

A REPORT ON  
EMPLOYMENT STATUS OF  
THE LEARNERS FOR CEMCA  
SUPPORTED COURSES

Uttarakhand Open University, Haldwani  
With the support of  
Commonwealth Educational Media Centre for  
Asia, New Delhi

Submitted by:

Dr. Jeetendra Pande  
Assistant Professor- Computer Science  
Uttarakhand Open University

## Contents

Background: Uttarakhand Open University.....	3
Introduction.....	4
Status on Development of Online Courses .....	6
Enrollment Status.....	8
Methodology.....	9
Analysis of Data.....	9
Respondent’s description based on age .....	9
Description based on respondents Gender .....	10
Description based on respondents Motivation.....	11
Description based on respondent’s status .....	13
Description based on respondent’s status .....	14
Course provide technical/vocational/professional skills.....	15
Course useful in increasing your job prospects .....	16
Respondent’s job status before the course completion and Age.....	17
Respondent’s Gender and job status before the course completion .....	20
Respondent’s job status before the course completion and Age.....	21
Respondent’s Gender and job status after the course completion .....	24
Sign Test Non-Parametric two sample test.....	25
Cross tabulation of motivated respondents based on increasing job prospects with status before course completion status .....	26
Cross tabulation of motivated respondents based on increasing job prospects with status after course completion status .....	27
Conclusion .....	28

## **Background: Uttarakhand Open University**

In the year of 2005, Uttarakhand Open University (UoU) was established by an Act of Uttarakhand Legislative Assembly (vide Act No. 23 of the Uttarakhand Government) based on the philosophical values of Open and Distance Learning (ODL). The focus of the UoU is to provide easy access of quality education to different sections of society. The main objective of the University is to develop trained and skilled human resource for sustainable development and progress. Similarly, the university aimed to disseminate knowledge and skills through distance learning, using the flexible and innovative methods of education to ensure ‘independent learning’. Following the ODL approach, the university caters to the development of schedule tribes, women, and those who have been left out of mainstream education. At the same time, the University has evolved considerably and has been successful in reaching out to the unreached.

The vision of the UOU is mentioned as “ to make higher education the potent medium of growth by creating knowledge and to provide easily accessible and convenient opportunities for value-based quality higher education to the people of Uttarakhand especially to youth, educationally deprived, and employed persons so that they are motivated for life-long-learning thereby ensuring their proficiency in different skills, securing self-employment, and employment with the motto of appropriate service to the state, nation and entire humanity.

The objectives of the Uttarakhand Open University are:

- To cater to the educational needs of the target groups through the open systems of learning.
- To create skilled and knowledge based human resource for speedy upliftment and development of the State in particular.
- To provide easy access to education to different sections of society, especially to those with seemingly geographical isolation and difficulty.
- To promote national integration and integrated development of human personality.
- To impart knowledge for awareness and skill development.
- To promote research orientation in the present scenario of technology and development. and disseminate knowledge through an innovative multi-media teaching-learning system.

- To promote dissemination of learning and knowledge through distance education systems including the use of any communication technology to provide opportunities for higher education to a large segment of the population and shall in organizing its activities.

## **Introduction**

Teaching and Learning has changed in the 21<sup>st</sup> century. The British Open University and other Traditional Universities have developed online distance courses. Private institutions are also offering online courses. Students' world over in the coming years will be using the e - learning tools more than the printed textual material and India is not far behind. The worldwide e learning industry is estimated to be worth over \$48 billion.

Open Universities in the last more than 20 years have moved from print material to web-based courses for delivery of instruction. With the emergence of new technologies, the universities have to move fast and keep the pace with the rest of the world.

Online Learning is mainly the transfer of skills and knowledge through computer. The content is delivered via Internet or audio/video or satellite or CDROM.

Keeping this new technological development in view, the teachers should be prepared to meet the challenges of the future. In this connection, UOU in collaboration with CEMCA had organized three-day training workshop on how to create /develop online courses. The training objectives of this three day workshop were to orient the Teachers towards Open Educational Resources, explain and Describe the Instructional Design for Online Courses, highlight some of the tools used to create online courses, understand the Learning Management System, publish the Resources for an Online Course, and create an Online Course using Moodle. The workshop comprised of eleven intensive and hands-on sessions which includes face-to-face delivery and online engagement. The workshop page for training on University's Moodle platform was created at [moodle.uou.ac.in](http://moodle.uou.ac.in). The platform was refreshed time to time for updating new courses and eLearning resources. The updated platform can be accessed at [elearning.uou.ac.in](http://elearning.uou.ac.in).

Elarning - Uttarakhand

elarning.uou.ac.in/

elarning Self Learning Material (SLM) Open Educational Resources (OER) Online Courses Research & Innovation

MAIN MENU  
Site announcements

NAVIGATION  
Home  
Search  
Site announcements  
Courses

### Site announcements

**Career Counseling Seminar**  
by Dr. Jeetendra Pande - Wednesday, 16 May 2018, 4:37 PM

The Placement Cell of Uttarakhand Open University is organizing a Career Counseling Seminar on 26th May, 2018. This seminar shall be of immense value to the learners as it intends to cover the important topics related to career choices and guide all the participants towards building a ...

[Read the rest of this topic](#) (159 words) [Permalink](#)  
[View the discussion](#) (0 replies so far)

**Free Online course on Cyber Security Techniques**  
by Dr. Jeetendra Pande - Saturday, 21 April 2018, 8:03 AM

Free Non-Credit Course on Cyber Security Techniques [Permalink](#)  
[View the discussion](#) (0 replies so far)

Please click here to access free course on Fundamentals of Information Security  
<http://elarning.uou.ac.in/course/view.php?id=62>

Course Duration 01 June to 07 June  
Fee: Free Online Course  
Credit: Non-credit

CALENDAR  
December 2019

Mon	Tue	Wed	Thu	Fri	Sat	Sun
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Copyright © 2018. Uttarakhand Open University, Haldwani  
You are not logged in. (Log in)  
moodle

elarning: Online Courses

elarning.uou.ac.in/course/index.php?categoryid=45

elarning Self Learning Material (SLM) Open Educational Resources (OER) Online Courses Research & Innovation

## Elarning - Uttarakhand Open University

Home > Courses > Online Courses

NAVIGATION  
Home  
Search  
Site announcements  
Courses  
Self Learning Material (SLM)  
Open Educational Resources (OER)  
Online Courses  
Course on Computer Application (CCA)  
Course on e-Governance and Cyber Security (CEGCS)  
Sanskrit  
Jyotish  
DIT  
Online courses for MCA/MScIT/PGDCA/BCA  
Video Editing  
MBA-17  
TOC  
DM  
Yog  
Research and Innovation

Course categories: Online Courses

Search courses:

[Expand all](#)

- Course on Computer Application (CCA)
- Course on e-Governance and Cyber Security (CEGCS)
- Sanskrit
- Jyotish
- DIT
- Online courses for MCA/MScIT/PGDCA/BCA
- Introduction to Video Editing
- Master of Business Administration(MBA17)

The programme has been sculpted to address the changes that are taking place in corporate world and society at large. The programme intends to meet the growing demand of entrepreneurs, business leaders and effective managers who can face the challenges resulting from cut-throat competition. The programme shall contribute in disseminating business knowledge and management skills through

## Status on Development of Online Courses

1. Uttarakhand Open University have Conducted a Baseline Study of the University with special reference to enrolment, contents, students support services, use of ICT, teaching learning process, learning outcome, employability etc.
2. Designed, developed and hosted a web interface along with Moodle LMS including app customization for content delivery and learner support including career counselling. The following courses are prepared in the text as well as video format:
  - a) Course on Computer Application (CCA)
    - Introduction to MS-Word
    - Introduction to MS-Excel
    - Introduction to MS-PowerPoint
    - Introduction to Information Technology
    - Introduction to DTP
  - b) Course on e-Governance and cyber security (CEGCS)
    - Fundamental of Information Security
    - Cyber Security Techniques
    - Cyber Attacks and Counter Measures: User Perspective
    - Information System
  - c) DIT
    - Database Management System
    - Introduction to Networking and Web Technology
    - Introduction to Programming using C
  - d) Video Editing
    - Video Recording and Editing
3. The services of the following experts were utilized for the content development and recording video lectures:
  - a. Group Captain Ashok Kumar, Director-IT, Defense Image Processing and Analysis Center, New Delhi
  - b. Mr. Ashutosh Bahuguna, Joint Director- Indian Cyber Emergency Response Team(CERT-In), Ministry of Comm & IT, Govt of India, New Delhi

- c. Group Captain C S Chawla, Ministry of Defense, New Delhi
- d. Dr. Jeetendra Pande, Assistant Professor- Computer Science, Uttarakhand Open University, Haldwani
- e. Sq. Leader Arun Kumar, Defence Image Processing and Analysis Center, New Delhi
- f. Ms. Priyanka Tewari, IT Consultant ( Ex employee Infosys Technologies Ltd. And Mercer India Limited)
- g. Dr. Gopal Dutt, Academic Associate- Vocational Studies, Uttarakhand Open University, Haldwani
- h. Dr. Nitin Deepak, Associate Professor- Computer Science, Amrapali Institute, Haldwani
- i. Dr. Mukesh Joshi, Associate Professor- Computer Science, Graphic Era Hill University, Bhimtal
- j. Mr. Sani Abhilash, Scientist- D, Indian Cyber Emergency Response Team(CERT-In), Ministry of Comm & IT, Govt of India, New Delhi.
- k. Mr. Apoorv Pande, Haldwani
- l. Mr. Balam Singh Dafouti, Academic Associate- Computer Science, Uttarakhand Open University, Haldwani
- m. Mr. Harsh Vardhan Pant, Assistant Professor- Computer Science, Amrapali Institute, Haldwani
- n. Mr. Jayash Sharma, Assistant Professor- Computer Science, Hindustan College of Science & Technology, Agra
- o. Dr. Darpan Anand, Associate Professor- Computer Science, Chandigarh University, Chandigarh
- p. Mr. Sani Abhilash, Scientist, Cyber Emergency Response Team in India, Ministry of Communication & IT, Govt. of India, New Delhi.
- q. Dr. A. Murli M. Rao, Head-IT, IGNOU, New Delhi
- r. Dr. V.V. Rao, Cyber Emergency Response Team in India, Ministry of Communication & IT, Govt. of India, New Delhi

4. The programs are hosted on the elearning portal of Uttarakhand Open University: elearning.uou.ac.in and the video lectures are also available in the Youtube channel of the University under the name UOULIVE.
5. Till date 162 video lectures are recorded and uploaded and 16 courses with consists of 207 modules are available in the elearning portal.
6. Student Support Services: To retain the students and provide student support services, the SMS and emails are sent via email credit system.

## Enrollment Status

The enrollment status of the learners is given below:

S. No.	Course	Total Enrolment	Enrolment in the current semester (1 Jan. 1 June, 2020)
1	Introduction to Information Technology	2717	404
2	Automata Theory	198	97
3	C Programming	1486	395
4	Cyber Attack and Counter Measures	886	358
5	Cyber Security Techniques	1672	633
6	DBMS	781	132
7	Discreet Mathematics	321	176
8	Information Security	1760	662
9	Information System	736	199
10	Introduction to DTP	776	158
11	MS Excel	1317	25
12	MS PowerPoint	824	201
13	MS Word	486	170
14	Video Editing	878	429
15	Introduction to Web Technology	675	99
	<b>Total</b>	<b>15513</b>	<b>4138</b>



## Methodology

The data has been initially collected online using feedback form available on the Moodle platform from 1068 respondents completed 15 different online courses offered by the University which were developed by the support of CEMCA and hosted on the Moodle based e-learning platform of the University. The main objective of the survey is to know the impact of the courses on respondents' job and whether the course is helpful in getting a job or if the learner is already employed, does the course provide any help in increasing job prospectus. There are many respondents who have completed more than one course and therefore, submitted more than one response as to download the certificate of participation, filling the exit survey was the necessary condition. After removing the duplicate responses, the data size reduced to 467 respondents. Finally, this data was described through basic descriptive statistical methods, histogram and charts. Furthermore, to know insight of the data cross tabulation and non-parametric sign test alternative to parried sample t-test was used to measure the difference in the performance of respondents before the course and after the completion of course. The details is given sections below.

## Analysis of Data

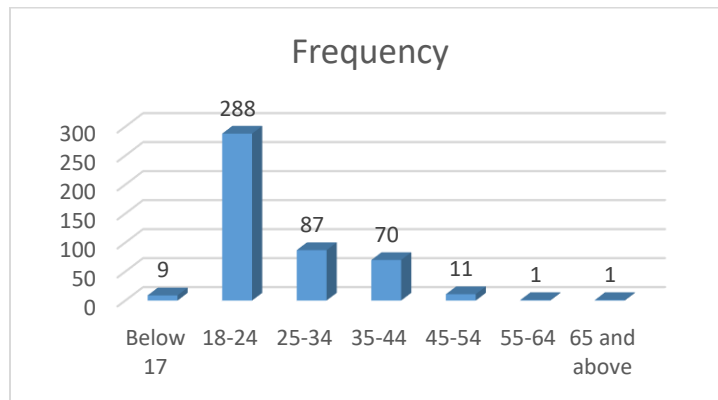
In this section basic descriptive analysis were used to describe the collected data set, which includes frequency distribution, histogram and pie charts.

### Respondent's description based on age

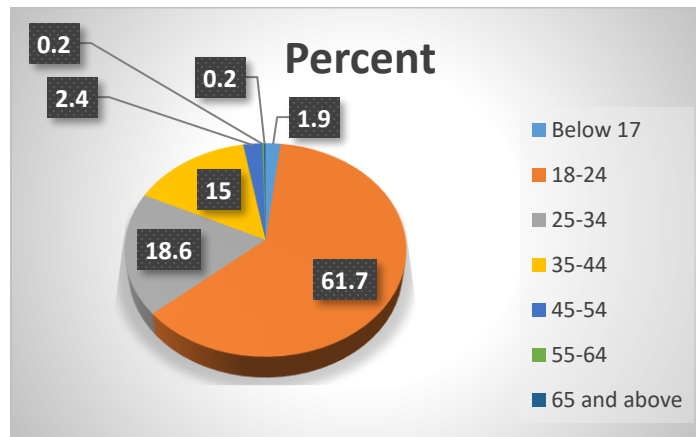
Table 1 illustrates the respondent's distribution based on their age. Respondent's age were categories in seven mutually exclusive categories, from below 17 years of age to 65 and above. Results shows that, number of respondents below 17 years of age are 9 with percentage of 1.90, 18-24 year old are 288(61.7%), 25-34 years 87(18.6%), 35-44 years 70(15.0%), 45-54 years, 11(2.4%), 55-64 years and 65 and above years old are 1 with percentage of 0.2. This shows that, young respondents are more interested as compare to older as 82.2 percent respondents are recorded up to 34 years and the remaining 17.8 percent are noted 35 and above years of ages. Furthermore, the same output was represented through histogram and pie-chart presented in figure 1 and 2 for easily and better understanding.

**Table 1: Description of data based on respondents Age**

Categories	Frequency	Percent
Below 17	9	1.9
18-24	288	61.7
25-34	87	18.6
35-44	70	15.0
45-54	11	2.4
55-64	1	.2
65 and above	1	.2
Total	467	100.0



**Figure 1:** Description of data based on respondents Age



**Figure 2:** Description of data based on respondents Age

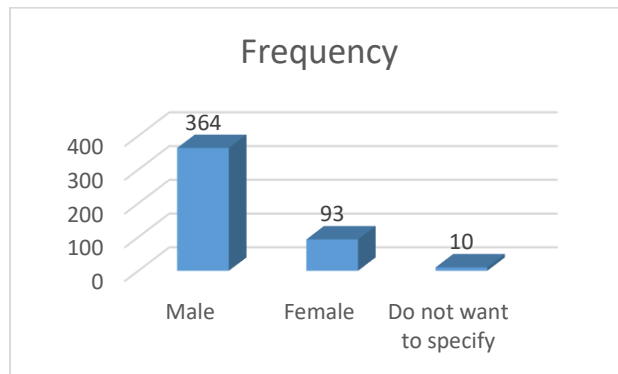
### Description based on respondents Gender

Table 2 presents description of collected data based on respondents' gender it has been observed that, out of total 467 respondents, 364 with percentage 77.9 are male 93(19.9%) are female while 10(2.1%) prefer not to mention their gender. Maximum percentage were recorded of male as

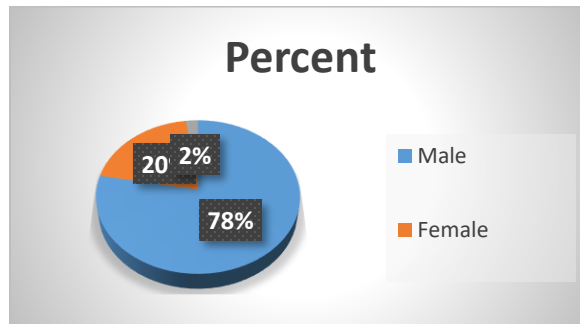
compare to female completed different online courses. Moreover, for simplification and enhanced understanding of data figure 3 and 4 also represent the same output.

**Table 2: Description of data based on respondents' gender**

Categories	Frequency	Percent
Male	364	77.9
Female	93	19.9
Do not want to specify	10	2.1
Total	467	100.0



**Figure 3: Description of data based on respondents' gender**



**Figure 4: Description of data based on respondents' gender**

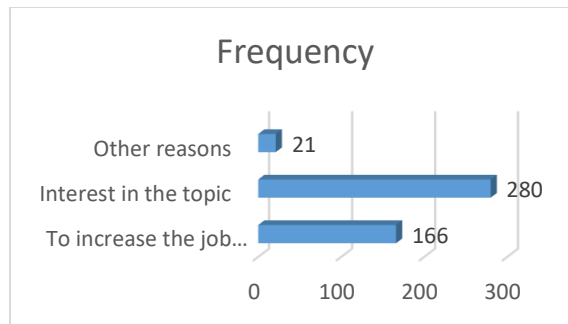
### **Description based on respondents Motivation**

Table 3 express description of collected data based on respondent's motivation for the online courses. Respondents motivation were described in through three different categories as to increase the job prospects, interest in the topic and other reasons. As the aim of this study is limited to respondent's job prospects only that's why motivation is categorised in limited form. Based on

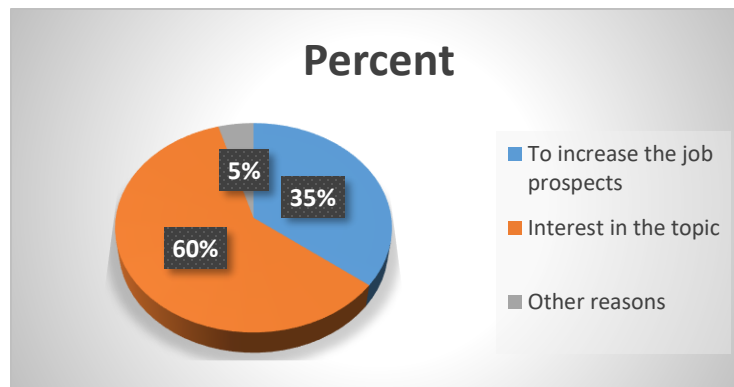
table 3 it has been observed that, out of total 467 respondents, 166 with percentage 35.5 are motivated to the course to increase the job prospects, 280(60.0%) are due to self interest in the topic and remaining 21(4.5%) due to other reasons Maximum percentage were recorded of respondents enrolled and completed online courses due to interest in the topics while minimum due to other reasons. Furthermore, for simplification and enhanced understanding of data figure 5 and 6 also represent the same output.

**Table 3: Description of data based on respondents Motivation**

Categories	Frequency	Percent
To increase the job prospects	166	35.5
Interest in the topic	280	60.0
Other reasons	21	4.5
Total	467	100.0



**Figure 5: Description of data based on respondents Motivation**



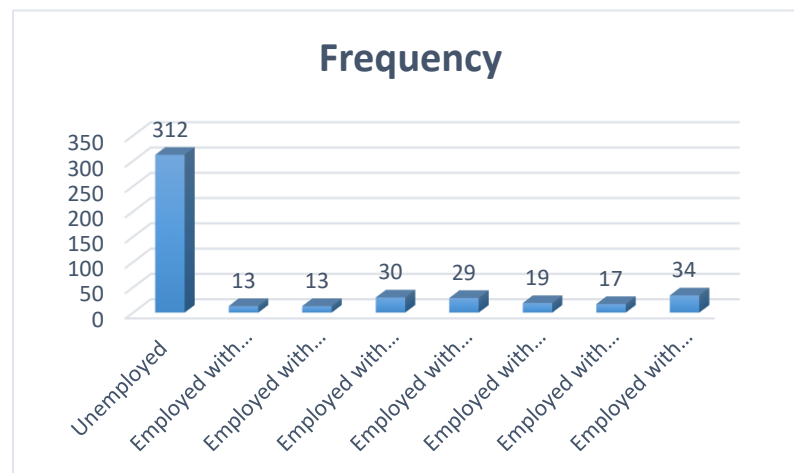
**Figure 6: Description of data based on respondents Motivation**

## Description based on respondent's status

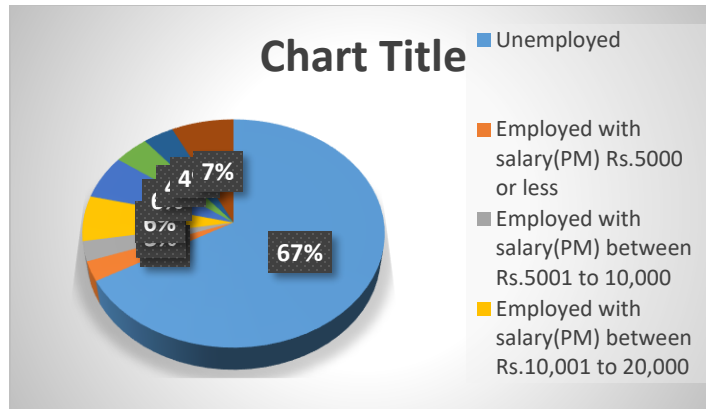
Table 4 reveals the respondent's responses regarding their status before the course completion. From total 467 respondents completed different course at the institute shows that, before the course 312 with percentage of 66.8 unemployed and remaining 33.2 percent are employed. Furthermore, 13 with percentage of 2.8 each recorded employed with a salary of 5000 or less and between 50001 to 10,000 Indian rupees per month. Similarly, 30 with percentage of 6.4, 29(6.2%), 19(4.1%), 17(3.6%) and 34(7.3%) are employed with salary between 10,001 to 20,000, 20,001 to 30,000, 30,001 to 40,000, 40,001 to 50,000 and 50,001 and above Indian rupees per month. It has been confirmed that, maximum percentage of respondents are unemployed before the course completion and only 10.9 percent respondents are getting salary of more than 40,000 Indian rupees per month. Furthermore, for simplification and enhanced understanding of data figure 7 and 8 also represent the same output.

**Table 4: Description of data based on respondent's status before the course**

Categories	Frequency	Percent
Unemployed	312	66.8
Employed with salary(PM) Rs.5000 or less	13	2.8
Employed with salary(PM) between Rs.5001 to 10,000	13	2.8
Employed with salary(PM) between Rs.10,001 to 20,000	30	6.4
Employed with salary(PM) between Rs.20,001 to 30,000	29	6.2
Employed with salary(PM) between Rs.30,001 to 40,000	19	4.1
Employed with salary(PM) between Rs.40,001 to 50,000	17	3.6
Employed with salary(PM) between Rs.50,001 and above	34	7.3
Total	467	100.0



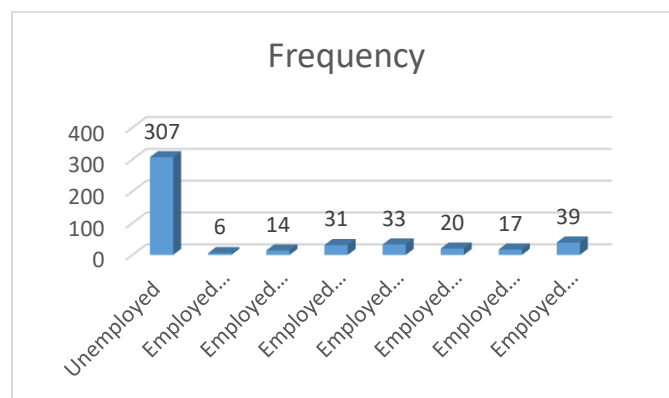
**Figure 7: Description of data based on respondent's status before the course**



**Figure 8:** Description of data based on respondent's status before the course

### Description based on respondent's status

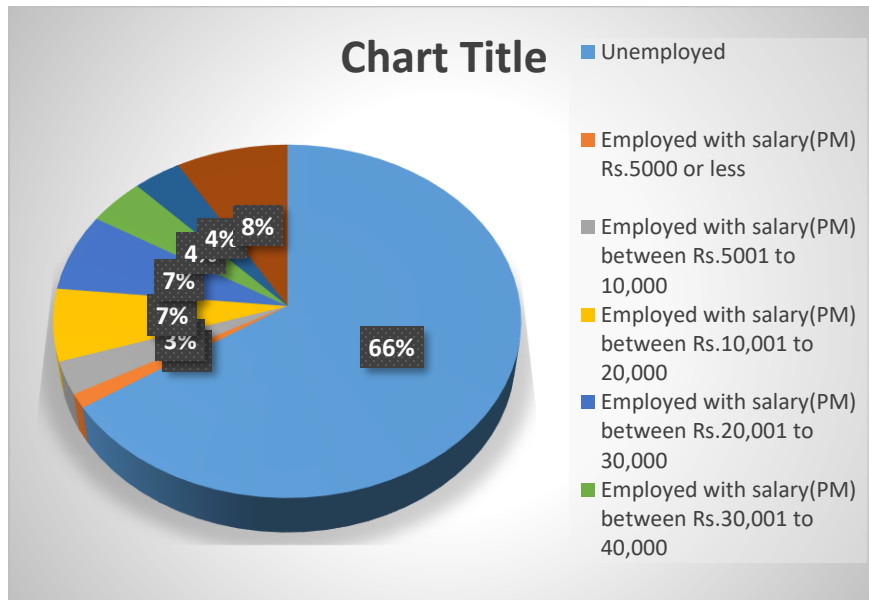
Table 5 illustrates respondent's responses regarding their current status after the course completion. From total 467 respondents completed different course at the institute responses shows that, 312 with percentage of 65.7 are unemployed and remaining 34.3 percent are employed. Furthermore, 6 with percentage of 1.3 were recorded employed with a salary of 5000 or less while 14(3.0%) are getting between 50001 to 10,000 Indian rupees salary per month. Similarly, 31 with percentage of 6.6, 33(7.1%), 20(4.3%), 17(3.6%) and 39(8.4%) are employed with salary between 10,001 to 20,000, 20,001 to 30,000, 30,001 to 40,000, 40,001 to 50,000 and 50,001 and above Indian rupees per month. It has been confirmed that, after the course completion the unemployed percentage is get down with 1.1 as compare to before the course completion and also it has been observed the percentage of respondents of getting salary of more than 40,000 Indian rupees per month were noted 12 percent also shows an increase as compare to before 10.9 percent. Furthermore, for simplification and enhanced understanding of data figure 9 and 10 also represent the same output.



**Figure 9:** Description of data based on respondent's status after the course completion

**Table 5: Description of data based on respondent’s status after the course completion**

Categories	Frequency	Percent
Unemployed	307	65.7
Employed with salary(PM) Rs.5000 or less	6	1.3
Employed with salary(PM) between Rs.5001 to 10,000	14	3.0
Employed with salary(PM) between Rs.10,001 to 20,000	31	6.6
Employed with salary(PM) between Rs.20,001 to 30,000	33	7.1
Employed with salary(PM) between Rs.30,001 to 40,000	20	4.3
Employed with salary(PM) between Rs.40,001 to 50,000	17	3.6
Employed with salary(PM) between Rs.50,001 and above	39	8.4
Total	467	100.0



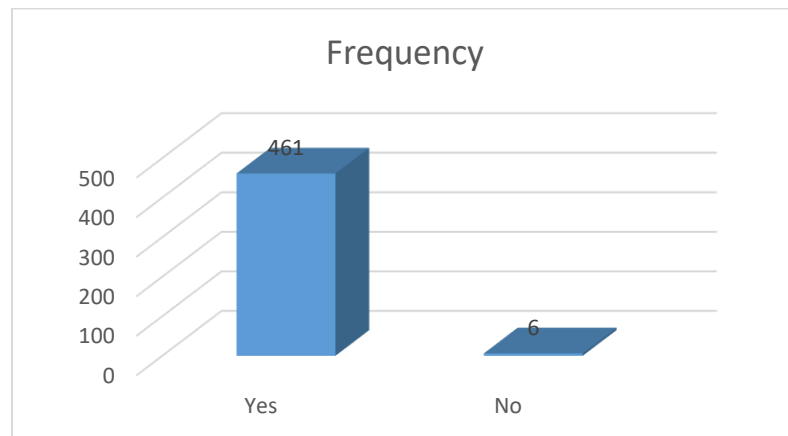
**Figure 10: Description of data based on respondent’s status after the course completion**

### Course provide technical/vocational/professional skills

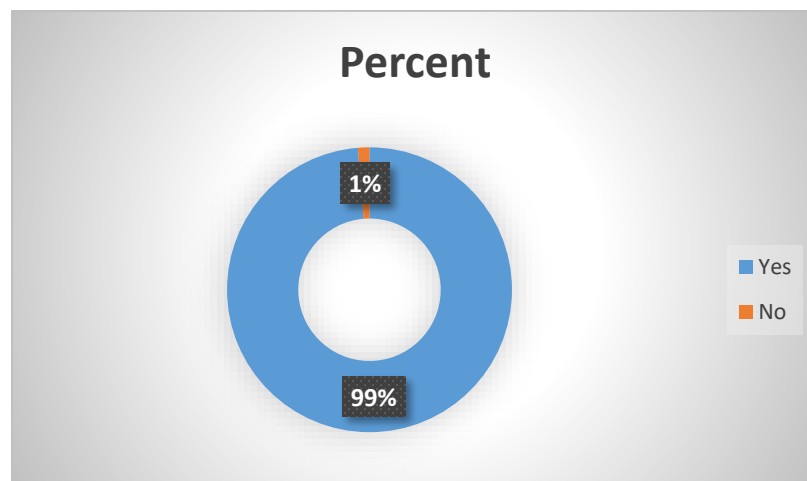
Table 6 represent respondent’s responses about improvement in the different skills after the course completion like technical/vocational/professional skills. From total 467 respondent’s 461 with percentage of 98.7 mentioned yes which illustrates that, the courses teaching in the institute are provided technical/vocational/professional skills to respondents. On the other hand only 6 respondents with percentage of 1.3 mentioned that, the courses did not provide any technical/vocational/professional skills. Furthermore, for simplification and enhanced understanding of data figure 11 and 12 also represent the same output.

**Table 6: Description based on course provide technical/vocational/professional skills**

Categories	Frequency	Percent
Yes	461	98.7
No	6	1.3
Total	467	100.0



**Figure 11: Description based on course provide technical/vocational/professional skills**



**Figure 11: Description based on course provide technical/vocational/professional skills**

### **Course useful in increasing your job prospects**

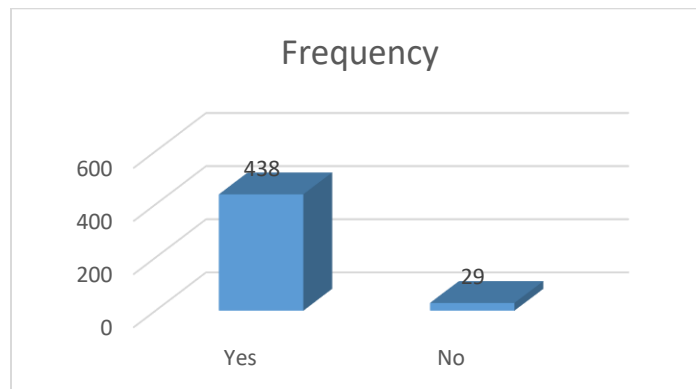
Table 7 presents respondent's responses about usefulness of courses regarding job prospects. From total 467 respondent's 438 with percentage of 93.8 mentioned yes which illustrates that, the courses teaching in the institute are useful regarding job prospects. On the other hand 29



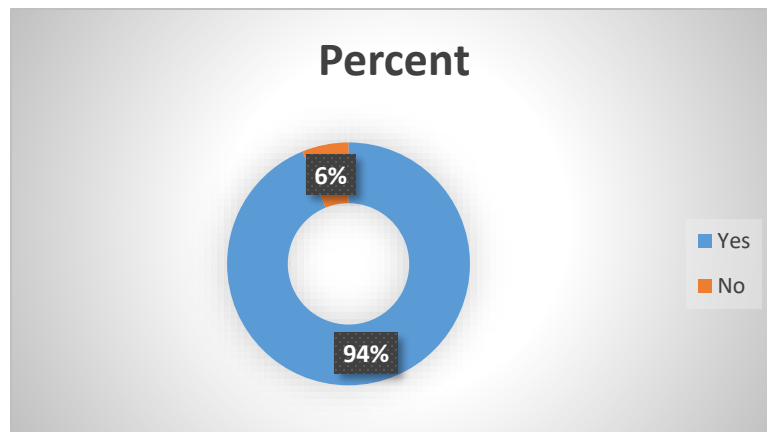
respondents with percentage of 6.2 mentioned that, the courses did not useful regarding job prospects. Furthermore, for simplification and enhanced understanding of data figure 13 and 14 also represent the same output.

**Table 7: Description based on usefulness of course increasing your job prospects**

Categories	Frequency	Percent
Yes	438	93.8
No	29	6.2
Total	467	100.0



**Figure 13: Description based on usefulness of course increasing your job prospects**



**Figure 14: Description based on usefulness of course increasing your job prospects**

### **Respondent’s job status before the course completion and Age**

Table 8 presents cross tabulation of respondent’s age and before the course completion their status, this will provide a closer look of data that how much number and percentage of respondents are unemployed and employed with how much salary at different age groups. It has been observed

that, at the age of below 17 years there are total 9 respondents in which 8 with percentage of 88.9 are unemployed and 1(11.1%) is employed with salary between Rs.20,001 to 30,000 rupees per month. Similarly respondents at the age group 18-24 years are noted 288 this is the highest number of respondents in a single age group. From total 288 respondents 261 with percentage of 90.6 are unemployed, 8(2.8%) employed with salary less than 5000 per month, 4(1.4%) with salary between 50001- 10000 per month, 6(2.1%) with salary between 10001- 20000 per month, 7(2.4%) with salary between 20001- 30000 per month, 1(0.3%) each with salary between 30001- 40000 and 40000 – 50000 per month. In the age group 25-34 years total 87 respondents were recorded in which 35 with percentage 40.2 are recorded unemployed and remaining 52(59.8%) are noted employed. From total 52 employed respondents, 2 with percentage of 2.3 are getting salary less than 5000 per month, 4(4.6%) between 50001- 10000 per month, 12(13.8%) between 10001- 20000 per month, 18(20.7%) between 20001- 30000 per month, 8(9.2%) each between 30001- 40000 and 50000 and above per month. Similarly at age group 35-44 years total 70 respondents were noticed in which 6 with percentage of 8.6 are unemployed and 3(4.3%), 5(7.1%), 11(15.7%), 2(2.9%), 9(12.9%), 15(21.4%) and 19(27.1%) are recorded employed with salary less than 5000 per month, between 50001- 10000, between 10001- 20000, between 20001- 30000, between 30001- 40000, between 40001- 50000 and 50000 and above respectively. Furthermore, at the age group 45-54 years total 11 respondents are recorded in which 2 with percentage of 18.2 are unemployed and 1(9.1%) each are employed with salary between 20001- 30000, between 30001- 40000 and between 40001- 50000, however 6(54.5%) are recorded with salary 50000 and above per month. Finally one respondents are noted at age group 55-64 and 65 and above years employed with salary between 20001- 30000 and 50000 and above per month respectively.

**Table 8: Cross tabulation of respondent’s job status before the course completion and Age**

Categories		Age							Total
		Below 17	18-24	25-34	35-44	45-54	55-64	65 & +	
Unemployed	Count	8	261	35	6	2	0	0	312
	% within Age	88.9%	90.6%	40.2%	8.6%	18.2%	0.0%	0.0%	66.8%
Employed with salary(PM) Rs.5000 or less	Count	0	8	2	3	0	0	0	13
	% within Age	0.0%	2.8%	2.3%	4.3%	0.0%	0.0%	0.0%	2.8%
Employed with salary(PM) between Rs.5001 to 10,000	Count	0	4	4	5	0	0	0	13
	% within Age	0.0%	1.4%	4.6%	7.1%	0.0%	0.0%	0.0%	2.8%
Employed with salary(PM) between Rs.10,001 to 20,000	Count	0	6	12	11	0	1	0	30
	% within Age	0.0%	2.1%	13.8%	15.7%	0.0%	100.0%	0.0%	6.4%
Employed with salary(PM) between Rs.20,001 to 30,000	Count	1	7	18	2	1	0	0	29
	% within Age	11.1%	2.4%	20.7%	2.9%	9.1%	0.0%	0.0%	6.2%
Employed with salary(PM) between Rs.30,001 to 40,000	Count	0	1	8	9	1	0	0	19
	% within Age	0.0%	0.3%	9.2%	12.9%	9.1%	0.0%	0.0%	4.1%
Employed with salary(PM) between Rs.40,001 to 50,000	Count	0	1	0	15	1	0	0	17
	% within Age	0.0%	0.3%	0.0%	21.4%	9.1%	0.0%	0.0%	3.6%
Employed with salary(PM) between Rs.50,001 and above	Count	0	0	8	19	6	0	1	34
	% within Age	0.0%	0.0%	9.2%	27.1%	54.5%	0.0%	100.0%	7.3%
Count		6	9	288	87	70	11	1	1
% within Age		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

## **Respondent's Gender and job status before the course completion**

Table 9 describe cross tabulation of respondent's gender and before the course completion their status, this will provide a closer look of data that how much number and percentage of male and female respondents are unemployed and employed. It has been observed that, from total 467 respondents 364 are male in which 241 with percentage of 66.2 are unemployed and 9(2.5%), 10(2.7%), 23(6.3%), 22(6.0%), 14(3.8%), 12(3.3%) and 33(9.1%) are recorded employed with salary less than 5000 per month, between 50001- 10000, between 10001- 20000, between 20001- 30000, between 30001- 40000, between 40001- 50000 and 50000 and above respectively. In a contrast, 93 were recorded female in which 62 are unemployed and 4(4.3%), 3(3.2%), 7(7.5%), 6(6.5%), 5(5.5%), 5(5.5%) and 1(1.1%) are recorded employed with salary less than 5000 per month, between 50001- 10000, between 10001- 20000, between 20001- 30000, between 30001- 40000, between 40001- 50000 and 50000 and above respectively. However out of total 10 respondents prefer not to mentioned their gender, in which 9 with percentage of 90.0 are recorded unemployed and 1 with percentage of 10.0 are noted employed with salary between 20,001 – 30,000 per month. Over all maximum percentage are noted for unemployed respondents which is 66.8 and remaining 33.2 percent respondents are noted employed with different salaries groups. In total 33.2 percent employed respondents, 2.8% are taking salary less than 5000 per month, 2.8 percent between 50001- 10000, 6.4 percent between 10001- 20000, 6.2 percent between 20001- 30000, 4.1 percent between 30001- 40000, 3.6 percent between 40001- 50000 and 7.3 percent 50000 and above respectively.

**Table 9: Cross tabulation of respondent's gender and job status before course completion**

Categories		Gender			Total
		Male	Female	Prefer not to say	
Unemployed	Count	241	62	9	312
	% within Gender	66.2%	66.7%	90.0%	66.8%
Employed with salary(PM) Rs.5000 or less	Count	9	4	0	13
	% within Gender	2.5%	4.3%	0.0%	2.8%
Employed with salary(PM) between Rs.5001 to 10,000	Count	10	3	0	13
	% within Gender	2.7%	3.2%	0.0%	2.8%
Employed with salary(PM) between Rs.10,001 to 20,000	Count	23	7	0	30
	% within Gender	6.3%	7.5%	0.0%	6.4%
Employed with salary(PM) between Rs.20,001 to 30,000	Count	22	6	1	29
	% within Gender	6.0%	6.5%	10.0%	6.2%
Employed with salary(PM) between Rs.30,001 to 40,000	Count	14	5	0	19
	% within Gender	3.8%	5.4%	0.0%	4.1%
Employed with salary(PM) between Rs.40,001 to 50,000	Count	12	5	0	17
	% within Gender	3.3%	5.4%	0.0%	3.6%
Employed with salary(PM) between Rs.50,001 and above	Count	33	1	0	34
	% within Gender	9.1%	1.1%	0.0%	7.3%
Count		364	93	10	467
% within Gender		100.0%	100.0%	100.0%	100.0%

### **Respondent's job status before the course completion and Age**

Table 10 illustrates cross tabulation of respondent's age and after the course completion their status, this will provide a closer look of data that how much number and percentage of respondents are unemployed and employed with how much salary at different age groups after completion the course. It has been observed that, at the age of below 17 years there are total 9 respondents in which 8 with percentage of 88.9 are unemployed and 1(11.1%) is employed with salary between Rs.20,001 to 30,000 rupees per month. Similarly, respondents at the age group 18-24 years are noted 288 this is the highest number of respondents in a single age group. From total 288 respondents 260 with percentage of 90.3 are unemployed, 2(0.7%) employed with salary less than 5000 per month, 9(3.1%) with salary between 5000- 10000 per month, 5(1.7%) with salary between 10001- 20000 per month, 8(2.8%) with salary between 20001- 30000 per month, 2(0.7%) each with salary between 30001- 40000 and 50000 and above per month. In the age group 25-34 years total 87 respondents were recorded in which 32 with percentage 36.8 are recorded unemployed and remaining 55(63.2%) are noted employed. From total 55 employed respondents,

1 with percentage of 1.1 are getting salary less than 5000 per month, 4(4.6%) between 50001-10000 per month, 13(14.9%) between 10001- 20000 per month, 17(19.5%) between 20001- 30000 per month, 10(11.5%) between 30001- 40000 per month, 3(3.4%) between 40001- 50000 per month and 7(8.0%) and 50000 and above per month. Similarly at age group 35-44 years total 70 respondents were noticed in which 5 with percentage of 7.1 are unemployed and 3(4.3%), 1(1.4%), 11(15.7%), 7(10.0%), 7(10.0%), 14(20.0%) and 22(31.4%) are recorded employed with salary less than 5000 per month, between 50001- 10000, between 10001- 20000, between 20001- 30000, between 30001- 40000, between 40001- 50000 and 50000 and above. Furthermore, at the age group 45-54 years total 11 respondents are recorded in which 2 with percentage of 18.2 are unemployed and 1(9.1%) each are employed with salary between 20001- 30000, between 30001- 40000 and between 40001- 50000, however 7(63.6%) are recorded with salary 50000 and above per month. Finally, one respondents are noted at age group 55-64 and 65 and above years employed with salary between 20001- 30000 and 50000 and above per month respectively. Over all maximum percentage are noticed for unemployed respondents which is 65.7 and remaining 34.3 percent respondents are noted employed with different salaries groups. In total 34.3 percent employed respondents, 1.3% are taking salary less than 5000 per month, 3.0 percent between 50001- 10000, 6.6 percent between 10001- 20000, 7.1 percent between 20001- 30000, 4.3 percent between 30001- 40000, 3.6 percent between 40001- 50000 and 8.4 percent 50000 and above respectively.

**Respondent’s job status after the course verse Age**

**Table 10:**

Categories		Age							Total
		Below 17	18-24	25-34	35-44	45-54	55-64	65 & +	
Unemployed	Count	8	260	32	5	2	0	0	307
	% within Age	88.9%	90.3%	36.8%	7.1%	18.2%	0.0%	0.0%	65.7%
Employed with salary(PM) Rs.5000 or less	Count	0	2	1	3	0	0	0	6
	% within Age	0.0%	0.7%	1.1%	4.3%	0.0%	0.0%	0.0%	1.3%
Employed with salary(PM) between Rs.5001 to 10,000	Count	0	9	4	1	0	0	0	14
	% within Age	0.0%	3.1%	4.6%	1.4%	0.0%	0.0%	0.0%	3.0%
Employed with salary(PM) between Rs.10,001 to 20,000	Count	1	5	13	11	0	1	0	31
	% within Age	11.1%	1.7%	14.9%	15.7%	0.0%	100.0%	0.0%	6.6%
Employed with salary(PM) between Rs.20,001 to 30,000	Count	0	8	17	7	1	0	0	33
	% within Age	0.0%	2.8%	19.5%	10.0%	9.1%	0.0%	0.0%	7.1%
Employed with salary(PM) between Rs.30,001 to 40,000	Count	0	2	10	7	1	0	0	20
	% within Age	0.0%	0.7%	11.5%	10.0%	9.1%	0.0%	0.0%	4.3%
Employed with salary(PM) between Rs.40,001 to 50,000	Count	0	0	3	14	0	0	0	17
	% within Age	0.0%	0.0%	3.4%	20.0%	0.0%	0.0%	0.0%	3.6%
Employed with salary(PM) between Rs.50,001 and above	Count	0	2	7	22	7	0	1	39
	% within Age	0.0%	0.7%	8.0%	31.4%	63.6%	0.0%	100.0%	8.4%
Count		9	288	87	70	11	1	1	467
% within Age		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

## **Respondent's Gender and job status after the course completion**

Table 11 describe cross tabulation of respondent's gender and after the course completion their status, this will provide a closer look of data that how much number and percentage of male and female respondents are unemployed and employed. It has been observed that, from total 467 respondents 364 are male in which 241 with percentage of 65.1 are unemployed and 4(1.1%), 8(2.2%), 24(6.6%), 27(7.4%), 14(3.8%), 12(3.3%) and 38(10.4%) are recorded employed with salary less than 5000 per month, between 50001- 10000, between 10001- 20000, between 20001- 30000, between 30001- 40000, between 40001- 50000 and 50000 and above respectively. In a contrast, 93 were recorded female in which 61 with percentage of 65.6 are unemployed and 2(2.2%), 6(6.5%), 7(7.5%), 5(5.4%), 6(6.5%), 5(5.4%) and 1(1.1%) are recorded employed with salary less than 5000 per month, between 50001- 10000, between 10001- 20000, between 20001- 30000, between 30001- 40000, between 40001- 50000 and 50000 and above respectively. However out of total 10 respondents prefer not to mentioned their gender, in which 9 with percentage of 90.0 are recorded unemployed and 1 with percentage of 10.0 are noted employed with salary between 20,001 – 30,000 per month. Over all maximum percentage are noted for unemployed respondents which is 65.7 and remaining 34.3 percent respondents are noted employed with different salaries groups. In total 34.3 percent employed respondents, 1.3% are taking salary less than 5000 per month, 3.0 percent between 50001- 10000, 6.6 percent between 10001- 20000, 7.1 percent between 20001- 30000, 4.3 percent between 30001- 40000, 3.6 percent between 40001- 50000 and 8.4 percent 50000 and above respectively.



**Table 11: Cross tabulation of respondent's gender and job status after course completion**

Categories		Gender			Total
		Male	Female	Prefer not to say	
Unemployed	Count	237	61	9	307
	% within Gender	65.1%	65.6%	90.0%	65.7%
Employed with salary(PM) Rs.5000 or less	Count	4	2	0	6
	% within Gender	1.1%	2.2%	0.0%	1.3%
Employed with salary(PM) between Rs.5001 to 10,000	Count	8	6	0	14
	% within Gender	2.2%	6.5%	0.0%	3.0%
Employed with salary(PM) between Rs.10,001 to 20,000	Count	24	7	0	31
	% within Gender	6.6%	7.5%	0.0%	6.6%
Employed with salary(PM) between Rs.20,001 to 30,000	Count	27	5	1	33
	% within Gender	7.4%	5.4%	10.0%	7.1%
Employed with salary(PM) between Rs.30,001 to 40,000	Count	14	6	0	20
	% within Gender	3.8%	6.5%	0.0%	4.3%
Employed with salary(PM) between Rs.40,001 to 50,000	Count	12	5	0	17
	% within Gender	3.3%	5.4%	0.0%	3.6%
Employed with salary(PM) between Rs.50,001 and above	Count	38	1	0	39
	% within Gender	10.4%	1.1%	0.0%	8.4%
Count		364	93	10	467
% within Gender		100.0%	100.0%	100.0%	100.0%

### Sign Test Non-Parametric two sample test

This test was applied to observe the impact of different courses on the respondent's job status and to measure difference in the job status of respondents before and after completion of the courses. The test is non-parametric test alternative to paired t-test it is based on ranks of data which calculates difference between ranks of respondents' job status before and after the completion of course. From table 12A test output were represented and from table 12B Z test were used to measure statistically difference in the respondent's status before and after course completion. Table 12A shows that, negative ranks were recorded 48 and positive were 11 the difference in ranks of before and after the course completion, while 408 are same represented by ties. Furthermore, table 12B presents the difference is statistically significant. From results it has been observed that the calculated p-value is 0.001 which is less than the considered 0.05 value of significance suggesting that, there are difference present in before and after the completion of course. The negative difference are more illustrating that after the course respondent's salary

changed to the positive side or jumped upward from the low salary group to high salary group and also due to increase in employment after the completion of courses. As 1.1 percent increase were noted in employed respondents after the completion of different courses.

**Table 12A: Two related sample non-parametric Sign Test**

Category		N	Mean Rank	Sum of Ranks
Before - After	Negative Ranks	48 <sup>a</sup>	27.59	1324.50
	Positive Ranks	11 <sup>b</sup>	40.50	445.50
	Ties	408 <sup>c</sup>		
	Total	467		
a. Before < After				
b. Before > After				
c. Before = After				

**Table 12B: Significance of non-parametric Sign Test**

Test Statistics	
	Before - After
Z	-3.374 <sup>b</sup>
Asymp. Sig. (2-tailed)	.001
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

### **Cross tabulation of motivated respondents based on increasing job prospects with status before course completion status**

Table 13 presents the cross-tabulation analysis of those respondents motivated to the course for increasing job prospects with respondent's status before course completion. Table shows that, before course completion out of total 166 respondents, 111 with percentage of 66.9 are unemployed and remaining 55 with percentage of 33.1 are noted employed. From total employed respondents, 7(4.2%), 6(3.6%), 13(7.8%), 8(4.8%), 6(3.6%), 5(3.0%) and 10(6.0%) are recorded employed with salary less than 5000 per month, between 50001- 10000, between 10001- 20000, between 20001- 30000, between 30001- 40000, between 40001- 50000 and 50000 and above respectively.

**Table 13: Motivated respondents based on increasing job prospects with before course completion status**

Categories	Percentage within Motivated Respondents	Motivated Respondents
Unemployed	Count	111
	% within Motivated Respondents	66.9%
Employed with salary(PM) Rs.5000 or less	Count	7
	% within Motivated Respondents	4.2%
Employed with salary(PM) between Rs.5001 to 10,000	Count	6
	% within Motivated Respondents	3.6%
Employed with salary(PM) between Rs.10,001 to 20,000	Count	13
	% within Motivated Respondents	7.8%
Employed with salary(PM) between Rs.20,001 to 30,000	Count	8
	% within Motivated Respondents	4.8%
Employed with salary(PM) between Rs.30,001 to 40,000	Count	6
	% within Motivated Respondents	3.6%
Employed with salary(PM) between Rs.40,001 to 50,000	Count	5
	% within Motivated Respondents	3.0%
Employed with salary(PM) between Rs.50,001 and above	Count	10
	% within Motivated Respondents	6.0%
Total	Count	166
	% within Motivated Respondents	100.0%

**Cross tabulation of motivated respondents based on increasing job prospects with status after course completion status**

Table 14 illustrates the cross-tabulation analysis of those respondents motivated to the course for increasing job prospects with respondent's status after course completion. Table shows that, after course completion out of total 166 respondents, 104 with percentage of 62.7% are unemployed and remaining 62 with percentage of 37.3 are noted employed. From total employed respondents, 2(1.2%), 11(6.6%), 14(8.4%), 10(6.0%), 7(4.2%), 5(3.0%) and 13(7.8%) are recorded employed with salary less than 5000 per month, between 50001- 10000, between 10001- 20000, between 20001- 30000, between 30001- 40000, between 40001- 50000 and 50000 and above respectively.

**Table 14: Motivated respondents based on increasing job prospects with after course completion status**

<b>Categories</b>	<b>Percentage within Motivated Respondents</b>	<b>Motivated Respondents</b>
Unemployed	Count	104
	% within Motivated Respondents	62.7%
Employed with salary(PM) Rs.5000 or less	Count	2
	% within Motivated Respondents	1.2%
Employed with salary(PM) between Rs.5001 to 10,000	Count	11
	% within Motivated Respondents	6.6%
Employed with salary(PM) between Rs.10,001 to 20,000	Count	14
	% within Motivated Respondents	8.4%
Employed with salary(PM) between Rs.20,001 to 30,000	Count	10
	% within Motivated Respondents	6.0%
Employed with salary(PM) between Rs.30,001 to 40,000	Count	7
	% within Motivated Respondents	4.2%
Employed with salary(PM) between Rs.40,001 to 50,000	Count	5
	% within Motivated Respondents	3.0%
Employed with salary(PM) between Rs.50,001 and above	Count	13
	% within Motivated Respondents	7.8%
Total	Count	166
	% within Motivated Respondents	100.0%

## Conclusion

Initially data consists of total 1068 respondents completed 15 different online courses offered by the institution by removing the duplicate cases only 467 respondents remain. The analysis was carried out by data the data of 467 respondents by using basic descriptive methods frequency and percentage tables, histogram and pie charts and cross tabulation. Also a statistical non-parametric test “sing test” which is alternative to paired sample t-test were carried out to measure difference between respondent’s status before and after completion of the course. In total 467 respondents the share of male respondents are 77.9 percent and female are 19.9 while 2.1% didn’t mentioned there gender. Furthermore, it is noticed that a great percentage of young people are participating in different courses as 82.2 percent respondents are recorded less than 35 years old and only 17.8

percent are recorded 35 or more years old. It has been also noticed that, 60 percent respondents are motivated to taking these courses due to self interest in the courses topics, 35.5 percent are motivated due to increase the job prospects and remaining 4.5 percent due to other reasons. In addition to this 98.7 percent respondents acknowledge that, these different courses provide technical/vocational/professional skills and 93.8 mentioned that courses are useful in increasing job prospects. Moreover before the course completion 66.8 are noted unemployed and 33.2 percent are employed in which 2.8% with salary 5000 or less and between 50001 to 10,000, 6.4%, 6.2%, 4.1%, 3.6% and 7.3% are employed with salary between 10,001 to 20,000, 20,001 to 30,000, 30,001 to 40,000, 40,001 to 50,000 and 50,001 and above Indian rupees per month respectively. Likewise after the course completion 65.7 are noted unemployed and 34.3 percent are employed in which 1.3%, 3.0%, 6.6%, 7.1%, 4.3%, 3.6% and 8.4% are employed with salary 5000 or less, between 50001 to 10,000, between 10,001 to 20,000, 20,001 to 30,000, 30,001 to 40,000, 40,001 to 50,000 and 50,001 and above Indian rupees per month respectively. From the results of nonparametric sign test it has been concluded that, there are significance difference presents in respondents before and after completion the course. As it has been noticed that, the percentage of unemployed after the completion of course is decrease by 1.1%, along with this in the percentage of lower salaried employed decrease were also observed after the completion of course.

In addition to the above it has been concluded from table 13 and 14, the motivated respondents to different courses based on increasing job prospects before the course completion are the percentage of unemployment is high as compare to after the completion of course. Furthermore, after the completion of courses maximum respondents get improved to next salary category from low to high.