CHAPTER 5

RESULTS, DISCUSSION & CONCLUSION

This research work was conducted in Indian context to test the causal relationship between perceived e-learning adoption factors and impact on attitude and intention through SEM framework. This study also, tested the mediating role of attitude on intention. From the results, the linkage of perceived e-learning adoption factors with attitude and intention in Indian context could be very well understood. Thus, the contribution of this study is two-fold, first on analytical level, adopting a more sophisticated method of analysis and secondly, on the conceptual level, introducing an e-learning adoption model.

5.1 SEM RESULTS INTERPRETATION

The study tested 15 causal relationships in the form of 15 hypotheses. These relationships were between 1: Relative advantage and attitude, 2: Compatibility and attitude, 3: Ease of Use and attitude 4: Results demonstrability and attitude, 5: Visibility and attitude 6: Image and attitude, 7: Self-efficacy and attitude, 8: Attitude and intention, 9: Relative advantage and intention, 10: Compatibility and intention, 11: Ease of use and intention, 12: Results demonstrability and intention, 13: Visibility and intention, 14: Image and intention, 15: Self-efficacy and intention.

Out of the 15 hypotheses, eleven hypotheses were supported and four not supported. Attitude was significantly influenced by five perceived
adoption factors in the order (highest influence to lowest influence) image, ease of use, visibility, relative advantage and self-efficacy. Image significantly influencing attitude was in accordance with the results of Razman Mahmod et al (2005). From the results it could be inferred that study explained that the factors highly influencing attitude was image. This showed that the attitude to use LMS by students was the first and foremost influenced by image. Compatibility and results demonstrability were not significant with the mediating variable attitude. However, compatibility not significant with attitude was in contradiction of the findings of His-Peng Lu (2005) and He Qile et al (2006). Results demonstrability not significant with attitude was in contradiction of the findings of Razman Mahmod et al (2005). Hence, they did not have any relationship with attitude. This showed that the student’s attitude to use LMS was not affected by its compatibility with their values and results demonstrability capability of LMS. Totally, 35.8 per cent of attitude was contributed by five perceived adoption factors namely; relative advantage (RA), ease of use (EU), visibility (VIS), image (IMG) and self-efficacy (SE). Results with regard to attitude revealed that 7 per cent, 36 per cent, 19 per cent 39 per cent and 7 per cent of attitude was dependent on relative advantage, ease of use, visibility, image and on self-efficacy, respectively.

Intention was significantly influenced by five perceived adoption factors in the order (highest influence to lowest influence) image, visibility, compatibility, results demonstrability and ease of use. Compatibility and results demonstrability significantly influencing intention was concomittant with the findings of His-Peng Lu (2005) with respect to e-learning websites. Compatibility, results demonstrability and image significantly influencing intention was in agreement with the findings of Ong et al (2008) with respect to adoption of 3G services. The study explained that the factor highly influencing intention was image. Image highly influencing intention was
concurrence with the findings of Razman Mahmod et al (2005). Intention to continue using LMS by students was first and foremost influenced by image. Relative advantage and self-efficacy were not significant with the intention. Relative advantage not influencing intention is in contradiction with the findings of Ong et al (2008) with respect to adoption of 3G services. Hence, did not have any relationship with intention. This showed that the student’s intention to continue using LMS was not affected by its relative advantage of LMS and also self-efficacy of students. Results revealed that, 73 per cent of intention was dependent on the attitude of the students to use e-learning in colleges. Among the factors, 9 per cent, 6 per cent, 6 per cent, 10 per cent and 26 per cent of intention depended on compatibility, ease of use, results demonstrability, visibility and image contributed to intention, respectively. The results were in conformity with the work of Taher Farahat (2012).

The notable observation was that the attitude and intention was most influenced by image. This showed that students tend to use the LMS for their learning only when they perceived their image/status/prestige improved on using LMS.

Also, attitude had a strong positive causal relationship with intention with beta value of 0.727. This result was in line with theory. Attitude and intention were constructs from TAM (Technology Acceptance Model) and are strongly related. The findings were in accordance with the results of Nelson Oly Ndubisi (2004).

5.2 INFLUENCE OF AVERAGE LMS TIME AND AVERAGE INTERNET TIME ON PERCEPTION OF STUDENTS

The average time spent by the student on the internet and on the LMS had no influence on perceived relative advantage, perceived
compatibility, perceived ease of use, perceived results demonstrability, perceived visibility, perceived image, perceived self-efficacy, attitude and intention. This showed that irrespective of time spent on internet/LMS by students did not change their perception/attitude/intention to use LMS.

5.3 INFLUENCE OF UNDERGRADUATION DEGREE AND GENDER ON PERCEPTION OF STUDENTS

The under graduation degree of the students, be it arts (B.A, B.Com, B.B.A, B.B.M) or science (B.Sc, B.C.A) or engineering (B.E / B.Tech) did not change the perception of the seven factors (perceived relative advantage, perceived compatibility, perceived ease of use, perceived results demonstrability, perceived visibility, perceived image, perceived self-efficacy) or attitude or intention. Engineering graduates who are better exposed to computers were thought to have a better perception of using LMS but the results proved that their under graduation did not influence their perception.

With regard to gender, being a male or a female did not influence their perception of the six factors (perceived compatibility, perceived ease of use, perceived results demonstrability, perceived visibility, perceived image, and perceived self-efficacy) or attitude or intention. The findings were in agreement with Farida Umarani & Rehana Ghadially (2008). With respect to perceived relative advantage, female differed from male and believed greater relative advantage helped in greater adoption of e-learning. The study results were in conformity with Leslie Jordan Albert & Camille Johnson (2011) & Hua Wang et al (2012).
5.4 INFLUENCE OF PLACE OF STAY ON PERCEPTION OF STUDENTS

Students who stayed inside the campus and outside the campus had the same opinion with respect to perceived relative advantage, perceived results demonstrability, attitude and intention.

The opinion of students who stayed inside the campus and outside the campus differed with respect to perceived compatibility, perceived ease of use, perceived visibility, perceived image, with higher mean values given to outside campus for all the four factors.

With regard to the opinion of students who stayed inside the campus had given higher mean value to self-efficacy than those students who stayed outside the campus. The e-learning facilities were available anytime to those students who stayed inside the campus and this improved their self-efficacy/confidence in using LMS than the students who stayed outside campus.

5.5 INFLUENCE OF PLACE OF ACCESS OF LMS

Students who accessed LMS from classroom/hostel/laboratory had the same opinion with respect to perceived relative advantage, perceived results demonstrability, perceived visibility, perceived self-efficacy and attitude.

Students who accessed LMS from classroom/hostel/laboratory had difference in opinion with respect to perceived compatibility, perceived ease of use, perceived image and intention.
5.6 CORRELATION

- Relative advantage had the highest correlation of 0.137 with attitude and was highly significant. Also, it had significant positive correlation with ease of use, visibility and image. It did not have any significant relationship with compatibility, results demonstrability, self-efficacy and intention.

- Compatibility had the highest correlation of 0.284 with visibility and was highly significant. It had highly significant positive correlation with ease of use, results demonstrability, and image, too. It did not have any significant relationship with self-efficacy, attitude and intention.

- Ease of use had highest correlation of 0.494 with results demonstrability and was highly significant. Visibility, image, attitude, and intention also had highly significant positive correlation. However, it did not have any significant relationship with self-efficacy.

- Results demonstrability had the highest correlation of 0.498 with visibility and was highly significant, besides, highly significant positive correlation with image. It did not have any significant relationship with self-efficacy, attitude and intention.

- Visibility had the highest correlation of 0.196 with image and was highly significant. Results revealed highly significant positive correlation with intention. It did not have any significant relationship with self-efficacy and attitude.
• Image had highly significant correlation value of 0.489 and 0.549 with attitude and intention, respectively. On the contrary, it did not have any significant relationship with self-efficacy.

• Self-efficacy had a significant positive relationship with attitude. However, statistically did not exhibit any significant relationship with intention.

• Attitude had the highest correlation value of 0.810 with intention and was highly significant. Since, this value was close to 1, we could conclude that there was a strong relationship between attitude and intention. This was true as per theory based on TAM model. The findings were in consensus with Soydal et al (2011) and Basheer Al-alak and Ibrahim Alnawas (2011).

Finding from the correlation results revealed that all the six factors like perceived relative advantage, perceived compatibility, perceived ease of use, perceived results demonstrability, perceived visibility and perceived image had no relationship with self-efficacy. This might be due to all the six factors mentioned above dealt with the characteristics of LMS and self-efficacy dealt with characteristics of student.

5.7 PATH ANALYSIS RESULTS OF STRUCTURAL MODEL (INTENTION)

• Relative advantage and self-efficacy did not directly affect the intention. However, either of them had 5 per cent degree of effect on intention when mediated through attitude.
• Compatibility and results demonstrability directly affected intention by 9 per cent and 6 per cent, respectively. Both had no path mediation through attitude.

• Ease of use directly affected the intention by 6 per cent while this degree of effect was increased to 26 per cent in case of mediation through attitude. Hence, the total impact of ease of use on intention was 32 per cent.

• Visibility directly affected the intention by 10 per cent while this degree of effect was increased to 14 per cent in case of mediation through attitude. Hence, the total impact of visibility on intention was 24 per cent.

• Image directly affected the intention by 26 per cent while this degree of effect was increased to 28 per cent in case of mediation through attitude. Hence, the total impact of image on Intention was 54 per cent.

From the results of path analysis, it could be inferred that the mediation effect of attitude on intention was highest in case of image (28 per cent) followed by ease of use (26 per cent). The findings were in accordance with Jao-Hong Chenga & Shu-Wei Chena (2011).

5.8 COMPARATIVE MODELS BASED ON UNDERGRADUATION DEGREE AND PLACE OF ACCESS OF LMS

1. Relative advantage had influence over the attitude to adopt LMS.

2. Ease of use had influence over the attitude to adopt LMS.
3. Visibility had influence over the attitude to adopt LMS.
4. Image influenced over the attitude to adopt LMS.
5. Self-efficacy had influence over the attitude to adopt LMS.
6. Attitude had influence over the intention to continue to use LMS.
7. Compatibility had influence over the intention to continue to use LMS.
8. Ease of use had influence over the intention to continue to use LMS.
9. Results demonstrability had influence over the intention to continue to use LMS.
10. Visibility had influence over the intention to continue to use LMS.
11. Image had influence over the intention to continue to use LMS.

**Under Graduation degree**

For students with arts under graduation, all the hypotheses were supported except (hypothesis 8) “Ease of use has influence over the intention to continue to use LMS”.

With regard to students with engineering under graduation, all the hypotheses are supported except (hypothesis 9) “Results demonstrability has influence over the intention to continue to use LMS”.

In the case of students with science under graduation, hypotheses 2, 4, 6 and 11 alone were supported. All other hypotheses were not supported.
Place of access of LMS

For students who accessed LMS from laboratory, all the hypotheses from 1 to 11 were supported.

Regarding students who accessed LMS from hostel, hypotheses 4, 7, 9 and 10 were not supported.

In the case of students who accessed LMS from classroom, hypotheses 1, 3, 5, 7, 9 and 10 were not supported.

5.9 CONCLUSION

The objective of the study was to identify the relationship between the seven adoption factors (relative advantage, ease of use, compatibility, visibility, image, results demonstrability and self-efficacy) with the b-school student’s attitude to use e-learning and intention to continue to use e-learning. This objective was studied by framing fifteen hypotheses, and the results showed that eleven hypotheses were supported and four were not. Hence, the objectives were achieved.

This paper explored the potential factors that might influence the adoption of e-learning technology through seven characteristics namely: relative advantage, compatibility, ease of use, image, visibility, observability and self-efficacy. Image, visibility, compatibility, results demonstrability and ease of use had a positive influence on intention to continue using e-learning and accounted for 73 per cent of the variance in intention.
The present task is to clarify, albeit in brief form, an e-learning adoption model and concept that has been used to affect the rates of adoption of ICT innovations.

The research presented clearly shows the need for a thorough understanding of user attitudes and preferences towards ICT acceptance. As more technological innovations are introduced in rapid succession and an increased number of those innovations are failing, profound insights in the determinants towards adoption and use become more important.

In spite of the challenges of implementing e-learning, it was found imperative for any educational institution to emphasise e-learning. The e-learning services need to be improved and sustained based on the results generated like; improving the relative advantage, compatibility, ease of use, image, visibility and results demonstrability.

5.10 FUTURE RESEARCH DIRECTIONS

In order to combat the identified lacunae of LMS such as; ‘one-size-fits-all’ service and to endorse LMS as a system offering rich and interactive experience rather than a way to manage students, LMS software must be enhanced to accomplish user’s expectation.

Rather than user’s perspective, e-learning is very demanding from business perspective. For the universities the production process of e-learning material become more and more complex, time and resource consuming task. Hence, it is essential to use software and technologies offering the high quality for developing materials, simplifying the production process at low cost.
In the author’s opinion, further development of LMS should and will be done in two major directions:

1. Updating e-learning with the state of the art technologies to keep pace with the wants of the users in a user friendly manner and enabling it to penetrate from desktop computers through laptops and to other mobile devices and forthcoming gadgets.

2. Developing intelligent and dynamic software platforms to flexibly accommodate the forthcoming e-learning devices and requirements such as virtual class rooms and real time dynamic modules to keep the users adhered to the e-learning.