## AN EMPIRICAL STUDY ON CLOUD COMPUTING SERVICES IN IT INDUSTRY

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## **ABSTRACT:**

The transmission of data, product, and services through the internet is called as cloud computing. The study mainly aims to identify the utility of cloud computing services in IT industry and its impact on organizational outcome. Through validation, the study confirmed the fact that the variables assess the targeted measures. Two hundred employees working in different IT companies are the respondents of the study. The findings are derived through the statistical analysis of data. The present study proves the fact that 'Emerging technologies' pave the way for the adoption of clouds in the work place. The benefits derived by the IT employees and the challenges encountered are also explored. The present study recommends the technological experts to look into the complex issues and derive solutions to it.

Keywords: Cloud computing, IT industry, Organizational outcome, AI powered tools, Automation of tasks.

### **INTRODUCTION:**

In cloud computing, the services such as analytics, networking, and data storage takes place over internet. Cloud symbol represents the transmission of data using internet (Antonopoulos & Gillam, 2010). It helps businesses to work as per their convenience. Earlier, much cost was invested in the infra structure but that scenario has been changed completely nowadays. Cloud computing is classified into three kinds namely public, private, and hybrid (Voorsluys et al. 2011; Lee, 2013; Singh et al. 2021). The kind of cloud services gets changed depending upon the nature and type of business (Bello et al. 2021; Marinescu, 2022). The services that fall under clouds include infrastructure as a service (IaaS), platform as a service (PaaS), software as a service (SaaS), and serverless computing. One of the greatest advantages is that it is not mandatory to appoint IT staff, as the software applications are managed through the web browser (Alouffi et al. 2021). For instance, Netflix is a SaaS company that enables the users to watch the licensed videos online. It also suggests tv shows/videos based on the watching habits of the users (Saratchandra, and Shrestha, 2022). Similarly, Amazon offers a greater number of cloud computing services such as RDS, S3, and EC2 etc. These services fall under Infrastructure-as-a-Service (IaaS) category and they are offered only based on user's preference (Karagoz et al. 2023). Cloud services are applicable to all the type of industries. Specifically, when it comes to IT the process becomes highly efficient. In every step of business planning and operations, AI powered tools and ML algorithms are applied to get optimal output. As a result, the scope of cloud computing careers has increased to a greater extent when compared to the other job roles and professions in the employment market (Abdulgadir et al. 2021; Islam et al.

2023). In a decade, the growth of cloud computing is estimated to increase more than 14% which would be around the worth of \$500 billion.

Senarathna et al. 2018 conducted research to investigate the factors that influence cloud services in small and medium sized enterprises (SMEs). Online survey was conducted among one hundred and forty-nine SMEs in Australia. Through multiple regression analysis, the study reported that the factors such as relative advantage, service quality and awareness were highly found to influence the adoption of cloud computing when compared to the risk factors such as security, privacy and flexibility. On the contrary, the study of Skafi et al. 2020 concluded that technological and organizational factor such as top management support was highly found to influence the cloud computing positively. Further, Alizadeh et al. 2020 conducted research in the banking sector and inferred that technology, environment, organization, and human factor highly contribute to the

adoption of AI technologies. Similarly, a study conducted by Neicu et al. 2020 analysed the perception of employees towards the utility of cloud computing technology in SME. The data was obtained from three hundred and fifteen employees working in Romanian SMEs. The findings revealed that the technology positively influence the service quality. Earlier research studies confined that cloud resulted in the automation of work with no paper or documentation work and it is also found to be time consuming as the natural language processing techniques, and the algorithms does the assigned and routine tasks regularly. The present study was initiated to identify the benefits that the IT staff derive through the adoption of cloud technology. It also exposes the challenges that they come across while working with it. The conceptual framework of the study is as follows in figure 1.

## Figure 1: Conceptual Framework of the Study



## **METHODOLOGY:**

A self-designed questionnaire consisting of twenty-five questions was used to collect the data from the sample. Secondary data was obtained through the review of literature review. The present study has three independent variables namely; (i) Benefits to IT employees working with cloud, (ii) Factors contributing to the adoption of cloud

computing, and (iii) Challenges of cloud computing. The dependent variable organizational outcome was assessed using different dimensions such as risk reduction, streamlines time and effort, cost saving, adaptability, and strategic fit. The Likert five- point rating scale representing 1 as strongly disagree, and 5 as strongly agree was used. Industrial experts' opinion is incorporated to ensure content validity. The adopted technique was convenient sampling method. The sample size was two hundred employees working in different IT company. All the respondents had more than four years of working experience in IT. The descriptive and inferential statistic was used to draw the conclusion.

# ANALYSIS AND INTERPRETATION:

The relationship between the variables was tested using Pearson correlation analysis. The result revealed positive correlation between the independent variables and dependent variable (r = 0.715, 0.705, 0.721; p<.01). It is inferred that there is strong correlation between organizational outcome and cloud computing services offered in the IT industry. The results are given in the table 1.

Variables	Organizational Outcome			
	r value	p value	r value	p value
Benefits to IT employees working with cloud	.715	.000**	.723	.000**

### **Table 1: Correlation Analysis**

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Factors contributing to the adoption of cloud computing	.705	.000**	.695	.000**
Challenges of cloud computing	.721	.000**	.702	.000**

Note: p<.01 is significant

Multiple regression analysis was calculated to find out the factor that highly contribute to the adoption of cloud computing service in the IT industry. The result revealed that the attribute, 'emerging technology' (beta = 0.873) highly contribute followed by the other attributes, 'cost' (beta = 0.856), 'reliability' (beta = 0.794), 'relative advantage' (beta = 0.721), and 'competitive pressure' (beta = 0.719) respectively with p value significant (p<.01).

rubie 2. Multiple Regi ession Analysis			
S. No	Attribute	Beta	Sig.
1	Emerging Technology	.873	.000**
2	Cost	.856	.000**
3	Reliability	.794	.000**
4	Relative advantage	.721	.000**
5	Competitive pressure	.719	.000**

 Table 2: Multiple Regression Analysis

Note: p<.01 is significant

Percentage analysis was calculated to identify the benefits that the employees derive while working with cloud. 'Increased collaboration' is the benefit that top the list followed by increased flexibility, data backups, improved security, automated updates and maintenance, & Cost savings respectively and the results are tabulated in table 3.

S. No	Benefit to IT employees working with cloud	In Percentage
1	Increased collaboration	97%
2	Increased flexibility	94%
3	Data backups	93%
4	Improved security	93%
5	Automated updates and maintenance	87%
6	Cost savings	83%

**Table 3: Percentage Analysis** 

The respondents were asked to rank the challenges that they come across while working with cloud computing. Table 4 illustrates that multiple clouds rank first followed by the other attributes such as lack of knowledge and expertise, vendor lock-in, resource underutilisation, and network issues respectively.

Table 4: Ranking			
S. No	<b>Cloud Computing Challenges</b>	Rank	
1	Multiple clouds	1	
2	Lack of knowledge and	2	
	expertise		
3	Vendor lock-in	3	
4	Resource underutilisation	4	
5	Network issues	5	

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## **CONCLUSION:**

The study proved the existence of correlation between the variables. 'Emerging technology' is considered to be the highly influential factor. The study also prove that IT employees get more benefits while they work with clouds and the top five benefits they derive are highlighted in this study through the analysis of data. The challenges that the professionals come across at work is also explored. Further, the ranking of challenges enables us to understand its impact on the organization. The study concludes that cloud services facilitate IT employees to carry out their assigned task at work with ease and comfort. In the mean way there are also certain disadvantages that really need to be addressed. The present study recommends the technological experts to find complex solutions for the risky factors such as cloud misconfigurations, service hijacking, technology vulnerabilities and other unsecured interfaces that are associated with cloud computing.

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