ABSTRACT

Educational institutions in India are witnessing a profound increase in the deployment of a range of Information and Communication Technology (ICT) tools for teaching and learning. While assessing the usage of IT in teaching, a need for understanding the factors that influence teachers' acceptance of technology as a tool and to predict usage behaviour from an Indian perspective was felt, as there is very little or no research study in this area.

This research study is conducted in the Indian State of Kerala. In Kerala, in the last couple of years, the State Government has taken up ICT implementation for teaching at State schools very systematically through a project called IT@School at State run schools. The researcher has attempted to expand the well established and time tested Technology Acceptance Model by adding the crucial factor of self-efficacy, i.e., perceived ability to use technology for teaching among teachers. Then the expanded model is being used to assess the technology acceptance behaviour of school teachers in this Indian context. The research model thus has a) Independent variables - (i) Perceived Usefulness (PU), (ii) Perceived Ease of Use (PEOU) and (iii) Perceived Ability (PA) or Self-Efficacy, along with b) Dependent variables – (iv) the Attitude of teachers towards use of technology as teaching tool (ATT) and (v) the reported use of technology, the Usage Behaviour (UB). Theoretically, Attitude is expected to influence Usage Behaviour, i.e., actual use of technology in teaching with (c) moderating variables - gender, age, education, experience, and subjects taught by teachers. The model is tested for equivalence across these moderator groups as moderating effects have given way to serious implications in technology acceptance literature (Schepers & Wetzels, 2007).
The research work has (1) reviewed literature in respect of prominent theories and models, (2) investigated the extent to which teachers at present use and intend to use the computers in their work, (3) formulated a research model to assess technology acceptance by secondary school teachers, and (4) generated and validated the research model that best describes School teachers’ attitude and usage behaviour using Structural Equation Modelling (SEM) techniques. The last two objectives represent the main focus of the thesis.

The survey instrument used for data collection was based on the earlier works of researchers though various revisions were brought in, keeping the Kerala State education scenario in mind. After cleansing and segregating, finally a sample of 396 high school teachers, was used for this research study. SPSS was used for data input and preliminary analyses along with SEM software AMOS to generate and test the extended technology acceptance model. The major research objectives met from research are:

1. A proper review of literature on teachers’ use of technology as teaching tool in various socio cultural contexts.
2. Development of a Teachers’ Technology Acceptance Model (TTAM), capable of assessing acceptance of IT as a teaching tool among school teachers.
3. The research model that best describes school teachers’ attitude towards IT and IT usage behaviour was not only generated, but was modified and further validated.
4. The main constructs used in the model, Perceived Usefulness (PU), Perceived Ease Of Use (PEOU) and Perceived Ability (PA), were found to have significant impact on teachers’ attitudes and usage behaviour in this Indian context.
5. The factors PU, PEOU and PA were all found to be inter-correlated.
6. Teachers’ attitude to use technology was found to be non-significant whereas perceived ability to use has shown significant impact on usage behaviour in this Indian scenario.
7. Theoretical and empirical evidences were found which were indicating a direct effect of external moderating variables such as gender, age, work-experience and subjects taught on usage behaviour, the self-reported usage, over and above having mediated effect on PEOU, PU, PA and ATT.

With the 23 item model TTAM proving to have a good fit, for the sample chosen, supporting all the hypotheses except three, it can be used as an assessment tool for examining teachers' intentions to use technology in future. The model had for the whole sample the squared multiple correlation ($R^2$) values for Attitude (ATT) and User Behaviour (UB) as 0.612 and 0.334 respectively indicating a moderate explanation for ATT (61%) but only 33.4% variance can be accounted by ATT and PA on UB, indicating scope for further investigation of the factors leading to UB. The findings of the study open new areas of research for research scholars in the field of technology acceptance with identification of new constructs related to teachers’ intention to use technology as a teaching tool and giving scope for a further extension in TAM in the future research.