

5.3 Regression Analysis

This study presents the simple regression analysis to indicate that level of ICT usage is a significant predictor of teacher engagement.

5.3.1 ICT Usage and Teacher Engagement

The first hypothesis in this study states that there is significant relationship between the level of ICT usage and teacher engagement. Results as shown in table 3 indicated that ICT usage predicts teacher engagement, $\beta = 0.311$, $S_{\beta} = .043$, $t = 5.865$, $p < 0.01$. It was found that ICT usage and teacher engagement are positively correlated.

Table 3: Correlation coefficient, R square, Standardized Beta Coefficients, Standard Error and t for Paths from ICT usage to Teacher engagement

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Dependent variable	Predictor variable	B	Std. Error	β		
Teacher engagement	ICT usage	0.252	0.043	0.311	5.865	.000
F = 34.399		R = 0.311		R ² = 0.097		

5.4 T-test Analyses

This study presents the t-test analyses to examine the differences in the level of ICT usage with regard to demographic variables i.e. teachers' gender, ownership of institution and class taught.

5.4.1 ICT Usage and Gender

The second hypothesis in this study states that there is a significant difference among the male and female teachers with regard to their level of ICT usage. Table 4 below shows the mean and SD values for ICT usage scores of male and female teachers. It was indicated that the differences between male and female teachers regarding ICT usage were not significant. ($t = -0.236$, $p > 0.01$).

Table 4: Mean of ICT usage, SD, t and p values by Gender (N=324)

Gender	N	Mean	SD	T	P
Male	143	39.39	6.85	-0.236	.814
Female	181	39.56	6.61		

5.4.2 ICT Usage and Ownership

The third hypothesis in this study states that there is a significant difference among the teachers employed in government and private institutions with regard to their level of ICT usage. Table 5 below shows the mean and SD values for ICT usage scores of government and private institution teachers. It was indicated that the differences between teachers serving in government and private higher educational institutions under study with regard to level of ICT usage were not significant. ($t = -0.047$, $p > 0.01$).

Table 5: Mean of ICT usage, SD, t and p values by Ownership (N=324)

Ownership	N	Mean	SD	T	P
Government	179	39.47	6.76	-0.047	.962
Private	145	39.51	6.66		

5.4.3 ICT Usage and Class taught

The fourth hypothesis in this study states that there is a significant difference among the teachers teaching graduate and postgraduate courses with regard to their level of ICT usage. Table 6 below shows the mean and SD values for ICT scores of graduate and postgraduate teachers.

It was indicated that the differences between graduate and postgraduate teachers with regard to level of ICT usage were not significant. ($t = -1.343$, $p > 0.01$).

Table 6: Mean of ICT usage, SD, t and p values by Class taught (N=324)

Class taught	N	Mean	SD	T	P
Graduate	99	39.16	6.72	-1.343	.181
Postgraduate	225	40.24	6.66		

5.5 ANOVA

This study presents the ANOVA to examine the differences in the level of ICT usage among teachers with regard to demographic variables i.e. number of years having used computers/internet at any institute, working hours per week and subjects taught.

5.5.1 ICT Usage and Number of Years having used computers/internet at any institute

The fifth hypothesis in the study states that there is a significant difference in the level of ICT usage with regard to number of years having used computers/internet. Table 7 below shows the mean, SD and F values for ICT usage by number of years having used computers/internet. Results found that there were no significant differences in the level of ICT usage with regard to the number of years having used computers/internet at any institute. ($F = 0.022$, $p > 0.01$).

Table 7: Mean of ICT usage, SD, F and p values by number of years having used computers/internet at any institute (N=324)

Number of years having used computers/internet	N	Mean	SD	F	P
Less than 3 year	84	39.44	6.23	0.022	0.978
Between 4 to 6 years	74	39.63	7.90		
More than 6 years	166	39.45	6.40		
Total	324	39.49	6.71		

5.5.2 ICT Usage and Working hours per week

The sixth hypothesis in the study states that there is a significant difference in the level of ICT usage with regard to working hours per week. Table 8 below shows the mean, SD and F values for ICT usage by working hours per week. Results found that there were significant

differences in the level of ICT usage with regard to working hours per week ($F = 14.697, p < 0.01$). It was found that those who taught for 2 – 4 hours per week used ICT the most for educational purposes, followed by those teaching for 5 – 7 hours per week and more than 8 hours per week.

Table 8: Mean of ICT usage, SD, F and p values by working hours per week (N=324)

Working hours per week	N	Mean	SD	F	Sig.
2 – 4 hours	74	42.52	6.25	14.697	0.000
5 – 7 hours	72	40.41	5.71		
8 or more hours	178	37.85	6.78		
Total	324	39.49	6.71		

5.5.3 ICT Usage and Subject taught

The seventh hypothesis in the study states that there is a significant difference in the level of ICT usage with regard to subject taught. Table 9 below shows the mean, SD and F values for ICT usage by subject taught. Results found that there were significant differences in the level of ICT usage with regard to subjects taught ($F = 59.83, p < 0.01$). It was found that teachers of management subjects used ICT the most for educational purposes followed by Humanities and Science.

Table 9: Mean of ICT usage, SD, F and p values by subject taught (N=324)

Class taught	N	Mean	SD	F	Sig.
Humanities	71	37.61	9.52	59.83	0.000
Science	74	34.12	4.72		
Management	179	42.45	3.83		
Total	324	39.49	6.71		

6. Discussion and Conclusion

The purposes of the present research were to explore the relationship among ICT usage and teacher engagement and to study the differences in the level of ICT usage among teachers in higher educational institutions under study with regard to demographic variables.

Hypothesis 1 in this study was supported, as there was a significant impact of level of ICT usage on teacher engagement. The results indicated that there was a significant positive relation of ICT usage with teacher engagement. Thus, teachers who used ICT for educational purposes more were found to be more engaged to their careers.

Hypothesis 2 stating that ICT usage would vary among male and female teachers was not supported by the findings. Thus it can be concluded based on this finding that male and female teachers are equally proficient and well-versed in the educational applications of ICT.

Hypothesis 3 stating that there are significant differences in level of ICT usage among teachers employed in government and private higher educational institutions was not supported by the findings. This could be attributed to the fact that most of the higher educational institutions in India have adequate ICT infrastructure. Thus, there exists no technological divide among respondents from

government and private institutions with regard to ICT usage.

Hypothesis 4 in this study was not supported, as there was no significant difference between teachers teaching graduate and postgraduate courses with regard to the use of ICT for educational purposes.

Hypothesis 5 stating that there were no significant differences in level of ICT usage with regard to number of years having used computers/internet at any institute was also not supported. This could be attributed to the fact that ICT usage for educational purposes is a function of the course structure rather than one's previous experience with ICT.

In line with hypothesis 6, it was found that there were significant differences in the level of ICT usage with regard to the working hours per week. The results indicated that those who taught for 2-4 hours per week used ICT the most followed by those who taught for 5-7 hours per week and more than 8 hours per week.

Hypothesis 7 stating that level of ICT usage among teachers varies with regard to the subject taught was supported. It was found that Management teachers used ICT for educational purposes the most followed by Humanities and Science teachers. A plausible explanation could be that management institutes compete for high-quality students by offering latest gadgets such as laptops, Wi-Fi enabled campuses and computer literate teachers whereas such competition is lacking in other institutes.

7. Implication of the Study

This study presents empirical findings on positive relationship of level of ICT usage and teacher engagement. Teachers with higher engagement are efficient, effective, creative and more aligned with the organizational goals and objectives. There are several implications for this study. Firstly, since ICT usage enhances teacher engagement, the management of the higher educational institutions must facilitate ICT infrastructure and its use for educational purposes. Secondly, the teachers must be trained in the use of ICT and its applications in teaching. There is a need to educate teachers about how ICT can enhance their efficiency and creativity by making learning more exciting for students as well as themselves. Thirdly, the management must create a culture that encourages ICT usage such as use of information systems in institutes where teachers are able to communicate with their students, supervisors and management using a common ICT platform. Fourthly, higher educational institutions are in dire need of IT officers who can handle the ICT infrastructure and related equipment in the institute. Recruiting such officers is essential in order to upgrade the institutes. Fifthly, Computer literacy can be made a criterion for recruitment as a teacher in any institute. Sixthly, Institutes can enter into strategic partnerships with IT companies that train teachers in the pedagogical uses of ICT. Seventhly, collaborative learning can take place among institutes where faculty members visit other hi-tech institutes to learn about the latest ICT practices being

followed for teaching purposes. Lastly, workshops and seminars must be conducted where teachers are briefed about the latest ICT practices being followed in other institutes in developed countries.

8. Limitations & Recommendations

There are several limitations as well as recommendations to this study. Firstly, the sample size is small. It is therefore suggested for future research to increase the number of respondents. Secondly, the sample of the present study includes only teachers in north India, so the findings of the present study cannot be generalized to other geographical regions. Thirdly, there is possibility of respondent error since the questionnaires were administered during work hours. There is a tendency among respondents to give answers that are socially acceptable. Thus, genuine responses may not have been captured by the self-rating questionnaires. This limitation can be overcome through the use of 360 degree feedback from students, supervisors and staff members. Fourthly, studies regarding the barriers to the use of ICT could be conducted in order to address the issue of technological divide in India. Lastly, this study is cross-sectional in nature; thus further research using longitudinal studies needs to be conducted to confirm the results.

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