ISSN No:-2456-2165

To Study Disruption by Cloud Computing in it Service Industry

SUBMITTED BY
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UNDER THE GUIDANCE OF
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IN PARTIAL FULFILLMENT OF
MIM COURSE
University of Mumbai
(2016 - 2019)

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Abstract:- The research is conducted on the people serving IT Support and Development in various Sectors by filling an online questionnaire and interpreting the data collected by analysing demographically to find out opinion and thoughts about the disruption and ranking them and statistically by finding the associations between factors like reliability and the location of Data Center, Organization Culture and Disruption and between Security and Compliances and Regulatory. The research concluded that the Cloud Computing has brought Disruption in IT service Industry and population agrees to the statement but not strongly agree to it and Disruption will happen whether management supports the Innovation or Understands or not, it is the need of the hour. The main point of criticism for Cloud is concerns about security and privacy of Data which can be resolved with various compliances and Localization of Data Centers

Keywords*: Disruption, Cloud Computing, IT Industry, Organization Culture, Cloud Security, Cloud Reliability*

ISSN No:-2456-2165

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Definitionsand Short forms

NIST	The National Institute of Standards and Technology US
HIPPA	Health Insurance Portability and Accountability Act of 1996) United States
MEITY	Ministry of Electronics and Information Technology India
AWS	Amazon Web Service
EC2	Amazon Elastic Cloud Compute
S3	Amazon Simple Storage Service
IaaS	Infrastructure as Service
PaaS	Platform as Service
SaaS	Software asService
ARPANET	**ARPANET** was the network that became the basis for the Internet. Based on a concept first published in 1967, **ARPANET** was developed under the direction of the U.S. Advanced Research Projects Agency (ARPA)

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CHAPTER 1
INTRODUCTION

1.1 Executive Summary

The Cloud Computing has brought new wave of innovation in Industry. In 2017 Cloud Computing was at the Slope of Enlightenment according to Gartner's Study report from the Trough of Disillusionment. Many IT Companies are adopting Cloud Computing and there is a change in the skill set requirement and practices followed because of Lots of Benefits and scaling the business needs cloud Bring in. So, this research concentrates on finding out whether Cloud Computing has brought Disruption in Market.

What are the Drivers and What are the main barriers Cloud Industry facing in achieving this. The association between the critical success factors and how they affect each other. The research also aims at finding the awareness and the knowledge IT population has about the technology and its effect on the day to day life of people when using personally and professionally. India is developing nation with many mid-scale and SMEs trying to build their businesses, to these industries Cloud Computing is providing infrastructure and IT support which will increase their flexibility and increase return on Investment.

The research concentrates on sample population views on Disruption brought by Cloud computing and it effect on their personal and professional life, the skill they had to acquire, different environments configured on Cloud Platform. Business applications developed and hosted on Cloud, their usage by IT people. The main focus is on the quantitative analysis on the factors affecting the Disruption and the inter relation among them whether they are strongly related or not related and their direction of relationship.

The research is conducted on the people serving IT Support and Development in various Sectors by filling an online questionnaire and interpreting the data collected by analysing demographically to find out opinion and thoughts about the disruption and ranking them and statistically by finding the associations between factors like reliability and the location of Data Center, Organization Culture and Disruption and between Security and Compliances and Regulatory.

The research concluded that the Cloud Computing has brought Disruption in IT service Industry and population agrees to the statement but not strongly agree to it and Disruption will happen whether management supports the Innovation or Understands or not, it is the need of the hour. The main point of criticism for Cloud is concerns about security and privacy of Data which can be resolved with various compliances and Localization of Data Centers.

1.2 Objective

1. To study the disruption and change in the IT service industry because of Cloud Computing and related technologies
2. To study the awareness about the Cloud Computing among the IT professionals and their thoughts about the disruption cloud computing has brought in business.
3. To study the usage of Cloud personally, professionally or both
4. To study the change and impact of Cloud Computing in various sectors in implementing IT solutions.
5. To study the factors which are critical and the drivers for the success and acceptance of Cloud Computing for various Business Solution
6. To study the factors which are barriers in implementing the cloud Computing and their association with each Other
7. To study the effect of data storage location on the reliability of Cloud Architecture
8. To study the effect of compliances on the IT Service Industry population's idea of Security over Cloud Architecture.
9. To study whether Organisation culture will affect the disruption brought by Cloud Computing.

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CHAPTER 2
LITERATURE STUDY AND CONCEPTUAL FRAMEWORK

2.1 What is Cloud Computing?

Cloud computing is a kind of processing that depends sharing assets and resources so that there is better return on investment that is spent in acquiring assets.

It is more scalable and flexible, increasing and decreasing capacity on demands is the major benefit of cloud computing. User Applications, technology stacks and different way of controlling and monitoring are gotten to through the Web. The management and monitoring are communicated and consumed over the Internet and are paid for by the cloud customers on an as-required or pay-as-per-utilization needs and strategic plan. It does not depend on location. Pooling of resources and use of measured service are added attributes.

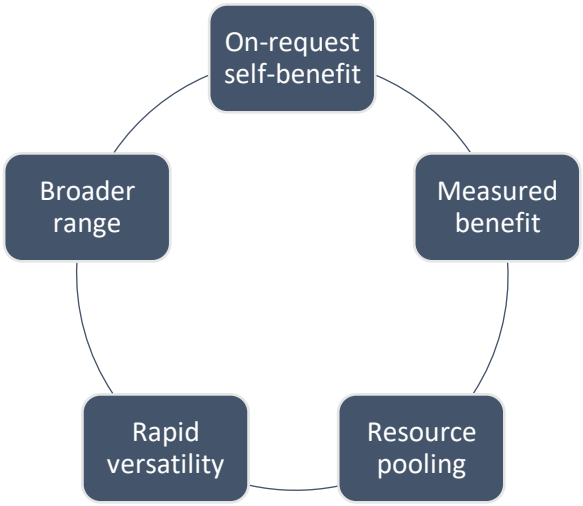

Fig 1. As mentioned by the NIST, CloudComputing has five key attributes

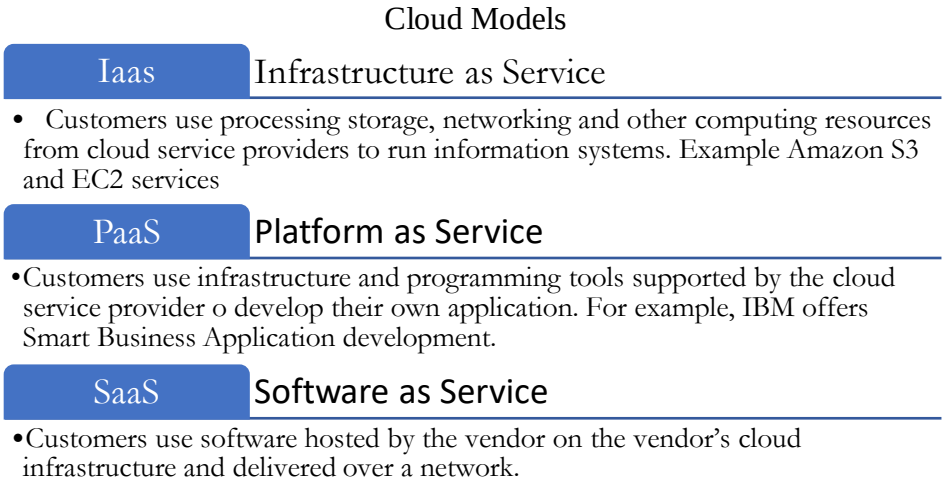

Fig. 2. Three different types of Services and Models of Cloud

2.2. What is Disruption?

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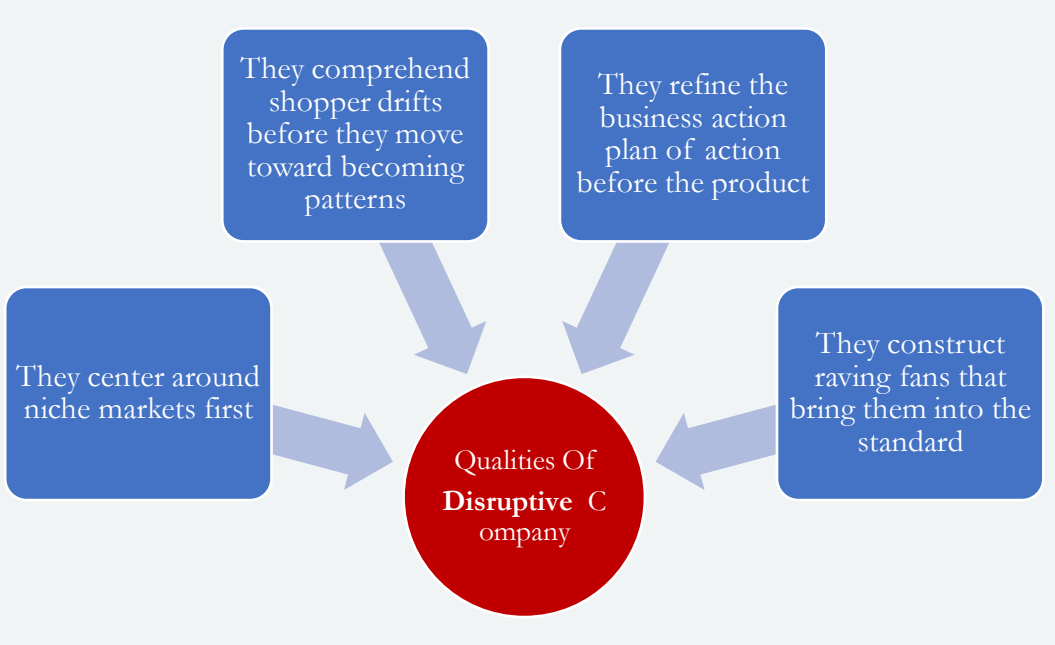

Fig 3. Qualities of Disruptive Company

"Disruptive innovation" " is a term instituted by Clayton Christensen, alluding to a procedure in which an underrated item or administration begins to wind up well sufficiently known to supplant, or uproot, an ordinary item or administration. In "genuine" problematic advancement, the item flourishes in the base of a market - and much of the time, builds up a terrible or low-class notoriety as a result of it. In any case, because of low costs, higher availability, or different focal points, the item in the long run turns out to be more engaging than its counterparts inside the business.

This is veered from "sustaining innovations," the new improvements and modifications made by tenant associations attempting to stay relevant with customers. These progressions can be noteworthy also, anyway a significant part of the time, things and organizations made in this manner end up being unreasonably refined, unnecessarily hard to reach, or too much exorbitant, making it unimaginable, making it difficult to have any authentic persisting power. In like way, customers look to more reasonable, now and again extreme decisions to address their issues.

The characterizing qualities of Disruption areare bring down gross edges, littler target markets, and items and administrations that are regularly less difficult than their contemporaries.

The issue with applying this term to any new business that difficulties an industry is that it undermines what genuine interruption is. It tends to draw in more thoughtfulness regarding new businesses that are as of now getting consideration, while the genuine disruptors are gradually climbing the step somewhere else, unnoticed by the business mammoths they're intended to supplant.

1.3 Literature Study

Table 1

Title		Abstract	Takeaway
How Cloud Computing Is Changing Management By Q. Hardy **Harvard Business Review, 21-Feb-2018. [Accessed: 28-Oct-2018]**		Cloud computing is changing how items are structured; empowering nearer coordinated effort between the corporate IT division and different specialty units, including deals, fund and measuring and cultivating more client communication, even to a point of mutually creating items with their users.	It's basic to begin contemplating how administration will be changed by the most impactful data innovation within recent memory: distributed computing. What does it enable us to do any other way, and in what manner will that change the way we get things done later on? With cloud, data voyages quickly in the two bearings, crosswise over figuring frameworks that, with characteristics like virtualization, scaling up or down to deal with greater remaining tasks at hand, or mechanized security fixing across over a large number of machines, are undeniably adaptable.
Augmentation Techniques for Mobile Cloud Computing: A Taxonomy, Survey, and Future Directions **By: Zhou, Bowen Buyya, Rajkumar** **ACM Computing Surveys. Jan2018 [Accessed: 28-Oct-2018]**		Regardless of the fast development of equipment limit and notoriety in cell phones, constrained assets in battery and preparing limit still come up short on the capacity to meet expanding portable clients' requests. Both ordinary strategies and rising methodologies are united to fill this hole between client request and cell phones' constrained capacities. Late research has concentrated on improving the execution of cell phones by means of enlargement strategies. Growth methods for portable distributed computing allude to the processing ideal models and answers for redistribute cell phone calculation and capacity to all the greater figuring assets with the end goal to upgrade a cell phone's registering ability and vitality proficiency (e.g., code offloading). Embracing enlargement methods in the heterogeneous and discontinuous versatile distributed computing condition makes new difficulties for calculation administration, vitality effectiveness, and	To build the capacity of cell phones loads of enhancements and advancement have been embraced on the equipment front yet at the same time there is bunches of extension on programming and preparing end with the improvement in cloud-based administrations. One essential idea of HMC (Heterogeneous Mobile Cloud Computing) is clarified in detail and different programming dialects ideas like Java Reflection and .Net CLR and their capacities to utilize Service Oriented Architecture (SOA) have been investigated in this examination. From the client's viewpoint, client encounter on versatile applications and the elements of cell phones can be enhanced by presenting versatile distributed computing. For cloud specialist organizations, versatile mists empower an extensive client network to utilize their administrations. Moreover, suppliers can apply machine learning components on the administration information of cell phone clients to additionally, give more redid cloud administrations. Expanding portable design with Cloud Computing will

		framework unwavering quality. In this article, we plan to give a complete scientific categorization and overview of the current strategies and systems for versatile cloud enlargement in regard to both calculation and capacity.	improve the client encounter and can increase the value of the cell phones.
Cloud Computing Technology: Leveraging the Power of The Internet to Improve Business Performance **By: Mohsen Attaran, Ph.D.** **Professor of Operations Management** **School of Business and Public Administration** **California State University** **[Accessed: 28-Oct-2018]**		As of late, Cloud Computing Technology (CCT) has risen as a significant innovation that could add to operational effectiveness of an IT stage by giving foundation and programming answers for the entire IT requirements of an undertaking by means of Internet. The cloud has reformed IT foundation. It is anticipated that 2017 will check the fast multiplication of undertakings progressing to the cloud-based figuring innovation. The usage of this imaginative innovation makes cooperation less demanding among organizations and has the potential to make budgetary and operational advantages. This examination talks about potential key advantages of this innovation, features its advancing advances also, patterns and their future effect, audits diverse stages important to send the innovation, features key appropriation factors, and overviews its potential application in various ventures.	Cloud Computing is upsetting the IT framework by presenting real advantages particularly for SMEs and new companies and still it has heaps of potential to furnish enhanced administrations to the organizations with administration focused distributed computing methodologies. It has the genuine potential to empower precision, unwavering quality, benefit upgrade, and cost decrease. Another imperative focuses talked about in the papers are distributed computing frameworks and administrations are additionally significant focuses for digital aggressors. These vulnerabilities point to the significance of ensuring cloud stages, foundations, facilitated applications, and data information, and make interest for significantly larger amount cloud security administration and brought together administration of security in cloud situations. Other essential worries of IT administrators are similarity of the cloud with organizations' strategy, IS improvement condition, and business needs.
The cloud impact on outsourcing to India **By Rajiv Rao | July 14, 2017** **[Accessed: 28-Oct-2018]**		has changed the manner in which organizations select which answers for utilize, and the enormous Indian IT firms are in effect deserted.	Indian IT business need to discover ways and upgrade themselves that detail how cloud can help support deals, set up powerful estimating, target clients all the more viably while achieving new ones, and streamline forms as a proactive measure to manage change in pattern

What the future holds for India in cloud computing **By: Asoke K LahaUpdated: July 27, 2015 [Accessed: 28-Oct-2018]**		There is no doubt that India has gigantic abilities to wind up a worldwide center point for cloud computing. The fate of cloud computing and also profession openings in the field sparkles splendid for India.	Cloud Computing cuts down the expense and labour prerequisites since the exorbitant programming bundles and equipment frameworks expected to introduce them are never again required which encourages us to climb in advanced Value chain. It has an immediate and high advantages for little to medium estimated organizations (SMBs)
Cloud Success story in India **By: Asvija B** **Center for Development of Advanced Computing (C-DAC),** **Bangalore.** **INDIA** **27 June 2014 ASREN Workshop on Clouds for Research and Education, Italy. [Accessed: 28-Oct-2018]**		With the end goal to use and saddle the advantages of Cloud Computing, Government of India has left upon an aspiring activity - "GI Cloud" which has been named as 'MeghRaj'. The focal point of this activity is to quicken conveyance of e-benefits in the nation while enhancing ICT spending of the Government.	Cloud Awareness and eagerness for selection is expanding and Government has perceived its significance and colossal business potential by attempting strategies and taking endeavours. Organizations are likewise eager to grow their base by giving better administrations, yet challenges remain: Foundation front Mentality of clients Developing benchmarks.

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CHAPTER 3
RESEARCH DESIGN

To better define the scope and limitations of this project, software engineers, consultants, team leads, students from various IT organisations and Educational Institutes will be studied. Primary research will be done by collecting data through an information gathering, survey and observation methods.

3.1 Research Problem and Hypotheses Statements

3.1.1. Hypothesis 1

"To study the association of Compliance and Regulatory Standards with Security of Cloud Computing in bringing Disruption in IT Service Industry"

The majorbarrier and matter of criticism for cloud computing is preserving confidentiality and integrity of data in aiding data security and the compliances associated which are not much developed. The major difference between security of Cloud and compliances and regulatory standards is that security is intrinsically risk-based whereas Compliance and Standards are determined by legislative, non-profit or industry groups and serves as a general design for the security of convinced classes of data.

Null Hypothesis (H_0): There is no significant association between Security and the Compliance and Regulatory Standardsof Cloud Computing for bringing Disruption in IT Service Industry
Alternative Hypothesis (H_a): There is significant association between Security and the Compliance and Regulatory Standardsof Cloud Computing for bringing Disruption in IT Service Industry

3.1.2. Hypothesis 2

"To study the association of Reliabilitywith the Location of Data Centers of Cloud Computing in bringing Disruption in IT Service Industry"

The purpose of capacity is an essential one in the GDPR talk from cloud suppliers, to showcasing frameworks, instruments and CRMs, to the specific server farm that guarantees to safely store the individual information of big business clients. "Govt IT data on cloud system must be stored within India:" necessitated Meity . Considering GDPR concerns and Indian Government's demand to set up Data Centers within the country's boundary and stress on localization of data, "Does the location of Data Center gives the reliability assurance to customers and makes Cloud Computing more acceptable and trust worthy" is point to be considered.

Null Hypothesis (H_0): There is no significant association between Reliability and the Location of Data Center of Cloud Computing for bringing Disruption in IT Service Industry
Alternative Hypothesis (H_a): There is significant association between Organization Culture and the Disruptionbrought by Cloud Computing in IT Service Industry

3.1.3. Hypothesis 3

"To study the association of Organization Culturewith Disruption brought by Cloud Computing in IT Service Industry"

Since 2007, cloud computing has developed as a registering worldview that is probably going to change many the conventional methods for conveying processing administrations to individuals and associations. Numerous associations, little and extensive, have grasped it considering the focal points it guarantees as far as adaptable cost structure, versatility and effectiveness. However, does organization culture affects the disruption or there will be disruption in the industry irrespective of the organization culture, they must accept the cloud computing and move ahead to reap the benefits of implementing the Cloud Technology.

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Null Hypothesis (H_0): There is no significant association between Organization Culture and the Disruptionbrought by Cloud Computing in IT Service Industry
Alternative Hypothesis (H_a): There is significant association between Organization Culture and the Disruptionbrought by Cloud Computing in IT Service Industry

3.2 Source of Data and Sample Size

The sample participants consist of population working in IT service Industry. Mostly salaried Individuals with Age Group of 25-30 years (Millennials) and are early adaptors of Innovation and Disruption.

Table 2

Occupation	Age Group in years		
	18-25	26-35	Grand Total
Business		4	4
IT	1		1
Salaried	4	59	63
Salaried, Student		1	1
Self- Employed		2	2
Self- Employed, Business, Salaried		1	1
Student	2	2	4
Grand Total	**7**	**69**	**76**

Participants will be the Managers, Team Lead, Consultants from IT Service Industry and Students pursuing education on Information Technology. Their understanding about the factors contributing to success of Cloud Computing as well as the factors which are barriers for Cloud Computing

3.3 Tools used for Collecting Data

The survey instrument will consist of questions that address role and impact of Cloud Computing technology:

- A structured questionnaire will be used to interview IT Professionals and Students regarding Disruption and Innovation brought by Cloud Computing in the Industry and their awareness and thoughts regarding its future.

- Cloud Computing Models opted and plans to opt in future through online survey.
- Questions with 5-point scale base on factors responsible for Disruption.

- Participants would be encouraged to provide their level of experience with technology and implementation in various Development Practices and Environment.

- Participants would deliver their level of mindfulness in Cloud innovation.

Both qualitative and quantitative data will be used and then be statistically analysed for the research. Qualitative analysis will be used to study the awareness among the people working in IT Service Industry and their idea about disruption and acceptance in using Cloud Computing in various environment. Quantitative analysis will be used to study the association between various critical factors acting as barrier or driving force for Cloud Computing.

3.4 Limitation of Research

- The scope of the research is limited to India, where sample size is very small and only few organization's population has responded to survey. The survey and effect can be conducted for more specific sectors and related factors associated can be measured more precisely.
- Further the scope is limited to few organizations, there can be bifurcation between organizations on CMMI Level or SMEs, thus it can be expanded for all further research.
- The technologies are being upgraded very often like Block Chains, Artificial Intelligence, Big Data and various Automation Tools including DevOps practices. Integration of Cloud Computing with these technologies and its effect on Disruption in the Industry can be studied more deeply.
- IT Service People are more informed and technology friendly thus the future scope of a conducive development and innovation in Cloud Computing is very high. The present study thus is limited to current scenarios.
- There are more specific GDPR policies which are implemented or in process in country like India so more compliance related and its effect on reliability, security and robustness and its effect on Disruption By Cloud Computing can be studied more specifically and keeping defined points in focus.

CHAPTER 4
PRIMARY RESEARCH

4.1 Tabulation of Data

4.1.1. Tabulation of Data for Demographic Analysis

Note: The actual sample size is 76 but for Tabulation Purpose top 10 records have been displayed.

Table 3

Sr. No	Gender	Sector	Are you aware of Cloud Computing?	Have you ever used Cloud Computing?	Has Cloud Computing created Disruption in IT Service Industry?(Rating)
1	Male	ICT (Information Communication and Technology)	I know what is cloud computing	Both	4
2	Female	Others	I have some knowledge about cloud computing	Personally	5
3	Male	Others	I have some knowledge about cloud computing	None	3
4	Male	Real Estate	I have some knowledge about cloud computing	None	5
5	Male	ICT (Information Communication And Technology)	I have some knowledge about cloud computing	None	5
6	Female	Others	I have some knowledge about cloud computing	Personally	4
7	Female	ICT (Information Communication And Technology)	I have some knowledge about cloud computing	Professionally	5
8	Male	Banking and Financial services	I have some knowledge about cloud computing	None	4
9	Female	Others	I know what is cloud computing	Both	5
10	Female	Others	I know what is cloud computing	Both	3

4.1.2. Tabulation of Data for Hypotheses Analysis

Data is Rating Based on the various Factors which are critical for the disruption of Cloud Computing. Hypotheses are based on the association between these factors and whether they are strongly or weakly related to each other and their direction whether positive or negative.

Org Culture is the ordinal and combined variable which is calculated by the average of Management Willingness and Organization Politics.

Disruption, Reliability, Data Center Location, Security and Compliance are the factors which are rated by the survey population.

Note: The actual sample size is 76 but for Tabulation Purpose top 10 records have been displayed.

Table 4

Sr. No	Disruption	Management Willing to Innovate(A)	Org Politics(B)	Org Culture (Avg of A and B)	Reliability	Data Canter Location	Security	Compliance
1	4	2	5	3.5	2	4	5	4
2	5	4	3	3.5	2	4	5	4
3	3	5	2	3.5	3	3	3	4
4	5	1	1	1	5	5	1	5
5	5	3	2	2.5	2	2	3	3
6	4	1	2	1.5	5	4	3	1
7	5	3	1	2	4	4	4	4
8	4	5	5	5	1	1	2	3
9	5	2	2	2	3	2	5	5
10	3	2	3	2.5	2	2	2	3

4.2 Analysis
4.2.1. Demographic Analysis
4.2.1.1. Sectorwise

Chart 1

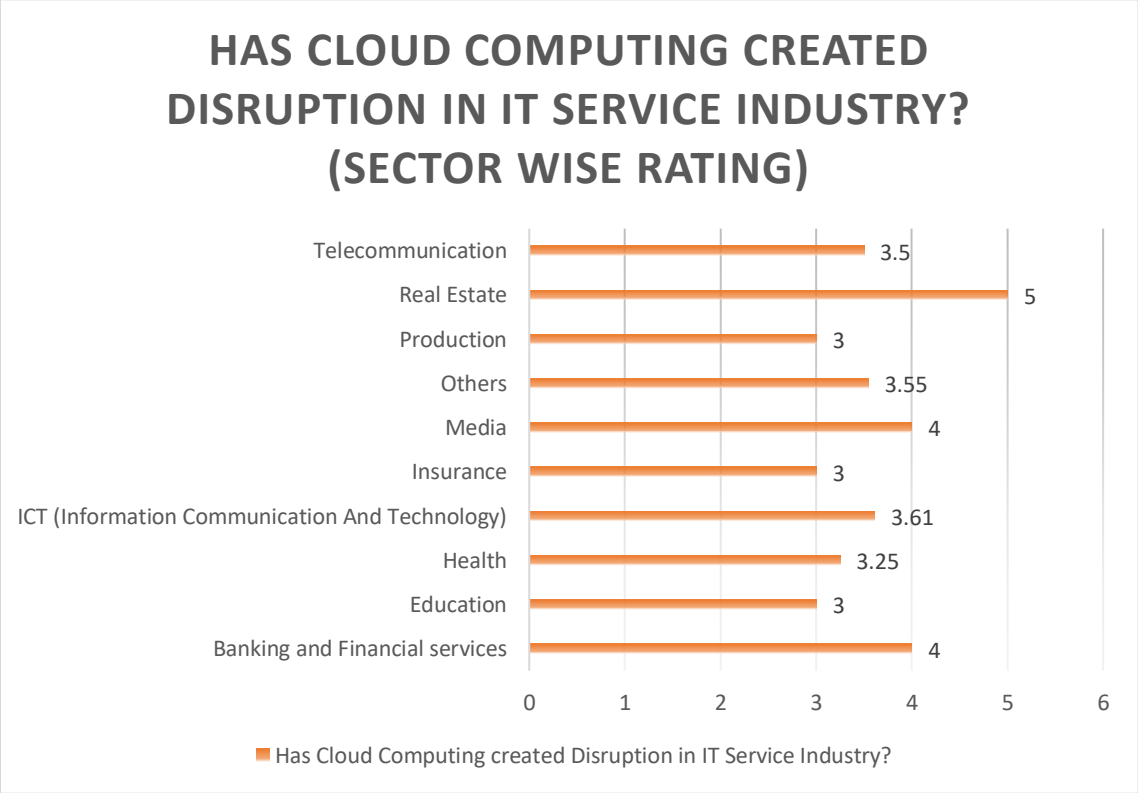

Table 5

Sectors	Average Rating	No. of Respondents
Banking and Financial services	4	7
Education	3	1
Health	3.25	4
ICT (Information Communication and Technology)	3.61	36
Insurance	3	1
Media	4	1
Others	3.55	22
Production	3	1
Real Estate	5	1
Telecommunication	3.5	2
Grand Total	**3.61**	**76**

Sector wise, demo graphic shows Cloud Computing has brought disruption since 3.6 Rating on Average shows population somewhat agrees on the statement.

4.2.1.2. Gender wise

Chart 2

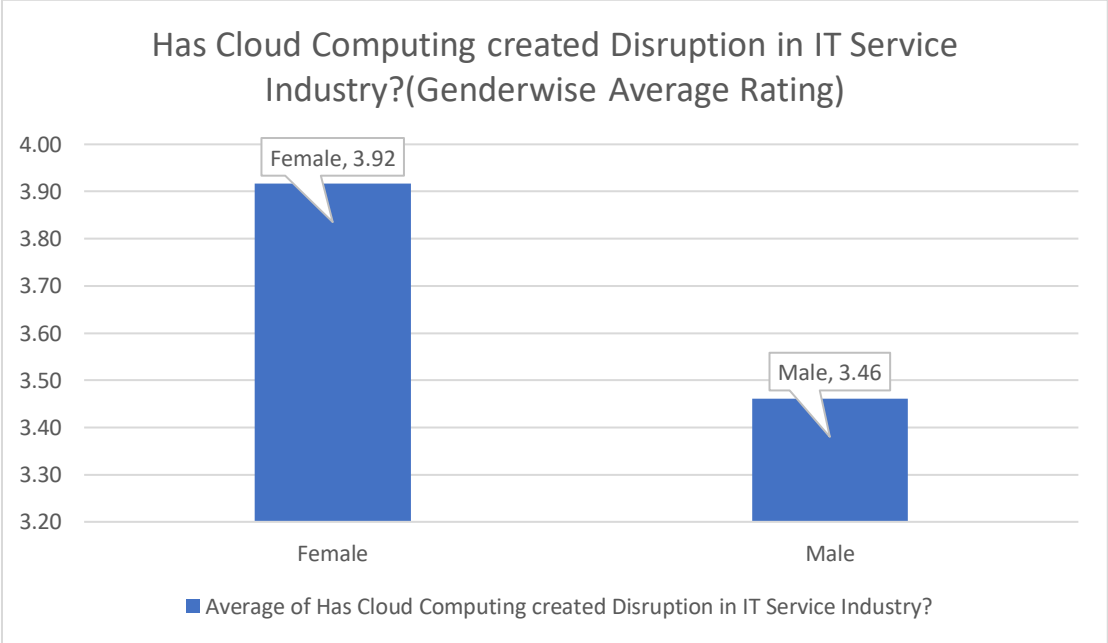

Table 6

Gender	Average Rating	No. of Respondents
Female	3.92	24
Male	3.46	52
Total	**3.61**	**76**

Gender wise Female Population Agree more on the statements as compared to malepopulation.

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4.2.1.3. Awareness and Knowledge wise

Chart 3

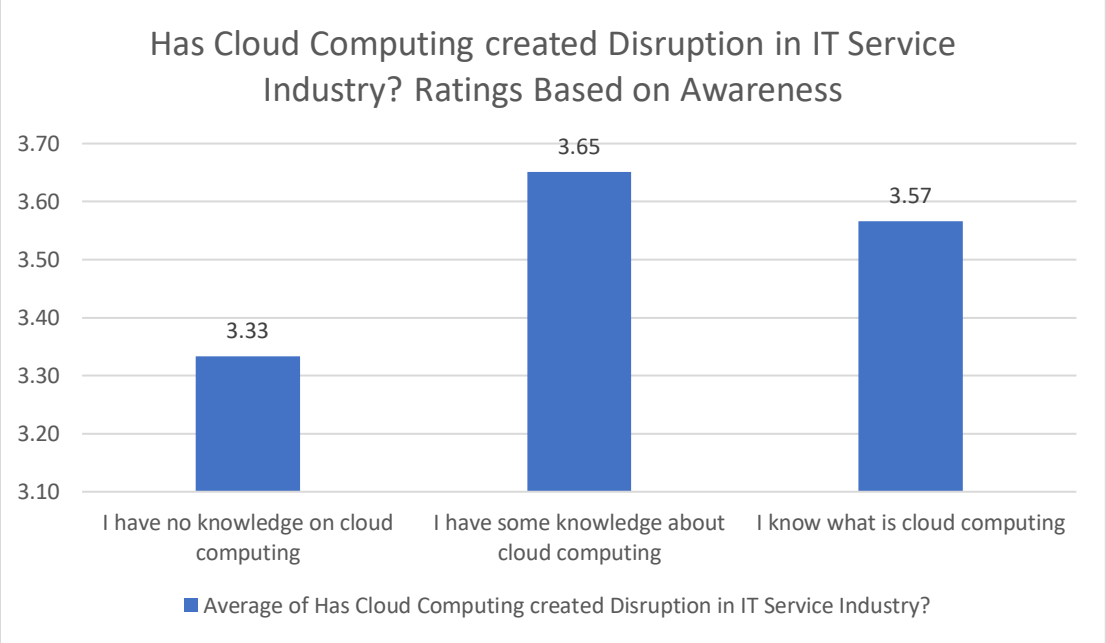


Table 7

Awareness	Average Rating	No. of Respondents
I have no knowledge on cloud computing	3.33	3
I have some knowledge about cloud computing	3.65	43
I know what is cloud computing	3.57	30
Grand Total	**3.61**	**76**

Awareness and knowledge wise, although people don't have technical knowledge and actual working of Cloud Computing, still,they are of the opinion that Cloud Computing is bringing Disruption in Industry.

4.2.1.4. Usage wise

Chart 4

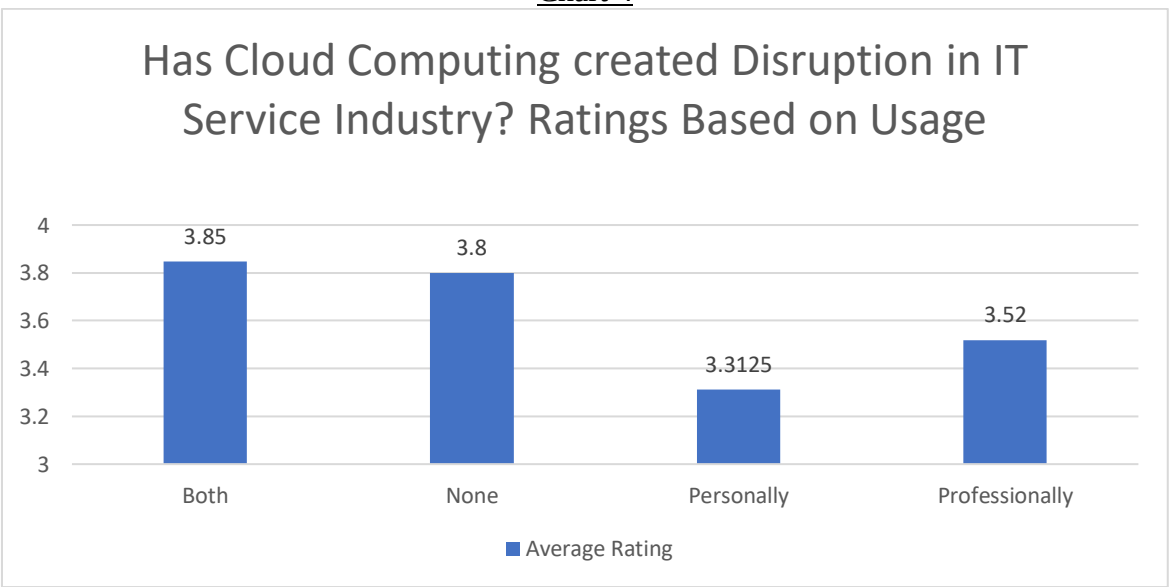


Table 8

Usage	Average Rating	No. of Respondents
Both	3.85	13
None	3.8	20
Personally	3.32	16
Professionally	3.52	27
Grand Total	**3.61**	**76**

Based on usage of cloud platforms, personally professionally or both, population agrees that Cloud computing has brought change in their experience and it is pleasant and innovative and will go long way making impact in their day to day life.

4.2.2. Hypotheses Analysis

4.2.2.1. Cronbach's alpha -Reliability and Consistency Test

Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability. It is a coefficient of reliability (or consistency).

Table 9- Case Processing Summary

		N	%
Cases	Valid	76	90.5
	Excluded[a]	8	9.5
	Total	84	100.0

a. Listwise deletion based on all variables in the procedure.

Table 10- Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.826	.816	6

The alpha coefficient for the four items is .826, suggesting that **the items have relatively high internal consistency.** (Note that a reliability coefficient of .70 or higher is considered "acceptable" in most social science research situations.)

In addition to computing the alpha coefficient of reliability, we might also want to investigate the dimensionality of the scale. We can use the factor Analysis to do this:

4.2.2.2. Factor Analysis

Table 11- Communalities		
	Initial	Extraction
Disruption	1.000	.803
OrgCulture	1.000	.615
Reliabilty	1.000	.679
DataCenterLocation	1.000	.780
Security	1.000	.688
Compliance	1.000	.749
Extraction Method: Principal Component Analysis.		

Table 12- Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.301	55.021	55.021	3.301	55.021	55.021
2	1.012	16.875	71.895	1.012	16.875	71.895
3	.672	11.207	83.102			
4	.481	8.013	91.115			
5	.306	5.107	96.223			
6	.227	3.777	100.000			
Extraction Method: Principal Component Analysis.						

Looking at the table labelled Total Variance Explained, we see that the eigen value for the first factor is quite a bit larger than the eigen value for the next factor (3.30 versus 1.01). Additionally, the first factor accounts for 55.021% of the total variance. This suggests that the **scale items are unidimensional**.

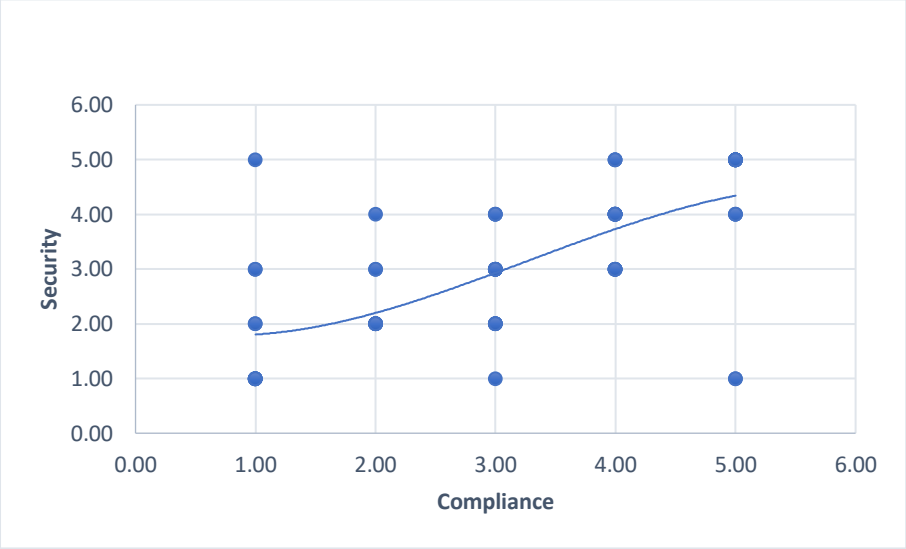
4.2.2.3. Hypothesis 1 Testing

Null Hypothesis (H_0): There is no significant association between Security and the Compliance and Regulatory Standardsof Cloud Computing for bringing Disruption in IT Service Industry

Alternative Hypothesis (H_a): There is significant association between Security and the Compliance and Regulatory Standardsof Cloud Computing for bringing Disruption in IT Service Industry

4.2.2.3.1. Scatter plot Diagram

Chart 5



The relationship appears **monotonic** (assessed via scatterplot).there is a monotonic component to the association, as the value of compliance increases, so does the value of the security.

Since both are ranked variable, we can run Spearman's correlation to measure the strength and direction of this monotonic relationship.

4.2.2.3.2 Spearman Correlation

Table 13- Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Security * Compliance	76	90.5%	8	9.5%	84	100.0%

Table 14- Security * Compliance Crosstabulation

Count

		Compliance					Total
		1.00	2.00	3.00	4.00	5.00	
Security	1.00	8	0	1	0	2	11
	2.00	2	8	5	0	0	15
	3.00	2	2	9	6	0	19
	4.00	0	1	3	9	3	16
	5.00	1	0	0	3	11	15
Total		13	11	18	18	16	76

ISSN No:-2456-2165

Table 15- Symmetric Measures					
		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.683	.096	8.046	.000[c]
Ordinal by Ordinal	Spearman Correlation	.692	.093	8.249	.000[c]
N of Valid Cases		76			
Based on normal approximation.					

Here the significance Value is 0.00 so, we will **reject the null hypothesis**(H_0) and **accept the alternative hypothesis** (H_a). So, these two variables have **strong association** since Spearman Correlation value is 0.692 and in **positive** direction that means Security will increase if compliance will increase.

This proves,
There is significant association between Security and the Compliance and Regulatory Standards of Cloud Computing for bringing Disruption in IT Service Industry.

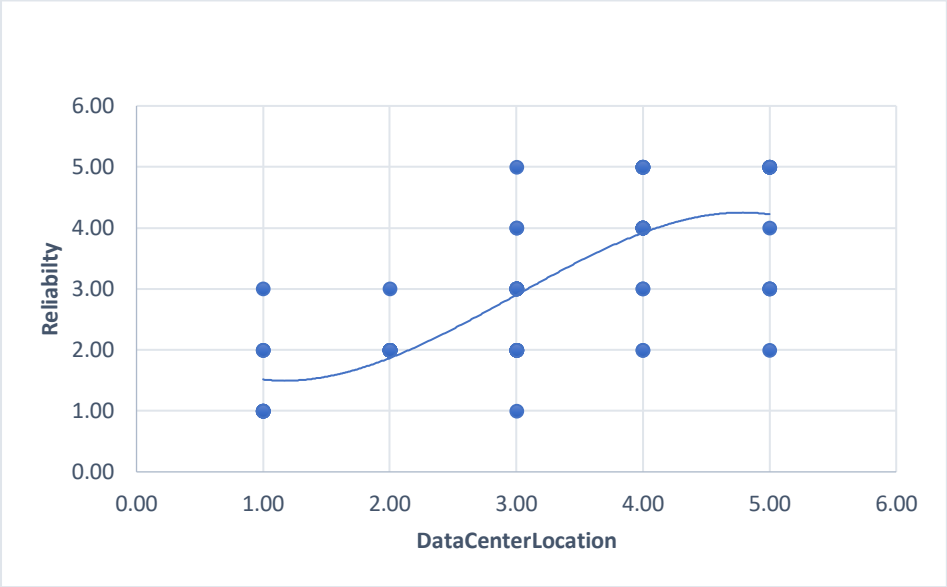
4.2.2.4. Hypothesis 2 Testing

Null Hypothesis (H_0): There is no significant association between Reliability and the Location of Data Center of Cloud Computing for bringing Disruption in IT Service Industry

Alternative Hypothesis (H_a): There is significant association between Organization Culture and the Disruptionbrought by Cloud Computing in IT Service Industry

4.2.2.4.1. Scatter plot Diagram

Chart 6



The relationship appears **monotonic** (assessed via scatterplot).There is a monotonic component to the association, as the value of reliability increases, so does the value of the data center location.

Since both are ranked variable, we can run Spearman's correlation to measure the strength and direction of this monotonic relationship.

4.2.2.4.2. Spearman Correlation

Table16- Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Reliabilty * DataCenterLocation	76	90.5%	8	9.5%	84	100.0%

Table 17- Reliabilty * DataCenterLocation Crosstabulation

Count

		DataCenterLocation					Total
		1.00	2.00	3.00	4.00	5.00	
Reliabilty	1.00	7	0	1	0	0	8
	2.00	3	11	8	2	1	25
	3.00	1	1	9	2	3	16
	4.00	0	0	2	9	1	12
	5.00	0	0	1	7	7	15
Total		11	12	21	20	12	76

Table 18- Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.746	.055	9.642	.000[c]
Ordinal by Ordinal	Spearman Correlation	.757	.056	9.967	.000[c]
N of Valid Cases		76			

Based on normal approximation.

Here the significance Value is 0.00 so, we will **reject the null hypothesis**(H_0) and **accept the alternative hypothesis** (H_a). So, these two variables have **strong association** since Spearman Correlation value is 0.757 and in **positive** direction that means Reliability on Cloud Computing will increase if Data Center Location Reliability will increase.

This proves,

There is significant association between Reliability on Cloud Computing and the Location of Data Center of Cloud Computing for bringing Disruption in IT Service Industry

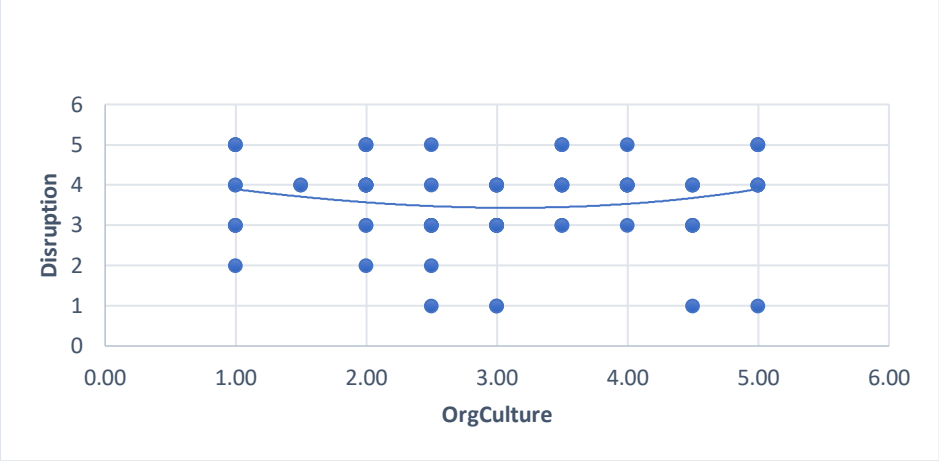
4.2.2.5. Hypothesis 3 Testing

Null Hypothesis (H_0): There is no significant association between Organization Culture and the Disruptionbrought by Cloud Computing in IT Service Industry

Alternative Hypothesis (H_a): There is significant association between Organization Culture and the Disruptionbrought by Cloud Computing in IT Service Industry

4.2.2.5.1. Scatter plot Diagram

Chart 7



The relationship appears **non-monotonic** (assessed via scatterplot).there is a non-monotonic component to the association, as the value of disruption in Cloud Computingis not associated with Organisation Culture.

Since both are ranked variable, we can run a Spearman's correlation on a non-monotonic relationship to **determine if there is a monotonic component to the association.**

4.2.2.5.2. Spearman Correlation

Table 19- Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Disruption * OrgCulture	76	90.5%	8	9.5%	84	100.0%

Table 20- Disruption * OrgCulture Crosstabulation

Count

		OrgCulture									Total
		1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	
Disruption	1	0	0	0	1	2	0	0	1	1	5
	2	1	0	1	1	0	0	0	0	0	3
	3	3	0	2	4	7	2	1	3	0	22
	4	2	2	7	1	5	4	5	3	4	33
	5	3	0	3	1	0	2	1	0	3	13
Total		9	2	13	8	14	8	7	7	8	76

Note:**Org Culture is the combined** variable calculated by taking average of Management Decision for innovation and Organization politics that the reason it has decimal values in rating.

ISSN No:-2456-2165

Table 21- Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	-.002	.120	-.018	.986[c]
Ordinal by Ordinal	Spearman Correlation	.031	.123	.266	.791[c]
N of Valid Cases		76			

Based on normal approximation.

Here the significance Value is 0.791 so, we will **accept the null hypothesis**(H_0) and **reject the alternative hypothesis** (H_a). So, these two variables have **no association** since Spearman Correlation value is 0.031 which implies no or very weak association and there is **no monotonic component** in the relationship.

This proves,
There is no significant association between Organization Culture and the Disruption brought by Cloud Computing in IT Service Industry.

ISSN No:-2456-2165

CHAPTER 4
FINDINGS AND OBSERVATIONS

1. The population agrees that cloud Computing has brought disruption in IT service Industry
2. Female population agrees more as compared to male population on the statement
3. Population irrespective of the technical knowledge about the Cloud Computing agrees that Cloud Computing has brought Disruption and will continue to bring.
4. Population who has used Cloud both professionally and personally are more positive about Disruption.
5. Security of Cloud Computing is positively affected by the Compliance and Standards.
6. Reliability of Cloud increases with Localization of Data
7. Management willingness to Innovate and organization politics does not effects Disruption of Cloud Computing

CHAPTER 6
CONCLUSION

1. The cloud computing ha great impact on IT Service Industry and still evolving and have high potential to explore AI and Automation, Blockchains, Big Data etc.
2. There are concerns and criticism regarding security, availability, confidentiality and integrity of data on cloud, but these can be resolved by best practices and being complied with various standards and policies.
3. The organisations who doubt on capabilities of cloud will lag and they should bug up to adopt the technology in order to survive in the competitive market.
4. The new roles have been introduced in the IT service Industry but still they are not well defined.

ANNEXURES

❖ Reference Tables

Internal consistency

Cronbach's alpha	**Internal consistency**
$0.9 \leq \alpha$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable

Association between Variables

Spearman's correlation coefficient	**Degree of Association**
.00-.19	very weak
.20-.39	weak
.40-.59	moderate
.60-.79	strong
.80-1.0	very strong

REFERENCES

[1]. Wiseman, M. (2018). *A history of Cloud Computing*. [online] Youcloudit.com. Available at: http://www.youcloudit.com/a-history-of-cloud-computing/ [Accessed 29-Jul-2018].
[2]. Computerweekly.com. (2018). *Cloud computing: Past, present and future - Ahead in the Clouds*. [online] Available at: https://www.computerweekly.com/blog/Ahead-in-the-Clouds/Cloud-computing-Past-present-and-future [Accessed 29-Jul-2018].
[3]. Uni-trier.de. (2018). [online] Available at: https://www.uni-trier.de/fileadmin/fb4/prof/VWL/IWB/Vorlesung/neu/DECLARATION_OF_ORIGINALITY_01.pdf [Accessed 29-Jul-2018].
[4]. Startupgrind.com. (2018). *What Is Disruption, Really? 8 Examples and What to Learn From Them*. [online] Available at: https://www.startupgrind.com/blog/what-is-disruption-really-8-examples-and-what-to-learn-from-them/ [Accessed 29-Jul-2018].
[5]. "Spearman's Rank-Order Correlation," Spearman's Rank-Order Correlation - A guide to when to use it, what it does and what the assumptions are. [Online]. Available: https://statistics.laerd.com/statistical-guides/spearmans-rank-order-correlation-statistical-guide.php. [Accessed: 26-Oct-2018]
[6]. "HOME," IDRE Stats. [Online]. Available: https://stats.idre.ucla.edu/spss/faq/what-does-cronbachs-alpha-mean/. [Accessed: 26-Oct-2018]
[7]. Q. Hardy, "How Cloud Computing Is Changing Management," Harvard Business Review, 21-Feb-2018. [Online]. Available: https://hbr.org/2018/02/how-cloud-computing-is-changing-management. [Accessed: 29-Jul-2018]
[8]. R. Rao, "The cloud impact on outsourcing to India," ZDNet, 14-Jul-2017. [Online]. Available: https://www.zdnet.com/article/the-cloud-impact-on-outsourcing-to-india/. [Accessed: 29-Jul-2018(Gonzalez, 2014)]
[9]. F. E. Online, "What the future holds for India in cloud computing," The Financial Express, 27-Jul-2015. [Online]. Available: https://www.financialexpress.com/industry/technology/what-the-future-holds-for-india-in-cloud-computing/108207/. [Accessed: 29-Jul-2018]
[10]. National Informatics Centre and Ministry of Electronics and Information Technology, "National Cloud of NIC," National Cloud of NIC. [Online]. Available: https://cloud.gov.in/. [Accessed: 29-Jul-2018]
[11]. Gonzalez, Matthew D. and Smith Jr., Marcus L., "Are Cloud Computing Services Adoption Trends Changing?," Are Cloud Computing Services Adoption Trends Changing? [Online]. Available: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=102429675&site=ehost-live. [Accessed: 29-Jul-2018]
[12]. Narasimhan, Sridhar, Niculescu, Marius Florin, and Wu, D. J., "TECHNOLOGY SUPPORT AND POST-ADOPTION IT SERVICE USE: EVIDENCE FROM THE CLOUD.," Sep-2018. [Online]. Available: http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=131142275&site=ehost-live. [Accessed: 29-Jul-2018]
[13]. Chen, Thomas, Ta-Tao Chuang, and Kazuo Nakatani, "The Perceived Business Benefit of Cloud Computing: An Exploratory Study," 2016. [Online]. Available: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=122416572&site=ehost-live. [Accessed: 29-Jul-2018]
[14]. Zhou, Bowen; Buyya, Rajkumar, "Augmentation Techniques for Mobile Cloud Computing," Jan-2018. [Online]. Available: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=127384034&site=ehost-live. [Accessed: 29-Jul-2018]
[15]. Noyes, Katherine., "IBM's Cloud CTO: 'We're in this game to win'," 2016. [Online]. Available: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=117089641&site=ehost-live. [Accessed: 29-Jul-2018]
[16]. Choudhary, Vidyanand; Vithayathil, Joseph., "The Impact of Cloud Computing: Should the IT Department Be Organized as a Cost Center or a Profit Center?," 2013. [Online]. Available: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=93255288&site=ehost-live. [Accessed: 29-Jul-2018]