

# An Empirical Analysis of Learners' Perception of Online Learning Platform

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### Abstract

**Problem-** COVID pandemic is a situation which affected every individual as well as every sector of the economy and Educational sector is not an exception. Due to pandemic the years old traditional class room teaching learning system has changed to teaching and learning through online platforms like MS Teams, Zoom and so on. As a result of this drastic change in traditional system, perception of learners has undergone huge changes which is required to be explored. Most of the studies conducted in the field of learners' perception are general study with very few focusing on finding learners' perception towards one specific online learning platform.

**Purpose of the Study-** This study aims to find out the perception and preference of learners for an online learning platform MS Teams.

**Methodology-**For exploring the factors associated with MS Teams as a platform for online learning, Exploratory Factor Analysis was used. Variation in perception of learners was measured by applying one- way ANOVA test. Descriptive statistics is used to study the preference of learners in the present study.

**Findings-** The findings of study are derived from a sample of 147 online learners from a University in Rajasthan. The findings showcased the fact that there exist differences in perception of learners when they accessed online classes through tablet device and on the basis of frequency of attending the online classes. Findings of work also highlighted the fact that MS Teams can be used along with traditional teaching system as a platform for sharing contents with learners.

**Implication-** The findings of the study will be useful for educational sector as well as online learning platform developing companies.

**Keywords-** COVID pandemic ,MS Teams , Online platform, Perception, Preferences, etc.

### Introduction

The Educational sector is considered a foundation sector for all the other sectors of an economy. In India the traditional teaching system include class room teaching and one on one interaction between teachers and

students. In last few years under digital India movement of Indian government, an innovative element of learning through online mode is being promoted to innovate the education system in the country. One of the government's flagship program to promote E-Learning is learning through Swayam, an E-Learning portal (Bast, F., 2021). Soon after government's initiative of promoting the E-Learning concept, the outbreak of COVID pandemic took place across the country. As a result, the educational institutions nationwide were closed down and education cannot be provided to the students in its usual offline class room manner. As an implication, learning through online platforms other than Swayam portal has become the trend during the covid pandemic in the country. Like other sectors, the educational sector too provided its services to learners by making use of different online learning platforms like Zoom, Google meet, MS Teams, Cisco Webex, and many more (Muthuprasad et al., 2021). Over a period two years from March 2019 to March 2022, this new way of providing education got acceptance not only by the students but by teachers too. The reasons behind the acceptance of teaching through online platforms includes ease of use, flexible learning, ease of controlling the platform (Khan et al., 2021) and an easy way of assessment and evaluation (Rani & Beutlin, 2020). Along with merits, this new system has some demerits as well like social isolation, lack of face to face interaction between teacher and students, connectivity issues (Khan et al., 2021) and a few more.

## Literature Review

Since 2019 till March 2022, the learners have seen two waves of covid pandemic and during this tenure different educational institutions have used different online platforms to minimize the learning gap (Khan et al., 2021). During this tenure some researchers have conducted studies on assessing perception and satisfaction of learners about online learning systems. Among the few studies on the theme of students' perception, one of the study is conducted by T. Muthuprasad et. al (2021) on agricultural students to know about their perception and preferences about online learning. Their findings showed positive perception of agricultural students for online learning but

for practical papers a need for hybrid mode is identified in this study. In another study by Rani. V & Bethi. M (2021) it was found that medical and dental students have differences in their perception for E-learning during pandemic. The findings of study showed that students prefer offline teaching over E-Learning as there is lack of interaction in online classes. Khan M.A. et.al.(2021) had undertaken a study on benefits of E-Learning and students' perception of E-Learning. The findings of the study highlighted the fact that students have positive perception towards E-Learning system as it provides the learners a freedom of connectivity with all concerned parties and ease of accessing the study material as well. Zakaryia Almahasees, Khaled Mohsen and Mohammad Omar Amin (2021) conducted a study on teachers and students to know about their perception about learning during pandemic. They have also explored advantages, challenges, effectiveness of online learning system. Findings of the study highlighted that online learning is less effective than face to face learning. Various challenges identified include a lack of interaction and motivation, technical and internet issues, data privacy, and security. Advantages found were benefits mainly of self-learning, low costs, convenience, and flexibility. Bast F (2021) explored in a study that receptiveness for learning is more among the techno-savvy, school and college going urban students who accessed online classes through desktops during COVID. Students in the same study reported flexitime and break from loneliness during covid as two advantages of online learning system. Kulal A., Nayak A. (2020) performed a study to know about perception of teachers and students in a district of Karnataka state. The findings of the study showed that students have positive perception towards online classes but don't think that online classes can replace the traditional class room teaching system. In the study it was highlighted that teachers are not able to conduct online classes properly due to lack of training support and technical issues faced by them. P. Kalyanasundaram and C. Madhavi.(2019) conducted a study to explore graduate students' perception for the value added certificate courses offered to them through online mode. Their findings show that the students have a positive perception towards online learning. Thus it

could be concluded that in most of the past studies focus area is to study the perception of learners and users towards E-Learning system in general. Most of these studies focused on studying the overall perception of learners about online way of learning and none or very few studies have focused on finding perception of learners towards one specific online learning platform. So the research question addressed in this study is whether there is any difference in perception of learners for different online learning platforms as well as for one specific platform i.e MS Teams, as every online learning platform is different from another in some of its features. Another research question addressed in the study is exploring the perception of learners regarding imbedding the online learning platform or some of its features in the traditional teaching system to make learning more interesting for learners.

### **Rationale of the Study**

Many studies were undertaken over the last two years to investigate the perception of learners about online learning or learning through online classes, but very few out of those focused on exploring the perception of learners about online classes taken through one specific online platform like MS Teams. Apart from this, the present study also focused on a comparison of MS Teams as a learning platform with other similar type of platforms used during the pandemic by different educational institutions and its future usability along with traditional offline teaching system.

### **Objectives of the Study**

1. To explore the factors associated with features of MS Teams as a platform for online learning.
2. To identify the perception of students towards the factors associated with features of MS Team as a platform for online learning.
3. To find out the preference of students for MS Team over the other platforms used for online learning.

### **Hypotheses of the Study**

H01: There is no significant difference in the perception of students towards the factors associated with MS Team as a

platform for online learning based on demographic variables of learners.

H02: There is no significant difference in the perception of students towards the factors associated with MS Team as a platform for online learning based on features of online classes.

### **Research Methodology**

The study is an exploratory study with reference to exploring the perception of learners towards MS Teams as a platform for online learning. It is also descriptive in nature with reference to the study of preference of learners.

### **The Sample**

The data for present work was collected from 147 respondents pursuing education at the University level. Initially, the questionnaire was distributed to 200 learners but after data cleaning 147 responses were found to be useful for the study. The sample is composed of specifically those learners who have attended the online classes in last semester of their degree course. Also, purposely, only those respondents are included in the study who have taken online classes through MS Teams, Google meet, Zoom and Cisco Webex platform in the past one and half year. Detailed profile of respondents is given in table 1 in appendix.

### **Tools for Data Collection**

The data for the study was collected by means of a questionnaire consisting of three sections. The first section is related to personal information of learners, the second segment carries questions related to features of online classes and the third section is having questions related to features of MS Teams as a platform for online learning and two questions related to preference for MS Teams and its features. The questions relating to MS Teams as a platform for online learning was designed on 5 point Likert Scale where 5 represented Strongly Agree and 1 represented Strongly Disagree.

### **Tools for Data Analysis**

Exploratory Factor Analysis was used to find out the factors associated with the features of MS Teams as a platform for

online learning. For examining the differences in perception of learners one -way ANOVA was applied. The preference of learners was identified based on descriptive statistics. All the statistical tools were applied on primary data collected by using SPSS. For the first hypothesis, factors associated with features of MS Teams are taken as dependent variables and demographic variables (years of study and faculty of study) of students as independent variables. In case of second hypothesis, dependent variable is same as taken for the first hypothesis and features of online classes (duration of online classes , frequency of attending the classes, device use to access the online classes and mode of accessing the internet connection) are taken as independent variables.

## Findings of the Study

### Exploratory Factor Analysis

For the first objective of the study, Exploratory Factor Analysis was applied on the question related to features of MS Teams as a platform for online learning and as a result two factors have been extracted namely “Features” and “Assessment”. Both these factors with the different variables and their loading values have been shown below in Table 2. Simultaneously factor scores have also been calculated for these two factors. Detailed result of Exploratory Factor Analysis has been shown in Table 4 to Table 7 in appendix.

**Table 2 - Factor 1- Features**

Variables	Factor Loading Value
I am comfortable using Microsoft Teams to learn theory paper	.597
I am comfortable using Microsoft Teams to learn lab paper	.703
Microsoft Teams works well even if the internet speed is low	.742
Chat with the faculty is easy	.803
Voice calling faculty or individual registered members is simple and easy	.805
Using Chat (conversation) option for discussion during class is easy	.707
Giving attendance during the class is simple and easy	.555
Class notebook is found useful	.614
Additional app which are embedded in Microsoft Teams will be useful	.614

Source – Primary Data

**Table 3- Factor 2- Assessment**

Variables	Factor Loading Value
Submitting multiple choice in quiz is simple and easy	.639
Submitting assignment is simple and easy	.869
Uploading assignment is simple and easy	.860
Viewing grades in quiz and assessment is simple and easy	.745
Using forms giving a quick response during class easy	.786
Uploading * doc, pdf, jpeg as attachment or in the file is easy	.675

Source – Primary Data

### Result of ANOVA Test for Factor 1 i.e. “Features”

For testing the hypothesis based on differences in perception, one way ANOVA test was applied. Initially One way ANOVA was first applied to test the differences in

perception of respondents for first factor identified, i.e., features based on demographic variables (hypothesis 1) as well as based on features of online classes (hypothesis 2). In case of hypothesis 2, for the first factor, i.e., features, the null hypothesis is rejected in two cases at 0.1 level of significance. The two cases are “frequency of

attending online classes” and “frequency of attending online classes through the device tablet”. The result can be interpreted as there exists a significant difference in the perception of learners for MS Teams as a learning platform when learners belong to different categories based on frequency of attending online classes and when learners

belong to different categories while accessing the online classes through a Tablet device. In rest of the cases based on features of online classes as well as in case of hypothesis based on demographic variable, null hypothesis for the first factor i.e. features is accepted.

**Table 8- Result of ANOVA for Factor 1- Features**

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Average duration of theory classes	Between Groups	6.521	26	.251	1.092	.361
	Within Groups	27.560	120	.230		
	Total	34.082	146			
Average duration practical classes	Between Groups	13.650	26	.525	1.051	.409
	Within Groups	59.915	120	.499		
	Total	73.565	146			
Frequency of attending the online classes	Between Groups	32.047	26	1.233	1.659	.036
	Within Groups	89.178	120	.743		
	Total	121.224	146			
Attending online classes through laptop device	Between Groups	8.988	26	.346	.673	.879
	Within Groups	61.665	120	.514		
	Total	70.653	146			
Attending online classes through Desktop	Between Groups	20.082	26	.772	.928	.570
	Within Groups	99.918	120	.833		
	Total	120.000	146			
Attending online classes through Smartphone	Between Groups	30.657	26	1.179	.871	.647
	Within Groups	162.459	120	1.354		
	Total	193.116	146			
Attending online classes through Tablet device	Between Groups	42.447	26	1.633	1.469	.086
	Within Groups	133.404	120	1.112		
	Total	175.850	146			
Accessing internet using LAN connection	Between Groups	10.961	26	.422	1.094	.359
	Within Groups	46.223	120	.385		
	Total	57.184	146			
Accessing internet using mobile datapack	Between Groups	22.335	26	.859	1.312	.165
	Within Groups	78.563	120	.655		
	Total	100.898	146			
Accessing internet using Wifi	Between Groups	10.292	26	.396	.843	.685
	Within Groups	56.375	120	.470		
	Total	66.667	146			
Faculty of study	Between Groups	13.188	26	.507	.883	.630
	Within Groups	68.894	120	.574		
	Total	82.082	146			
Study year	Between Groups	12.113	26	.466	1.426	.103
	Within Groups	39.193	120	.327		
	Total	51.306	146			

Source – Primary Data

## Result of ANOVA for Factor 2- Assessment

Secondly, one- way ANOVA is applied to test the differences in perception of respondents for the second factor identified, i.e., assessment. For the second factor the null hypothesis is accepted in all the cases at 0.1 level of

significance for both the hypotheses. It can be interpreted, as there exists no significant differences in the perception of learners for MS Teams as learning platform based on features of online classes taken through MS Teams as a learning platform, as well as on the basis of demographic features of learners.

**Table 9- Result of ANOVA for Factor 2- Assessment**

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Average duration of theory classes	Between Groups	3.357	15	.224	.954	.507
	Within Groups	30.724	131	.235		
	Total	34.082	146			
Average duration of practical classes	Between Groups	9.230	15	.615	1.253	.241
	Within Groups	64.335	131	.491		
	Total	73.565	146			
Frequency of attending the online classes	Between Groups	6.779	15	.452	.517	.927
	Within Groups	114.445	131	.874		
	Total	121.224	146			
Attending online classes through laptop device	Between Groups	4.299	15	.287	.566	.896
	Within Groups	66.354	131	.507		
	Total	70.653	146			
Attending online classes through Desktop	Between Groups	12.658	15	.844	1.030	.429
	Within Groups	107.342	131	.819		
	Total	120.000	146			
Attending online classes through Smatphone	Between Groups	28.413	15	1.894	1.507	.112
	Within Groups	164.703	131	1.257		
	Total	193.116	146			
Attending online classes through Tablet device	Between Groups	14.565	15	.971	.789	.688
	Within Groups	161.285	131	1.231		
	Total	175.850	146			
Accessing internet using LAN connection	Between Groups	4.243	15	.283	.700	.781
	Within Groups	52.940	131	.404		
	Total	57.184	146			
Accessing internet using mobile datapack	Between Groups	8.129	15	.542	.765	.713
	Within Groups	92.769	131	.708		
	Total	100.898	146			
Accessing internet using Wifi	Between Groups	2.755	15	.184	.377	.983
	Within Groups	63.911	131	.488		
	Total	66.667	146			
Faculty for study	Between Groups	3.531	15	.235	.393	.979
	Within Groups	78.551	131	.600		
	Total	82.082	146			
Study year	Between Groups	7.854	15	.524	1.579	.088
	Within Groups	43.452	131	.332		
	Total	51.306	146			

Source – Primary Data

## Preference of Online Learning Platform

For knowing about the preference of learners, two questions have been included in the questionnaire. One of the question was related to a preference of MS Teams as a platform for online learning over other similar online learning platforms. In response to this question it was found that 51% of learners preferred MS Teams over other similar online learning platforms, followed by 38% respondents reporting MS Teams as a learning platform to be good as compared to other similar platforms. Another question was related to identifying the feature of MS Teams which can be embedded in traditional offline teaching systems to make learning more effective for the students. In response to this question 51 % responded that MS Teams can be used as a platform for sharing the contents on regular basis in traditional teaching system followed by 23.8 % supporting the fact that its feature of being a platform for solving doubts and assessments can be embedded in traditional offline teaching systems. Detailed result is shown in table 8.

## Conclusion and Discussion

COVID 19 phase I and II represented such a time which no one had imagined. Due to the pandemic, the educational sector had to switch from the years old class room teaching pattern to an online mode of teaching and learning. Such a switch is one of the major reasons behind conducting this study. There were two focus areas of this study, namely perception and preference of learners. The result of the study showed that there exist no major differences in perception of learners for MS Teams as a platform for learning irrespective of features of online classes as well as demographic features of learners. The findings for preference showed that out of several features of MS Teams as learning platform, the first feature which a majority of respondents suggested to be embedded in the traditional class room teaching system is, “it can be used as a platform for sharing contents with learners” followed by “platform for solving doubts and for assessment”.

The findings of the present study with reference to preferences are found to be similar to the findings of the study conducted by Khan M.A. et.al.(2021). In the study conducted by Khan M.A. et.al. one of the reason found for

students' positive perception towards E – Learning was easy access of study material in E-Learning systems. Likewise, in the present study, when respondents were asked which features of MS Teams can be embedded into traditional teaching system, the majority responded that it can be used as a platform for sharing contents with learners.

The next feature of MS Teams which students preferred after the one mentioned above is – “a platform for solving doubts and assessments”. This finding is in contrast of findings of the research work conducted by Rani. V & Bethi. M (2021). Both these authors in their study found lack of interaction in E- Learning system as one of the factors because of which E- Learning systems cannot be properly implemented in the educational sector.

## Implications

The study has implications for educational sector as well as for software companies. The findings of the present study will help the educational institutions in taking decisions regarding the adoption of MS Teams along with traditional teaching systems for making learning more interesting for learners. This study will also help educational institutions in designing their curriculum in order to be ready for situations like covid, if any, in the future. By referring to preferred features of MS Teams, institutes can design their curriculum in a such manner that assessment of students can be conducted smoothly through online mode even if they are taught in through offline mode. The findings regarding preference will help software companies to modify online learning platforms so as to increase their acceptability in the educational sector in the future.

## Scope for Further Study

In the present work, only female respondents are considered for the sample. Thus, the study can be conducted with male respondents as well. Also a comparative study of a similar nature can be conducted for male and female respondents. The present work can also be conducted on teachers who have used MS Teams as a platform for teaching to know about their perception and preference about the platform. This study is conducted on students pursuing graduation and post graduation programs at the

University level. Learning through MOOC's platform and online learning apps like Biju's, Vedantu, etc are not part of this study. Similar types of studies can be conducted in the future for Learning through MOOC's platform and online learning apps like Biju's, Vedantu, etc.

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## Appendix

**Table1 – Respondents Profile**

Online Class related Features			
		Count	Column N %
Average duration of online theory classes	30 min	7	4.8%
	45 min	109	74.1%
	more than 45 min	31	21.1%
	Total	147	100.0%
Average duration of online practical classes	30 min	22	15.0%
	45 min	62	42.2%
	more than 45 min	63	42.9%
	Total	147	100.0%
Frequency of attending online classes	Daily	76	51.7%
	most of the days in a week	54	36.7%
	hardly 1 or 2 days in a week	3	2.0%
	as per my willingness	14	9.5%
	Total	147	100.0%
Attending online classes through Laptop device	Always	5	3.4%
	Mostly	6	4.1%
	Rarely	12	8.2%
	Never	124	84.4%
	Total	147	100.0%

<b>Online Class related Features</b>			
		<b>Count</b>	<b>Column N %</b>
Attending online classes through Desktop device	always	68	46.3%
	Mostly	36	24.5%
	Rarely	39	26.5%
	Never	4	2.7%
	Total	147	100.0%
Attending online classes through Smatphone device	Always	51	34.7%
	Mostly	36	24.5%
	Rarely	29	19.7%
	Never	31	21.1%
	Total	147	100.0%
Attending online classes through Tablet device	Always	34	23.1%
	Mostly	30	20.4%
	Rarely	47	32.0%
	Never	36	24.5%
	Total	147	100.0%
Accessing internet using LAN connection	Always	3	2.0%
	Mostly	6	4.1%
	Rarely	15	10.2%
	Never	123	83.7%
	Total	147	100.0%
Accessing internet using mobile datapack	Always	85	57.8%
	Mostly	39	26.5%
	Rarely	18	12.2%
	Never	5	3.4%
	Total	147	100.0%
Accessing internet using WIFI	Always	5	3.4%
	Mostly	5	3.4%
	Rarely	10	6.8%
	Never	127	86.4%
	Total	147	100.0%
<b>Study related Personal features of learners</b>			
Study year	first year	9	6.1%
	second year	78	53.1%
	third year	60	40.8%
	Total	147	100.0%
Program level	post graduation	29	19.7%
	Graduation	118	80.3%
	Total	147	100.0%
Faculty for study	Science	55	37.4%
	commerce and management	61	41.5%
	Humanities	31	21.1%
	Total	147	100.0%

Source – Primary Data

**Table 4 – KMO and Bartlett's Test**

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.909
Bartlett's Test of Sphericity	Approx. Chi-Square	1466.440
	Df	105
	Sig.	.000

Source – Primary Data

The KMO value of 0.909 and significance value of 0.00 of Bartlett's test of Sphericity shows that the sample taken is adequate for application of exploratory factor analysis.

**Table 5- Communalities**

<b>Communalities</b>		
	Initial	Extraction
I am comfortable using Microsoft Teams to learn theory paper	1.000	.501
I am comfortable using Microsoft Teams to learn lab paper	1.000	.558
Microsoft Teams works well even if the internet speed is low	1.000	.551
Chat with the faculty is easy	1.000	.693
Voice calling faculty or individual registered members is simple and easy	1.000	.719
Using Chat (conversation) option for discussion during class is easy	1.000	.635
Submitting multiple choice in quiz is simple and easy	1.000	.478
Submitting assignment is simple and easy	1.000	.789
Uploading assignment is simple and easy	1.000	.781
Viewing grades in quiz and assessment is simple and easy	1.000	.599
Class notebook is found useful	1.000	.503
Giving attendance during the class is simple and easy	1.000	.620
Using forms giving a quick response during class easy	1.000	.743
Uploading * doc, pdf, jpeg as attachment or in the file is easy	1.000	.762
Additional app which are embedded in Microsoft Teams will be useful	1.000	.517
Extraction Method: Principal Component Analysis.		

Source – Primary Data

The survey has been started with 18 variables / statements related to MS Teams as a platform for learning. Based on communalities values after extraction 3 statements have been dropped as their communalities value after extraction is found to be less than 0.5. Finally, EFA have been applied on remaining 15 variables / statements only.

**Table 6 - Total Variance Explained**

<b>Total Variance Explained</b>									
<b>Component</b>	<b>Initial Eigenvalues</b>			<b>Extraction Sums of Squared Loadings</b>			<b>Rotation Sums of Squared Loadings</b>		
	<b>Total</b>	<b>% of Variance</b>	<b>Cumulative %</b>	<b>Total</b>	<b>% of Variance</b>	<b>Cumulative %</b>	<b>Total</b>	<b>% of Variance</b>	<b>Cumulative %</b>
	1	7.867	52.449	52.449	7.867	52.449	52.449	4.876	32.507
2	1.579	10.525	62.974	1.579	10.525	62.974	4.570	30.467	62.974
3	.833	5.552	68.526						

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
4	.787	5.248	73.774						
5	.701	4.674	78.448						
6	.539	3.594	82.042						
7	.492	3.282	85.324						
8	.440	2.932	88.256						
9	.343	2.284	90.540						
10	.337	2.244	92.785						
11	.306	2.041	94.825						
12	.256	1.710	96.535						
13	.224	1.493	98.028						
14	.175	1.164	99.192						
15	.121	.808	100.000						

Extraction Method: Principal Component Analysis.

Source – Primary Data

**Table 7- Rotated Component Matrix**

Rotated Component Matrix <sup>a</sup>		
	Component	
	1	2
I am comfortable using Microsoft Teams to learn theory paper	.597	
I am comfortable using Microsoft Teams to learn lab paper	.703	
Microsoft Teams works well even if the internet speed is low	.742	
Chat with the faculty is easy	.803	
Voice calling faculty or individual registered members is simple and easy	.805	
Using Chat (conversation) option for discussion during class is easy	.707	
Submitting multiple choice in quiz is simple and easy		.639
Submitting assignment is simple and easy		.869
Uploading assignment is simple and easy		.860
Viewing grades in quiz and assessment is simple and easy		.745
Class notebook is found useful	.614	
Giving attendance during the class is simple and easy	.555	
Using forms giving a quick response during class easy		.786
Uploading * doc, pdf, jpeg as attachment or in the file is easy		.675
Additional app which are embedded in Microsoft Teams will be useful	.614	
Extraction Method: Principal Component Analysis.		
Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

Source – Primary Data

**Table 8- Result of Preference objective**

		<b>Feature to be embedded</b>			
		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	platform for sharing course contents	76	51.7	51.7	51.7
	additional app	23	15.6	15.6	67.3
	platform for doubt solving	13	8.8	8.8	76.2
	assessment	35	23.8	23.8	100.0
	Total	147	100.0	100.0	

*Source – Primary Data*