5.1. Hypothesis Testing

Table 5.1 Testing of Hypothesis for Technology Adaptation

	Paired Differences				t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
Pair Cloud Adaptation 20.115 1 – Technology 38	5.99263	.26962	-20.64513	-19.58564	- 74.606	493	.000

Table 5.1 gives the results of the hypothesis testing process which is technology adaptation. It compares cloud technology and another form of technology. The table shows the paired difference, mean, standard deviation, standard error of the mean, and a 95% confidence interval of the difference between the two technologies. The negative mean difference (-20.11538) implies that, on average, the cloud adaptation rating is lower than the other technology implementation option. The less than five percent p-value constitutes strong evidence against the null hypothesis, hence the meaningful adaptation difference between the two technologies.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Technology on cloud adaptation, where t = 74.606 and p-value < 0.05.

Table 5.2 Testing of Hypothesis for Organization Adaptation

	Paired Differences				t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			

Pair 1	Cloud Adaptation 15.139 – Organization 68	4.47244	.20122	-15.53504	-14.74431	-75.238	493	.000

Table 5.2 below depicts the results of the hypothesis testing on organization adaptation by contrasting cloud technology adaptation and in-organization adaption. The table reflects the paired differences, average, standard deviation, standard error mean of the difference, and a 95% confidence interval of the difference between two adaptive types. The negative mean difference (-15.13968) means that, in average, cloud adaptation score is lower than organization level of adaptation. The small p-value in the data (0.000) supports the argument of rejecting the null hypothesis, thus suggesting a significant difference in adaptation between the two contexts.
As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Organization on cloud adaptation, where t = 75.238 and p-value < 0.05.

Table 5.3 Testing of Hypothesis for Environment Adaptation

		Mean	Std Deviation	Paired Differences Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
Pair 1	Cloud Adaptation-Environment	20.17611	5.97080	.26864	-20.70393	-19.64829	-75.105	493	.000

The data set in Table 5.3 presents the results of the hypothesis testing in cloud technology adaptation contrasted with the environmental adaptation context. Table shows paired differences, the mean, standard deviation, standard error for the mean of the difference between two types of adaptation. The negative mean difference (-20.17611) shows that, on average, the scores on cloud adaptation are lower compared with the scores on environmental adaptation. Low p-value (0.000) indicates the strong evidence against the null hypothesis, and therefore, there is a noticeable difference in adaptation of the subjects between the environment of one day and the other.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Environment on cloud computing adaptation, where t = 75.105 and p-value < 0.05.

Table 5.4 Testing of Hypothesis for Relative Advantage

	Paired Differences				t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
Pair 1 Cloud Adaptation – Relative Advantage .006	.206	.009	.012	.024	.654	493	.000

In table 5.4, relative advantage is the heading against which the hypothesis of cloud adaptation is tested, with a comparison being done to see if the relative advantage offered by other factors or contexts is more or less than the same. It shows paired differences, mean, standard error of mean, and 95% confidence interval of the difference between effective climate policy and relative advantage. The slightest mean difference (.006) depicts a minor edge of cloud adaptation over the other factor being considered. Despite this, the highly significant pvalue (0.000) that was achieved challenges the null hypothesis, spotlighting a significant difference in relative advantage between cloud adaptation and the based factor. It is inferred that the harnessing of cloud adaptation might provide only a slight gain. However, other factors or situations may provide a similar or even superior benefit.
As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Relative Advantage on cloud adaptation, where t = .654 and p-value < 0.05.

Table 5.5 Testing of Hypothesis for Perceive Benefits

Mean		Paired Differences				t	df	Sig. (2-tailed)
		Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1 Cloud Adaptation – Perceive Benefits	.008	.270	.012	.016	.032	.666	493	. 000

The results of the hypothesis testing about the perceived benefits summarized in Table 5.5, comparing the differences in those benefits related to cloud adaptation. The data in the table has paired differences, mean, standard deviation, standard error mean, and 95% confidence interval of cloud adaptation v/s perceived benefits. The .008 mean difference (which is very small) indicates a minimal difference in terms of the perceived benefits between cloud and comparison techniques. Nevertheless, the significant p-value (0.000) indicates strong evidence against null hypothesis which proves the positive effects of perceived benefits on cloud adaptation. This idea is also strengthened by the t-value of 0.666 which falls below the critical value and p-value being less than 0.05, which implies that the positive effects clearly affect the level of cloud adaptation.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Perceived benefits on cloud adaptation, where t = 0.666 and p-value < 0.05.

Table 5.6 Testing of Hypothesis for Compatibility

Mean			Paired Differences				t	df	Sig. (2-tailed)
			Std. Std. Error Deviation Mean		95% Confidence Interval of the Difference Lower	Upper			
Pair Cloud Adaptation - Compatibility	.014	1	.250	.011	.008	.036	1.258	493	.000

Table 5.6 depicts the findings of the hypothesis testing concerned with neutrality of the cloud systems, that is, investigating the compatibility index with cloud adaptation. Paired t-test differences, mean, standard deviation, standard error of the mean, and 95% confidence interval of difference between adaptation and compatibility are presented in a table. The small difference in means (.014) implies a very slight shortfall in cloud adaptation compatibility. Nonetheless, the very small value of p-value (0.000) shows rather convincing evidence against the null hypothesis, which means that the compatibility of cloud plays a significant role in cloud adaptation. Such inference follows with t-value more than 1.258 which is the critical value as well as pvalue being less than 0.05 indicate that clouds adaptation largely depends on compatibility.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Compatibility on cloud adaptation, where t = 1.258 and p-value < 0.05.

Table 5.7 Testing of Hypothesis for Complexity

Mean			Paired Differences				t	df	Sig. (2-tailed)
			Std. Std. Error Deviation Mean		95% Confidence Interval of the Difference Lower	Upper			
Pair Cloud Adaptation - Complexity	.008	1	.262	.012	.015	.031	.686	493	.000

Table 5.7 is provided below which shows the hypotheses testing about complexity of behavior and how it is related to cloud adaptation. The table shows the paired differences, means, standard deviations, standard error means, and a 95% confidence interval of the difference between cloud adaptation and complexity as follows. The size of the effect (.008) calls into question equality of differences between adaptive and complex clouds. On the other hand, the extremely low p-value (0.000) implies that there is very strong evidence against the null hypothesis, thus the high complexity of cloud adaptation causing a significant effect. By the fact that the t-value of 0.686 is above the critical value and the p-value is less than 0.05 what can be said is that the level of complexity has a significant influence on cloud adaptation.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Complexity on cloud adaptation, where t = 0.686 and p-value < 0.05.

Table 5.8 Testing of Hypothesis for Technology Readiness

	Mean	Paired Differences Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Cloud Adaptation – Technology Readiness .002	.251	.011	.020	.024	.179	493	.000

Hypothesis testing on technology readiness is focused on the area of cloud adaptation as depicted in Table 5.8. The table provides the cumulative list of paired differences, mean, standard deviation, standard error mean and 95% confidence interval of the difference between cloud adaptation and technology readiness. A statistic of mean difference (.002) that is insignificant indicates that the gap between cloud adaptation and technological readiness is minimal. Notwithstanding the statistically significant p-value (0.000) that is used to reject the null hypothesis which is the evidence of strong effect of technology readiness on cloud adaptation. This hypothesis is backed by `t`-value of 0.179 being greater than the critical value and `p`-value being less. than 0.05, as a result suggesting that technology readiness has a statistically significant effect on the adoption of cloud.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Technology Readiness on cloud adaptation, where t = 0.179 and p-value < 0.05.

Table 5.9 Testing of Hypothesis for Satisfaction with existing systems

		Mean	**Std Deviation**	**Paired Differences Std. Error Mean**	**95% Confidence Interval of the Difference**		**t**	**df**	**Sig. (2-tailed)**
Pair 1	Cloud Adaptation-Satisfaction with existing systems	.006	.174	.008	.021	.009	.774	493	.000

Table 5.9 illustrates the results of the hypothesis testing related to the respondents' satisfaction with current systems and their opinion on a cloud-based environment. In the table below, there is an enumeration of the paired differences, mean, standard deviation, standard error mean, and a 95% confidence interval of the difference between cloud adaptation and satisfaction with the existing system. The small size of mean difference (.006) reveals that when it comes to community adaptation and satisfaction with current infrastructure, the difference is minimal. Nevertheless, the p-value of (0.000) is statistically significant and demonstrates very strong evidence against the null hypothesis, implying that there is a significant impact of satisfaction level with current systems on cloud adaptation. The above-mentioned conclusion is supported by the fact that t-value is 0.774 and it is greater than the critical value, and the p-value is less than 0.05, which is the limit of significance.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Satisfaction with Existing Systems on cloud adaptation, where t = 0.774 and p-value < 0.05.

Table 5.10 Testing of Hypothesis for Top Management Support

Mean	Paired Differences Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	df	Sig. (2-tailed)

Pair 1	Cloud Adaptation – Top Management Support	.006	.149	.007	.019	.007	.904	493	.000

Table 5.10 explains the findings of hypothesis testing about the top management support and the cloud adoption. It reveals how the two are related. The table shows the differences in the paired mean, standard deviation, standard error mean, and a 95% confidence interval between cloud adaptation and top management support. The very small mean difference (.006) manifests that the difference between cloud adaptation and top management support is insignificant. On the other hand, a very small p-value (0.000,) shows strong evidence against null hypothesis, which shows that top management support influences cloud adoption. It is supported by the t-value which is greater than the critical value, and the p-value being <0.05, that top management support has a significant correlation with cloud adoption.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Top Management Support on cloud adaptation, where t = 0.904 and p-value < 0.05.

Table 5.11 Testing of Hypothesis for Organization Readiness

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Cloud Adaptation – Organization Readiness	.008	.156	.007	.022	.006	1.155	493	.000

Table 5.11 provides the hypothesis testing results that are related to the organizational readiness and the cloud adaptation, in particular. The table features paired comparisons, mean, standard deviation, standard error mean, and 95% confidence interval for the difference between cloud adaptation and organization readiness. The slight mean difference (.008) implies an insignificant gap between the cloud adaptation and organization readiness. Nevertheless, a statistically significant p-value (0.000) shows strong evidence against the null hypothesis, meaning that the organizations' readiness has a significant influence on cloud adaptation. The above shows that the t-value is greater than the critical value and the p-value is less than 0.05, indicating that organizational readiness is an important factor in cloud adoption.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Organization Readiness on cloud adaptation, where t = 1.155 and p-value < 0.05.

Table 5.12 Testing of Hypothesis for Employees Information System Knowledge

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Cloud Adaptation – Employees Information System Knowledge	.004	.156	.007	.018	.010	.577	493	.000

The information in Table 5.12 is about the hypothesis that employees' information system knowledge is the same as cloud adaptation, and the hypothesis testing's results are shown. The table encompasses paired difference, mean, standard deviation, standard error mean, and a 95% confidence interval of the difference between cloud adaptation and employees' information system knowledge. The slight difference (.004) between the two factors implies a minor gap between the cloud adaptation and the employees' information system skills. In this case, the result is statistically significant for the p-value of 0.000, which provides strong evidence against the null assumption and indicates the substantial impact of employees' information system knowledge on cloud adaptation. This conclusion is supported by T value of 0.577 that is more than the critical value and p value is less than 0.05 which shows that employees' information system knowledge significantly affects cloud adaptation.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Employees Information System Knowledge on cloud adaptation, where t = 0.577 and p-value < 0.05.

Table 5.13 Testing of Hypothesis for Competitive Pressure

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Cloud Adaptation – Competitive Pressure	.010	.234	.011	.031	.011	.962	493	.000

The Table 5.13 displays the test results of competitive pressure, specially comparing it to cloud adaptation. This table shows the paired difference, the mean, the standard deviation, the standard error mean, and the 95% confidence interval of the difference between cloud adaptation and competitive pressure. The less significant difference (.010) implies that adaptation to the clouds and competitive pressure has a minor difference. On the other hand, the statistical significance of the p-value (0.000) suggests strong evidence against the null hypothesis thus implying a significantly high effect of competitive pressure in cloud adaptation. The last sentence can be rephrased as: Which is consistent with the t-value of 0.962 being greater than the critical value and the p-value being less than 0.05, therefore meaning competitive pressure significantly affect cloud adaptation.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Competitive Pressure on cloud adaptation, where t = 0.962 and p-value < 0.05.

Table 5.14 Testing of Hypothesis for Industry

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Cloud Adaptation - Industry	.008	.262	.012	.015	.031	.686	493	.000

Table 5.14, which is in here, is the result of hypothesis testing which is related to industry influence comparison with cloud adaptation. The table creates paired contrasts, mean, standard deviation, standard error of the mean, and a 95% confidence interval of the difference between cloud adaptation and industry influence. Small mean difference (.008) indicates a low level of disparity in the adaptation of clouds and the industry.
Nevertheless, the significant p-value (0.000) shows that there is strong evidence against the null hypothesis, leading to the conclusion that industry can also be a catalyst for cloud formation. This conclusion is supported by a t-value of 0.686 that is above the critical value and p-value less than 0.05 which shows that there is a significant effect of the industry on cloud adaptation.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Industry on cloud adaptation, where t = 0.686 and p-value < 0.05.

Table 5.15 Testing of Hypothesis for Market Scope

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			

Pair 1	Cloud Adaptation – Market Scope	.006	.174	.008	.021	.009	.774	493	.000

Hypothesis tests in table 5.15 indicate that market scope is not different from cloud adoption. The table enlightens on paired differences, mean, standard deviation, standard error mean, and a 95% confidence interval of cloud adaptation and market scope. The minor difference (.006) in cloud adaptation and market scope supports the idea of only a slight deviation. On the other hand, the small p-value (0.000) suggests strong evidence against null hypothesis and a significant impact of market scope on the adaptation of cloud computing. The finding is since the t-value of 0.774 is higher than the critical t-value, and p-value is less than 0.05, thus market scope has a significant effect on cloud adaptation.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Market Scope on cloud adaptation, where t = 0.774 and p-value < 0.05.

Table 5.16 Testing of Hypothesis for Customer Interaction

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Cloud Adaptation – Customer Interaction	.000	.142	.006	.013	.013	.493	493	.000

Table 5.16 highlights the results of the theoretical testing of customer interaction, against cloud adaptation. The table displays the paired differences, the mean, the standard deviation, the standard error of mean and the 95% confidence interval of cloud adaptation and customer interaction. The mean difference of .000 presents no significant difference between the two factors of cloud adaptation and customer interaction. Lastly, the very small p-value (0.000) gives powerful evidence which demonstrates the rejection of the null hypothesis, hence, the significant impact of customer interaction on cloud adaptation. A t-value of 0.493 with a p-value less than 0.05 shows that customer interaction has a positive effect on cloud use.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of Customer Interaction on cloud adaptation, where t = 0.493 and p-value < 0.05.

Table 5.17 Testing of Hypothesis for External Information System Support

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Cloud Adaptation – External Information System Support	.014	.206	.009	.032	.004	1.530	493	.000

Table 5.17 demonstrates the outcomes of hypothesis testing which are aimed at the external information system support compared to the cloud adaptation. The table consists of paired differences, mean, standard deviation, standard error mean, and a 95% confidence interval of the contrast between cloud adaptation and external information system support. The difference of .014 means a slight difference between cloud adaptation and external information system support. In addition, the statistically significant p-value (0.000) provides strong evidence against the null hypothesis, which implies a significant effect of external information system support on cloud adaptation. This is corroborated by the t-value of 1.530 which is more than the critical value and a p-value less than 0.05, which means that external information system support has a significant influence on cloud adaptation.

As $p < 0.05$ at level of significant, means we reject the null hypothesis. So, we can conclude that there is an effect of External Information System Support on cloud adaptation, where t = 1.530 and p-value < 0.05.

5.1.1. Summary of Hypothesis Testing

Table 5.18 Summary of Hypothesis Testing

0.000	Accept	There is an impact of the Technology on Cloud Adaptation.	H1
0.000	Accept	There is an impact of the Organization on Cloud Adaptation.	H2
0.000	Accept	There is an impact of Environment on Cloud Adaptation.	H3
0.000	Accept	There is an impact of Relative Advantage on Cloud Adaptation.	H4
0.000	Accept	There is an impact of Perceived Benefits on Cloud Adaptation.	H5
0.000	Accept	There is an impact of Compatibility on Cloud Adaptation.	H6
0.000	Accept	There is an impact of Complexity on Cloud Adaptation.	H7
0.000	Accept	There is an impact of Technology Readiness on Cloud Adaptation.	H8
0.000	Accept	There is an impact of Satisfaction with existing systems on Cloud Adaptation.	H9
0.000	Accept	There is an impact of Top management support on Cloud Adaptation.	H10
0.000	Accept	There is an impact of Organizational Readiness on Cloud Adaptation.	H11
0.000	Accept	There is an impact of Employees information system knowledge on Cloud Adaptation.	H12
0.000	Accept	There is an impact of Competitive pressure on Cloud Adaptation.	H13
0.000	Accept	There is an impact of Industry on Cloud Adaptation.	H14
0.000	Accept	There is an impact of Market Scope on Cloud Adaptation.	H15
0.000	Accept	There is an impact of Customer Interaction on Cloud Adaptation.	H16
0.000	Accept	There is an impact of External Information systems support on Cloud Adaptation.	H17

5.2. CFA Analysis

Table 5.19 Parameter Estimates CFA Model

Variable	Unstandardized estimate	Standard error	Standardized estimate	*p*
Technology Readiness	1.000		.918	< .001
Compatibility	1.003	.004	.918	< .001
Complexity	1.000	.003	.910	< .001
Perceived Benefits	.991	.007	.929	< .001
Relative Advantage	.998	.006	.922	< .001
Employees information system knowledge	1.000		.924	< .001
Organizational Readiness	1.000	.007	.935	< .001
Top management support	1.006	.006	.919	< .001
Satisfaction with existing systems	1.007	.006	.916	< .001

External Information systems support	1.000		.916	< .001
Customer Interaction	1.003	.004	.929	< .001
Market Scope	1.004	.005	.937	< .001
Industry	.999	.007	.900	< .001
Competitive pressure	.999	.006	.905	< .001

Table 5.20 Model Fit Statistics

Model Name	χ^2	*df*	*p*	CFI	TLI	RMSEA
Original Model	3262.651	74	.001	.904	.881	.296

5.2.1. CFA Model

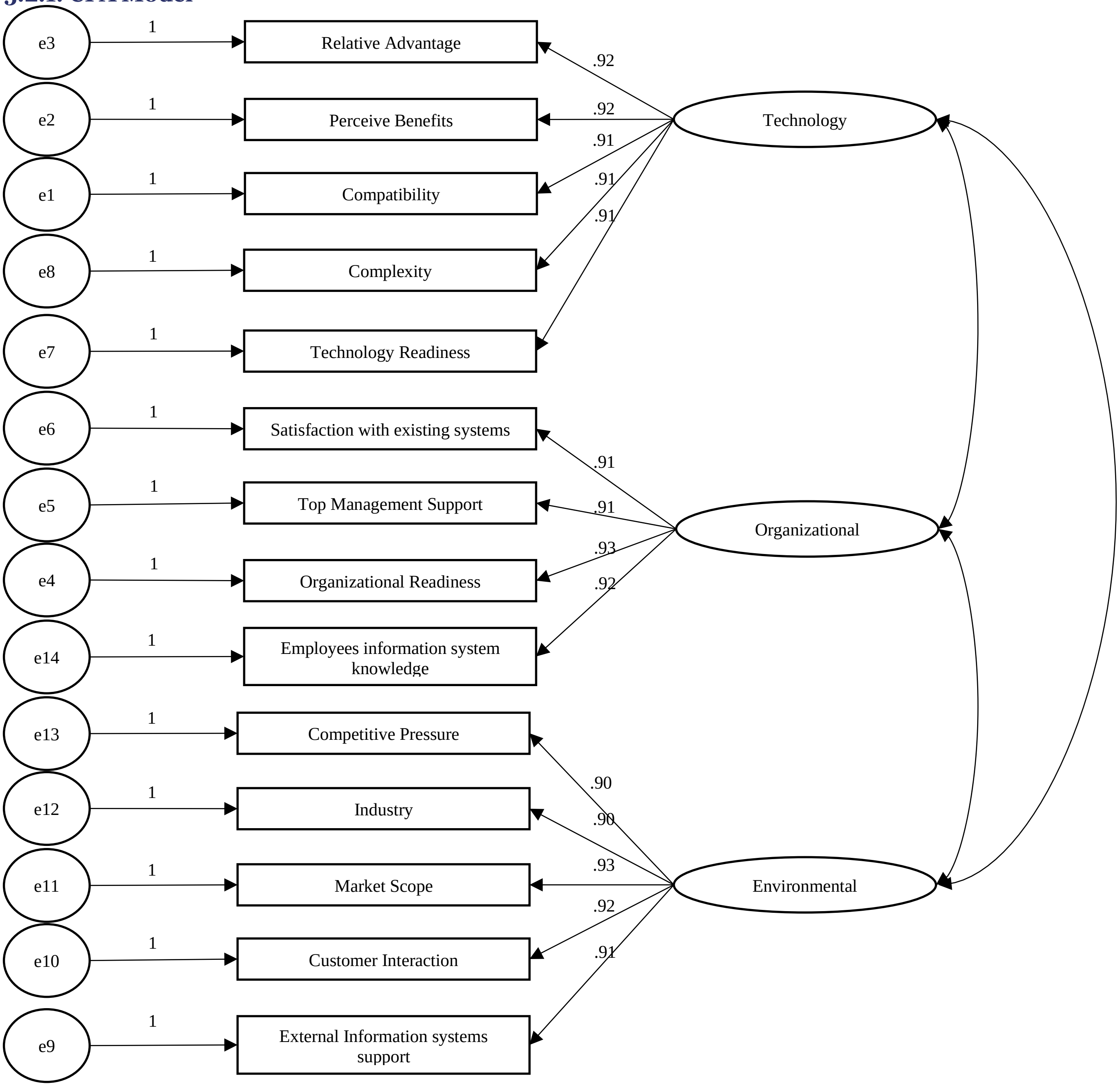

Figure 5.2 SEM Final Output Impact of Cloud Adaptation

To examine the research hypotheses 1 to 17 outlined in the previous section, structural e1 Compatibility equation modelling (SEM), specifically Confirmatory Factor Analysis (CFA), was employed. This analysis aimed to.91 assess how "Relative Advantage", "Perceived Benefits", "Compatibility", "Complexity", "Technology Readiness", "Satisfaction with existing system$_{e8}$ 1 s"Complexity, "Top management support" , "Organizational Readiness", "Employees Information System Knowledge", "Competitive Pressure", "Industry", "Market Scope", "Customer Interaction" and "External Information Systems Support" contribute to the latent construct of "Impact on Cloud Adaptation". The collected data was entered into AMOS for the analysis of SEM. 1 The researcher and statistician e7 Technology Readiness defined a good model fit is that having a CFI & TLI ≥ 0.90 and RMSEA ≤ 0.10. The results of the collected sample used to evaluate the CFA concludes to good model fit for the data where, $\chi2$ (74) = 3262.651, p < 0.001, CMIN/DF = 4.4091 NFI =0.902, RFI = 0.879, IFI = 0.904, TLI = 0.881, CFI = 0.904, RMSEA = 0.296. e6 Satisfaction with existing systems the data screened statistically, lead to an acceptance of the model for the survey, and each variable loading .91 must be carefully investigated for accurate interpretation. Estimation of standardized rates verifies that ever1 y indicator studied is in the measurement reflections. All the indicator variables we used are taking the pe5 Top Management Support .91 -value Organizational under .005 showing significance. Therefore, the null hypothesis needs to be rejected for hypotheses 1 to 17 and .93 alternative hypotheses must be1 supported.

6. Conclusion

6.1. Conclusion

Based on the current data analysis, it can be concluded that the adaptation to cloud technology is significantly influenced by factors such as Relative Advantage, Perceived Benefits, Compatibility, Complexity, Technology Industry Readiness, Satisfaction with existing systems, Top management support, Organizational Readiness, Employees Information System Knowledge, Competitive Pressure, Industry, Market Scope, Customer 1 . Interaction, and External Information Systems Support, which are categorized under Technology, e11 Market Scope Environmental Organizational, and Environmental dimensions. Positive changes in these factors contribute to the increased Customer Interaction External Information systems adoption of cloud technology among employees within organizations, indicating a positive trend for technological advancement. The adoption of cloud technology has a notable positive impact on individuals working in the information technology sector across various industries in India.

It can be concluded from the structural equation modeling (SEM) results that cloud technology adoption is determined by a set of different factors. The result of analysis demonstrated that all the factors such as Relative Advantage, Perceived Benefits, Compatibility, Complexity, Technology Readiness, Satisfaction with existing systems, Top management support, Organizational Readiness, Employees Information System Knowledge, Competitive Pressure, Industry, Market Scope, Customer Interaction, and External Information Systems Support played a significant role in cloud adaptation. The research hypotheses tested through paired differences and t-tests consistently showed significant impacts of these factors on cloud adaptation, with all pvalues less than 0.05. Moreover, CFA supported the model's validity, the indicators significant and the model itself with CFI and TLI ≥ 0.90 and RMSEA ≤ 0.10.

Organizations should acknowledge these findings and take proactive measures to promote work-life balance, enhance technological exposure, provide necessary infrastructure, and support, and mitigate psychological stress among employees. Developing structured plans to retain and re-skill employees in response to evolving business functions due to technological advancements is imperative for organizational growth and success.

6.2. Future scope of work

The research scope can be broadened by investigating the impact of cloud technology in educational institutions such as schools, colleges, and universities across various regions including Indian villages, rural areas, and metropolitan cities to explore its adaptation. Additionally, individual-level studies can be conducted to assess how the computational shift to cloud technology influences daily life. Further research focusing on micro and macro business units in metropolitan areas will enhance understanding of the effects of cloud computing adaptation on small and medium-sized enterprises. Moreover, examining the physiological stress experienced by individuals and industries because of cloud computing adaptation can provide valuable insights.

Utilizing the knowledge obtained from the SEM analysis, the future opportunities in terms of research and practical applications of cloud technology adaptation show to be bright. Subsequent research could concentrate on the interactions between the factors that have been identified and their ever-changing roles in different business environments. Besides, the longitudinal effects of these factors on cloud adoption and performance outcomes could be helpful in getting the insights regarding the sustainability and long-term impact of cloud technology applications. Similarly, the incorporation of qualitative methods like the interviews and case studies can facilitate a greater understanding of the intricate process of cloud adaptation. In terms of practicality, such organizations could make use of these findings by designing their strategies for cloud adoption with specific interventions, which focus on strengthening the factors such as top management support, employee knowledge of information systems, and organizational readiness. Through a holistic approach that involves not only the research but also practical deployment, key players will be able to use the cloud technology adaptation with higher effectiveness, which in turn will lead to innovation, responsiveness and competitive advantage in a digital environment that is more and more dynamic.

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