

APP BASED LEARNING PLATFORMS AND BEHAVIORAL INTENTION OF UG & PG STUDENTS' TOWARDS USAGE

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ABSTRACT

App based online learning platforms are gaining popularity and students are frequently using them. These Apps were web 2.0 technology based modern social media platforms. It is very useful for students learning and skill development. Primarily, the design goal for research was to explore students' perception towards these Apps, their usability and students' inclination. It is important to examine whether such Apps are beneficial for students' or not. This study also highlighted the students' attitude towards the usage of information communication technology and their perception towards these Apps. To conduct the study we have opted latent variables from Technology Acceptance Model (TAM) and Behavioral Intention scales. We merge them and framed the scale as per our research objective. Model has been developed and Confirmatory Factor Analysis (CFA) was used to measure the variables, which tells how well they are fitted. A structural Equation Modeling (SEM) technique was used to evaluate the proposed model. Based upon the statistical output, hypotheses were tested and conclusion drawn. 206 respondents were considered for the analysis. We found that these Apps are flexible and convenient platforms of learning which leads to development of positive attitude towards usage of such Apps. Over all students' attitude and self driven motivation creates positive behavioral intention towards the use of such Apps.

Key Words: Mobile Apps, online learning, Social media, TAM, UA and Behavioral Intention

Introduction

In this dynamic era when everything is changing so fast, the individual learning perspective also shifting from syllabus-based education (limited topics only) to knowledge & skill based education. Innovation and effective learning needs collaboration, interaction, and resourcefulness that must have the capability to enhance learner's understanding. The classroom-based education facilitates only limited and prescribed amount of information and time-bound activity but learning is limitless and it must be student centric, where student have authority to learn and excel his/her knowledge based on their requirement or interest. It is also not a time-bound activity. Learning is an interest based; beyond of time-bound, not only limited with few topics and place-bound activity. Due to such reasons large number of online learning Apps were emerged and their numbers are increasing day by day.

The App based self administered social media learning platforms are gaining popularity in India, and a large number of students are doing their study with the help of such Apps, commonly these are student centric content based social media platforms that supports regular learning. For "App based self directive learning" students' attitude towards the acceptance of such apps for learning purpose and the ensuing behavioral intentions towards its usage for learning is important. The centrality of research is "students' attitude & behavioral intentions" towards the usage of such apps for learning purposes. The App based social media learning platforms are easy to collaborate, content share, interact, innovative, problem solving and flexible in nature.

Primarily the study focuses on graduate and postgraduate students because they are mature enough and understand the pros and cons of App based and online learning social media platforms.

The understandings of students' attitude and intention towards such Apps for learning purposes will definitely enhance their conceptual and behavioral understanding towards the use of such technology driven learning platforms.

Literature Review

App based online learning or student centric content based online learning sites or Social media learning has become an integral part of human life especially among university students', it also boost up the multitasking, with the help of online learning platforms the academic learning can be increased. Without proper knowledge and understanding of technology as well as BI towards the usage of technology creates major hindrance in study and understand the right use of social media learning platforms(Lau, 2017). Social media learning and online learning fosters the knowledge of service receiver and increase their awareness about the object or learning concept. It creates a positive environment for the object and enhances individual and social learning. (Garcia-Morales, Martín-Rojas, & Lardón-López, 2018). Collaborative learning in recent days became global phenomenon with the help of social media and other online learning platforms. Group interaction and combine study can be done globally with the help online learning media. (Al-Rahmi, Alias, Othman, Marin, & Tur, 2018). The students were pursuing or completed higher education; mature enough to use content based or students centric online learning sites, social media, blogs, wikis for academic and personal development through positive learning. (Chawinga, 2017). In this century, the role of online learning has been increased, it's not only associated with taking help or support through online portals, but it also influenced the learning and academician and institutions also started using online learning platforms as a tool of interaction with students. (Krutka, Carpenter, & Trust, 2017). Such sites became the tool to interact and associate with academician and educational institution that increases the chances of getting the right direction and guidance to the students for their knowledge and career enhancement(Carpenter & Krutka, 2014). Students' can demand self-disclosure on learning contents on these sites and interact with experts, which influence the classroom environment and students' positive learning. (Mazer, Murphy, & Simonds, 2007). Self driven online learning Apps, which also known as, web 2.0 learning tools also supports the classroom learning. It helps in the development of a positive relationship between the faculty and students. Content specified online learning platforms enhance students' learning through planned behavior. (Ajjan & Hartshorne, 2008). Knowledge management can be utilized in a better way to interact with learners that enhance the individual creativity(Sigala & Chalkiti, 2015). Web 2.0 supported online platforms including Social media has created a digital world. This digital world has tremendous potential to enhance formal and informal learning. (Greenhow & Lewin, 2016). Online learning is the cheapest ,effective and student driven medium of information sharing, it helps in social connecting and boosts up the social learning, understanding, positive learning attitude, right behavior and culture if taken positively(Mao, 2014). Online learning Apps or student centric content based sites, and its positive impact on the educational performance of student can be achieved by the integrating online knowledge centers and learners(R. Wang, Scown, Urquhart, & Hardman, 2014). Knowledge management and information technology enhance online learning platforms, and online learning platforms enhances the way people communicate and collaborate with each other. (Kane, 2017). A leaky knowledge management system of students driven online learning platforms provides the source to access the information by the learner and help them to enhance their learning. (Leonardi, 2017). The dynamic environment in education brought innovations, right attitude, positive BI and constructive changes in the modern education system. Now education is not only limited to the classroom, but experts and students can also interact and focus on self-learning through online learning digital media platforms. Use of students driven social media learning platforms has been increased(Dabbagh & Kitsantas, 2012). Open learning social media platforms and MOOCs are played the vital role for distance learning educators or learners, such social media platforms are playing a vital role to guide them. (Kaplan & Haenlein, 2016). So many people started using online learning platforms and such Apps are getting popularity. So, professional, teachers, subject experts and students were started collaborating on online learning platforms for their learning requirements and development. it increases the social collaboration among identical learners boundless and limitless. (Chugh & Ruhi, 2018). The number of executive learning and collaborative research are increasing day by day, it became possible just because of availability of online learning supported social media platforms were students and experts can collaborate with each other. (Zhang et al., 2015). Online learning Apps and sites which enable new kind of social media platforms, that opened a widespread business opportunity for new firms. Through online learning sites, Apps and social media platforms, they are collaborating for learning and promoting new ideas and such ideas helps students to enhance their learning(Garcia-Morales et al., 2018).

In general, people have tendency to accept innovative and latest technologies. They have shown positive inclination toward the usage of technology to achieve their personal or social goals. It may be either related to academic or non-academic goals. The same applies for app based social media learning and it is supported by various theories such as Rogers & Monsell (1995): Theory of Diffusion of Innovations, Goodhue, and Thompson (1995)Theory of Task-technology fit, Ajzen & Fishbein (1975) Theory of Reasonable Action, Icek (1991) Theory of Planned Behavior, Taylor & Todd (1995) Decomposed Theory of Planned Behavior and (Davis, Jr. (1980) Davis, (1989) Technology Acceptance Model.

The above literature highlights the two major aspects of App based & student centric social media learning platforms. First, understanding the importance of information communication technology and its role for shaping

the learner's positive attitude towards its usage and second, how this modern app based learning platforms influences the learner's Behavioral Intention (BI) for knowledge enhancement. The proposed research model is based upon the above literature review.

Model and Hypotheses Development

The conceptual model was framed on the basis of two old theories: which are being used to understand the learner's BI towards the usage of information communication technology for their learning enhancement (a) Fishbein and Ajzen, 1975: Theory of Reasonable Action, (b) Davis, Bogozzi and Warshaw, 1989: Technology Acceptance Model (TAM). Based upon the research objective hypotheses were developed.

Perceived-Ease of use (PEU): Perception of individuals, which leads to development of attitude for the use of ICT technology or ICT system; user believes that using this system will enhance their learning capability(Huang & Liaw, 2018). PEU is closely related with BI(Park, 2009), UA(Panigrahi, Srivastava, & Sharma, 2018) and PU(Dumpit & Fernandez, 2017). So, the following hypotheses were proposed.

H1: PEU has significant and positive impact on the BI of student's using online learning App for their learning.

H4: PEU has significant and positive impact on UA of student's using online learning App for their learning.

H6: PEU has significant and positive impact on PU of student's using e-learning App for their learning.

User Attitude (UA): it is an individual's viewpoint that indicates their favor or disfavor, it is based upon the person's affective, cognitive and behavioral components(Mao, 2014). UA is closely related with BI(Park, 2009). So, the following hypothesis was proposed.

H2: UA has significant and positive impact on BI of student's using online learning App for their learning.

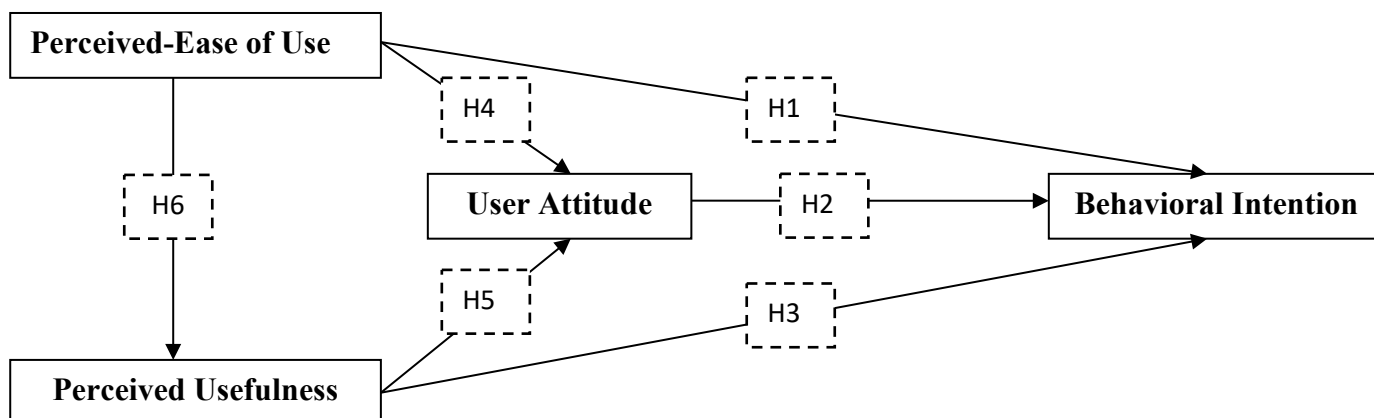
Perceived Usefulness (PU): It is a view point of individuals subjective and positive idea about the expected benefits or positive outcome after using the specific technology or systems(Liao, Huang, Chen, & Huang, 2015). PU is positively related with UA(Park, 2009) and BI.

H3: PU has significant and positive impact on BI of student's using online learning App for their learning.

H5: PU has significant and positive impact on UA of student's using online learning App for their learning.

Behavioral Intention (BI): Based upon the conscious plan, it is a degree on which the course of action depends either the person will perform or not to perform specific task(Ajjan & Hartshorne, 2008).

Figure-I: Research Model



Research Methodology

Respondents and Data Collection Procedures

The data was collected through digital and physical platforms. Under Graduation and Post Graduate students were consider as a proposed sample. Proposed research area was limited to Easter part of India and both government and private universities students were consider for research. Planned "five point likert scale" was considered for data gathering. After filtering and finalizing total 206 respondents were find suitable for research, out of which 141 were male and 65 were female. They use both free and paid sources for online learning. Out of 206 respondents, 14 said they always use paid sources of learning, 30 often use paid source for learning, 102 said sometimes they use paid source for learning, 34 said they rarely use paid sources for learning and 26 said they never use paid sources for online learning. 98 respondents were enrolled in UG courses and 108 were enrolled in PG courses.

Scale development and Data Analysis Technique

Our outcome variable is BI of online learners among students of UG and PG. to measure latent variables five point liker scale were framed and the variables we identify as: PEU (05 items), PU (03 items), UA (04 items) and BI (05 items).

The Confirmatory Factor Analysis (CFA) was considered and Structural Equation Modeling (SEM) technique was used for data analysis and model testing. SmartPLS 3.0 software was used for data analysis. One item BI-3 were deleted from BI scale because it was cross loaded, and finally 16 items out of 17 were consider for further data analysis, conceptual model justifying and hypothesis testing. The questionnaire was developed & modified as per our research objective and was adapted based on various published research papers (Davis, 1989)

Model measurement and Assessment

To measure the model: first we checked the “reliability and validity” of the scale (Table: I). Convergent and Discriminant validity (Joseph F. Hair, G. Tomas M. Hult, Christian M. Ringle, 2017) measured and checked to identify the strengths with the indicators of the constructs. Cronbach’s Alpha and Composite Reliability (CR) has been checked to identify the reliability of the scale. It is visible that the Cronbach’s Alpha value is more that 0.60 (Worthington & Whittaker, 2006) and CR value is 0.60 (P. Bagozzi & Yi, 1988). To measure convergent validity factor loading and average variance extracted (AVE) are used. Factor loadings accepted value is 0.50 or above and AVE accepted value is also 0.50 or above (Joseph F. Hair, G. Tomas M. Hult, Christian M. Ringle, 2017), it means construct has capability to explains at least 50% variance of the items. To measurement the discriminant validity Fornell-Larker Criterion (Table: II) and Heterotrait-monotrait (HTMT) ratio (In Table: III) were used. The Fornell-Larker states that the square root of each and every construct’s average variance extracted (AVE) must have a greater value than the correlations with other latent constructs in data. Further we also checked HTMT, and it is found that the values were below the standard i.e. 0.90 (Fornell, C., & Larcker, 1981).

Table-I: Model Measurement and Results

S. No.	Variables	Items	Factor Loading	Cronbach's Alpha	Composite Reliability(CR)	AVE
1	Behavioral Intention	BI1	0.727	0.713	0.822	0.538
2		BI2	0.821			
3		BI4	0.639			
4		BI5	0.735			
5	Perceived-Ease of Use	PEU1	0.741	0.713	0.822	0.538
6		PEU2	0.746			
7		PEU3	0.794			
8		PEU4	0.712			
9		PEU5	0.717			
10	Perceived Usefulness	PU1	0.799	0.797	0.860	0.552
11		PU2	0.675			
12		PU3	0.796			
13	User Attitude	UA1	0.789	0.713	0.822	0.538
14		UA2	0.812			
15		UA3	0.720			
16		UA4	0.747			

Table-II: Discriminant Validity (Fornell-Larker Criterion)

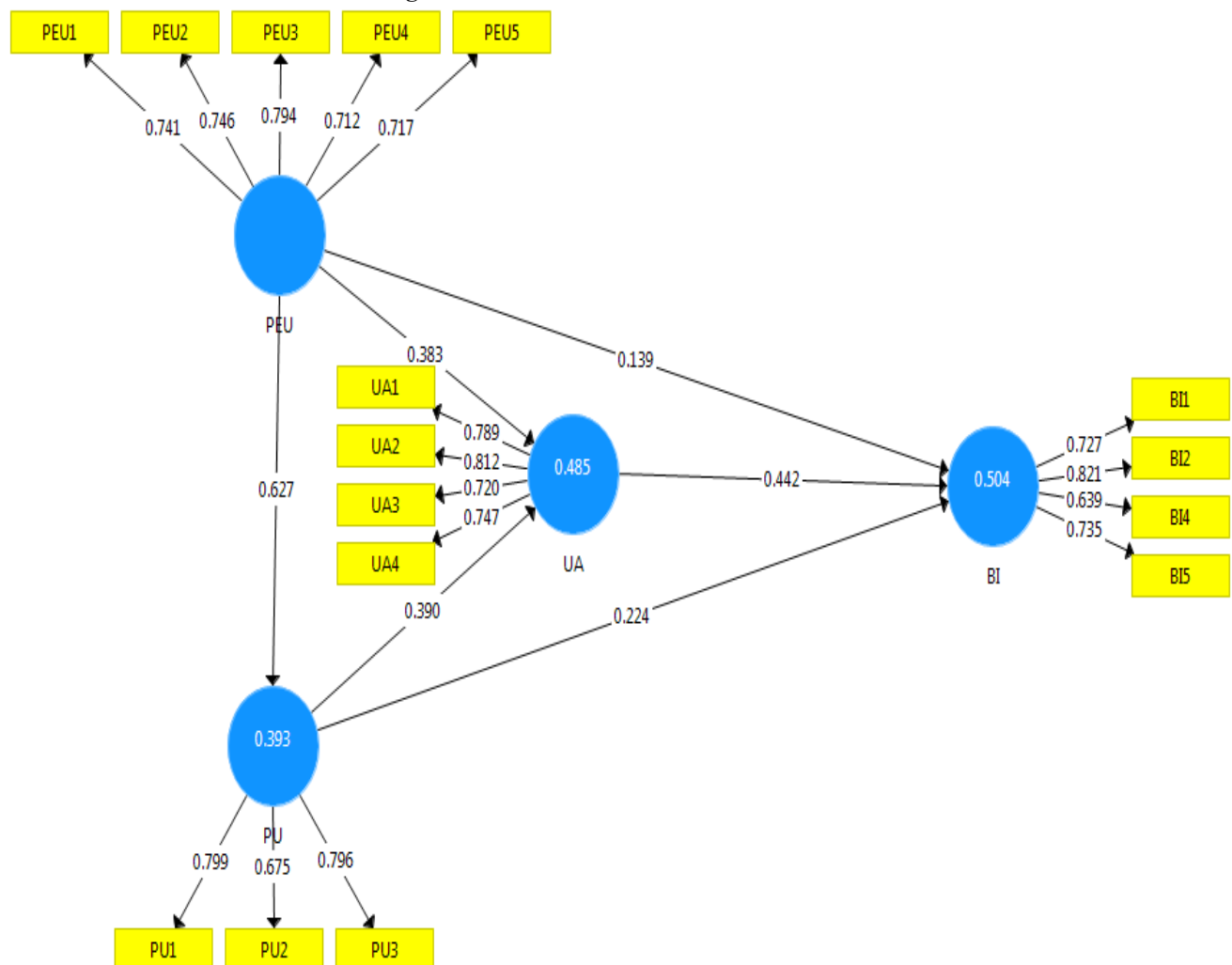
	BI	PEU	PU	UA
BI	0.734			
PEU	0.556	0.743		
PU	0.589	0.627	0.759	
UA	0.669	0.627	0.629	0.768

Table-III: Hetrotrait-Monotrait Ratio (HTMT)

	BI	PEU	PU	UA
BI				
PEU	0.717			
PU	0.886	0.883		
UA	0.878	0.784	0.886	

To check the structural model and relationship between the latent construct we followed the path suggested by (Joseph F. Hair, G. Tomas M. Hult, Christian M. Ringle, 2017). In SmartPLS 3.0 software we run Algorithm test to assess the model and Bootstrapping was run to test the hypothesis (p-value). Figure-2, figure-3 and table-4 reflect the outcomes of the analysis. P-value R2 (coefficient of determinants)(Hair, Risher, Sarstedt, & Ringle, 2019), which defines the relationship strength between the variables. Percentage value of dependent variables i.e PEU and BI positively integrates, it could explain 50.4%. PEU and PU integrates, it could explain 39.3%. PEU and UA positively integrates, it could explain 48.5%. Empirically we can see that all the hypotheses (H1, H2, H3, H4 and H5) were supported by the research data. All hypotheses were accepted.

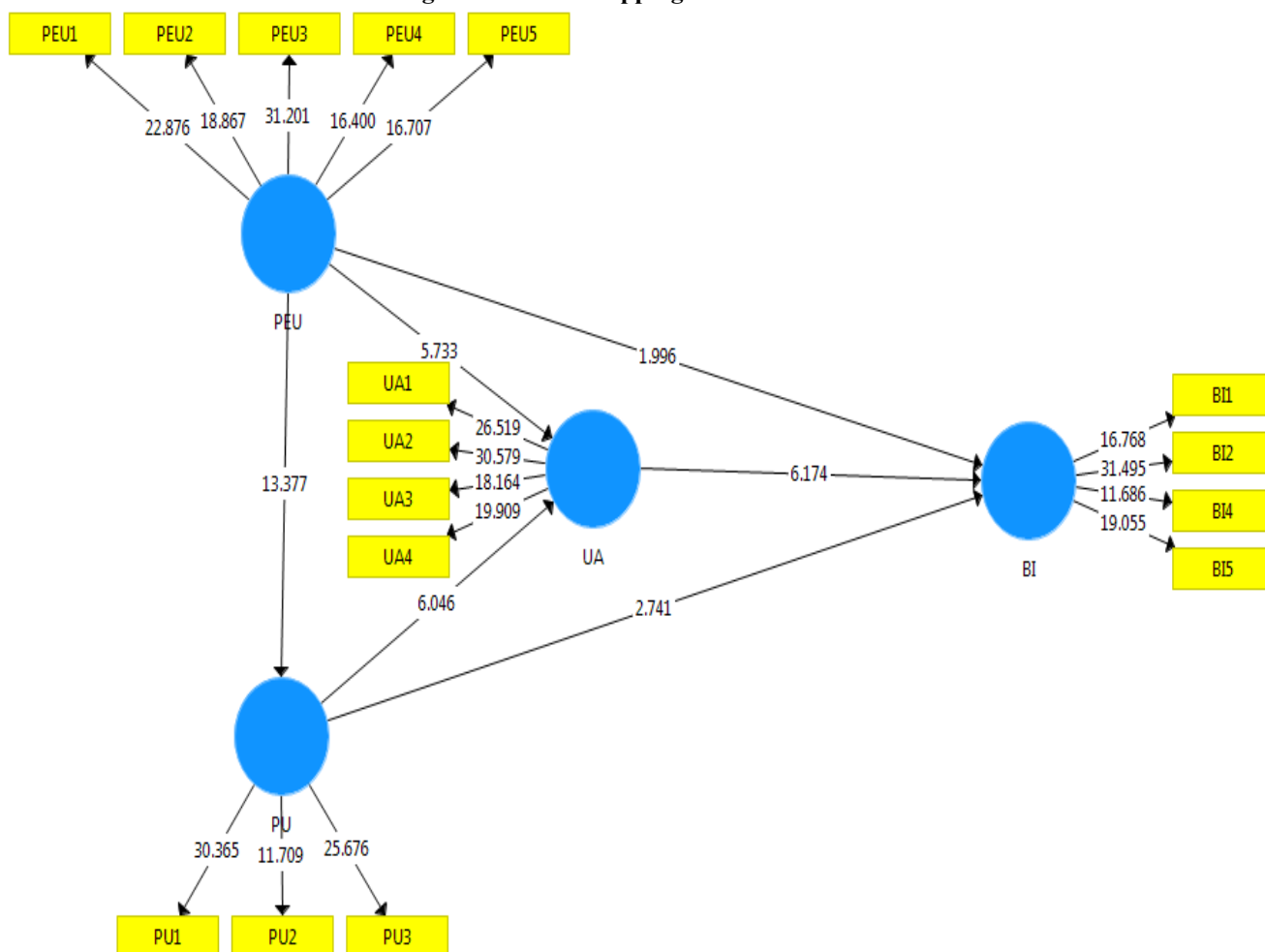
Figure-II: Path Coefficient Results



In output we can see the influence level and effect size(Joseph F. Hair, G. Tomas M. Hult, Christian M. Ringle, 2017) i.e PEU significantly influence the BI ($\beta=0.139$, $t=1.996$, $p<0.05$, $f^2=0.020$), PEU significantly influence PU ($\beta=0.627$, $t=13.377$, $p<0.01$, $f^2=0.647$), PEU significantly influence UA ($\beta=0.389$, $t=5.733$, $p<0.01$, $f^2=0.173$), PU significantly influences BI ($\beta=0.224$, $t=2.741$, $p<0.01$, $f^2=0.052$), PU significantly influence UA ($\beta=0.390$, $t=6.046$, $p<0.01$, $f^2=0.179$) and UA significantly influence BI ($\beta=0.442$, $t=6.174$, $p<0.01$, $f^2=0.203$).

The predictive relevancies of the variables are measured by Q2, the positive value more than zero of Q2 reflects there is an existence of predictive relevancy in the structural model. In this research we can see the Q2 values of BI, PU and UA are 0.245, 0.213 and 0.267 respectively, which indicates that there is existence of predictive relevancy in the structural model.

Figure-III: Bootstrapping Results



Hypotheses Tests

Table-IV: Hypotheses Testing Results

H		Std. Beta	Std. Error	t-Value	P-Value	Result	R ²	F ²	Q ²
H1	PEU -> BI	0.139	0.070	1.996	0.047	Supported	0.504	0.020	0.245
H2	PEU -> PU	0.627	0.047	13.377	0.000	Supported	0.393	0.647	0.213
H3	PEU -> UA	0.389	0.068	5.733	0.000	Supported	0.485	0.173	0.267
H4	PU -> BI	0.224	0.082	2.741	0.006	Supported		0.052	
H5	PU -> UA	0.390	0.065	6.046	0.000	Supported		0.179	
H6	UA -> BI	0.442	0.072	6.174	0.000	Supported		0.203	

Discussion

Here, our prime objective of the study was to evaluate the students' BI and their readiness towards the adoption of App based online learning social media platforms. As the App based online learning or social media learning is gaining popularity in elementary and higher education rapidly in India. Our study is restricted to higher education

perspective only. We developed and tested the hypotheses to evaluate students' BI towards the use of such learning tools, we checked the inter-relationship of students' PU, and students' attitude towards usage App based learning sources (Y. Y. Wang, Wang, Lin, & Tsai, 2019). It is important to understand the students' attitude and intention towards adoption of App based social media learning in higher studies, we can see the shift from web supported (Sarwar, Zulfiqar, Aziz, & Ejaz Chaudhary, 2019) learning to App supported learning.

It is found that PEU is significantly predicting the BI of the student. PEU influences the student's usage, understanding of the concept and nurture the learning environment (Huang & Liaw, 2018). PEU is successfully predicting the PU, it is one of the well-established factor of TAM model, where it is indicated that the degree of inclination towards the usefulness of the information technology, in this study App based social media learning, perceived benefit is more and easy to use & understand. It is the major cause of a large number of students opt App based social media learning platforms for online learning (Alalwan et al., 2019; Dumpit & Fernandez, 2017). PEU predicts the UA successfully. It is proven in previous literatures that easier the use of source of learning increases usefulness, seriousness and commitment which directly leads to development of positive attitude towards the learning effectiveness (Shao, 2020). PU successfully predicts the BI of students' using App based social media learning platforms for their learning. Continuous usage and likelihood of App based social media learning depends upon the long-term usefulness and positive intention towards the use of online learning platforms. Environmental characteristics of App based social media learning and individual learner's characteristics simultaneously have positive influence on the BI of the students' (Ozturk, 2016). PU is successfully predicting the UA. The major aspect of attitudes towards use of technology is learner attitude toward use, intention to participate and degree of preference, such positive attitude only be generated when learner have positive association of PU of technology or resources for their learning objective. Students know the benefits of using App based learning platforms for the learning success, this positive attitude has been developed because of the PU in students (Liao et al., 2015). UA successfully predicts the BI of the students for using App based social media learning. Two major aspects of motivation play a major role in development of positive BI of students towards App based social media learning. First is intrinsic motivation, student's e-learning self-efficacy which regulates their self-paced e-learning activity and second is extrinsic motivational factor, such as social influence, get recognition from people, initiative for career development by getting chance to preparing well, skill & knowledge enhancement and getting competitive edge over others (Park, 2009).

Conclusion

App based social media learning and self-driven online learning is gaining popularity in India and a large number of learning Apps are growing day by day. A large number of students are also attracted towards these digital mode of self-driven Web 2.0 social media learning resources. Such Apps and social media learning platforms were offering contents on the basis of demands and needs of the students. It is quite interesting to study the students' BI towards the usage of these Apps. Information communication technologies and behavioral aspects of students are two key driven elements of this study. With the help of TAM model and BI this study has been performed. It is found that technology adoption through ease of use & its benefits through usefulness is an important element. It helps students in development of positive attitude towards usage of such platforms for learning purposes. Positive attitude and overall benefits attract students' towards the usage of such social media learning Apps for their learning purposes.

Limitation and Future Work

App based social media learning platforms and student-centric content based online learning sites are new in India. So, multidimensional research can be done in this field. Various studies can be done in different age groups of students, different schools, different universities and disciplines or branches of students. Further study can be done by taking technology, infrastructure, resources and gender as a moderator & mediating factors etc.

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