Journal of Pharmacognosy and Phytochemistry

Available online at www.phytojournal.com

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A study on ICTs skill of faculty members of state agricultural universities in Uttar Pradesh

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Abstract
Information and Communication Technology (ICT) are technologies offering new ways for communicating and exchanging information and knowledge. Information and Communication Technology (ICT) is seen as an important means of achieving such a transformation. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing, and numeracy. The explosion of Information and Communication Technology (ICT) in the last two decades has impacted the life of many people and the nature of jobs in all fields. Education as the main vehicle for human capital development needs to heed to the constant changes in the world of work. In line with the rapid development and usage of ICT in the workplace, it is important that the current generation of students need to well-prepared with ICT knowledge and skills for them to face the tasks in the world-of-work in the future. Information and communication technology (ICT) is becoming the lead artery in our international system which transfers information and knowledge in various fields of professional development for the technical and vocational education system. In line with the fast pace of ICTs development; all the technical and vocational education and training TVET cadres (schools managers, teachers, students even the classrooms), should be prepared to meet the new culture of teaching and learning based on 21st century skill's requirements for educational technologies.

Keywords: Communication, education, information, knowledge, technology, skills

Introduction
ICTs are technologies offering new ways for communicating and exchanging information and knowledge. The phrase ICT was coined by Stevenson in 1997. Information and Communication Technology (ICT) is seen as an important means of achieving such a transformation. The concept of ICT or Information and Communication Technology was first termed by the United Nations in 1992, and is used to connote 'internet service', media, 'telecommunication' and 'network-based information services' (Pelgrum and Law, 2003) [1]. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing, and numeracy (Swamy, 2012) [2]. The explosion of Information and Communication Technology (ICT) in the last two decades has impacted the life of many people and the nature of jobs in all fields. Education as the main vehicle for human capital development needs to heed to the constant changes in the world of work. In line with the rapid development and usage of ICT in the workplace, it is important that the current generation of students need to well-prepared with ICT knowledge and skills for them to face the tasks in the world-of-work in the future. In fact, ICT is the way of life for the majority of us and we should be fully prepared to live in the ICT world. Information and communication technology (ICT) is becoming the lead artery in our international system which transfers information and knowledge in various fields of professional development for the technical and vocational education system. Therefore, education is the main valve which is responsible for dissemination of knowledge and information technologies. In line with the fast pace of ICTs development; all the technical and vocational education and training TVET cadres (schools managers, teachers, students even the classrooms), should be prepared to meet the new culture of teaching and learning based on 21st century skill's requirements for educational technologies (Chai, Tan, Deng, & Koh, 2017; Göksün & Kurt, 2017) [3, 4]. Majority of teachers were aware about discussion (89.01%), classroom based project (73.99%), self-instruction project techniques (73.62%), group teaching and learning (71.79%) but did not possess adequate knowledge to use. (Ingle *et al.* 1995) [5]. E-Learning provides a method of delivering knowledgeable contents through CD, DVD, multimedia and other tools. The main constraint identified in this process is availability of proper bandwidth, willingness of E-Learners and some sort of skill set to deliver the material to learners. Overall we found E-Learning is beneficial to gentry for knowledge, better job opportunities, and promotions and to learn new developing technologies in the market.

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The paper emphasized that in the national policy of ICT for education, the policy makers paid more attention in rural areas and its student education standard while implement ICT for education programme (Kavita, 2015) [6].

Research Methodology
Survey Research Design was used for the present investigation. The present study was conducted in purposively selected state Uttar Pradesh (UP). All of the State Agricultural Universities in Uttar Pradesh that are the recognized by the Indian council of agricultural research (ICAR) were selected for the study. Four SAUs namely Chandra Shekhar Azad University of Agriculture and Technology, Narendra Deva University of Agriculture and Technology, Sardar Vallabhbhai Patel University of Agriculture and Technology and Banda University of Agriculture and Technology are situated in Uttar Pradesh. These Universities was selected purposively. A list of all the faculty members in state agricultural universities of U.P. was prepared for to determine the sample and their size. After the pilot study it was found that 271 faculty members were working in all four selected Agricultural universities. They were assistant professors, associate professors and professors. So, it was decided to take all the 271 members as a sample from all the 4 selected universities. The data from the respondent was collect through the Questionnaire sent through e-mails. This study was based on the information obtained through the primary data. The statistical methods used in the present study were Frequency, Percentage and rank.

Results and Discussion

Table 1: Distribution of respondents according to use of General Window Skill**:** N=271

S. No	Statements Window Skills	Frequency	Percentage	Rank
1.	Renaming of files.	219	80.81	I
2.	Running of scandisk.	215	79.33	II
3.	Create a shortcut on the desktop.	214	78.96	III
4.	Use of windows explorer to manage files.	210	77.49	IV
5.	Updating of anti-virus.	200	73.80	V
6.	Searching for a particular file.	193	71.21	VI
7.	Converting word documents to PDF document.	192	70.84	VII
8.	Move and copy files.	183	67.52	VIII
9.	Recovering of deleted documents.	180	66.42	IX
10.	Creating new directories/folders.	174	64.20	X
11.	Saving files in personal directory and in general directories.	165	60.88	XI
12.	Use of disk clean-up tool.	154	56.82	XII

It is evident from the Table 1 that majority (80.81%) of the respondents were having skill to renaming of the files ranked first followed by running of scandisk (79.33%) ranked second, create a shortcut on the desktop (78.96%) ranked third, use of windows explorer to manage files (77.49%) ranked fourth, updating of anti-virus (73.80%) ranked fifth, searching for a particular file (71.21%) ranked sixth, converting word documents to PDF document (70.84 %) ranked seventh, move and copy files (67.52%) ranked eighth, recovering of deleted documents (66.42%) ranked ninth, creating new directories/folders is (64.20%) ranked tenth, saving files in personal directory and in general directories (60.88%) ranked eleventh ranked eleventh and use of disk clean-up tool (56.82%) ranked twelfth respectively.
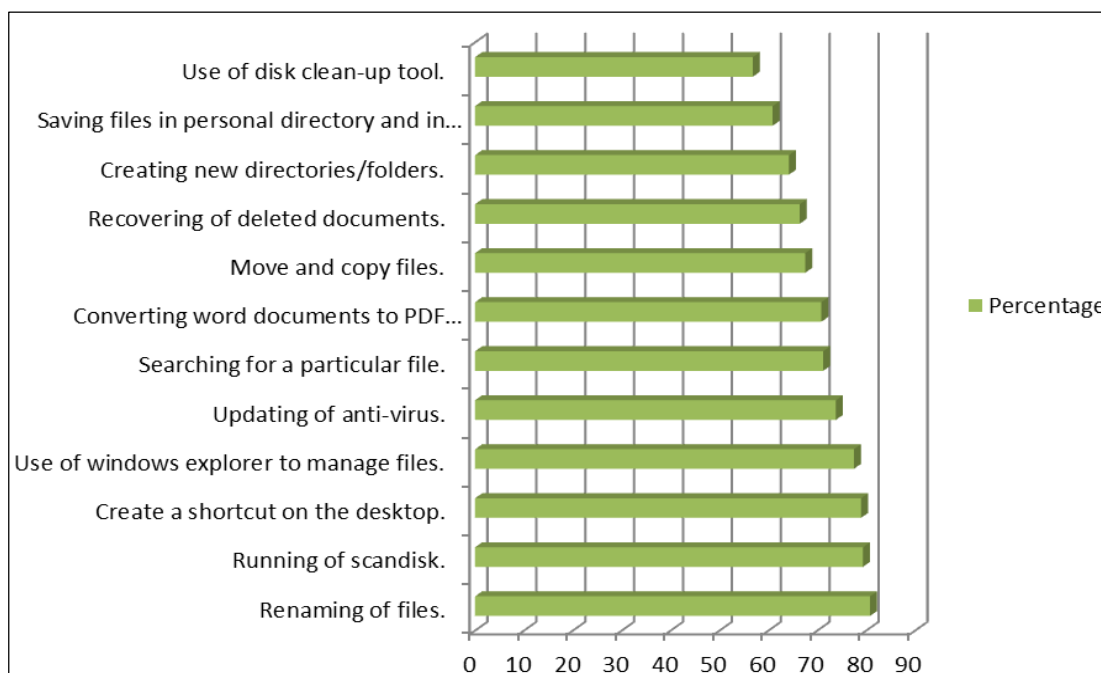

Fig 1: General Window Skill

Table 2: Distribution of respondents according to used of printer and other peripheral Skill

S. N.	Statements Printers and other Peripherals skills.	Frequency	Percentage	Rank
1.	Printing of documents.	230	84.87	I
2.	Transfer a file from the camera to the PC.	215	79.33	II
3.	Solving problem with printer paper jam.	187	69.00	III
4.	Scanning an image.	181	66.78	IV
5.	Set up and use of web cam available in PC.	178	65.68	V
6.	Manipulate a scanned image with appropriate software such as paint.	167	61.62	VI

It is evident from the Table 2 that majority (84.87%) of the respondents were having skill to printing of documents that ranked first followed by transfer a file from the camera to the PC (79.33%) ranked second, solving problem with printer paper jam (69.00%) ranked third, scanning an image (66.78%) ranked fourth, set up and use of web cam available in PC (65.68%) ranked fifth, and manipulate a scanned image with appropriate software such as paint (61.62%) ranked sixth were the printer and others peripherals skill carried out by the least number of respondents.
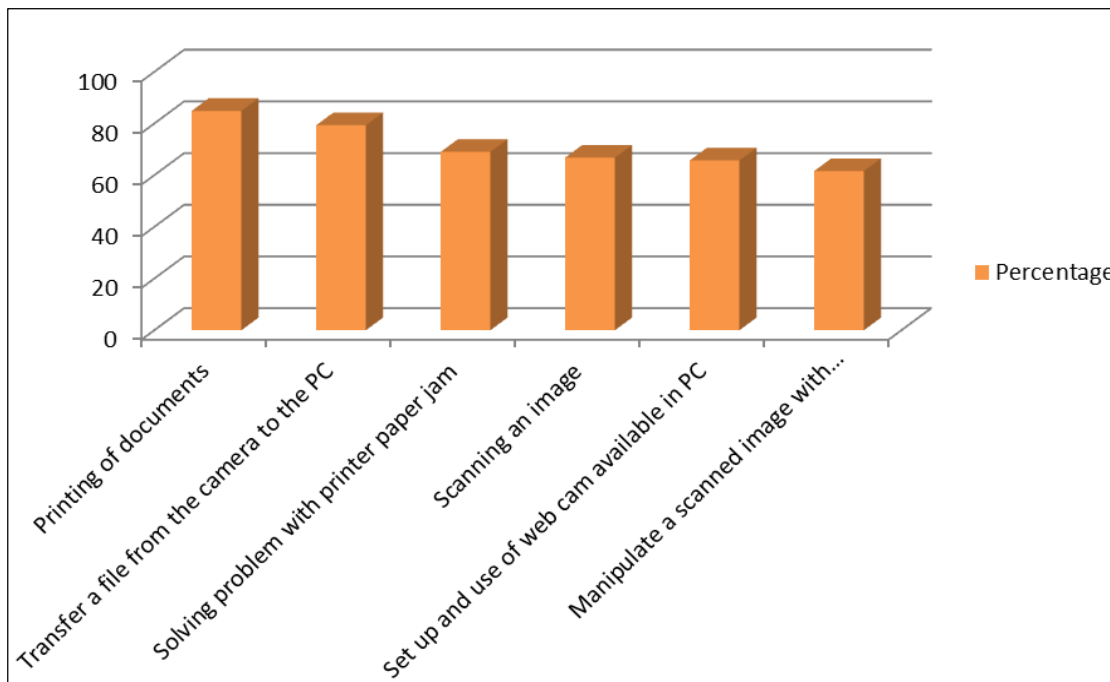

Fig 2: Printers and other Peripherals skill

Table 3: Distribution of respondents according to use of Word Processing Skill

S. No	Statements Word Processing Skills.	Frequency	Percentage	Rank
1	Format text e.g. size, bold, font, column	222	81.91	I
2	Copy/cut some words in a document and paste elsewhere	220	81.18	II
3	Create numbers and bullets in a document	211	77.85	III
4	Proper use of undo tool	185	68.26	IV
5	Import images into document	178	65.68	V
6	Spell check a document	177	65.31	VI
7	Inserting borders and shading to tables and paragraphs	175	64.57	VII
8	Linking other documents using hyperlink.	174	64.20	VIII
9	Set headers and footers.	148	54.61	IX

It is evident from the Table 3 that majority (81.9%) of the respondents were giving skill to format text e.g. size, bold, font, column that ranked first, followed by copy/cut some words in a document and paste elsewhere (81.18%) ranked second, create numbers and bullets in a document (77.85%) ranked third, proper use of undo tool (68.26%) ranked fourth, import images into document (65.68%) ranked fifth, spell check a document (65.31%) ranked sixth, inserting borders and shading to tables and paragraphs (64.57%) ranked seventh, linking other documents using hyperlink (64.20%) ranked eighth, and set headers and footers is (54.61%) ranked ninth respectively.
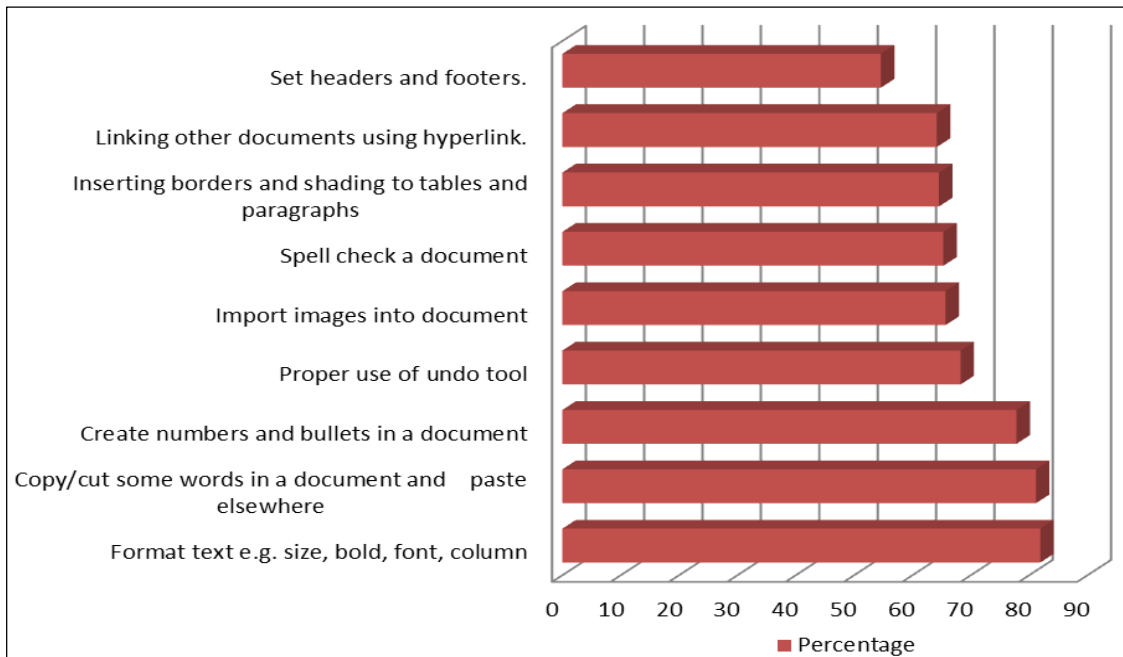
Fig 3: Word Processing skill

Table 4: Distribution of respondents according to use of slide preparation and presentation skill

S .N.	Statements Slides Preparation and Presentation skills.	Frequency	Percentage	Rank
1.	Create a new slide for presentation /lecture	238	87.82	I
2.	Create and use a master slide	224	82.65	II
3.	Formatting a slide properly for presentation	202	74.53	III
4.	Add an image or graphic, table & chart in a slide	194	71.58	IV
5.	Add shapes and lines to slides	191	70.47	V
6.	Create an organizational chart and table in a slide	187	69.00	VI
7.	Adding colour and effect to slides	179	66.05	VII
8.	Set up and operate multimedia projector	172	63.46	VIII
9.	Delete slides	157	57.93	IX

It is evident from the Table 4 that majority (87.82%) of the respondents were giving skill to create a new slide for presentation/lecture that ranked first followed by create and use a master slide (82.65%) ranked second, formatting a slide properly for presentation (74.53%) rank third, add an image or graphic, table & chat in a slide (71.58%) ranked fourth, add shapes and lines to slides (70.47%) ranked fifth, create an organizational chart and table in a slide (69.00%) ranked sixth, adding colour and effect to slides (66.05%) ranked seventh, set up and operate multimedia projector (63.46%) ranked eighth and delete slides (57.93%) ranked ninth respectively.
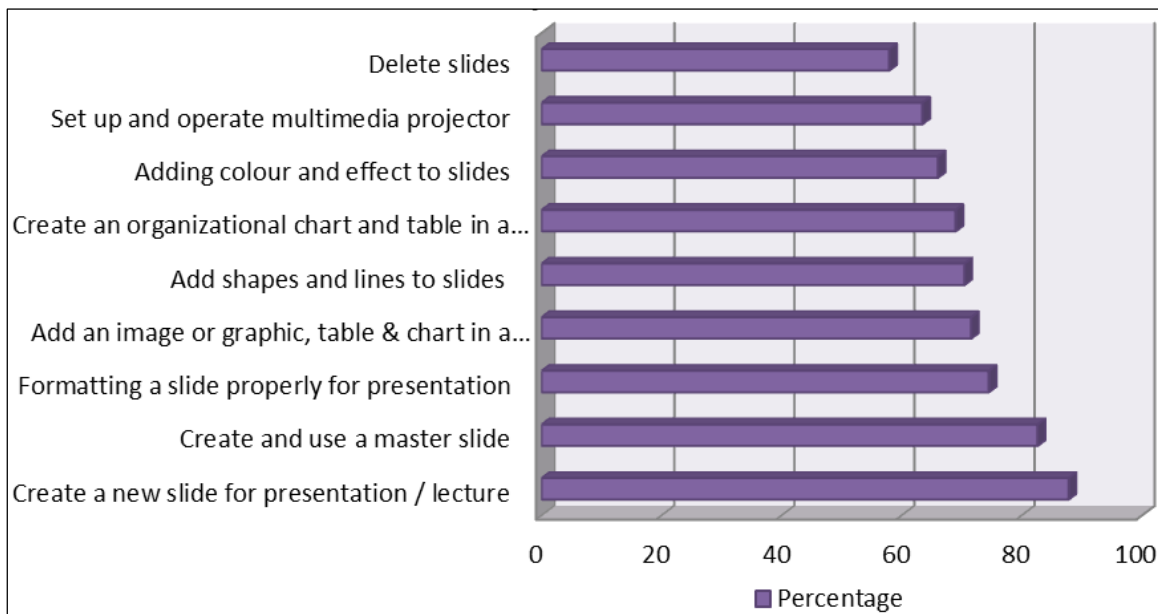

Fig 4: Slides Preparation and Presentation skill

Table 5: Distribution of respondents according to use of spreadsheet skill

S. N.	Statements Spreadsheet Skills	Frequency	Percentage	Rank
1.	Format a number to decimal places.	227	83.76	I
2.	Produce a chart from a given data.	219	80.81	II
3.	Change the width of a column and height of a row	206	76.01	III
4.	Linking cells between worksheets.	204	75.27	IV
5.	Save a spreadsheet document in a specify directory.	199	73.43	V
6.	Format text (size, colour, bold etc).	189	69.74	VI
7.	Inserting and deleting rows and columns.	176	64.94	VII
8.	Change the orientation of the print-out from portrait to landscape or vice-versa.	164	60.51	VIII
9.	Entering of text and numeric data in cells.	163	60.14	IX

It is evident from the Table 5 that majority (83.76) of the respondents were having skill to format a number to decimal places that ranked first followed by produce a chart from a given data (80.81%) ranked second, change the width of a column and height of a row (76.01%) ranked third, linking cells between worksheets (75.27%) ranked fourth, save a spreadsheet document in a specify directory (73.43%) ranked fifth, format text (size, colour, bold etc.) (69.74%) ranked sixth, inserting and deleting rows and columns (64.94%) ranked seventh, change the orientation of the print-out from portrait to landscape or vice-versa (60.51%) ranked eighth and entering of text and numeric data in cells (60.14%) ranked ninth respectively.
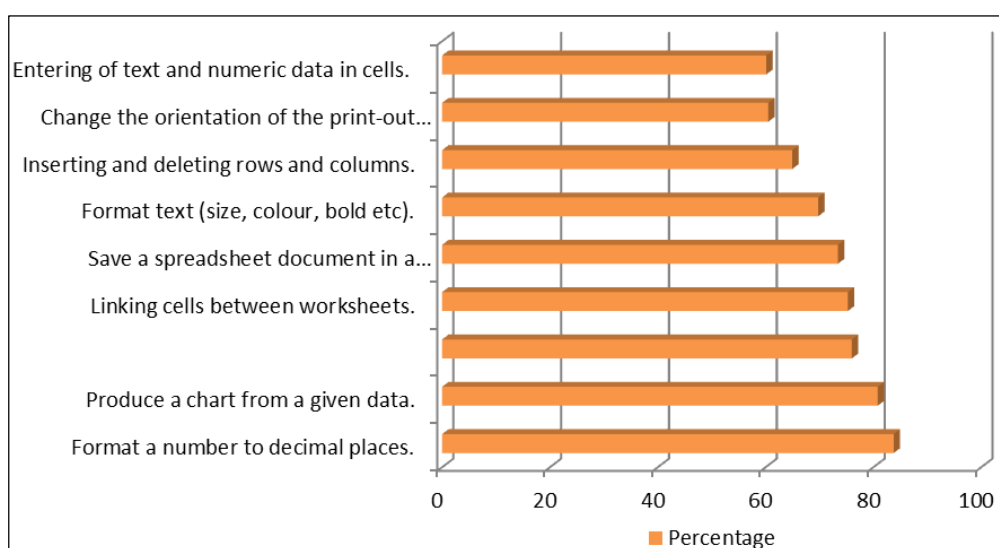
Fig 5: Spreadsheet Skill

Table 6: Distribution of respondents according to use of Internet and online activities skill

S. No	Statements Internet and Online Activities Skills	Frequency	Percentage	Rank
1	Attach a word document or picture to an email and send	231	85.23	I
2	Email an image file as attachment	217	80.07	II
3	Reply to, delete or forward an email	215	79.33	III
4	Know how to use a search engine like Google, Yahoo etc.	205	75.64	IV
5	Access e-mail box with ease	202	74.53	V
6	Create and send an email to others	198	73.06	VI
7	Can save email to an outlook folder	196	72.32	VII
8	Know how to download a document from the website	190	70.11	VIII
9	Know how to set up preferred default home page	183	67.52	IX
10	Know how to navigate a website	182	67.15	X
11	Connect to the internet using any internet browser	181	66.78	XI
12	Can create a new outlook folder	173	63.83	XII
13	Know how to download software	165	60.88	XIII
14	Know how to find the information that may be required	159	58.67	XIV
15	Uploading of lecture note on the web	154	56.82	XV
16	Know where to put a URL in the browser to find a particular page	141	52.02	XVI

It is evident from the Table 6 that majority (85.23%) of the respondents were having skill to attach a word document or picture to an email and send that ranked first followed by Email an image file as attachment (80.0 7%) ranked second, reply to, delete or forward an email (79.33%) ranked third, know how to use a search engine like Google, Yahoo etc (75.64%) ranked fourth, access e-mail box with ease (74.53%) ranked fifth, create and send an email to others (73.06%) rank sixth, can save email to an outlook folder (72.32%) ranked seventh, know how to download a document

from the website (70.11%) ranked eight, know how to set up preferred default home page (67.52%) ranked ninth, know how to navigate a website (67.15%) ranked tenth, connect to the internet using any internet browser (66.78%) ranked eleventh, can create a new outlook folder (63.83%) ranked twelfth, know how to download software (60.88%) ranked thirteenth, know how to find the information that may be required (58.67%) ranked fourteenth, uploading of lecture note on the web (56.82%) ranked fifteenth, and know where to put a URL in the browser to find a particular page (52.02%) ranked sixteenth respectively.
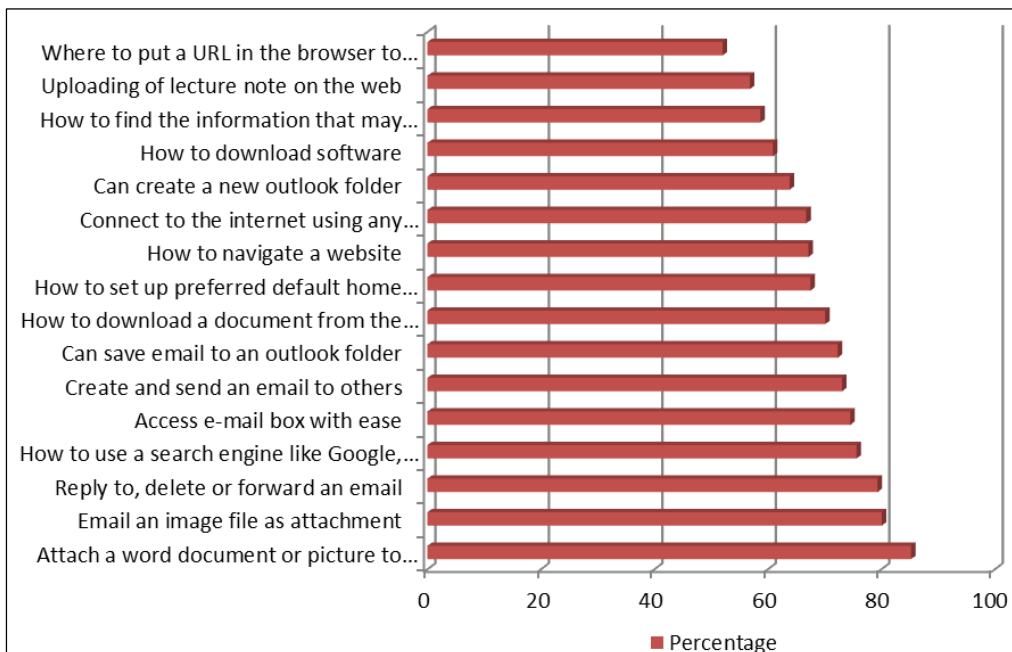

Fig 6: Internet and Online Activities Skill

Table 7: Distribution of respondents according to use of data input and analysis skill

S. No	Statements Data Input and Analysis Skills	Frequency	Percentage	Rank
1.	Analysis of data using Excel.	219	80.81	I
2.	Analysis of data using SPSS.	205	75.64	II
3.	Analysis of data using STATA.	199	73.43	III
4.	Software applications.	178	65.68	IV
5.	Analysis of data using GENSTAT.	165	60.88	V
6.	Coding of data for computer analysis and interpretation	163	60.14	VI
7.	Analysis of data using MINITAB etc.	157	57.93	VII

It is evident from the Table 7 that majority (80.81%) of the respondents were having skill to analysis of data using excel that ranked first; followed by analysis of data using SPSS (75.64%) ranked second, analysis of data using STATA (73.43%) ranked third, software applications (65.68%) ranked fourth, analysis of data using GENSTAT (60.88%) ranked fifth coding of data for computer analysis and interpretation (60.14%) ranked sixth and analysis of data using MINITAB etc. (57.93%) ranked seventh respectively.
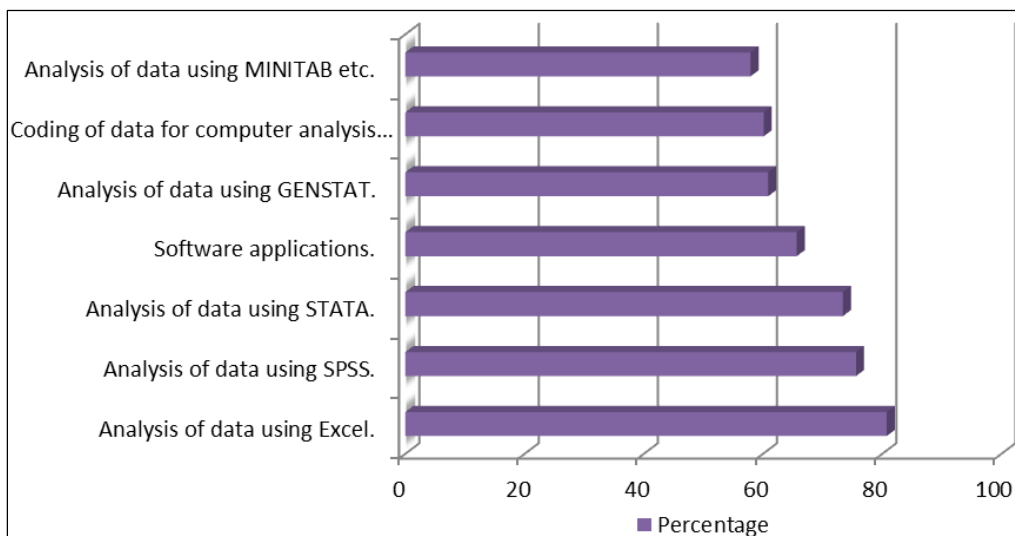

Fig 7: Data input and Analysis Skill

Conclusion

The findings of present study pertaining to different dimensions of ICTs skill of faculty members such as general window skill, printer and other peripheral skill, word processing skill, slides preparation and presentation skill, spreadsheet skill, internet and online activities skill and data input and analysis skill. Majority of respondents were having skill to renaming of the files, printing of documents, format text, create a new slide for presentation/ lecture, format a number to decimal places, attach a word document or picture to an email and send and analysis of data using excel that ranked first in different dimensions of ICTs skill respectively.

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