A Study on Identifying the Factors Associated with the E-learning: Using Meta-Analytic Approach

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Preface

Research Center for Management Studies (RCMS) at SDMIMD has endeavoured to promote research in the field of management education in the Institute, in various ways. The Research Centre has encouraged faculty and students to actively take part in research activities jointly, collate and disseminate findings of the research activities through various types of projects to contribute to the body of knowledge to the academic fraternity in general, and management education in particular.

In this direction, keeping in line with the philosophy of promoting active research in the field of management to capture live situations and issues, the Research Center has taken a unique initiative to sponsor and encourage faculty members to carry out Applied Research Projects in various areas of management.

The duration of these projects is typically between four to twelve months. After completion of each project, after peer review, a publication is taken out, by the institute. The projects help the faculty members, and the students, who work under the supervision of the faculty members for these projects, to identify issues of current importance in the field of management in various sectors. Data is collected mostly through primary research, through interviews and field study.

The institute takes into account the time and resources required by a faculty member to carry out such projects, and, fully sponsors them to cover the various costs of the project work (for data collection, travel, etc), thereby providing a unique opportunity to the two most important institutional stakeholders (faculty and students) to enrich their knowledge by extending their academic activities, outside the classroom learning situation, in the real world.

From the academic viewpoint, these projects provide a unique opportunity to the faculty and the engaging students to get a first-hand experience in knowing problems of targeted organizations or sectors on a face to face basis, thereby, helping in knowledge creation and its transfer, adding to the overall process of learning in a practical manner, with application of knowledge, as the focus of learning pedagogy, which is vital in management education.

Dr. Mousumi Sengupta
Chairperson, SDM RCMS

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Table of Contents

Executive Summary

E-learning is defined as a tool that uses computer network such as internet, to deliver learning to users (Cheng, 2011). One can say that it has changed the learning process and has opened gates for one to explore new learning opportunities and be updated on the latest developments. For the employees it is an opportunity to update themselves and be more productive, for the employers to encourage their employees to learn at minimal cost and contribute. They can provide all the facilities to make their employees learn. Teachers who wish to share their knowledge, can use these e-learning platforms to spread wisdom. Note that, system and platform are alternatively used in this report to indicate an e-learning platform or system. A platform will be successful if it is accepted by the users and received well by them. For this, one has to identify the factors that impact the platform and take them into consideration while designing a platform. Attempts have been made to identify the factors by using technology adoption model (TAM) and over the years, researchers have been extending the model by adding more factors. Each study proposes different factors and, changes with geographical region and user type. Also, those factors that are proved to be significant in one study are not significant in another study. Hence, there is a need to aggregate these findings and present them one place. Also, identify the factors that are significant/insignificant and build a comprehensive model. Though attempts have been made to achieve this, they are not complete and there is a need to include the latest developments and findings. Hence, we have taken up the current study and use meta-analysis as study methodology. Under this we have identified the studies that have considered TAM and extended TAM and collected data from these studies. A total of 128 studies have been considered and the information on the paths are collected. The information includes factors, paths between the factors and path coefficients (beta coefficients). Meta-analysis (MA) is used to identify the significant factors and build a comprehensive model.

In the first stage of MA, we have reviewed the literature related to e-learning and understood the problem and have decided to provide a solution. In the second stage, we have reviewed literature related to TAM and extended TAM to collected data from them. In the third stage, we have developed a coding process to collect the data from the studies considered. In the next stage, we have conducted MA to find the significant factors.

From the analysis, we have found the factors that are significant and built a comprehensive model. We have found that behavioural intention (BI), perceived usefulness (PU) and perceived ease of use (PEOU) are significantly related with AU. That is, to make a person use the system, one has to design the platform that will create an intention to use it, useful to learn, and easy to use the system for learning.

One has to design the platform such that, an attitude to use (ATU) the system can be created among the learners. For this, the platform should be useful for learning, easy to use, and the learning should be enjoyable.

For creating an intention (BI) to use the system, the designed platform should be useful for learning, easy to use, should create satisfaction towards learning process, overall system should be qualitative, should help the learner to fulfil the social norms or obligations, should make the learning enjoyable, should create an attitude to use the system and should make one feel self-sustainable while using the platform.

Note that, there is a link between the three factors ATU, BI, and AU. ATU is significantly related with BI and BI is related with AU.

From the analysis, we found that perceived usefulness (PEOU) is significantly related with PU. That is, a platform that is easy to use for learning, leads to a perception that it is useful for learning. Similarly, a platform that makes the learning enjoyable (PENJ) creates a perception that it is useful for learning. Among the extrinsic factors, anxiety (ANX), subjective norm (SN), content quality (CQ), information quality (IQ), cognitive absorption (CAB), self-efficacy (SE), system quality (SYQ), and experience (EXP), are significantly related with PU. If a platform is design such that, it doesn't create any anxiety, fulfils the social obligations of the learners, provides quality content, informative, makes one get absorbed in the learning, makes one self-sustainable in learning, overall system is qualitative, and gives one an opportunity to use their experience in learning, then it will be successful in creating a perception that it is useful.

We found that ANX, SN, SYQ, IQ, EXP, system accessibility (SA), SE, facilitating conditions (FC), CAB, and PENJ are significantly related with perceived ease of use (PEOU). Hence, a platform should not create anxiety, fulfils the social obligations, maintains overall quality, provides qualitative information, makes one use their experience for learning, gives access to use the platform optimally, make the learning self-sustainable, makes one to get involved completely in the learning, organizations or institutes that provide all the required facilities (technical and non-technical) for learners to use the e-learning platform, finally the entire learning process is enjoyable.

We found that perceived ease of use (PEOU) is significantly related with perceived enjoyment (PENJ). This indicates that, a platform that is easy to handle by the learners makes them enjoy the learning on the platform.

We finally found that, one can perceive that the platform gives them satisfaction towards learning if it is a qualitative system to use, information provided on the platform is qualitative, it is useful for learning, and easy to use.

From the above findings, we have built a comprehensive model (Figure-35) for e-learning adoption or continuance.

Learners who wish to choose an e-learning platform can consider all the factors found through this study and have a better learning experience. Employers can suggest their employees to choose such platforms and have a better learning experience. Teachers can choose a platform based on these aspects and spread their knowledge to the learners. Developers of an e-learning platform can take these aspects and design a platform.

A Study on Identifying the Factors Associated with the E-learning: Using Meta-Analytic Approach

1.1. Introduction

"E-learning" is a revolution in the education system, as it has opened gates for the wisdom to flow and reach the appropriate audience. It has helped students, professionals, corporates, teachers to update themselves on any aspect of interest and also helped to progress in their careers. It has created a platform for any individual to communicate with others and expand the horizons on the subjects. E-learning is the latest means of disseminating the wisdom and is acting as a platform to train the individuals with ease. It has given an opportunity for the teachers to find the right students and express themselves on their subjects of interest freely. Also, teachers have the autonomy of designing their own courses, modules, and styles. They have complete freedom in organizing the learning, in a disciplined way, that is effective and makes them introduce contemporary aspects into the learning. It has given them an opportunity to collaborate with scholars around the globe and share the learning with them regularly. E-learning has given students an opportunity to learn any topic of their choice and update themselves with contemporary developments in the same. It has helped them to expand their horizons and remain competent with the latest updates. It is a platform where students exchange their views and ask questions with others openly. Also, discuss with the course facilitators and instructors on various aspects related to their subjects. E-learning has given professionals/practitioners an opportunity to be a part of the learning process and share their learnings with larger audience. Their presence has made the platform to focus on practical issues than only on theoretical aspects. In a nutshell, one can say that E-learning has brought a compete change to the learning process of an individual and is a revolutionary change in the traditional education system. Businesses have gained a lot from E-learning. They could get their employees trained on e-learning platforms and update them on latest developments in their respective fields. It has given the employees to upgrade themselves and build careers using the same. It has also given an edge to few employees in getting promotions and shifts in their places/projects etc. It has helped organizations to get client appreciation and quality projects, in-time projects done. For those who couldn't visit an institute/ university for a formal education, E-learning platforms are a boon and are fulfilling their thirst to learn and helping them to meet their dreams. It is seen as an easy way to learn than a full-time course at an institute/university.

Due to its introduction and later developments, many institutes/universities have designed effective e-learning platforms to disseminate the wisdom. Interesting part of it is, wisdom is spread at a minimal cost in some cases and with no charges in other cases. The standard of the materials, lectures etc., have given everyone involved, an opportunity to have a quality learning.

For the institutes/universities, it is a very good platform to spread their brand and also increase their alumni base. A good business model where they can generate revenue with minimal cost and also provide quality education. Apart from this, it has created employment for many who are involved in designing the websites, course content etc. Overall it is a very good platform and helping the society in many dimensions.

At this stage, one can question on the factors that are motivating one to choose the E-learning platform for their advancement and on the link between the factors, growth of E-learning, opportunities, challenges etc., and on the popular platforms for learning, their processes etc. Many researchers have conducted studies that give information or answers to above questions. But they are all spread over on different websites, journals etc., and difficult for one to have a fair understanding on E-learning. Hence, there is a requirement for one to have a document that will at least organize these aspects at one place and give one an opportunity to look into the same to get the required information. The current project is such an attempt that aggregates the work of different researchers and present the same effectively, and also,

find new linkages between the factors, and new dimensions to the existing aspects of E-learning.

1.2. Definition of E-learning and other aspects

One can understand E-learning as, the process in which the courses are taught through electronic means (smartphones, tablets, online platforms, laptops etc.). The courses are delivered online through internet, where the students can access the resources online, interact with the professors and other students in the class, get answers to the queries raised, and, graded live for the participation. Latest technologies are used for this purpose. In simple terms one can say that E-learning is, learning mediated by electronic media.

E-learning is for those who can maintain self-discipline, who can meet the timelines and discuss with other cohorts in the course through discussion board etc. It is a mandate for those who choose E-learning as means, to keep updated with the content given on the learning platform and be prepared to participate in the live classroom discussions. They should be prepared to submit the assignments, quizzes, tests etc., within the scheduled time. One has to be self-motivated, self-disciplined to complete the courses taken under E-learning system.

Institutes and universities that are providing e-learning has to check if, latest hardware and software are being used, proper resources have been uploaded, course content is updated, clarity in the transmission of the lectures, professors with updated and contemporary understanding of the concepts, contemporary concepts are taught, useful to the larger groups, course management system is upgraded and communicated properly to the students etc. Students have to check if, they are using the latest hardware and software as per the requirements of the training institute, activate the accounts given, accessibility of the course management system and understand the system properly, familiarity with the technology and usage of the same with ease, accepting the cookies of the browsers and checking the pop-up windows etc., read the introductory material sent, understand the course syllabus and coverage, having sufficient information about the course and pedagogy, set goals and priorities, planning schedule and effective time management etc. Overall, the institutes/universities or the students, proper preparation is very important for the smooth conduct of the courses.

E-learning provides one with benefits like, cost-effective, saves time for the individuals who wish to learn, improves performance and productivity, quick learning and ease in completing the courses, and, has lower environmental impact. Learning will be effective if one designs the modules perfectly, uploads proper videos, uses gamification to teach, uses social forums for discussions, having more practical examples, addresses all types of audience, encourage discussions etc. Learning can become worst if only PowerPoints and no discussions, include too-long videos, irrelevant examples and gamification, low interactions etc.

1.3. A Brief History of E-learning

The first one to coin the word E-learning was Elliott Masie in 1999 at his TechLearn conference at Disneyworld. Till then, other are using the word online learning and after this, the word has become popular. In the year 1840 Issac Pitman taught his pupils shorthand via correspondence and the assignments were sent back by mail and he would send his pupils more work again. The first testing machine was invented in the year 1924 and in the year 1954 Professor BF Skinner invented "teaching machine", which helped schools to administer programmed instruction to the students. In the year 1960, the first computer-based program (CBT) known as PLATO-Programmed Logic for Automated Teaching Operations, was designed for students studying at University of Illinois, but was used by many schools in the surrounding area. With the introduction of computer and internet things have become easy for e-learning to become a popular learning platform. Today businesses use e-learning platforms to train their employees and the world in the time where MOOCS (Massive Open Online Courses), SOOCS

(Selective Open Online Courses) are dominant. The following figure gives the history of E-learning in a nutshell.

Figure-1 : History of E-learning

Source: Retrieved from https://filtered.com/blog/post/articles/the-history-of-e-learning on 19.12.2019

1.4. E-learning at Global Level

Global E-Learning market is expected to grow from $176.12 billion in 2017 to reach $398.15 billion by 2026 with a CAGR of 9.5% (https://www.reuters.com/brandfeatures/venture-capital/article?id=72033 retrieved on 19.12.2019). Some of the drivers for this development are: need for trained workforce at low cost, reduction in the pricing for the learning options, need for the workforce to engage themselves in continuous learning, comfort in attending training sessions online rather than a traditional setup, urge for the workforce to update themselves on the latest trends, urge for the younger generation to build the careers and climb the organizational ladder within short duration, safeguard their positions in the organizations, thirst for knowledge etc. The size may increase due to more developing nations looking for skill improvement and train the younger generations with latest trends. Sometimes the unavailability of the resources and cost, looking for world-class training with ease, quality of education, certification etc., may make these countries look for E-learning. Companies are keen on E-learning as, it has the ability to speed up employee training and reduce the employee training time. They believe that cutting the time will make the employees spend more time on their primary work roles, believe that they can achieve the benefits that they cannot achieve through E-learning. From the government's point of view, the spending on formal education may come down if E-learning increases. But, a mix of traditional with E-learning is important and E-learning may not replace the existing system completely. E-learning is an important component of the learning process of the millennials. They wish to learn while they earn and achieve mastery in their chosen fields and see E-learning as a platform that gives them an edge to change their jobs. Among the electronic means for e-learning, mobile learning will become very prominent and gives one a quick access to learn at any given point of time. At the same time, factors like change management, technology obsolescence and vendor- developer partnership are major restraints for growth of this market. The following information has been retrieved from https://www.reuters.com/brandfeatures/venture-capital/article?id=72033 retrieved as on 19.12.2019 and produced as it is.

Some of the key players in E-Learning the market include: -

Cisco Systems, Oracle iLearning, Tata Interactive Systems, Microsoft, Apollo Education Group, Educomp Solutions Ltd, SAP, McGraw-Hill Education, SkillSoft, The British Council, Aptara, Cengage Learning, Macmillan, Cornerstone on demand, Desire2learn,

Edmodo, Pearson, BlackBoard Learn, Docebo, SunGard.

Vendors Covered:

Content Providers, Faculty support, Service Providers

Learning Modes Covered:

Instructor-Led, Self-Paced

Types Covered:

Testing, Training

Technologies Covered:

Podcasts, Learning Content Management System, Learning Management System (LMS)/SaaS, Knowledge Management System, Application Simulation Tool, Mobile e-learning Rapid e-learning, Virtual Classroom, Online e-learning, Game Bases Learning, Massive Open Online Courses (MOOCS), Wearables and Others, Packaged Content, Other Technologies.

Applications Covered:

Academic e-Learning, Corporate e-Learning

End Users Covered:

Higher Education, K-12, Other End Users

Regions Covered:

North America, US, Canada, Mexico, Europe, Germany, UK, Italy, France, Spain, Rest of Europe, Asia Pacific, Japan, China, India, Australia, New Zealand, South Korea, Rest of Asia Pacific, South America, Argentina, Brazil, Chile, Rest of South America Middle East & Africa, Saudi Arabia, UAE, Qatar, South Africa, Rest of Middle East & Africa.

The following figure gives the E-learning market: general analysis

Figure-2:

E-learning Market; General analysis

Source: https://blog.coursify.me/en/e-learning-market-forecast-2019/ retrieved as on 19.12.2019

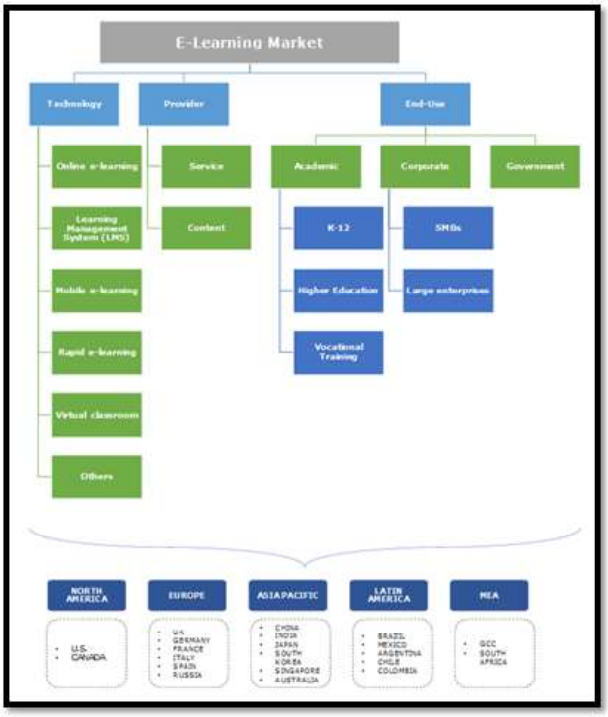


Figure-3

E-learning Market Segmentation

Source: https://www.arizton.com/market-reports/e-learning-market-size-2024 retrieved as on 19.12.2019

Top 50 universities that are offering e-learning worldwide:

https://www.onlinecoursereport.com/top-50-universities-offering-online-courses/ retrieved as on 19.12.2019

Table-1 : List of universities

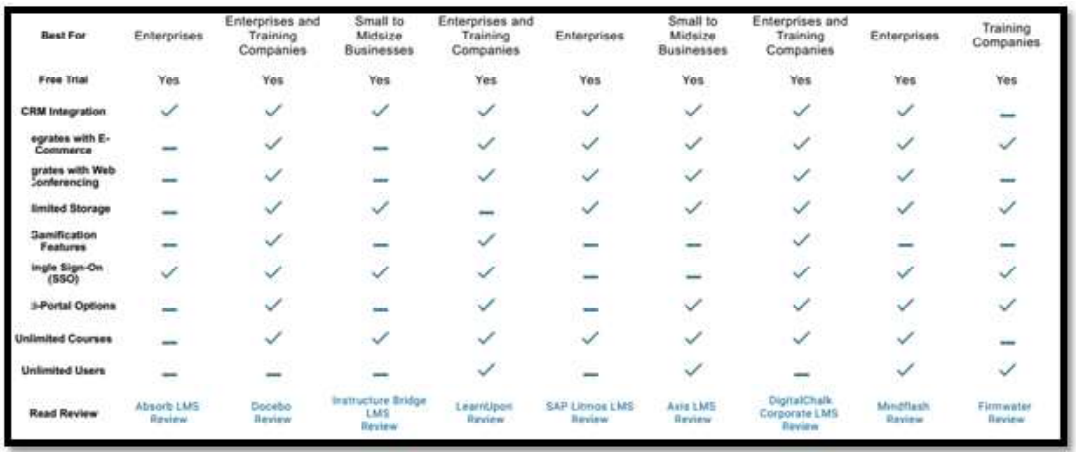
1.5. Learning Platforms and other technical details related to E-learning

University Name
#50 – Thomas Edison University
#49 – Pennsylvania State University
#48 – Valley City State University
#47 – University of Minnesota – Twin Cities
#46 – University of Wisconsin – Stout
#45 – Washington State University
#44 – Northeastern University
#43 – Missouri State University
#42- Texas Tech University
#41 – Kennesaw State University
#40 – West Texas A&M University
#39 – Sam Houston State University
#38 – University of Alabama
#37 – Western Kentucky University
#36 – Ohio State University
#35 – Embry-Riddle Aeronautical University
#34 – Temple University
#33 – University of Illinois at Springfield
#32 – Old Dominion University
#31 – Utah State University
#30 – University of Texas – Permian Basin
#29 – Minot State University
#28 – Bemidji State University
#27 – Valdosta State University
#26 – Western Governors University
#25 – University of Alaska Fairbanks
#24 – University of Oklahoma
#23 – University of Alabama at Birmingham
#22 – Colorado State University
#21 – University of North Dakota
#20 – Arizona State University
#19 – Florida International University
#18 – Westfield State University
#17 – Lamar University
#16 – University of Florida
#15 – Liberty University
#14 – University of Central Florida
#13 – California University of Pennsylvania
#12 – Southeast Missouri State University
#11 – Robert Morris University
#10 – University of North Carolina – Wilmington
#9 – Indiana Wesleyan University
#8 – Indiana University
#7 – University of Massachusetts
#6 – Oregon State University
#5 – University of Maine – Augusta
#4 – University of Arkansas
#3 – Northern Arizona University
#2 – Fort Hays State University
#1 – New England Institute of Technology

The following figure gives more platforms and their details:

Figure-4 : Details of the platforms that offer E-learning based on editor's choice

Source: https://in.pcmag.com/cloud-services/104247/the-best-online-learning-platforms-for-business retrieved as on 19.12.201



Best For	Enterprises	Enterprises and Training Companies	Small to Midsize Businesses	Enterprises and Training Companies	Enterprises	Small to Midsize Businesses	Enterprises and Training Companies	Enterprises	Training Companies
Free Trial	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CRM Integration	✓	✓	✓	✓	✓	✓	✓	✓	–
egrates with E-Commerce	–	✓	–	✓	✓	✓	✓	✓	✓
grates with Web conferencing	–	✓	–	✓	✓	✓	✓	✓	–
limited Storage	–	✓	✓	–	✓	✓	✓	✓	✓
Gamification Features	–	✓	–	✓	–	–	✓	–	–
ingle Sign-On (SSO)	✓	✓	✓	✓	–	–	✓	✓	✓
s-Portal Options	–	✓	–	✓	–	✓	✓	✓	✓
Unlimited Courses	–	✓	✓	✓	✓	✓	✓	✓	–
Unlimited Users	–	–	–	✓	–	✓	–	✓	✓
Read Review	Absorb LMS Review	Docebo Review	Instructure Bridge LMS Review	LearnUpon Review	SAP Litmos LMS Review	Axis LMS Review	DigitalChalk Corporate LMS Review	Mindflash Review	Firmwater Review

The following gives the details of the E-learning platforms:

https://www.howspace.com/resources/best-online-learning-platforms-for-organizations retrieved as on 19.12.2019

1. LinkedIn Learning

LinkedIn Learning offers a wide variety of expert-led online learning courses for teams and organizations. Unlike many other e-learning platforms, the business plan allows you to bring custom content into the platform and that way make courses more applicable to your organization.

' Pros:

· A huge library of learning materials spanning several different areas

· The ability to customize content based on your organization's needs

Ô&þ Cons:

· Many of the courses are only available in English

· Most materials are only delivered in video format

2. Pluralsight

Pluralsight is a technology-focused e-learning platform that helps your team upskill across design, development, security, and cloud.

' Pros:

· High-quality and highly specialized expert-authored courses across a variety of technology topics

· The ability to track employee's progress across their learning paths

Ô&þ Cons:

· No certified courses

3. Udemy for business

Udemy for Business is a corporate learning platform that offers courses in business, tech, and design.

' Pros:

· In-depth courses on a wide variety of topics

· User-friendly interface — especially on the mobile app

· The ability to track the participants' learning progress

Ô&þ Cons:

· A lack of shorter, summary courses for on-the-go learning

4. Coursera

Coursera has partnered with world-class universities and businesses to bring quality courses to organizations of all sizes.

' Pros:

· Certified courses from top universities and organizations

· Video lessons are paired with interactive assessments, quizzes and peer-reviewed assignment to deliver a more holistic learning experience

· Custom courses available with the enterprise plan

Ô&þ Cons:

· The interface is not the most intuitive

· A lack of shorter courses

5. Skillsoft

Skillsoft is a corporate e-learning platform that offers perhaps the most comprehensive set of learning materials to companies. Including tactical courses like how to use Microsoft Excel to highly specialized expert-led courses on digital transformation, Skillsoft serves a variety of different learning needs.

' Pros:

· Perhaps the industry's widest selection of courses

· Convenient mobile app

Ô&þ Cons:

· Occasional issues with a long loading time

- Reporting features could be improved

6. uQualio

uQualio is a video-based e-learning platform that comes with handy practice quizzes and gamification features. Unlike many of the more traditional e-learning platforms, it favors shorter, bite-sized content and interaction between the participants.

' Pros:

- The ability to build your own courses
- Packed with quizzes and other interactive features
- Support for bite-sized content that can be consumed on-the-go

Ô&þ Cons:

- Launched in 2017 and a lot of the features are still being developed

7. Mind Tools

Mind Tools is a management and leadership training platform that offers a catalog of learning resources.

' Pros:

- Clear focus on management, leadership, and business-related content
- Materials available for all knowledge levels: beginner, intermediate, and advanced

Ô&þ Cons:

- Most of the content is in article format, and not available offline

8. Cornerstone

Cornerstone is an e-learning content subscription service that allows you to order tailored content for your organization's LMS.

' Pros:

- Customizable platform, where you can set different access levels to different users and create custom welcome messages to each group

Ô&þ Cons:

- Limited reporting functionalities
- Limited customer support

9. OpenSesame

OpenSesame is an e-learning solution that helps you curate the right content for your learning program.

' Pros:

- A wide variety of courses
- Helpful customer service with short response times

Ô&þ Cons:

- The courses leading up to a certification can be pricey
- Limited localization to different languages

10. Grovo

Grovo is a microlearning platform that offers corporate customers bite-sized mixed-media lessons on the go.

' Pros:

- Mixed-media lessons, e.g. short videos that are supplemented with quizzes
- Gamification features that allow organizing internal learning competitions

Ô&þ Cons:

- Some of the videos use cheesy stock images to illustrate serious concepts
- At times, the quizzes are too easy, and can therefore be construed as disengaging

11. Udacity

Udacity helps forward-thinking organizations train their

technical teams on topics like machine learning, data science, and artificial intelligence.

' Pros:

· Tons of free, high-quality courses on technical topics — even emerging ones

· Nano degrees offer a more comprehensive view of a topic

· Great quizzes at the end of each lesson

Ô&þ Cons:

· No interaction possibility between the learner and the instructor

Learning management systems (LMS)

1. Moodle & Microsoft Teams

We know, we know. While Moodle and Microsoft Teams are technically two different platforms, they now offer a seamless integration, which means that you can bring collaboration directly into your LMS.

' Pros:

· Tons of customization options and different plug-ins

· Smooth integration between the two platforms, which allows learners and facilitators to interact with one another

Ô&þ Cons:

· While the integration is great, having two separate platforms can make the learning experience a bit noisy for everyone involved

· Creating a continuous learning journey is difficult, since Moodle and Teams function as more of a content and project management tool than an interactive learning platform

· A lot of Moodle users find the interface a bit difficult to navigate and use, which can have serious consequences in terms of the results of your learning initiatives

2. Lessonly

Lessonly is a modern training software that helps customer-facing teams such as sales and customer success learn and practice skills that they need to succeed in their roles.

' Pros:

· Lessonly makes it easy for admins to create structured, user-friendly learning materials for employees

· World-class customer success team

Ô&þ Cons:

· Reporting only comes in a CSV format and is more focused on per-user data than per-lesson data

· No white-label support in terms of fonts, colors, and logos

3. TalentLMS

TalentLMS is a cloud-based LMS perfect for training employees, partners, and customers.

' Pros:

· Support for various different content types

· The secure cloud-based storage makes sure that your data is safe within the platform

· Robust reporting capabilities

Ô&þ Cons:

· Some limitations in the mobile app's user interface

· Limited email notification options

4. Eloomi

Eloomi is a hybrid between a learning management system and a performance management software.

' Pros:

· Intuitive user interface for admins and users alike

· Clever gamification features

- Good customer support and seamless implementation

Ô&þ Cons:

- Limited support for different languages

5. Eurekos

Eurekos is a content-first learning management system that delivers powerful administration, analytics, and social features.

' Pros:

- Eurekos makes it easy to reuse and recycle existing learning content
- Courses are easy to structure and build
- Advanced analytics features

Ô&þ Cons:

- Tons of features, which can be a downside for admins who don't have time to learn how to use them

6. iSpring

iSpring is a cloud-based learning management system that allows you to teach and assess employees online.

' Pros:

- Setting up a new course is very easy
- Helpful support with fast response times

Ô&þ Cons:

- Some users have reported problems with integrating iSpring into their existing tools

7. Docebo

Docebo is an online training tool for employees that comes with a fully customizable interface and tons of useful automation features.

' Pros:

- Modern look and feel
- Frequent updates to the platform

Ô&þ Cons:

- The admin side of the platform can be difficult to navigate
- Occasional bugs on the platform in conjunction with the software updates

8. Bridge

Bridge is a learning solution that makes it easy to onboard new employees and coach existing ones.

' Pros:

- Simple and streamlined approach to remote employee training
- Implementation is fast and no user training is required to get started

Ô&þ Cons:

- Limited reporting capabilities
- Lack of interactive features

9. Adobe Captivate Prime

Adobe Captivate Prime is a learning management system that allows you to deliver and track e-learning efforts.

' Pros:

- Beautiful UI with nice graphics
- Great reporting features
- Ready-made email templates and advanced automation capabilities

Ô&þ Cons:

- Not easily integrated with 3rd party software

We now present the details related to e-learning in India.

1.6. E-learning in the Indian Context

We now present few details related to E-learning in the Indian context and also growth of the same in India.

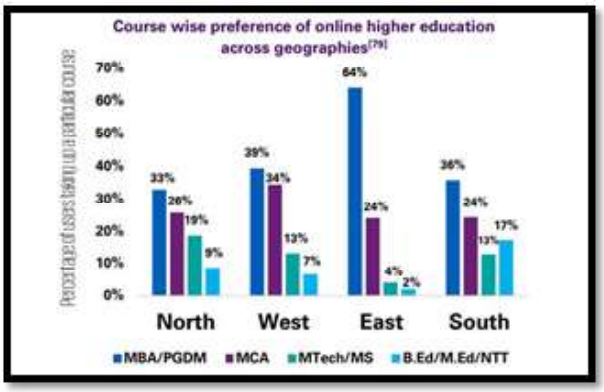
In India, the education system ways back to ancient days where the students visit the place (Gurukul) of

the teacher and stays there for 12 years, till they are proficient in all the aspects. It is seen as all-round development of the student, who enters the system. Over the years, the system has been taken over by the British education system. Under this, the students visit the school/Institute/University to receive the teachers and learn various subjects from them. Even under this, a student used to get awareness on various subjects. Over the years it has been replaced by the system where the student specializes in few subjects and establishes as the one proficient only in those subjects. With change in the time, the tastes and interests of the students are changing and again they are interested to gain awareness on multiple aspects, keeping their specializations fixed. For example, a student who specializes himself in management, wishes to create an awareness on other subjects. This is the current trend and can be seen in majority of the students. Especially this can be seen more in the students who study management courses, engineering courses, other degrees like B. Com, BBM, BBA etc. These students wishe to gain additional certifications on other subjects, so that they can position themselves as compared to other students. Getting a job in a corporate has been the main goal of the majority of the students and having additional certification. The source for the additional certification is, the institutes that offer these with a prescribed fee and a course curriculum, that is limited. Also, the options that they have are limited and getting more certifications has become a costly affair to majority of them. Along with this, the time they can spend has become a hurdle and the challenge is to manage the time appropriately. For the corporates who are already working, it has become important to advance themselves in the latest updates in their respective fields and build a career. For the teachers, it has become an important inner urge to disseminate the wisdom and new ideas to the society. Irrespective of the category, all the individuals in the society have started looking at avenues that will give them opportunities to learn or spread wisdom. But the opportunities are limited in nature and this is where the advent of E-learning has helped them to achieve their targets. With the change in the time, the targets have been changed from acquiring a certificate to acquiring the necessary wisdom. Also, those who are working in corporates are now looking at learning the latest aspects in their fields and become productive to the organizations they are working. The E-learning platforms have helped students to achieve their dreams of learning new aspects with minimal cost, time, and more comfort. Similarly, it has helped corporates to fulfil their dreams of updating themselves in the latest developments in their fields and better their positions in the organizations, for organizations to train their employees with minimal cost, time and effort. For teachers, it has opened gates to disseminate ideas and develop latest course curriculum, course content etc., with complete autonomy. In a nutshell, one can say that it has changed the complete scenario of the Indian education system.

In India, the digital learning has evolved during the years 2002-2003 with the technological advancements spreading to the education sector. The E-learning in India is witnessing a growth rate of 25 per cent year-on-year and is expected to touch $1.96 billion by 2021. In India, there are more than 1.5 million schools and 18,000 higher education institutes and this creates a big market for digital education in India. E-learning is not seen as a luxury but has become a necessity. With increase in the usage of smartphones and technology, it has become easy for one to utilize the e-learning platforms for updating the skills.

According to the report published by KPMG, e-learning in higher education in India is at an early stage has seen several universities starting the courses on e-learning platforms. The demand for MBA, MCA through e-learning has increased as compared to other courses. The following figure gives the demand for the courses across different geographical regions.

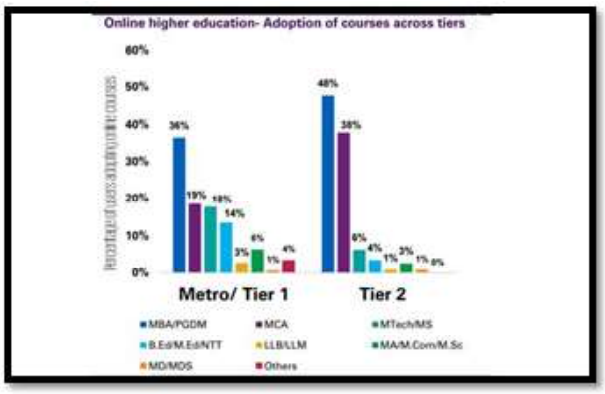
Figure-5 : Course wise preference of online higher education across geographies



Source: KPMG Report: Online Education in India: 2021

The report also gives number of the individuals looking for courses in tier-1 and tier-2 cities.

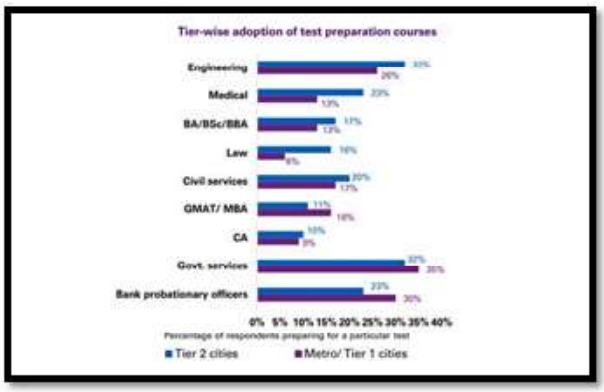
Figure-6 : Online higher education adoption of courses across tiers



Source: KPMG Report: Online Education in India: 2021

Along with the regular courses, there are many who look at e-learning for preparing for entrance examinations. The following figure gives the number of students who look for e-learning for preparing for various entrance examinations.

Figure-7: Tier-wise adoption of test preparation courses



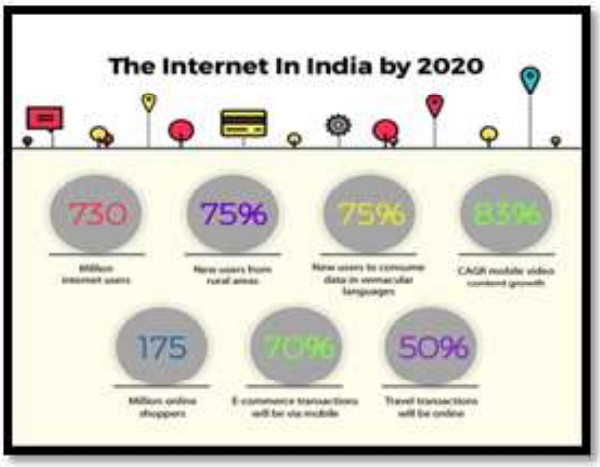
Source: KPMG Report: Online Education in India: 2021

E-learning in India helps the candidates preparing for examination by providing the students to access the webinars, mock tests, videos, counselling etc. Students also get an opportunity to interact with the instructors who provide coaching to the students. Overall, e-learning platforms are helping the students to learn the techniques of cracking the examinations with minimal cost, effective time, and comfortably. E-learning in India has become very popular and ease due to internet penetration, increasing smartphone usage, flexibility of time, quality education, affordability, availability of study materials etc.

Distance education in India was started in the year 1962 to meet the demand for higher education. Delhi university has established School of Correspondence Courses and Continuing Education in 1962. Based on its success, the education commission (1964-66) recommended the expansion of correspondence education and UGC has formulated guidelines for introducing correspondence courses in India. As of now there are 45 universities including 4 deemed universities offering correspondence courses in the country. In 1985, Indira Gandhi National Open University (IGNOU) was started that offers several courses. Similarly, other universities have been started that offer correspondence courses. Later developments include universities offering online courses. For example, University of Mysore offers online courses.

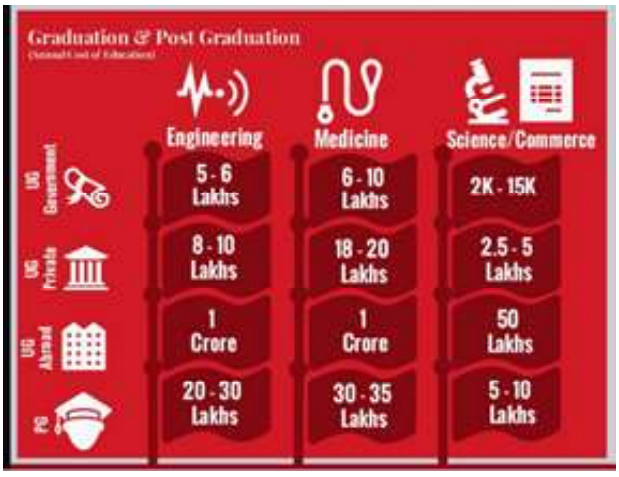
We now present some statistics related to the growth of E-learning in India. The following graphs give the same and they reflect upon the key drivers of e-learning growth in India.

Figure-8 : The internet in India by 2020



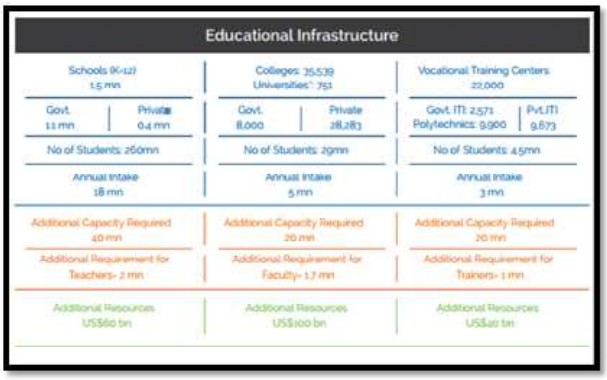
Source: http://www.aurumequity.com/the-online-education-industry-in-india-present-and-future/ retrieved as on 20.12.2019

Figure-9 : Graduation and Post-graduation numbers



Source: http://www.aurumequity.com/the-online-education-industry-in-india-present-and-future/ retrieved as on 20.12.2019

Figure-10 : Educational Infrastructure



Source: http://www.aurumequity.com/the-online-education-industry-in-india-present-and-future/ retrieved as on 20.12.2019

Government has taken the initiative to launch several programmes under the initiatives such as 'Digital India' and 'Skill India' to spread digital literacy, create a knowledge-based society in India, and implement three principles 'access, equity and quality' of the Education Policy.

- e-Basta (schools books in digital form)
- e-Education (all schools connected with broadband and free Wi-Fi in all schools and develop MOOCs – develop pilot Massive Online Open Courses)
- Nand Ghars (digital tools as teaching aids)
- SWAYAM (MOOCs based on curriculum taught in classrooms from 9th class till post-graduation)
- India Skills Online (learning portal for skill training)

In order to establish digital infrastructure, the government has also launched National Optical Fibre Network (NOFN) which aims to expand broadband connectivity and faster network. Taking into consideration the changing job scenario in India these initiatives have been taken by the government. Also, the unemployment in India is making individuals to look for courses, which they can complete in short duration of time so that it will help them in fetching jobs.

Among various challenges faced for implementation of e-learning in India, insufficient digital infrastructure, poor learning engagement, lack of standardization, credibility and quality, language of the courses, low completion rates are the key challenges.

1.7. The current work and few details on the same

Apart from these challenges, another important challenge is to find the motivating factors that are really making individuals to choose the e-learning platforms for their progress. Choice of platforms depends on several factors such as, availability, convenience, affordability and apart from this depends also on psychological aspects of the individual who wish to choose the platforms for learning. For example, how one perceives the e-learning process, how one adopts to the changes in the technologies etc. With respect to this, many researchers have studied and proposed several factors that are motivating an individual to choose e-learning platforms. Few also have used models like technology acceptance model (TAM), theory of planned behaviour (TPB) etc., to identify the factors. These models look at various aspects related to one's behavioural aspects and aspects related to acceptance of technology. For example, TAM is built to study the user's acceptance of information systems and technologies. But all these give different factors that are specific to the model and there is a necessity to integrate all the factors at one place to give a comprehensive model. This comprehensive model has to link the factors appropriately and finally give the connection between them, to produce valid suggestions to the e-learning service providers, teachers and users. The current study is an attempt to achieve this and uses meta-analysis as the research methodology. Under this, we try to integrate various factors identified under these models and attempt to provide valid linkages between them. We then finally use Meta-analysis to establish new relations between the factors.

The report is organized in the following way. We first present the literature related to various model used by the researchers to identify the factors. For example, those related to TAM, Extended TAM etc. Note that, the literature review presented will be used to build a comprehensive model. This is followed by sections on research gap, motivation for conducting the study, problem statement, research methodology, adoption of meta-analysis in the current study, model building, research questions, research objectives, research hypotheses. In the next section, we present data analysis and key findings. This is followed by conclusion, managerial implications, limitations and future work. In the last section we present the references. Note that, the references are given year-wise and not alphabetical. Also, references other than e-learning are given separately.

Note that, our focus is on identifying the factors that make one to choose e-learning platforms to enhance their knowledge. Hence, we present the literature and construct everything related to this. Aspects related to instructors choosing the e-learning platforms, organizations choosing e-learning platforms, and aspects related to e-learning service providers developing the platforms etc., will be presented as future work and extension of the current work. Also, we do not restrict the model building to any geographic region and build a general model from the point of users of e-learning.

We now present the literature on models used to identify the factors that motivate one to choose e-learning.

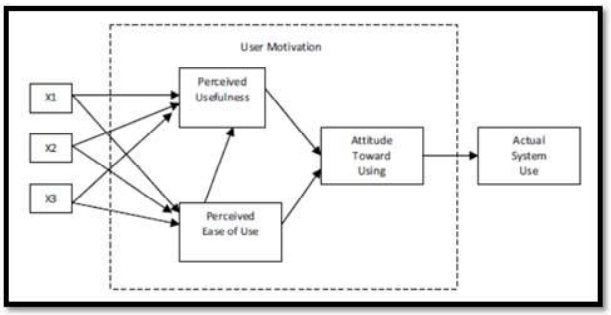
2. Technology Acceptance Model

In this section, we present the technology acceptance model and history of the same.

Technology acceptance model (TAM) is developed by Davis (1986) and deals with predicting the acceptability of a system or technology. The main purpose of the model is to identify the aspects that lead to acceptability of the system or technology and make necessary changes to suit the requirement of the users. It is based on two major aspects: Perceived

usefulness (PU) and Perceived ease of use (PEU). Perceived usefulness looks at the degree to which an individual believes that using a system or technology will improve the performance. Perceived ease of use refers to the degree to which a person believes that the use of a system or technology will be effortless. The following is the TAM model, originally proposed by Davis (1986).

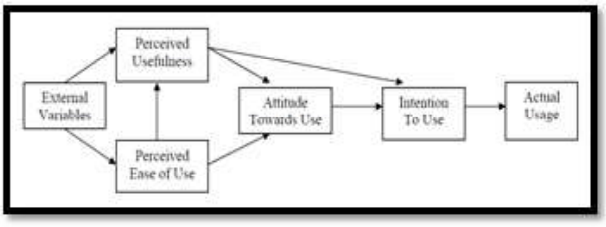
Figure-11 : TAM proposed by Davis



Source: From the paper of Davis (1986)

The above model links the attitude of an individual to the actual usage of the system or technology. Davis proposes that not only an individual's attitude that determines the actual usage, but also an individual's perception that is will impact the performance. That is, even if an individual doesn't welcome a system or technology to be introduced, he/she may use the same with high probability if he/she perceives that it will improve the performance. Another aspect that one has to note is, TAM links perceived usefulness and perceived ease of use directly. Later in 1989, Davis et.al. demonstrates that the link between perceived usefulness and intention to use is stronger than perceived ease of use. This shows that an individual's perception that a system or technology will be useful improves his/her intention to use the same. The following figure give the model.

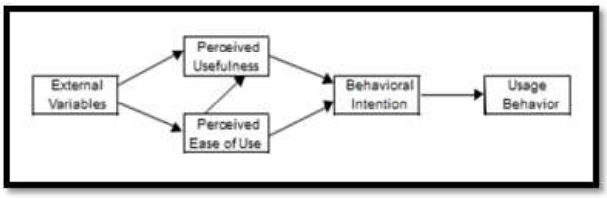
Figure-12 : TAM by Davis et.al



Source: From the paper of Davis et.al (1986)

The final version of TAM was developed by Venkatesh and Davis (1996), under which the attitude construct was excluded and, both perceived ease of use and perceived usefulness are directly linked to intention to use. The following figure gives the same.

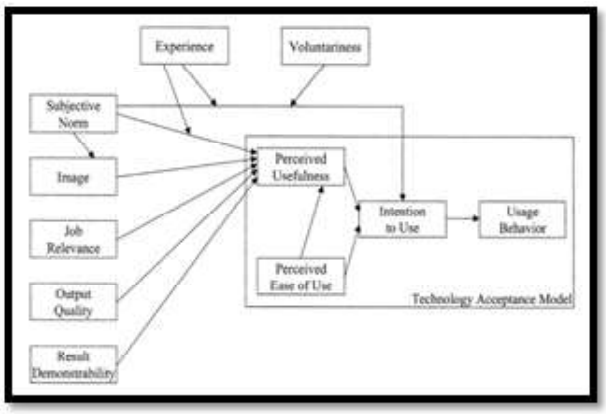
Figure-13 : Final version of TAM



Source: From the paper of Venkatesh and Davis (1996)

In 2000, Venkatesh and Davis proposed TAM 2, which provides more reasons for an individual to use a system or technology. TAM 2 proposes that an individual's mental assessment of the link between important goals to attend at work and the consequences that arise due to the usage of the system while performing job tasks acts as a basis for forming perceptions on usefulness of the system. The following figure gives TAM 2.

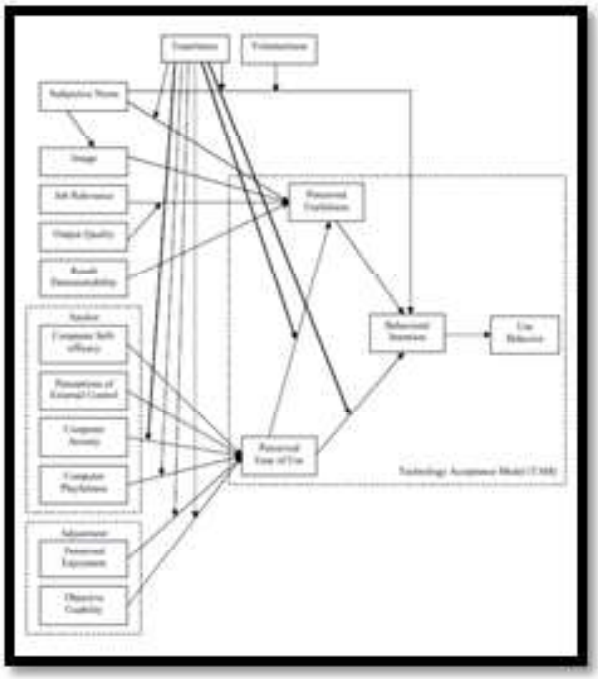
Figure-14 : TAM 2



Source: TAM 2 from Venkatesh and Davis (2000)

Venkatesh and Bala (2008) combined the model proposed by Venkatesh and Davis (2000) and Venkatesh (2000), named as TAM 3. Figure below gives the same.

Figure-15 : TAM 3

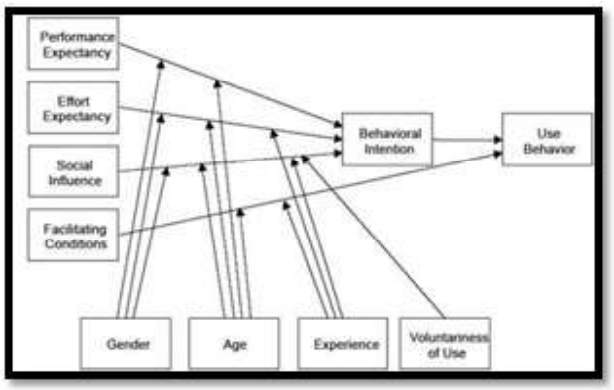


Source: Paper of Venkatesh and Bala (2008)

Note that under the above model, four different types are included: the individual differences, system characteristics, social influence, and facilitating conditions, which are determinants of perceived usefulness and perceived ease of use. In TAM 3 model, the perceived ease of use to perceived usefulness, computer anxiety to perceived ease of use and perceived ease of use to behavioural intention were moderated by experiences.

Venkatesh et.al. (2003) develops a model, Unified Theory of Acceptance and Use of Technology (UTAUT) that has four predictors of users': Performance expectancy, Effort expectancy, Social influence, and Facilitating conditions. The following figure gives the same.

Figure-16 : UTAUT



Source: Paper of Venkatesh et.al. (2003)

In the current study we look at TAM in E-learning. Note that, E-learning platform is seen as a system that facilitates courses with various options and an individual chooses appropriate courses from available list. From the above discussion we note that, almost all the models (TAM, TAM 2, TAM 3, UTAUT) propose various predictor variables/factors for measuring the actual usage of the system or the technology.

We are interested to check which of these factors are significantly related to selection of E-learning platform, using a meta-analysis approach. We perform this analysis under each of the models and find the factors that are significant. Note that, meta-analysis aggregates the research findings from various studies at one place and new relations, hypotheses can be established using the same. We now look at literature on how these models are integrated with E-learning. We consider the research papers from 2000-2019, a period of 19 years. Before presenting the literature review, we present, in brief, the constructs considered in the model.

Note that, the objectives of the study are established based on the literature and hence more emphasis will be on collecting the appropriate studies exhaustively and synthesizing the same, using meta-analysis.

2.1. Constructs in TAM/Extended TAM

In this section, we present the explanation to the constructs/factors and the variables considered in the

technology acceptance model. We first present the constructs included in the final TAM and then factors in the extended versions of the TAM.

a. Perceived Usefulness (PU)

PU is defined as "the degree to which a person believes that using a particular system would enhance his or her performance" (Davis (1989)). When a system is introduced, one may look at how it will help them in increasing their performance. This is one of the important constructs in the technology acceptance model (TAM) that takes into consideration an individual's perception on usefulness of a system. PU is measured using set of items (questions) or factors, which are designed as unique aspects for a given situation. That is, items and factors are considered specific to a given situation and measured using appropriate scaling. In the context of e-learning, PU refers to the extent to which the e-learning system or platform is useful to the user (learner) in enhancing the learning. Unless this aspect is taken care, the system may not be significant to the learners. Note that, PU can be measured using customised items or external factors. Customised items are statements designed by the researcher specific to the situation. The external factors used to measure PU include, anxiety, self-efficacy, subjective norm, enjoyment, etc. These external factors are also measured using items designed specific to the given situation. In the current study, we try to identify more external factors that are significant in measuring PU, in the context of e-learning. Note that, PEOU is an important factor linked with PU in the model.

b. Perceived Ease of Use (PEOU)

PEOU is another important construct in the TAM. It refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis (1989)). Under this, one looks for the effort that one has to put to understand the system, its usage etc. Similar to PU, it is also an important factor that has to be taken into consideration for the success of a technology or system. In the context of e-learning, the system or the platform has to be user friendly and should make the user feel comfortable while using the same for learning. The effort taken to use the system should be minimal and the learner should be able to access with ease the materials, videos, other technical aspects related to the system or platform. PEOU is measured using items or factors again based on the specific situation. For example, it is measured using system quality, content quality, subjective norms etc. Note that PEOU is an antecedent to predict PU in TAM. Int eh current study, we make an attempt to find other external factors that are significant with PU.

c. Behavioral Intention (BI)

BI refers to the intention of the user/learner to choose e-learning systems for learning process. Bi is the factor that is predicted using the antecedents like PU and PEOU etc. Bi is linked with Actual system usage (AU). BI is also measured using items and then linked with other factors in the model. In the current study we make an attempt to find the strength of the factors in predicting BI.

d. Attitude Towards Using (ATU)

ATU refers to the degree to which a person has a positive or negative feeling towards e-learning systems. This has PU and PEOU as antecedents and is linked with BI. Few studies have excluded ATU and considered only BI and AU. In the current study we make an attempt to find the strength of the antecedents in predicting this factor.

e. Actual System Usage (AU)

AU refers to the final decision on usage of the e-learning platforms. This factor is the dependent variable, which is predicted using the antecedents such as BI, ATU, PU. In this study we try to find the strength of these factors in predicting the AU.

f. Subjective Norm (SN)

SN is considered as a part of the social influence factor and it refers to an individual's perception on what others think of him\her and what they expect them

to do or not to do. This an external factor to PU, PEOU and AU. In this study we try to find the strength of this factor in explaining the behaviour of PU, PEOU and AU. In the e-learning context, SN is seen as influence of other's opinion on the users in choosing (not choosing) the platform for learning.

g. Image

The degree to which an individual perceives that use of an innovation will enhance his or her status in his or her social system (Moore & Benbasat, (1991)). In the e-learning context, an individual can choose e-learning platform for gaining necessary skills to earn notoriety among their peers. In the current study we look at the strength of this factor in predicting PU.

h. Job Relevance (JR)

Job relevance is defined as, "the degree to which as individual believes that that target system is applicable to his or her job" (Venkatesh and Davis (2000)). In the e-learning context, JR is the extent to which the e-learning is useful to the learner in fulfilling the gaps/ updation of the learning process. One has to feel that the e-learning course/platform is applicable in the learning process. We study the strength of JR in predicting PU.

i. Output Quality (OQ)

OQ is defined as, "the degree to which an individual believes that the system performs his or her job tasks well" (Venkatesh and Davis (2000)). It is an important factor in inspecting whether the system does the job well and helps in excluding those systems that do not perform well. An e-learning platform that helps a learner in gaining wisdom that improves his/her job performance is seen as the one with better output quality. OQ is linked to PU and in the current study we look at the strength of the same in predicting PU.

j. Result Demonstrability (RD)

RD is defined as, "the degree to which an individual believes that the results of using a system are tangible, observable, and communicable" (Moore and Benbasat (1991)). In other words, the one who uses a system should be able to attribute the benefits they received in job performance to the system. RD is related to PU and we try to identify the strength of RD in predicting PU. In the e-learning context RD can be related to, learners attributing the gains in their job performance to the e-learning course/platform. It is very important for one to design a course/platform that will give proper benefits to the learner.

k. Computer Self-efficacy (CSE)

CSE is defined as, "the degree to which an individual believes that he or she has the ability to perform a specific task/job using the computer" (Compeau and Higgins (1995)). That is, self-efficacy is an individual's confidence in using the system/platform in their own capacity. In e-learning, CSE is an individual's own ability in using the e-learning system. CSE is linked to PEOU and we try to identify the strength of the same in predicting PEOU.

l. Perceived External Control (PEC)

PEC is defined as, "the degree to which an individual believes that organizational and technical resources exist to support the use of the system" (Venkatesh et al., 2003). That is, an individual should feel that the organization he/she is working should have necessary resources to support their learning process. PEC is also called as facilitating conditions (FC) as complex systems need organizational support for implementation. PEC is linked to PEOU and the same is considered in the current study, to build the model.

m. Computer Anxiety (CA)

The degree of "an individual's apprehension, or even fear, when she/he is faced with the possibility of using computers" (Venkatesh, 2000). That is an individual who is free of fear of using the computer, will be more comfortable in using the same and perceives it as easy. CA is an emotional reaction and fear to use a computer, may lead to negative opinion towards using the e-learning system. CA is usually linked with PU.

n. Computer Playfulness or Perceived Playfulness (PP)

It is defined as, "the degree of cognitive spontaneity in microcomputer interaction" (Webster & Martocchio, 1992, p. 204). It is linked with PU.

o. Perceived Enjoyment (PENJ)

The extent to which "the activity of using a specific system is perceived to be enjoyable in its own right, aside from any performance consequences resulting from system use" (Venkatesh, 2000, p. 351). It is important factor in the success of an e-learning system. When a user of the system perceives that the e-learning system he/she uses is enjoyable, then it will have a better receptivity. PENJ is linked with PEOU.

These are important factors usually considered in the model and apart from these, there are other factors specifically related to e-learning system. We present the same in the summary table, constructed based on literature review. We now present the literature review related to TAM in e-learning.

3. Literature Review: Technology Acceptance Model in E-learning

In this section, we present the literature related to TAM and extended TAM in E-learning. We present the paths that are significant between the constructs, between the external variables and the constructs. The same will be used under meta-analysis. We have considered the papers published between 2000 and 2019 and present the key findings of all the studies. The research gap is presented separately. The key words used for search are "TAM in E-learning", "TAM in Web-based learning", "Perceived use of use/ usefulness in E-learning", "TAM in online learning" etc. Note that, we consider the variables found from the literature and check for suitability of the same to the model. Any variable(s) that doesn't have sufficient strength or evidence will be ignored. The literature presented is a flow of the independent studies conducted at different periods of time, with different respondents, and at different places. But, all of them are related to E-learning. Ultimately, these findings will be used in meta-analysis and model building.

Brown (2002) studies the behaviour of the South African students with respect to their acceptance of web-based learning. The study found perceived ease of use as the main predictor of both usage and perceived usefulness. The sample size considered for the study was 78 and regression analysis was used to test the proposed hypotheses. Among the external variables of the model, ease of understanding and ease of finding (technological characteristics), and, self-efficacy and computer anxiety (user characteristics) are significant with respect to perceived ease of use.

Yi and Hwang (2003) extends the technology acceptance model by incorporating self-efficacy, enjoyment, and learning goal orientation. 109 students were considered as the respondents and used partial least squares to build the model. They found that enjoyment is significantly related with usefulness, with ease of use and with self-efficacy, and self-efficacy is significant with ease of use and use. Also, learning goal orientation is significantly related with self-efficacy, and PU, PEOU are related with BI. Finally, BI is related with use.

Martins and Kellermanns (2004) studies the acceptance of web-based course management system amongst B-school students and finds that, perceived incentive, perceived faculty encouragement, and peer encouragement are positively related to perceived usefulness of the system. Also finds that, awareness of the capabilities, perceived availability of technical support, and prior experience with computer and web use are positively related with perceived ease of use. Reponses were collected from 243 students and structural equation modelling was used to build the model.

Gong et.al (2004) attempts to identify the external factors of the IT acceptance in the education sector amongst the teachers. They combine the technology acceptance model (TAM) and social cognitive theory to build a model. They find that computer self-efficacy

is significant with perceived ease of use and with teachers' intention to use the web-based learning. A final sample of 146 teachers' responses were considered and model was built using partial least squares.

Ong et.al (2004) considers engineers as the target population and studies the significance of perceived credibility on the behavioural intention to use e-learning. Their proposed model consists on computer self-efficacy, perceived usefulness, perceived ease of use, and perceived credibility, as constructs that influence the behavioural intention. Their results show that perceived credibility has a significant link with the behavioural intention to use e-learning, computer self-efficacy has a significant link with perceived usefulness, ease of use and credibility. Interestingly, perceived ease of use is significantly related to credibility. To build the model, they have considered 140 full responses and used linear structural equation modelling (SEM) to build the model.

Liao et.al. (2004) studies the students' acceptance of web-based learning and uses Unified Theory of Acceptance and Use of Technology (UTAUT) model to identify the factors that are significant in explaining the behaviour of the students in using the system. Their study suggests that performance expectancy, effort expectancy, and social influence are significantly related with intention of students to use system. Also, finds that facilitating conditions have significant relation with final system usage. They used 172 responses and adopted SEM to build the model.

Lee et.al. (2005) investigates students' acceptance of an internet-based learning medium (ILM) and their results show that perceived usefulness and perceived enjoyment are significantly related to attitude to use ILM. Whereas perceived ease of use is not significantly related with attitude to use ILM. In this study, they have considered 544 students and use SEM to build the model.

Liu et.al. (2005) combines the TAM theory and the Flow theory to give out an integrated theoretical framework for behaviour of the users of web-based streaming e-learning. Students of MIS department was the target population and 102 final responses were considered to build the model. The study finds that concentration has a positive correlation with their intention to use technology. E-learning materials like text-audio, audio-video, text-audio-video are used as external variables, linked to perceived usefulness and concentration. They prove that these materials have significant impact on perceived usefulness and concentration. The study suggests that individuals has to be seen as not only as users of e-learning but also as leaners of e-learning.

Saade and Bahli (2005) examines the impact of cognitive absorption (CA) on perceived usefulness (PU) and perceived ease of use (PEU). A sample of 102 students has been used to test the model and Partial least squares was used to build the model. The study proved that CA is an important antecedent to PU but less important to PEU.

Ifinedo (2006) considers two external constructs: technology and user characteristics, to extend the TAM theory. Their study proves that both the technology characteristics and user characteristics are significantly related to PU and PEU. Also, PEU significantly affects usage while PU did not show significance. Further, the study proves that both usage and PU influence continuance intention, PEU do not influence. Responses were collected from 72 students and Partial least squares is used to build the model. Interesting part of the study is it considers continuance intention of the we-based learning along with other constructs.

Lee (2006) makes an attempt to find the factors affecting the adoption of the e-learning system (ELS) under mandatory and voluntary settings. The study uses extended TAM for this. A sample of 1,085 students were considered and SEM was used to build the model. The factors considered in the model are: Content quality, Perceived network externality, Computer self-efficacy, Course attributes, Subjective norm, Perceived usefulness, Perceived ease of use, and competing behavioural intention. The study has found that content quality has significant relation with perceived usefulness, computer efficacy has a

significant relation with perceived ease of use, course attributes has a significant relation with perceived usefulness, perceived network externality has a significant relation with perceived usefulness and perceived ease of use, and competing behavioural intention has no significant relation with actual behaviour. Similarly, perceived usefulness has a significant relation with behavioural intention, perceived ease of use has a significant relation with behavioural intention, subjective norm has a significant relation with perceived usefulness.

Jiinpo et.al. (2006) aims at proposing a theoretical framework to address the continuance issue. Their study first integrates computer self-efficacy and the expectation-confirmation model (ECM), second theorizes the causal relationship between the factors PU, confirmation, satisfaction, and information system continuance in the e-learning context. MIS major students are the respondents and a sample of 187 final responses were considered in the study. To test the model, they use path analysis. The results show that perceived usefulness has a significant relation with satisfaction and continuance intention. Similarly, confirmation and computer self-efficacy have significant relation with perceived usefulness, computer self-efficacy has a significant relation with satisfaction, confirmation has a significant relation with satisfaction.

Ong and Lai (2006) conducts a study to find the gender differences in perceptions and relationships among factors affecting e-learning acceptance. A sample of 67 female and 89 male employees are considered to test the hypotheses. Their study found that men's rating of computer self-efficacy, perceived usefulness, perceived ease of use, and behavioural intention to use e-learning are all higher than women. They also found that women were strongly influenced by perceptions of computer self-efficacy and ease of use. Similarly, men's usage decisions were more significantly influenced by their perception of usefulness of e-learning. The main suggestion is to consider factors of gender while developing and testing e-learning systems.

Roca et.al. (2006) proposes a decomposed technology acceptance model under which, perceived performance is decomposed into perceived quality and perceived usability. In the study, a sample of 172 responses have been considered and they found that user's continuance intention is determined by satisfaction, which in turn is jointly determined by perceived usefulness, information quality, confirmation, service quality, system quality, perceived ease of use and cognitive absorption.

Saadé and Kira (2006) studies the effect of factors Affect and Anxiety (alone and together) on perceptions of online learning system (OLS). The results suggest that Affect and Anxiety may exist simultaneously as two weights on each side of TAM scale. The respondents are students of MIS course where OLS is mandatory and a total of 114 students have participated in the survey. Partial least squares method was used for the assessment of the proposed model.

Pituch and Lee (2006) proposes and tests alternative models to identify the factors that make students use e-learning system. They integrate factors of TAM with system and participant characteristics. Responses were collected from 259 college students and SEM was used to build and test the model. The external factors considered include system functionality, interactivity, response, self-efficacy, internet experience, and use for supplementary learning.

Fong-Ling et.al. (2007) uses an extended TAM to study the motivation, attitude and acceptance of e-learning, by the participants. They include factors: system functionality, interface design, pedagogic and contents, and community. Perceived enjoyment was included as an additional factor to the model. The analysis indicated that extended TAM explains the acceptability of online learning systems and perceived usefulness, ease of use, and enjoyment are good predictors of attitude and acceptance. Also, show that pedagogic, community, and content are significant external factors that explain the behaviour of the users of e-learning. A sample of 451 students were considered for the study and use SEM to build and

test the model.

Chang and Tung (2007) combines the innovation diffusion theory and the technology acceptance model. They add two research variables, perceived system quality and computer self-efficacy to propose a new model. They found that compatibility, perceived usefulness, perceived ease of use, perceived system quality and computer self-efficacy were critical factors for students' behavioural intentions to use online learning. A sample of 212 students were considered and SEM was used.

Jung-Wen (2007) aim at proposing a new construct, perceived control to the model and examine the role of the same in acceptance of e-learning by the employees. The proposed model is tested using SEM, with a sample of 206 employees. The study proves that perceived control has a significant relation with perceived usefulness and behavioural intention to use. Similarly, proves that computer self-efficacy is significant with perceived ease of use, perceived usefulness, and perceived control.

Davis and Wong (2007) conceptualizes and measures the e-learners experience from two integrated perspectives. The first one looks at the learners' affective perceptions using the flow model and TAM. They propose that learners' acceptance and the affective responses towards a particular system are two important factors in determining their intentional and actual behaviours, which in turn, influence user participation and engagement with the system. Responses were collected from 964 students and used SEM for model building. They found that subjective norm is significant with PU, job relevance is significant with PU, PEOU is significant with PU and Intention to use, PU is significant with intention to use, intention to use is significant with actual usage, Skill/perceived control is significant with experience of flow, challenge/arousal is significant with experience of flow, experience of flow is significant with ease of use and intention to use, experience of flow is significant with positive affect and exploratory behaviour, focused attention is significant with telepresence/time distortion, involvement is significant with focused attention, interactive speed is significant with flow, telepresence/time distortion, and focused attention, and telepresence/time distortion is significant with usage behaviour.

Hussien et.al. (2007) investigates the significance of computer self-efficacy, convenience, instructor's characteristics, instructional design, technological factors, and instructor's support. They use these factors as external factors for TAM. A sample of 147 responses were used in building the model and SEM is used to build the model. They found that, instructional design and technological factors were shown to be strong predictors of both perceived ease of use and perceived usefulness. Computer self-efficacy is significant in predicting perceived usefulness, convenience and instructor's characteristics are found to be non-significant factors for perceived ease of use. Perceived ease of use is found to be a strong predictor of perceived usefulness and intention to use.

Chiu et.al. (2007) integrates information system (IS) model and fairness theory to construct a model for identifying the motivations behind learners' intentions to continue using web-based learning. They theorize that three dimensions of quality (information, system, and service) and the three dimensions of fairness (distributive, procedural, and interactional) affect the learners' satisfaction. A sample of 289 learners was used to test the hypothesized model. The results show that information quality, system quality, system use, distributive fairness, and interactional fairness have significant relation with satisfaction. Similarly, procedural fairness and satisfaction have significant relation with learners' intention to continue using Web-based learning.

Chen et.al. (2007) makes an attempt to extend technology acceptance model and links perceived enjoyment and system features with perceived usefulness. Similarly, characteristics of teaching materials and self-efficacy are linked with perceived ease of use. A sample of 214 students were considered and partial least squares is used for building and testing the model. The results show that perceived

enjoyment and system features are significant with perceived usefulness, and characteristics of teaching materials and self-efficacy are significant with perceived ease of use.

Liaw et.al. (2007) studies the instructors and learners' attitudes towards e-learning usage. They consider 30 instructors and 168 students and asked them to answer questionnaires to investigate their perceptions. From the analysis they found that, instructors have a very positive perceptions towards e-learning as a teaching assisted tool. Similarly, self-paced, teacher-led, and multimedia instruction are important factors that affect learners' attitudes.

Maslin (2007) investigates the relevance of TAM in usage of e-learning in Malaysia and finds that perceived ease of use has a significant relation with perceived usefulness and attitude to use e-learning, perceived usefulness has a significant relation with attitude to use e-learning and intention to use e-learning. A sample of 122 students were considered in the study and regression analysis was used to test the hypotheses.

Sun et.al. (2007) develops an integrated model with six dimensions: learners, instructors, courses, technology, design, and environment. A sample of 295 final responses were considered from the e-learners and stepwise multiple regression analysis. The results show that learner computer anxiety, instructor attitude towards e-learning, e-learning course flexibility, e-learning course quality, perceived usefulness, perceived ease of use and diversity in assessments are significant factors affecting the perceived satisfaction. They show how institutions have to improve learner satisfaction and further strengthen their e-learning implementation.

Roca and Gagné (2008) builds a model by including perceived autonomy support, perceived competence, perceived relatedness, perceived playfulness, to the factors of TAM. A sample of 166 complete responses were considered for building the model and SEM was used to test the model. The results show that perceived autonomy support is significant with perceived usefulness and perceived playfulness. Perceived competence is significantly related with perceived usefulness, perceived ease of use, and perceived playfulness. Similarly, perceived relatedness is significantly related with perceived usefulness and perceived playfulness. Perceived playfulness is significantly related with perceived usefulness, perceived ease of use and E-learning continuance intention.

Park et.al. (2008) examines the factors that influence instructors' adoption and use of internet-based learning system. A sample of 191 instructors were considered and multiple linear regression was used to test the hypotheses. They found that Motivation has a significant impact on perceived ease of use, perceived usefulness, and evaluation of functions. Similarly, compliance with school policy has a significant impact on evaluation of functions and behavioural intention to use the system, Instructional technology has a significant impact on evaluation of functions, and evaluation of functions has a significant relation with current system use.

Hsia and Tseng (2008) combines perceived flexibility and computer self-efficacy with the TAM, for explaining the employees' decision to accept e-learning. A sample of 233 employees are considered and SEM was used to build and test the model. The results show that computer self-efficacy is significantly related with perceived ease of use, perceived usefulness and perceived flexibility. Similarly, perceived flexibility is significantly related with perceived usefulness and behavioural intention to use.

Tobing et.al. (2008) has conducted a study to get more experience about the acceptance of Adaptive e-learning system (AEL system) and integrated system adaptability to TAM. A sample of 314 students were considered to build the model and found that system adaptability is significant with perceived usefulness and perceived ease of use. Regression analysis is used to test the hypotheses.

Allan and Will (2008) studies teachers' acceptance of e-learning and builds a model to understand their

acceptance of e-learning technology. A sample of 152 teachers were considered to build the model and LISREL was used for data analysis. They made an attempt to include five constructs: intention to use, perceived usefulness, perceived ease of use, subjective norm, and computer self-efficacy. It was found that subjective norm and computer self-efficacy as two significant constructs of PU and PEOU. Similarly, PU is was not significant with intention to use, PEOU is significant with intention to use.

Sheng et.al. (2008) studies the TAM with respect to online learning system and extends by including an intrinsic motivational factor. A sample of 121 usable responses were considered to build the model and partial least squares was used to building and testing the model. From the analysis, they found that PEOU is significantly related with PU, PU significantly related with behavioural intention, enjoyment is significantly related with behavioural intention, and PEOU is significantly related with behavioural intention.

Antonio et.al. (2008) studies the influence of gender and previous experience as determinants of technology and proposes a modified TAM. They use SEM to explain the impact of perceived computer self-efficacy on the intention to use internet-based e-collaboration. A sample of 225 management students were considered for the study. Interestingly their study suggests that management students cannot be considered as advanced user of internet. Computer self-efficacy has a positive impact on PEOU, do not have a significant impact on intention to use.

Jaflah and Hamad (2008) investigates the factors affecting the acceptance and use of e-learning system at the University of Bahrain. They build an extended TAM by including three factors: computer self-efficacy, content quality, and subjective norms. A sample of 155 final questionnaires were considered for the study and correlation analysis for analysing the data. Interestingly the study considers content quality, computer self-efficacy, and other factors of TAM are considered in building the model. Along with this, the study considers power distance, Individualism vs Collectivism, Uncertainty avoidance, Masculinity vs feminism, and Long-term orientation. The analysis has proven that PEOU is significant with PU, PU is significant with behavioural intention, PEOU is significant with behavioural intention, subjective norms is significantly related with behavioural intention, content quality is significant with PU, content quality is significant with PEOU, computer self-efficacy is significant with PU and PEOU, Individualism vs collectivism is significant with behavioural intention, power distance is significant with behavioural intention, uncertainty avoidance is significant with behavioural intention, masculinity vs feminism is significant with behavioural intention, and long term vs short term is significant with behavioural intention.

Masoud et.al. (2008) proposes a model to identify the factors that can be used to predict the acceptance of e-learning. Results demonstrate that there exists positive relationship between students' intention to use e-learning and its perceived usefulness, internet experience, computer self-efficacy, and affect. Also, computer anxiety and age have negative relationship with students' intention to use e-learning.

Liao and Lu (2008) considers antecedents of perceived characteristics of innovating (PCI) and antecedents of TAM and investigates that same in the context of e-learning. Experimental results show that PCI factors explain more variance in users' intention of continued use than TAM antecedents. PCI factors include ease of use, compatibility, image, and result demonstrability. Among these, compatibility is significantly related with intention to continued usage.

Tseng and Hsia (2008) integrates internal locus of control (ILOC) and computer self-efficacy with TAM and attempts to explain employees' decisions to accept e-learning system. A sample of 204 employees were considered and SEM was used to build and test the model. The analysis shows that ILOC is significantly related with perceived usefulness and perceived ease of use, computer self-efficacy is significantly related with perceived ease of use and behavioural intention to use.

Liao and Lu (2008) attempts to build a TAM and findings indicate that perceptions of relative advantage and compatibility are significantly related to users' intention to use e-learning. They consider two sets of samples, one with prior e-learning experience and two without prior e-learning experience. For the model with prior e-learning experience, compatibility and result demonstrability are significantly related with intentions of continued use. For the model without prior e-learning experience, compatibility and relative advantage are significantly related with intentions of adoption. Their findings help one to understand the e-learning users better.

Lee (2008) examines perceptions of adequate resources on students' adoption of online learning system. Their model extends TAM by including the perspectives of intra and extra-organizational factors in the aspect of perceived resources. The results show that perceived usefulness and ease of use are positively associated with behavioural intention. Among the intra-organizational factors, internal computing support and internal computing training are significantly related with perceived usefulness and perceived ease of use. Similarly, among the extra-organizational factors, external computing support is significantly related with perceived usefulness and perceived ease of use, external computing training and external equipment accessibility are significantly related with perceived ease of use.

Lee et.al. (2009) proposes a model, based on flow theory, service quality, and TAM, that consists of four independent variables (instructor characteristics, teaching materials, design of learning contents, and playfulness), two belief variables (perceived usefulness and perceived ease of use), and one dependent variable (intention to use e-learning). A sample of 250 responses from students were collected, who had attended at least one e-learning class and SEM was used to build the model. The results show that instructor characteristics is significantly related with perceived usefulness, teaching materials are related with perceived usefulness, design of learning contents is related with perceived ease of use.

Park (2009) develops a general structural model that includes e-learning self-efficacy, subjective norm, system accessibility, perceived usefulness, perceived ease of use, attitude, and behavioural intention to use e-learning. A sample of 628 students were selected for the study and SEM was used to build the model. The results show that TAM was a good model to understand the users' acceptance of e-learning. Also, e-learning self-efficacy was most important construct, followed by subjective norm.

Wang and Wang (2009) develops an integrated model that integrates instructor adoption of web-based learning systems by incorporating existing literature and multiple empirically verified theories, including the technology acceptance model and DeLone and McLean's information system success model. A sample of 268 instructors were considered and SEM was used to build the model. The final model has information quality, system quality, service quality, subjective norm, and self-efficacy, along with constructs of TAM. Analysis show that information quality is significant with PU, system quality is significant with PEOU, and service quality is significant with PEOU. Also, subjective norm is significant with PU and intention to use, self-efficacy is significant with PEOU.

Akram and Sona (2009) extends TAM by including subjective norm, personal innovativeness in domain of information technology and computer self-efficacy. A sample of 155 students were considered and SEM was used to build the model. The results show that personal innovativeness in domain of information technology has a direct effect on self-efficacy. Both personal innovativeness and self-efficacy have direct effect on perceived ease of use. Perceived usefulness has a direct effect on intention of students to accept e-learning system.

Muneer and David (2009) investigates and tries to identify factors affecting students' adoption of e-learning system. An extended TAM was developed to find the factors. A sample of 470 students who were using Moodle based e-learning system were considered and SEM was used to build the model.

The model has subjective norms, internet experience, system interactivity, self-efficacy, technical support, along with factors of TAM. The analysis shows that self-efficacy is significantly related with PEOU, Prior internet experience is significantly related with PEOU, subjective norm is significant with PU and intention to use, system interactivity is not significant with the TAM factors.

Cho et.al. (2009) proposes a theoretical model to assess impact of perceived user-interface design (PUID) on continued usage intention (CUI). The proposed model has perceived functionality (PF), perceived system support (PSS), and user satisfaction (USat). A sample of 100 students were considered and SEM was used to build the model. The results show that PF is significantly related with PU, PUID is significantly related with PEOU, PSS is significantly related with PEOU, Usat is significantly related with CUI, and PU is significantly related with CUI. Among the demographics, prior experience is significantly related with CUI.

Sørebø et.al. (2009) proposes to build an extended model in the context of teachers' utilization of e-learning in connection with on-site courses. In this model they consider perceived autonomy, perceived competence, perceived relatedness, confirmation, intrinsic motivation, satisfaction, and PU as predictors of intention to continue. A sample of 124 teachers was considered and SEM was used to build the model. The results show that perceived autonomy is significantly related with intrinsic motivation, perceived competence is significantly related with confirmation, and PU, PU is significantly related with satisfaction and intention to continue, confirmation is significantly related with PU.

Duan et.al. (2010) conducts a survey amongst the Chinese students' intention of taking up e-learning. They consider relative advantage in facilitating learning process, relative advantage in enhancing learning outcome, compatibility, complexity, trialability, observability as predictors of intention to take up e-learning study. Among these, compatibility and trialability is significantly related with intention to take up e-learning study.

Abdulhameed et.al. (2010) extends TAM by including enjoyment, computer anxiety, computer self-efficacy, and internet experience as predictors for studying the students' intention to use e-learning. A sample of 402 students were considered to build the model and used regression analysis to test the hypotheses. The results indicate that computer anxiety, computer self-efficacy, and enjoyment were significantly related with students' intention to use e-learning.

Lee (2010) attempts to synthesize the expectation-confirmation model (ECM), TAM, theory of planned behaviour (TPB), and flow theory to build a model to explain the users' intention to continue using e-learning. A sample of 363 learners of web-based learning program were considered for the study and SEM was used to build and test the model. From the analysis, one can note that confirmation is significantly related with satisfaction and PU, PU is significantly related with satisfaction, attitude, continued intention. Perceived enjoyment is significantly related with attitude and continued intention, concentration is significantly related with continued intention. Also, subjective norm and perceived behavioural control are significantly related with continued intention.

Liu et.al. (2010) takes TAM as foundation and extends the same by including the external variables and few perceived variables. A sample of 436 students were considered for the study and SEM was used to build and test the model. External variables considered are-online course design, user interface design, pervious online learning experience. Perceived interaction (PINT) was considered as perception variable. The analysis shows that online course design is significantly related with PU, PEOU, and PINT. User interface design is significantly related with PEOU, and PINT, and previous online learning experience is significantly related with PU, PEOU, Intention to use an online learning community, and PINT is significantly related with Intention to use an online learning community.

Jorge et.al. (2010) studies the influence of gender on

adoption of technology among higher education students. The proposed model has PU, PEOU, Result demonstrability (RES), Perception of external control (PCE), and Perceived enjoyment (PENJ). A sample of 189 students were considered and, Partial least squares and ANOVA were used to test the proposed hypotheses. The results show that RES is significantly related with PU, PCE and PENJ were significantly related with PEOU. Also, show that there exists no significant difference between male and female when adopting e-leaning platform.

Chen (2010) links the overall job outcomes with e-learning related factors. The proposed model has information quality, system quality, PU, user satisfaction, and Overall job outcome. A sample of 193 employees was considered and partial least squares was used to build and test the model. Analysis show that information quality is significantly related with PU, system quality is significantly related with PU and PEOU. Also, usage of e-learning systems has a significant impact on overall job outcome.

Ahmad and Samar (2010) tries to link few external factors and TAM factors and study the influence of the same on students e-retention. They consider design features, enjoyment, PU PEOU as independent variables, e-satisfaction as mediating variable, and e-retention as dependent variable. A sample of 340 complete responses were used in the study and SEM was used to build and test the model. The results show that PU, BDF, ENJ are significantly related with e-satisfaction, PEOU, PU are significantly related with e-retention, and e-satisfaction is significantly related with e-retention.

Lee et.al. (2011) examines the factors that influence employees' adoption and use of e-learning systems. They study the relationship of employees' perceptions on using e-learning systems in terms of four determinants- individual, organizational, task characteristics, and subjective norm. A sample of 357 employees were considered and SEM was used to build and test the model. They consider organizational support (OS), management support (MS), individual's experience with computers (IEC), computer self-efficacy (CSE), task interdependence (TI), and task equivocality (TE) as external factors. TAM factors include PU, PEOU and Subjective norm. Analysis show that OS is significantly related with PU and SN. Similarly, MS is related with SN and PEU, IEC is related with PEU, CSE is related with PEU, SN is related with PU and PEU. Also, PU and PEU are significantly related with behavioural intention.

Veera (2011) proposes to extend TAM by introducing CSE, system functionality (SF), and Teaching materials (TM). A sample of 207 students have been considered for the study and SEM was used to build the model. Analysis shows that CSE, SF, and TM have positive effect with PEOU, TM has positive effect with PU. PU is positively linked with intention to use, and PEOU is positively linked with PU.

Yan li et.al. (2011) tries to integrate TAM and self-efficacy theory and develop a theoretical framework to investigate learners' behavioural intention to reuse e-learning systems. A sample of size 280 e-learners were considered for the study and SEM was used to build and test the model. The model is built by considering factors-system functionality, system response, system interactivity as predictors for PU and PEOU. Similarly, service quality, course quality, self-efficacy, PU, and PEOU as predictors of behavioural intention to re-use. Analysis show that system functionality is significantly related with PU and PEOU, system response is significantly related with PU and PEOU, system interactivity is related with PEOU. Also, service quality, course quality, PU, PEOU, and self-efficacy are significantly related with behavioural intention to reuse.

Cheng (2011) builds an extended TAM for identifying the antecedents and consequences for employees' acceptance of the e-learning system with financial services organizations. A sample of 328 employees were considered and SEM was used to build and test the model. The study links several factors to build extended TAM. The factors considered as network externality factor, social factors (interpersonal influence,

external influence), system factors (system functionality, system interactivity, system response, and content quality) and individual factors (computer self-efficacy, internet self-efficacy, cognitive absorption, and learning goal orientation) as predictors for PU, PEOU, and perceived enjoyment.

Lin (2011) explores the factors impacting the e-learning continuance intention of users with different levels of e-learning experience and examines moderating effects of e-learning experience on the relationships among the factors. A sample of 256 users were used in the study and SEM was used to build and test the model. The factors considered are- Negative critical incidents (NCI), Quality attributes cumulative satisfaction (QAS), PU, and PEOU as predictors. From the analysis, one can note that NCI is significantly related with QAS and PU. Also, PEOU is significantly related with PU and attitude to use e-learning. PU is related with attitude and, QAS and attitude are significantly related with continuance intention (CI).

Karaali et.al. (2011) aims at extending the TAM by including the factors that are significant in explaining the decision on using a web-based learning system among blue-collar workers in the automotive industry. A sample of 546 blue-collar workers were considered in the study and SEM was used to build and test the model. The model includes factors-social influence, facilitating conditions, anxiety as external factors. From the analysis one can note that, social influence is significantly related with PU and Behavioural intention, facilitating conditions and anxiety are significantly related with PEOU.

Soud and Fisal (2011) investigate empirically the relationships between system quality, information quality, service quality, internet self-efficacy, PU, intrinsic user satisfaction, and continuous intention to use e-learning system. Demographic variables are considered as moderating variables, continuance intention is the dependent variable. A sample of 186 responses were considered for the study and multiple regression was used to test the hypotheses. The results indicate that there exists positive relationship between system quality, information quality, service quality, internet self-efficacy, perceived usefulness, intrinsic, and user satisfaction. Also, there exists positive correlation between system quality, information quality, service quality, internet self-efficacy, perceived usefulness, intrinsic, user satisfaction, and continuous intention to use e-learning system. Finally, the results suggest that there is no difference in the evaluation of continuous intention to use e-learning systems by research respondents in terms of demographic variables such as, gender, age, and level of education.

Basheer Ibrahim (2011) aims at studying the attitudes of lecturers towards adoption of e-learning system and finds that there exists positive relationship between PU, PEOU, computer knowledge, management support, and intention to adopt. Also, there exists negative relationship between normative pressure, computer anxiety and intention to adopt. A sample of 799 academicians were considered for the study and SEM was used to build and test the model.

Alfie (2012) aims at identifying the predominant factors that determine intention of students to use e-learning. The study considered 5 categories of variables-individual differences, beliefs, attitudes, behavioural intention, and actual behaviour. A sample of 249 usable responses taken from students were considered and SEM was used to build and test the model. Results show that PU, SN, PEOU are significant predictors of behavioural intention.

Hsia et.al. (2012) integrates locus of control, computer self-efficacy, and TAM and builds an extended TAM to explain the behaviour of employees of high-tech companies towards acceptance of e-learning systems. A sample of 233 employees was considered and SEM was used to build and test the model. The results indicate that locus of control has a significant relation with PU and PEOU. PU, PEOU and computer self-efficacy are significant with behavioural intention. Also, computer self-efficacy is significant with behavioural intention.

Cheng (2012) examines the effect of quality factors on the learners' intention to use an e-learning system. A

sample of 483 usable responses were used and SEM was used to build and test the model. The study considers information quality, system quality, service quality, instructor quality as quality factors. Further, information quality is divided into two components- course content quality and course design quality. Service quality is measured with support service quality, system quality is divided into 4 components- system functionality, system interactivity, system response, and user-interface design. Instructor quality is measured as instructor attitude toward e-learners.

Abdulhameed (2012) extends TAM to investigate the effect of system performance (SP), system functionality (SF), system response (SR), and system interactivity (SI) on students' acceptance of E-learning. A sample of 408 responses were used in the study and stepwise regression analysis was used to test the hypotheses. Analysis show that SR, SF and SI are significant with e-learning acceptance and SP found to be insignificant with e-learning acceptance.

Purnomo and Lee (2012) tries to extend the TAM in the context of e-learning acceptance in banking workplace, by including computer self-efficacy, prior experience, computer anxiety, management support, and compatibility. A sample of 306 responses were considered and SEM was used for building and testing the model. Results show that Management support is significantly related with PU and PEOU, Prior experience is significantly related with PU and PEOU, computer anxiety is significantly related with PU, perceived compatibility is significantly related with PU and PEOU. Finally, PU is significantly related with behavioural intention to use.

Chen and Tseng (2012) considers teachers and investigate their perspective on using e-learning in in-service education. A sample of 402 junior high school teachers in central Taiwan were considered as respondents and SEM was used for building the model and testing it. The factors considered include Motivation to use (MU), Computer anxiety (CA), Internet self-efficacy (ISE), PU, PEOU. The results show that MU is significantly related with PU and PEOU, CA is significantly related with PEOU, ISE is significantly related with PU and PEOU. Finally, PEOU is significantly related with PU, PU and PEOU are significantly related with Behavioural intention.

Park et.al. (2012) considers professionals from construction industry and tries to build an extended TAM to study the factors that affect the successful implementation of a web-based training. A sample of 408 construction professionals were considered and SEM was used to build and test the model. The factors considered are enjoyment (ENJ), computer anxiety (CAX), social influence (SI), organizational support (OS), information quality (IQ), system quality (SQ) as external factors along with the TAM factors. The analysis show that PU is significantly related with user satisfaction (US), PEOU is significantly related with US, PEOU is significantly related with PU, US is significantly related with transfer of training (TT). Similarly, ENJ is significantly related with PU, CAX is significantly related with PU and PEOU, SI is significantly related with PU, OS is related with PEOU, IQ is related with PU, and SQ is related with PEOU.

Alexander et.al. (2012) investigates the association with particular learning style and perceived usefulness of e-learning. A sample of 953 students were considered for this purpose and regression analysis was used to test the hypotheses. Findings show that individuals' learning style and gender have significant effect on perceived usefulness.

Ramayah et.al. (2012) tries to find the factors that are significant for the adoption of e-learning among the students of universities in Malaysia. The study considers information quality, system quality, system quality as predictors of user satisfaction. A sample of 250 students were considered and SEM was used to build and test the model. Results show that system quality, information quality, service quality are significantly related with user satisfaction. Also, system quality is positively related with intention to use, service quality is positively related with intention to use, and user satisfaction is positively related with usage continuance.

Lin and Chen (2012) integrates TAM and ISM to identify the factors that makes one choose e-learning system (ELS). They introduce system quality (SQ), platform information quality (PIQ), and course information quality (CIQ) as antecedents of perceived usefulness and perceived ease of use. Satisfaction to ELS (SES) was introduced as a factor to predict continuance intention (CI) and PU and PEOU are taken as antecedents to SES. A sample of 412 students were considered and SEM was used to build and test the model. Analysis show that PU, SES are significantly related with CI, PU and PEOU are significantly related with SES, PEOU is significantly related with PU, and SQ is related with PEOU. Also, CIQ and PIQ are significantly related with PU and PIQ is related with PEOU.

Ali et.al. (2013) extends TAM by including social norms and quality of work life (QWL) constructs. A sample of 569 undergraduate and Postgraduate students were considered and SEM was used to build and test the model. The analysis show that PU, PEOU, social norms and QWL are significantly related to students' behavioural intention to use e-learning.

Lee et.al. (2013) applied TAM to study the attitude of the employees and acceptance of e-learning systems in the organizations. They consider organizational support (OS), computer self-efficacy (CSE), prior experience (PE), and task equivocality (TE) as external factors to PU and PEOU. A sample of 332 employees were considered and SEM was used to build and test the model. Analysis show that OS is significantly related with PU and PEOU, CSE is significantly related with PEOU, PE is significantly related with PU and PEOU, and TE significantly related with PU. Also, PU is significantly related with behavioural intention (BI), PEOU is related with PU and attitude, and attitude with BI.

Rym et.al. (2013) proposes a model to identify the determinants of accepting e-learning by Tunisian Post office employees. A sample of 200 employees were considered and SEM was used to build the model and test the same. The study considers social factors (interpersonal influence (INI), external influence (EXI)), system factors (content quality (CQ)), organizational factors (technical assistance (TA)), and individual factors (NTIC self-efficacy (NTICSE)). Analysis shows that TA is significantly related with PEOU, NTICSE is related with PEOU, CQ is related with PU, EXI is related with PU, PEOU is related with PU, PU is related with ATU, PEOU is related with ATU, ATU is related with ITU, and EXI is related with ITU.

Nabeel (2013) conducts a study to identify the determinants of students' acceptance of e-learning in higher education. The study considers university support and computer self-efficacy as external factors of PU and PEOU. A sample of 224 students were considered in the study and regression analysis was used to test the hypotheses. The analysis shows that university support and computer self-efficacy is significantly related with PU and PEOU. Also, PU is significantly related with PU, attitude towards using e-learning, and behavioural intention to use e-learning. Similarly, PEOU is significantly related with PU and attitude towards using e-learning.

Amer et.al. (2013) considers students of Jordanian Universities and attempts to identify the factors that motivate them to use e-learning systems. A sample of 107 students were considered for the students and regression analysis was used to test the hypotheses. The analysis shows that PU is significantly related with intention to use e-learning system, PEOU is significantly related with PU, PEOU is related with attitude to sue e-learning system.

Sánchez et.al. (2013) considers students of University of Huelva and attempts to identify the factors lead to acceptance of WebCT learning system. A sample of 226 students were considered for the study and SEM was used to build and test the model. The study considers technical support as an antecedent of computer self-efficacy and computer self-efficacy is considered as an antecedent to PU and PEOU. Among the factors, technical support has a significant relation with attitude, PEOU is significantly related with attitude, and PU. Also, attitude has significant relation with system usage.

Cheng (2013) conducts a study to explore the relation between intrinsic factor (flow), extrinsic factors (PU, PEOU) and usage of e-learning amongst the nurses. A sample of 218 responses were considered and SEM was used to build and test the model. The study considers learner-system interaction, instructor-learner interaction, and learner-learner interaction as antecedents of PU, flow, and PEOU. Results show that learner–system interaction, instructor–learner interaction, and learner–learner interaction are significantly related with PU, PEOU, and flow. Also, flow had significant relation with PU and PEOU, and PEOU had a significant relation with PU. Finally, flow, PU, and PEOU have significant relation with intention to use.

Ali et.al. (2013) considers students from developing country like Lebanon and conducts the study to extend TAM to include two constructs social norms and quality of work life. A sample of 569 students were considered in the study and uses SEM for building and testing the model. Results show that quality of work life, social norm, PU, and PEOU are significantly related with behavioural intention to use e-learning system. Also, behavioural intention has significant relation with attitude to use.

Motaghian et.al. (2013) conducts a research to build a model to identify the factors affecting university instructors' adoption of web-based learning systems. A sample of size 115 university instructors were considered in the study and SEM was used to build and test the model. Their research show that PU, PEOU, and system quality increase instructors' intention to use web-based learning systems. Also, they show that PU is the most important factor affecting the intention and actual use the system.

Mazen et.al. (2013) conducts a study to identify the factors contributing to attitude towards E-learning in higher education among the students. The study develops a TAM-EL model for predicting the intention to adopt e-learning using the factors of the model. A sample of 380 undergraduate students were considered for the study. The study considers PU, PEOU, patronise (degree of support) and practiced (previous use) as predictors of attitude towards using the system. Analysis shows that PU, PEOU are significantly related with practiced (previous use). Patronised (degree of support) is significantly related with PU and PEOU. Also, practiced is significantly related with attitude towards the usage of system.

Cheung and Vogel (2013) attempts to extend the TAM for e-learning and identify the factors that influence the acceptance of Google applications acceptance model. A sample of 136 students were considered for the study and SEM was used to build and test the model. The study considers perceived resource, compatibility, sharing, subjective norm (peer, media, lecturer), self-efficacy, PU, PEOU as antecedents of attitude, and behavioural intention. Analysis show that perceived resource and compatibility is significantly related with PEOU, compatibility is related with attitude, sharing is related with PU and attitude, subjective norm-peer is related with behavioural intention, and self-efficacy is related with behavioural intention. Also, sharing and behavioural intention are significantly related with system usage.

Tabak and Nguyen (2013) proposes a conceptual model that integrates TAM with self-regulation taken from social cognitive theory. The study considers intrinsic factors (consciousness, openness, general self-efficacy, and risk propensity), extrinsic factors (technical support, technology training, equipment accessibility), self-reflection (self-adjustment, self-reaction), forethought (self-motivation and task analysis), and performance (self-control, self-observation) as factors of the model.

Ali et.al. (2013) extends TAM by including social, institutional and individual factors. A sample of 604 students were considered for the study and SEM was used to build and test the model. The study considers the factors PU, PEOU, social norms (SN), quality of work life (QWL), as antecedents to behavioural intention (BI) and self-efficacy (SE), and facilitating conditions (FC) as antecedents to attitude to use (AU) the web-based system. The analysis shows that PU,

PEOU, SN, and QWL are significant factors of BI, SE and FC are significantly related with AU.

Calisir et.al (2014) considers blue-collar workers and aims at identifying the factors that affect their intention to use the web-based learning system in the automotive industry. The extend TAM by including factors such as anxiety, image, perceived content quality, and perceived system quality. A sample of 546 blue-collar workers was used SEM to build and test the model. Analysis shows that perceived content quality is significantly related with PU, perceived system quality and anxiety are significantly related with PEOU, PU is related with attitude to use and BI, PEOU is related with AU.

Richard et.al. (2014) adopts TAM and attempts to identify the factors that motivate the students to choose e-learning systems. A sample of 423 students were considered and SEM was used to build and test the model. The results show that perceived enjoyment (PENJ), social influence and computer self-efficacy are significantly related with PU, PENJ and computer self-efficacy are related with PEOU, satisfaction is related with system usage.

Lee et.al. (2014) proposes a model that includes five characteristics of TAM and tries to find the significant factors that motivate students to use e-learning. They consider factors such as computer self-efficacy, internet elf-efficacy, instructor attitude toward students, learning content, and technology accessibility. A sample of 326 students were considered and SEM was used to build and test the model. The results show that computer self-efficacy is significantly related with PEOU, internet self-efficacy is related with PU, learning content is related with PU and PEOU, and technology accessibility is related with PEOU. Also, PU and PEOU is related with perceived intention to use and PEOU is related with PU.

Tan and Shao (2014) considers a model that takes into consideration the characteristics related to information and technology related to e-learning. Many studies have considered user characteristics and attempted to identify the factors that motivate the users of e-learning system. This is one study that considers the characteristics related to information and technology. They consider factors such as subjective norm, image, job relevance, output quality, result demonstrability, user friendliness, user training, and environment support, as predictors of the TAM factors. Analysis show that subjective norm and output quality are significantly related with PU, user friendliness and environment support are significantly related with PEOU. Also, PU and PEOU are related with BI, PEOU is related with PU.

Agudo-Peregrina et.al. (2014) proposes a TAM3 based model by including two additional variables: personal innovativeness and perceived interaction, to study the factors influencing the acceptance of e-learning systems. The study considers factors such as relevance for learning, perceived interaction, subjective norm, self-efficacy, computer anxiety, personal innovativeness, perceived playfulness, facilitating conditions, and self-reported habit. A sample of 81 students were considered and SEM was used to build and test the model. The analysis shows that relevance for learning is significantly related with PU and perceived usefulness (flexibility) and PEOU, perceived interaction is related with PU, subjective norm is related with PU and BI, compute anxiety and playfulness is related with PEOU, facilitating conditions is related with PEOU.

Wu and Zhang (2014) proposes a model that integrates TAM, information system success (ISS) model and social motivation theories to identify the factors that motivate students to continue to use e-learning system. A sample of 284 participants from the companies in China that have already implemented E-learning in their companies and SEM was used to build and test the model. The study includes factors such as system reliability, system accessibility, information accuracy, information completeness, sociality, and altruism as predictors of the TAM factors. Analysis shows that system reliability is significantly related with PU and PEOU, system accessibility is related with PEOU, information accuracy is related with PU, information completeness is related

with PU, and Sociality is related with PU.

Ali et.al. (2014) aims at identifying the factors affecting the students' behavioural intention to adopt e-learning technology and also study the moderating effect of age and gender on the relationships among the determinants affecting e-learning acceptance. A sample of 604 students who used a web-based learning system were considered and SEM was used to build and test the model. The study considers PU, PEOU, social norm, and self-efficacy as predictors of behavioural intention. The analysis shows that all the factors are significantly related with behavioural intention to use the e-learning system. Also, the study found that age is a significant moderator for PEOU, PU, and self-efficacy, gender is a significant moderator for PEOU, and SN.

Cheng (2014) conducts a longitudinal study to examine how the interactivity factors affect the learner's intention to use e-learning system. A sample of 225 students were considered for the study and SEM was used to build and test the model. The study considers factors such as controllability, responsiveness, two-way communication, and personalization as predictors (or extrinsic) of TAM factors. In the current study, perceived enjoyment is considered as an intrinsic factor. Analysis shows that all extrinsic factors have significant relation with PU, PEOU, and PE. Also, PU, PEOU, and PE have significant relation with intention to use e-learning.

Inma and Antoni (2014) investigates how senses of presence and flow, together with perceptions about two central elements of the virtual education environment (didactic resource quality and instructor attitude), facilitate the user's intention to continue e-learning. The factors include resource quality and instructor attitude are considered as antecedents of PU, PEOU, Flow, and Presence. The analysis shows that AU is significantly related with continuance intention, PEOU is related with AU, PU is related with AU, PEOU is related with PU, resource quality is related with PEOU, and PU, instructor attitude is related with PEOU, PU and resource quality, PEOU is related with Flow, resource quality is related with Flow, Flow is related with academic performance, Flow is related with AU, resource quality is related with presence, instructor attitude is related with presence, presence is related with Flow, and presence is related with continuance intention.

Patricio et.al. (2015) considers two different universities, one in Chile and the other in Spain and studies the impact of gender on the adoption of e-learning in the two universities. The study includes factors such as result demonstrability (RES), perceived enjoy (ENJ), perception of external control (PCE) as predictors of PU and PEOU. Also, PU and PEOU are predictors of BI. A sample of 230 students were considered from Spain and 159 students from Chile. The analysis shows that there is significant relation between BI and Usage of e-learning for male and female, ENJ is significantly related with PEOU for male but not for female, PCE is significantly related with PEOU for both male and female, PEOU is significantly related with BI for both male and female, and RES is significantly related with PU for both male and female. This motivates one to take up gender as a moderating factor while building the comprehensive model.

Kang and Shin (2015) propose to extend TAM for identifying the factors that motivate learners to choose e-learning system. They consider self-efficacy, systematic lecture content, subjective norm, system accessibility as antecedents to PU and PEOU. A sample of 251students were considered and SEM was used to build and test the model. Analysis show that self-efficacy is significantly related with BI, and PU, subjective norm is significantly related with PU and PEOU, and system accessibility is related with PEOU, and BI. Also, PEOU is related with BI.

Mohammadi (2015) attempts to integrate TAM and IS success model to identify the factors that motivate the e-learners to choose the e-learning system. A sample of 390 students were considered for the study and SEM, Path analysis were used to build and test the model. The factors considered include education quality, service quality, technical quality, information quality, PU, PEOU as predictors of the factor satisfaction and intention. Also, satisfaction and

intention are used to predict learning assistance and actual use. Analysis show that educational quality is significantly related with satisfaction, service quality is related with satisfaction and intention, system quality is related with satisfaction and intention, information quality is related with satisfaction and intention, PEOU is related with PU, PU and satisfaction are related with intention, satisfaction is related with actual use and learn assistance, intention is related with actual use, actual use is related with learn assistance.

Ho and Liu (2015) investigates users' choice of new e-learning system to old system. They use construal theory and TAM to identify the factors that motivate users choose e-learning system. A sample of 131 students were considered in the study and conducted an experiment to achieve the objectives of the study. Two levels of construal level are considered: high construal level and low construal level. Analysis show that PEOU is related with PU and attitude, PU is related with attitude, relative construal level acts significantly as a moderator between PEOU and PU. Also, attitude is significantly related with usage intention.

Abu-Shanab and Ababneh (2015) considers TAM and extends the same by considering job satisfaction and age as other factors along with PU and PEOU as predictors of intention to use e-learning. A sample of 104 faculty members were considered and regression analysis was used to test the hypotheses. Analysis shows that age and job satisfaction are not significant, PU and PEOU are significantly related with intention to use e-learning.

Ratna and Mehra (2015) considers TAM to identify the factors that motivate students to use e-learning. A sample of 116 students were considered and regression analysis was used to test the hypotheses. Analysis of the data shows that PU and PEOU were significantly related with attitude towards e-learning (ATT), PEOU is related with PU, ATT is related with BI, Bi is related with actual use of e-learning. Also, PU and PEOU are related with actual use of e-learning.

Nawaz et.al. (2015) studies the intentions of schoolteachers towards usage of e-learning systems in Sri Lanka. The study uses PU, PEOU, social influence (SI), and facilitating conditions (FC). A sample of 367 teachers were considered and regression analysis was used to test the hypotheses. Analysis show that PU, PEOU, and FC are significantly related to attitude to usage of e-learning.

Willie and Herring (2015) adopts TAM to identify the factors that motivate the students in South Africa to choose e-learning. A sample of 113 students were considered and MANOVA is used to test the hypothesis. The study considers computer self-efficacy and gender as predictors of PU and PEOU. Results show that gender was found to be significant in building the model. Also, other factors of TAM are significant.

Richard et.al. (2016) attempts to identify the determinants of e-learning adoption among the students of University of Ghana. They consider a model that has computer self-efficacy as an important predictor of PU and PEOU. Analysis show that computer self-efficacy is significantly related with PEOU but not with PU.

Ahmed et.al. (2016) proposes a model that includes five constructs IT infrastructure services, system quality, information quality, service delivery quality, and perceived usefulness. A sample of 720 students who were enrolled for online courses, were considered for the study and SEM was used to build and test the model. Among the factors, service delivery quality (SDQ) is considered as a mediating factor. Analysis show that SDQ was not a significant mediating factor. Removing the same, the analysis shows that IT infrastructure services is significantly related with system quality, system quality is significantly related with information quality, IT infrastructure services is significantly related with information quality, system quality is related with PU, and information quality is related with PU.

Abdullah and Ward (2016) uses Meta-analysis to build an extended TAM to identify the factors that motivate users to choose e-learning. A total of 107 papers

covering the 10 years were considered and results of the same were considered to build the extended TAM. The study considers self-efficacy, subjective norm, enjoyment, computer anxiety, and experience as external factors. The analysis show that self-efficacy is the most significant factor for PEOU. Other significant factors include, enjoyment, experience, computer anxiety, and subjective norm. For PU, the most significant factor is enjoyment, followed by subjective norm, self-efficacy and experience. It is an interesting study and a motivation for the current study, in either finding more external factors or finding strengths to the existing paths.

Said (2016) conducts a study to identify the factors that motivate the students to choose e-learning systems. Their study considers TAM3 and considers a sample of 286 students to achieve the objectives of the study. The factors considered include subjective norm, image, job relevance, output quality, result demonstrability, computer self-efficacy, perceptions of self-control, computer anxiety, computer playfulness, perceived enjoyment, and objective usability. SEM was used to build and test the model. Analysis shows that subjective norm, image, job-relevance were significantly related with PU, computer self-efficacy, perceptions of external control, computer anxiety, and perceived enjoyment were significantly related with PEOU. Interestingly, the study finds that experience was a significant moderator between subjective norm and PU, between perceived enjoyment and PEOU, between PEOU and PU, between PEOU and intention to use. Also, subjective norm is significantly related with intention to use.

Moreno et.al. (2016) conducts a study to explain students' intention to use e-learning platforms effectively. Interestingly they study the intention of students to explore the system functionalities fully. A sample of 251 students were considered in the study SEM was used to build and test the model. They use factors such as system interactivity, social influences, output quality, cognitive absorption, self-efficacy, facilitating conditions, and prior experience as external factors. The analysis shows that system interactivity cognitive absorption is significantly related with PU, and cognitive absorption, self-efficacy, and facilitating conditions are significantly related with PEOU.

Biswadip (2016) proposes a model as an integration of technology mediated learning (TML) and TAM. The proposed model has individual characteristics, TML system, perceived ease of use, perceived usefulness, facilitating conditions, learning outcomes as predictors of the factor "Usage". A sample of 139 users were considered for the study and SEM was used to build and test the model. The analysis shows that TML is significantly related with PEOU, PU and Usage. PEOU is related with PU, PU is related with Usage, Usage is related with learning outcomes, individual characteristics is related with PEOU, Usage, PU, learning outcomes, and facilitating conditions is related with PEOU.

Ramirez-Anormaliza et.al. (2016) builds a model to identify the factors that motivate teachers to use e-learning systems. They consider a model that has factors such as social influence (SI), perceived enjoyment (PENJ), technical support (TS), computer self-efficacy (CSE), and satisfaction (S) as predictors of TAM factors. A sample of 131 teachers were considered for the study and SEM was used to build and test the model. The analysis shows that SI is significantly related with PU, PENJ is related with PU and PEOU, and CSE is related with PEOU.

Ali et.al. (2016) conducts a study that tests the significance of social media in explaining the factors of TAM in e-learning. A sample of 318 students and 182 teachers were considered for the study and SEM was used to build and test the model. The analysis shows that social media is significantly related with PU and PEOU.

Abbas (2016) conducts a study to propose a model that includes three social factors-interpersonal influence, external influence, and instructor influence. A sample of 468 students were considered in the study and SEM was used to build and test the model. The analysis shows that interpersonal influence is significantly related with PU, external influence is

related with PU, instructor influence is related with PU and PEOU.

Khanh (2016) conducts a study to identify the factors that determine the attitudes of learners towards a blended e-learning system (BELS). A sample of 396 students were included and SEM was used to build and test the model. The model considers system characteristics and individual differences as predictors of attitude and PEOU. System characteristics include system functionality and content feature. Socio-cultural factors include language capability, interaction, learning climate. Individual differences include computer self-efficacy and personality traits. Personality traits include extraversion, openness, conscientiousness, agreeableness, and neuroticism. Analysis shows that system functionality, language capability, interaction, and extraversion are significantly related with PEOU, content feature and interaction are related with attitude. Also, PEOU is significantly related with attitude.

Nadia et.al. (2017) conducts a study to evaluate the relationship between technological aspects of e-learning and PU. A sample of 306 students were considered for the study and SEM was used to build and test the model. The study considers-ease of access, level of interaction, service quality, system quality and internet quality ss predictors of PU of e-learning. Analysis shows that ease of access, level of interaction, service quality, and internet quality have significant relation with PU.

Ibrahim et.al. (2017) conducts a study to identify the factors that are affecting the students' choice of e-learning systems. They consider computer self-efficacy, course design, instructor characteristics as predictors of TAM factors. A sample of 95 students were considered for the study and SEM was used to build and test the model. The study identifies that computer self-efficacy is significantly related with PEOU, and PEOU is related with intention to use e-learning.

Wilmar et.al. (2017) integrates theories of information systems' satisfaction and success in the e-learning systems to build a model to identify the factors that motivate the students in Brazil to use e-learning systems. The factors include collaboration quality (CQ), service quality (SQ), information quality (IQ), system quality (SYsQ), learner computer anxiety (LCA), instructor attitude towards-learning (IATL), diversity in assessment (DA), learner perceived interaction with others (LPIO). A sample of 301 students were considered and the study identifies that CQ is related with use, IQ is related with use and user perceived satisfaction, SysQ is related with user perceived satisfaction and individual impact. Also, IATL, DA, LPIO are related with user perceived satisfaction.

Manuel (2017) aims at determining the factors that affect students' choice of e-learning technology acceptance, particularly on learning management systems (LMS). They extend TAM by including internet connectivity experience (ICE), social media influence (SMI), integrated multimedia instruction (IMI), system interactivity (SI) and perceived quality of work life (PQWL) as predictors. A sample of 629 students from Filipino were considered and SEM was used to analyse the data. Analysis show that ICE is significantly related with PEOU and BI, PU is related with BI, SMI is related with PU and BI, PEOU is related with PU and BI, SI is related with PU, and IMI is related with PEOU.

Chang et.al. (2017) considers the general extended TAM to identify the factors affecting the students' acceptance of e-learning systems. The study considers Subjective norm (SN), experience (EXP), enjoyment (ENJ), computer anxiety (CA), technological innovation (TI), and self-efficacy. A sample of 714 students were considered for the study and SEM was used to test the model. Analysis shows that SN is significantly related with BI and PU, EXP is related with PU and PEOU, ENJ is related with PU and PEOU, CA is related with PU and PEOU, and SE is related with PEOU. Also, PU and PEOU is related with BI. Another interesting result is TI is a significant moderator of SN and PU, and a significant moderator between PU and BI.

Zainab et.al. (2017) builds a model to find the role of perceived cost, self-efficacy, and the TAM in e-training

in the Nigerian civil service. A sample of 450 heads of the departments were considered in the study and SEM was used to build and test the model. They found that perceived cost is significantly related with e-training, and PU is related with e-training.

Faria and Mariam (2017) makes an attempt to identify the factors that motivate the students to adopt e-learning systems in developing countries like Pakistan. A sample of 354 students enrolled at a Virtual University at Pakistan and SEM was used to build and test the model. The study considers computer self-efficacy (CSE), internet experience (IEXP), enjoyment (ENJ), computer anxiety (CA), organizational accessibility (ORGA), system characteristics (SCH), sand subjective norm as predictors of TAM. CSE, IEXP and ENJ are significantly related with PEOU, SCH is related with PU and PEOU, PU and PEOU are related with attitude and finally attitude is related with BI.

Maria et.al (2017) conducts a study to determine the factors that influence the students to choose e-learning systems. A sample of 286 students were considered in the study and regression analysis was used to test the hypotheses. The study considers e-learning usefulness, e-learn design, e-learning ease of use as predictors of attitude to use e-learning. The analysis shows that all the three factors are significantly related with attitude to use e-learning.

Willie et.al. (2017) conducts a study to identify the factors that influence students to choose e-learning system at a rural University in South Africa. A sample of 252 first year students were considered, and SEM was used to build and test the model. The study considers online course design, user interface design, pervious learning experience as external factors. PU, PEOU, and perceived interaction (PI) as internal factors. Analysis shows that PEOU is significantly related with PI, PU is related with intention to use, and PEOU is related with PU.

Ahmed and Patrick (2017) considers a model that includes self-efficacy (SE), perceived satisfaction (PS), and learning styles to investigate the effect of learning styles in predicting the PS and e-learning acceptance. A sample of 210 students were considered and SEM was used to build and test the model. The learning styles include processing, perception, input, and understanding. Among the styles, understanding has significant impact on PS, SE is significantly related with PU and PEOU, PU and PEOU are significantly related with PS, and PU and PEOU are related with intention to use e-learning system.

Zuhal (2017) conducts a study to investigate the attitude of University students in Malaysia on the use of e-learning system using TAM. A sample of 151 students were considered to test the model and regression analysis was used to test the hypotheses. Analysis show that attitude to use e-learning is significantly related with intention to use the e-learning system. PU and PEOU are not significant with attitude to use e-learning system.

Tsai et.al. (2017) conducts a study to investigate the factors affecting nurses' choice of e-learning system. A sample of 557 nurses were considered and SEM was used for the study. The study considers information quality (IQ), system quality (SQ), service quality (SVQ) as external factors of the model and PU, PEOU, perceived enjoyment (PENJ), attitude and BI are considered as external factors. Analysis show that IQ is related with PU and PEOU, SQ is related with PU and PEOU, SVQ is related with PEOU. Also, PENJ is related with PEOU and attitude, PEOU is related with PU and attitude, and PU is related with attitude. Finally, PU and attitude are related with BI.

Ritter (2017) uses meta-analytic structural equation modelling (MASEM) to test the TAM in adopting the online management systems. The study considers 13 studies representing 3407 students and considers four path models (fixed-effects and random-effects) to measure the factors. The results give mixed conclusions. That is, in few cases the results are positive while in other cases they are negative. Hence, one has to check the adoptability of the model fresh and this motivates us to synthesize the results.

Priyanto et.al. (2017) conducts a study to find the factors that motivate the teachers of vocational school

to choose e-learning system. The study considers social environment, facilitating conditions as predictors of TAM factors. A sample of 132 teachers were considered in the study and regression analysis was used to test the hypotheses. Analysis shows that social environment is significantly related with PU and IU, facilitating conditions is significantly related with PEOU and e-learning usage, PEOU is related with PU. Also, Pu and PEOU are related with IU and IU is related with e-learning usage.

Dana and Darmawan (2017) conducts a study to identify the factors that motivate students to choose e-learning system. They consider a university that has implemented e-learning for two years and tests the significance of TAM among the students of the university. A sample of 73 respondents were considered in the study and used regression analysis to test the model. Results show that PU is significantly related with user acceptance of e-learning.

Sanjiv (2017) conducts a study to identify the factors that motivate the students to choose e-learning. The study considers self-efficacy, PU, PEOU, subjective norm, and system accessibility as predictors of e-learning attitude. A sample of 100 students were considered for the study and regression analysis was used to test the hypotheses. Results show that PEOU, PU, and self-efficacy are related with e-learning attitude, and e-learning attitude is related with BI.

Alejandro et.al. (2018) proposes an e-learning tools acceptance model (eLTAM) to identify the factors that affect students' choice of e-learning. The study includes factors such as instructor's preparation (INP), student's preparation (STUP), perceived self-efficacy (PSE), learning autonomy (LAUTO), and personal innovativeness as predictors of TAM factors. A sample of 1032 students from three different higher education institutions in Columbia were considered and confirmatory factor analysis (CFA) was used to test the model. The study identifies INP, LAUTO, and PSE as main factors affecting the adoption of e-learning tools by the study. Results indicate a strong relation between INP and PU, PSE and PEOU, and LAUTO and PU. Somer's D was used to measure the association between the factors. The degree of association between the factors mentioned above are high and hence appropriate conclusions have been drawn on the relations between them.

Abinew et.al. (2018) conducts a study to examine the e-learning acceptance and use in technology institutes of Ethiopian public Universities. A sample of 400 teachers were considered and SEM was used to build and test the model. The study includes factors such as PEOU and PU as predictors of BI, and top management support, training, and incentive as predictors for Actual usage. Also, BI is taken as the antecedent for Actual usage. Results shows that BI is significantly related with actual usage, incentive is not related with actual usage, PEOU and PU related BI, top management support is related with actual usage, and training is related with actual usage. The study gives new factors to be considered while looking for factors that affect the TAM factors.

Irene et.al. (2018) attempts to build an extended TAM by including flow as an important external factor for predicting attitude to use e-learning system, PU, PEOU, behavioural intention to use, and actual system use. A sample of 2574 students were considered to build and test the model, SEM was used in building and testing the study. The results show that Flow is significantly related with actual system usage, PU, and PEOU. Also, PU and PEOU are related with attitude towards using, PU is related with BI, attitude towards using is related with BI and BI is related with actual system usage.

Ali et.al. (2018) extends TAM by including factors such as PU, PEOU, subjective norm (SN), work life quality (WLQ), internet experience (IE), computer self-efficacy (CSE), facilitating conditions (FC) as predictors of BI and actual usage (AU). A sample of 424 students were considered in the study and SEM was used to test the paths between the factors. Analysis shows that WLQ, PU, PEOU, IE, and SN are significantly related with BI. FC, BI, and CSE are related with AU.

Vululleh (2018) extends TAM by including two intrinsic

motivation attributes, namely, quality of life (QL) and social influence (SI). The sample considered is taken from a developing country and of size 269 and SEM was used to test the model. Analysis shows that PU, PEOU, SI, and QL are significantly related with BI and BI is related with AU.

Angela et.al. (2018) uses extended TAM to find the factors that are affecting students' choice of e-learning systems. A sample of 354 students were considered for the study and SEM was used to build and test the model. The study considers self-efficacy (SE), subjective norm (SN) and experience (EXP) as external predictors of PU and PEOU. Analysis shows that SE, EXP and SN are significantly related with PEOU. Also, PU and PEOU are significantly related with BI.

Bryan (2018) conducts a study in Uganda to identify the factors that affect the students' choice of e-learning system. A sample of 213 students were considered for the study and regression analysis was used to test the hypotheses. Analysis shows that e-learning policy is significantly related with PEOU and PU.

Tove (2018) conducts a study with an aim to study the impact of trust perceptions on teachers' intention to continue using e-learning technology. A sample of 401 university teachers were considered for the study and SEM was used to identify the significant paths in the model. The study considers trust in the system, trust in management, confirmation, PU, satisfaction, and intention to continue. Analysis shows that confirmation is significantly related with trust in system, PU and satisfaction. Also, trust in system, PU, trust in management, and satisfaction are related with intention to continue.

Hadeel and Kamaljeet (2018) conducts a study to identify the factors that motivate students to choose e-learning system in Saudi Arabia. They include service quality (SQ) and user experience (UE) as external factors of TAM. A sample of 353 students were considered for the study and SEM was used to build and test the model. Results show that PEOU is significantly related with user acceptance, PU is related with user acceptance, service quality if related with PEOU, user acceptance is related with continuance usage intention, and user experience is related with PU.

Qais and Emad (2018) conducts a study to identify the factors affecting the adoption of e-learning system. They attempt to build a model as an integration of TAM and Delone and McLean models. The factors considered include PU, PEOU, system quality (SQ), information quality (IQ), computer self-efficacy (CSE). A sample of 386 students were considered for the study and multiple regression analysis was used to test the hypotheses. Analysis shows that PEOU, PU, SQ, IQ, and CSE are significantly related with students' satisfaction.

Aamer et.al. (2018) conducts a study to build a model that includes six external factors to predict the behavioural intention of the students towards e-learning system. A sample of 437 students were considered and path analysis was used to test the model. They consider, result demonstrability (RED), subjective norm (SN) as predictors of PU, enjoyment (ENJ), self-efficacy (SE), perception of external control (PEC), and system accessibility (SYSACC) as predictors of PEOU. Analysis shows that RD and SN are significantly related with PU, and ENJ, PEC, SYSACC are related with PEOU.

Nasiru and Salihu (2018) aims to identify the factors affecting students' choice of e-learning in Nigeria. They consider UTAUT to achieve the objectives of the study. A sample of 286 students were considered and SEM was used to test the significance of the paths. The model considered had, performance expectancy (PEXP), effort expectancy (EFEXP), social influence (SI), and facilitating conditions (FC) as predictors of behavioural intention (BI) toward the usage of e-learning. Analysis shows that PEXP and EFEXP are significantly related with BI.

Also, FC and BI are related with AU.

Adhicipta (2018) builds a model by considering system characteristics (system interactivity, technical support, and screen design) and individual differences

(subjective norms, internet experience, and computer self-efficacy). A sample of 152 students were considered and path analysis was used to test the hypotheses. Results show that PEOU is related with PU, PU and PEOU are related with AU, AU is related with ITU, SN is related with PU and ITU, IE is related with PEOU, and CSE is related with PEOU.

Liu et.al. (2018) builds an extended e-learning acceptance model by including social influence (SI) and cost tolerance (CT). A sample of 156 students were considered in the study and path analysis was used to test the model. Analysis show that PU and PEOU are related with AU, PEOU is related with PU, AU is related with BI, SI is related with PU, SI is related with AU, and CT is related with AU.

Nisreen et.al. (2018) aims to identify the factors that affect the choice of e-learning system in Iraq. They integrate the factors of TAM and UTAUT to achieve the objectives of the study. A sample of 300 students were considered and PLS-SEM was used to build and test the model. The factors considered are-information quality (IQ), technical support (TS), PEOU, PU, subjective norms, self-efficacy, system quality. Analysis show that IQ is significantly related with SQ, PU, and BI, TS is related with IQ, PEOU, BI and actual usage of the e-learning system, self-efficacy is related with BI, PEOU is related with PU, PEOU is related with BI, PU is related with BI.

Mohamed et.al. (2019) extends TAM by including 4 external factors namely computer anxiety, perceived enjoyment, computer playfulness, and gender. The objective is to find the factors that affect the students to use web-based learning system. A sample of 250 teachers, educational experts, and workers in the education sectors in Libya were considered and SEM was used to build and test the model hypotheses. Analysis shows that PENJ is significantly related with PEOU, Computer playfulness is related with PEOU and PU, computer anxiety is related with PEOU. Also, PU and PEOU are related with attitude towards use, PEOU is related with PU, Attitude towards use is related with BI and BI is related with actual use of web-based learning.

Andrea (2019) aims at presenting an extended TAM to identify the factors that motivate the generation Z students to adopt e-learning. They study considers factors such as social factors (SF), e-learning anxiety (ANX), system access (SA), IT security awareness (IT), smart tool (ST), traditional education (TE), digital learning (DL), as external factors of TAM factors. The study also looks at digital learning and smart tool usages in the Hungarian environment. A sample of 500 responses were used to achieve the objectives of the study and SEM was used to test the hypotheses. The analysis shows that PU, DL, ST, SA, PEOU, and ANX are significantly related with motivation and usage intention (MUI). Also, SA, DL, SF, ANX, PE, DL, ST, SF, and ANX are related with PU. Finally, the study finds that IT and SF are not related with MUI, and, IT and ST are not related with MUI.

Sukainah et.al. (2019) considers TAM to identify the relation between the factors of TAM and acceptance of e-learning by the students of Kelase. A sample of 67 students were considered for the study and multiple linear regression is used to test the hypotheses. Results show that PEOU and PU are significantly related with acceptance of Kelase.

Gaurav et.al. (2019) conducts a study to evaluate the effectiveness of e-learning experience from students' perspective. The study considers those students who have registered to COURSERA and looks at two aspects related to the e-learning. The first one looks at e-learning system that includes system quality, information quality, and service quality and e-learning effectiveness the include user satisfaction and net benefits. Note that, the study considers e-learning system dimensions as predictors e-learning effectiveness and e-learning effectiveness is a predictor to user satisfaction and net benefits. A sample of 469 students were considered for the study and SEM was used to build and test the model. Analysis shows that system quality, service quality and information quality are significantly related with user satisfaction and new benefits.

Marzieh and Salman (2019) builds a model that includes factors such as e-learning motivation (ELM),

online communication self-efficiency (OCSE), perceived enjoyment (PENJ) as predictors to TAM factors. A sample of 181 valid responses were considered and SEM was used to build and test the model. Analysis shows that PU, PEOU are significantly related with e-learning acceptance and readiness. PEOU is related with PU. Also, ELM is related with E-learning acceptance and readiness with PU as mediator, PEOU as mediator. Similarly, OCSE is related with e-learning acceptance and readiness with PU and PEOU as mediators. PENJ is related with e-learning acceptance and readiness with PU, PEOU as mediators.

Farhan et.al. (2019) takes up a study to propose and design an E-learning User Interface (ELUI) using web programming to support instructional communication in an online learning environment. The study considers both students and teachers, a sample of 102 students and 10 teachers were taken. They adopt both quantitative and qualitative methods for analysing the data drawn. Students' responses were analysed using TAM and teachers' responses were analysed using content analysis. Analysis for students show that PU and PEOU are significantly related with BI and AU. Analysis for teachers show that teachers believe that ELUI would be successful if adequate training and support are provided.

Dimah et.al. (2019) proposes a comprehensive model based on a literature review and tests the validity of the same using a sample of 563 students who are engaged with an e-learning system. The comprehensive model considers factors such as technical quality (TSQ), information quality (INQ), service quality (SRQ), educational system quality (ESQ), support system quality (SUP), learner quality (LER), and instructor quality (INS) as predictors. TAM factors include PU, PEOU, Perceived satisfaction and taken as predictors of benefits (BNT). Analysis shows that TSQ is significantly related with SAT and PU, INQ is related with SAT and PU, SRQ is related with SAT, ESQ is related with PEOU, SUP is related with SAT, PU, and PEOU, LER is related with SAT, PU, and PEOU, INS is related with SAT, PU, and, SAT and PU are related with BNT.

Damijana et.al. (2019) conducts a study to identify the factors that influence student perception on e-course's usefulness in blended learning environment. A sample of 539 students were considered in the study and SEM was used to build the model. Factors considered are technology acceptance (TA), face-to-face (F2F), e-teaching (ET) as predictors of PU. Analysis shows that all the three factors are significantly related with PU. ET and F2F are directly related with PU, while TA has an indirect impact on PU.

Said et.al. (2019) conducts a literature review of articles published for the last 12 years for identifying the external factors of the TAM. The factors identified include- system quality, content quality, information quality, computer self-efficacy, subjective norm, enjoyment, accessibility, computer playfulness. A sample of 435 students were considered to test the model. Analysis shows that SQ is related with PEOU, IQ is related with PU and PEOU, CSE is related with PEOU, ENJ is related with PU and PEOU, accessibility is related with PU and PEOU, and computer playfulness is related with PEOU. Also, PEOU is related with PU, PU and PEOU are related with attitude towards using and BI. Finally, BI is related with actual system usage.

Flora and Zhang (2019) empirically tests the general extended TAM for e-learning to identify the factors that affect students' usage intention of e-learning system. A sample of 172 students were considered and SEM was employed to test the model. Factors considered are subjective norm, experience, enjoyment, computer anxiety, and self-efficacies. Analysis show that SN is related with PU and PEOU, experience is related with PEOU, enjoyment is related with PEOU, computer anxiety is related with PU and PEOU, and PEOU is related with PU. Also, PU and PEOU are related with usage intention.

Anastasia and Nikolaos (2019) proposes a model which is an extended version of TAM, by including factors such as social norm (SON), self-efficacy (SE), system accessibility (SYSA), and year (Y). A sample of 345 students were considered and SEM was used to build the model. Analysis shows that AT is significantly

related with BI, Y is related with BI, PE is related with AT, PE is related with PU, PU is related with AT and BI, SE is related with BI and PE, SN is related with AT and BI, SN is related with PU, SA is related with BI, and SA is related with PE.

Marie et.al. (2019) extends the TAM by adding factors such as subjective norms (SN), images (IMG), output quality (OQ), facilitating conditions (FC) and well-being at work (WBaW). Internal factors include PU, PEOU, intention to use e-learning (IU), and usage behaviour (UB). IMG is related with PU, OQ is related with PU, PEOU is related with PU, PEOU is related with IU, PU is related with IU, FC is related with PEOU, IU is related with UB, and U is related with WBaW.

Waleed et.al. (2019) proposes an extended TAM by integrating innovation diffusion theory and TAM. A sample of 1286 students were considered for the study and SEM was used to build the model. The factors considered are- relative advantages (RA), complexity (CO), trialability (TR), observability (OB), perceived compatibility (PC), and perceived enjoyment (PENJ) and TAM factors include PU, PEOU and BI. Analysis shows that RA is significantly related with PU and PEOU, CO is related with PEOU, TR is related with PU, OB is related with PU, PC is related with PU and PEOU, PE is related with PU and PEOU, PEOU is related with PU, PU is related with BI, and PEOU is related with BI.

Zhi et.al. (2019) uses extended TAM to identify the factors that affect the choice of e-learning system by the students. A sample of 275 students were selected and SEM was used to build the model. Factors considered include- social influence (SI), system characteristics (SCH), individual differences (ID), and facilitating conditions (FC). Analysis of the data show that SC, SI, PEOU are significantly related with PU; FC and ID are related with PEOU; PU and PEOU are related with BI. The study also shows that output quality, perceived enjoyment and objective usability are critical to the users' continued usage intentions of online learning applications.

Edward et.al. (2019) conducts a study to predict the students' intention to accept and use technology in learning. A sample of 337 students were considered and regression analysis was used to test the hypotheses. Analysis shows that PU is related with intention to use and intention to use is related with actual usage.

Rizwan et.al. (2019) conducts a study to understand the attitude of students towards e-learning. They use TAM and attempts to assess the influence of computer self-efficacy (CSE) in e-learning usage. A sample of 110 students were considered and regression analysis was used to test the hypotheses. Analysis shows that PEOU is related with AU; PEOU is related with AU, with CSE as a mediator; PU is related with AU; PU is highly related with AU, with CSE as a mediator; AU is related with Intention to use.

Wang et.al. (2019) conducts a study to find the relation between five factors namely-computer self-efficacy (CSE), enjoyment (ENJ), PEOU, PU, and user perception (UP) and the dependent variable continuance intention (CI). A sample of 170 IT students were considered and PLS-SEM was used to build the model. Analysis shows that CSE and enjoyment are significantly related with CI and other factors are not significantly related with CI.

Note that the above literature gives one an idea on the factors that are significantly related with either e-learning usage or continuance or attitude towards use of e-learning. The results taken from various studies spanning from 2000 to 2019 helps one to find the strength of paths between the factors. Since the methodology planned to apply is meta-analysis, we focus more on presenting the results in chronological order to find the paths and hence, one may not find linkers between the results presented above. It is just aggregating the results found over the years.

4. Research Gap

From the above literature review and the summary, we identify the following research gap.

Many studies have been conducted to identify the factors that affect the leaners' choice of e-learning or continuance of e-learning. But not many could give a

comprehensive model that takes into consideration all the significant factors that affect learners' choice/ continuance of e-learning. Though few studies have attempted to aggregate the results of previous studies to build a model, the recent developments have not been recorded and this has created a gap. Also, few studies have claimed some of the factors to be significant, while others have proved that they are not significant. There is a need to consolidate these results and find a conclusion on their significance, as an aggregate of the previous findings. Another important aspect is to identify new paths between the factors and note their significance in explaining the behaviour of the learners towards adoption of e-learning. Also, it is important to identify/establish the paths between the factors, provide the path coefficients as an aggregate of the previous studies and study their significance. This will also eliminate few paths that have weaker path coefficients and helps one to rebuild the model. The current study fills the gap.

5. Motivation for the study and Problem Statement

5.1. Motivation for the study

E-learning is an important change the world has seen in the learning process and has opened gates for learners who wish to update themselves with the latest developments in their respective fields. It has helped students to learn new aspects in their subjects of interest, has given employees to update themselves in their working domains, employers to encourage their employees to get trained on latest developments in their domains, instructors have got opportunities to share their knowledge with wider section of learners, and developers of courses to develop customized courses to meet the needs of the learners. Overall, e-learning has changed the learning scenario across the globe and has removed barriers for the flow of the wisdom. Along with advantages, it has also created new challenges to the learners, instructors and developers. Among other challenges, the important challenge is to understand the attitude or behaviour of the learners towards e-learning systems. It is very important to know the likes/dislikes of the users towards e-learning usage and build a platform that is more user friendly. For this, one has to conduct studies on the users of e-learning and identify the factors that affect their motivation towards the adoption of the platforms. Researchers have tried to understand the same by using models such as, technology acceptance model (TAM), TAM2, TAM3, UTAUT etc. In all the cases the attempt is to identify the factors that affect the choice of e-learning by the users. In the modelling process, researchers have divided the factors into two groups-intrinsic and extrinsic. The intrinsic factors include PU, PEOU, AU, ATU, BI etc. Extrinsic factors include quality characteristics, system characteristics etc. Over the years, researchers have added new dimensions to both the sets of factors. Attempts have been made to identify the significance of each of these factors on the actual usage intentions of the users. Interestingly, these studies have been conducted at different places (geographical regions) and each of them have given different set of factors affecting the e-learning choices. While few studies have identified the factors as significant, while others have found the same to be insignificant at other places. This has created a void and there is a need to fill this by identifying the factors that are significant. A fresh study based on primary data may again lead to similar confusion and one has to conduct a study that will take into consideration all the previous studies and aggregates the results. This can be achieved by using meta-analysis, which synthesizes the results found by the researchers. This is the main motivation for conducting the current study.

5.2. Problem Statement

Studies conducted by the researchers across the globe have given out different extrinsic and intrinsic factors for understanding the behaviour of the learners/users towards using E-learning system. The main objective of every study is to identify the factors that affect the choice of e-learning system by the users. This is

achieved, in most of the times, by using technology acceptance model or an extended version of the same. It is believed that the user acceptance/continuance play an important role in making an e-learning platform successful. The model includes intrinsic factors such as perceived usefulness (PU) and perceived ease of use (PEOU). These are expected to influence the factors such as, attitude to use (ATU), actual usage (AU), and behavioural intention of the users towards e-learning system. Few also have given additional intrinsic factors such as perceived enjoyment, subjective norms etc. The extrinsic factors include demographics of the users, self-efficacy, quality aspects etc. Few studies have tried to add the factors, while others have tried to find the significance of these factors in predicting the behaviours. Interestingly, few studies have shown that the factors are significant, while others have proved that they are not. This has created a confusion amongst the users, developers, and instructors, on identifying the factors that are significant in motivating one to choose e-learning platforms. Hence, there is a need to synthesize the results found at different time points and places and give the overall significance of each of the factors on behaviours of users towards adoption of e-learning systems. This synthesis will help one to find the average effect of each of these factors and also understand the priority amongst these factors. This helps the users to know why an e-learning platform is being chosen by them and what benefits they get and also what factors need to be taken while choosing a platform. Instructors to know about the actual motivating factors that are making user to choose a platform and design the courses accordingly. Developer can be more cautious while designing a platform. It is better to have results at one place than having them scattered and creating confusion. Another important problem is that, every study adds a new factor and one needs to know the strength of these factors. Strength means, repetitive usage of a factor while considering a platform and the average beta value. Few factors may not have much strength and they need not have to be considered. This study aims at providing solutions to the mentioned problems.

6. Research Methodology

We use meta-analysis to achieve the objectives of the study and in the current section we present the steps adopted in meta-analysis. We present the methodology as required and more information about the same can be obtained from notes on meta-analysis by Stefan (2015), Lipsey and Wilson (2001), Borenstein et.al. (2009).

Meta-analysis (MA) is process of systematically integrating the research findings using statistical methods. It helps one to find new directions and findings in research by a way of synthesizing the results founds in earlier studies. It can be performed where there are many scientific studies addressing the same issue, with each study indicating the results that are expected to have some degree of error. The objective is then to use statistical methods to derive a pooled estimate closest to the unknown value. MA yields a weighted average from the results of individual studies and the weights are allocated based on the variances of the estimators. One of the important advantages of this approach is getting a higher statistical power and more robust point estimate. It applies to empirical studies and to research studies that produce quantitative findings. Since MA focuses on the aggregation and comparison of findings, it is important that these findings can be meaningfully compared. That is, findings must be conceptually comparable and be configured in similar statistical forms. The findings considered in MA must result in comparable studies and MA represents each study's results in the form on effect size (ES). An ES is a statistic that encodes the quantitative information from the study considered. Effects sizes are computed based in the types of studies considered. For example, studies that results in correlations are meta-analysed using different effect sizes as compared to studies that results in mean values of dependent variables. The key to MA is to define appropriate effect size that is capable of representing the quantitative findings of a set of research studies in a standardized form that

helps one to have meaningful comparisons and analysis across the studies.

MA helps one to present the cumulative results by reducing the distorting effects of primary studies (sampling error, measurement error, and others) and hence reduces conflicts of differing findings. It helps to develop theories by identifying the relationships between the variables (Schnidt and Hunter (2015) pp. 17-37). MA helps to identify the gaps in the existing research and help to design new research. It also helps in keeping track of ongoing research by providing aggregated data from vast range of studies.

The following are the strengths of MA:

1. It is a disciplined process of summarizing the research findings and needs documentation of each step, open to scrutiny. One has to specify the criteria that defines the population of study findings at issue, search strategies for retrieval of data and formal coding of study characteristics and findings, and data analysis in support of the conclusions drawn. The user of the research can assess the researcher's assumptions, methodology, and conclusions.
2. Unlike review of existing literature in a qualitative manner to draw valid conclusions, MA focuses on magnitude and direction of relevant statistical relationship in a collection of studies. This helps one to understand the relationships between the variables in a better way and also gives one a way to synthesize the results in a structured way.
3. MA gives estimates of the relationships with better power than studies that only focuses on providing the qualitative summaries. MA makes one to systematically code the characteristics and precisely examine the relationships between the study findings. Furthermore, estimating the effect sizes in each study and pooling those sizes cross studies, makes one to synthesize the results with more statistical power.
4. MA helps one to gather information in an organized way from a large number of study findings under review.

Process of Meta-Analysis

The following flow chart gives process to be adopted while conducting a study using MA.

Figure-17 : Process of MA

Source: Taken from note on MA by Stefan (2015)

In the first stage, one has to specify a research problem or question and related aspects, like in any primary research process. Then, one has to obtain set of rules for identifying relevant studies as data basis for conduct of MA.

Under this, the researcher starts with a research topic or idea and then conducts initial literature review to gain more insights into possible theories as a basis for validity of MA. This helps one to extract relations between the variables of interest. Reviewing theories will make one to get required motivation for the proposed MA (new MA or adding new information to the existing MA). The theoretical foundations lead to more research questions and gaps to be filled by the new study.

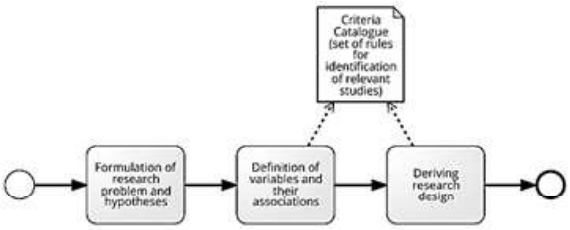
This stage is an iterative stage, where the steps are repeated till proper information on the variables and their relations are identified. This stage also helps one to distinguish between relevant and irrelevant literature related to the problem considered. The research design can be identified at this stage, based on three aspects:

1. The quantitative results obtained. 2. The target population of the research problem or hypotheses. 3. The aim of the research question: description, association or causal explanation of the events. The following figure gives the flow

Figure-18 - Process at first stage of MA

Source: Taken from note on MA by Stefan (2015)

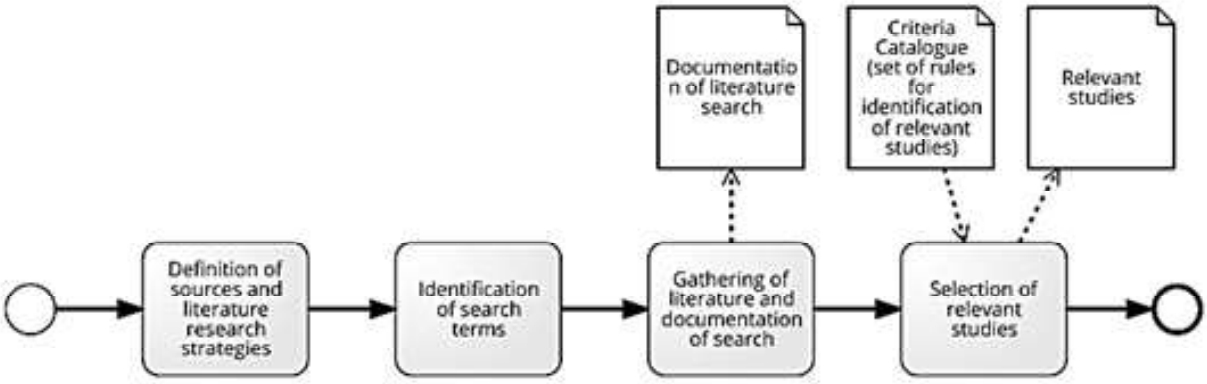
In the second stage (Search for the literature) the researcher retrieves relevant studies and tries to collect the relevant data from these studies. The relevant studies are searched in electronic data bases, research reports, systematic inquiry of peers of the same research field. The following diagram gives the flow in the second stage.



The next stage in the process is "Extraction and Coding of Data from studies", which is very critical for conduct of MA and also quality of MA. To achieve this, the coding process needs to be developed and the coders have to be trained, so that they extract and code the data found in studies. The studies are in turn selected based on the quality of the data. The following diagram gives the flow of the process at this stage.

Figure-19 : Process at second stage of MA

Source: Taken from note on MA by Stefan (2015)



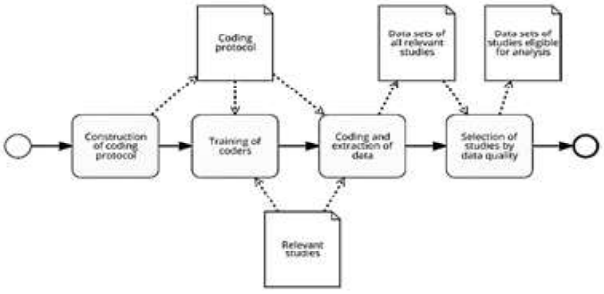


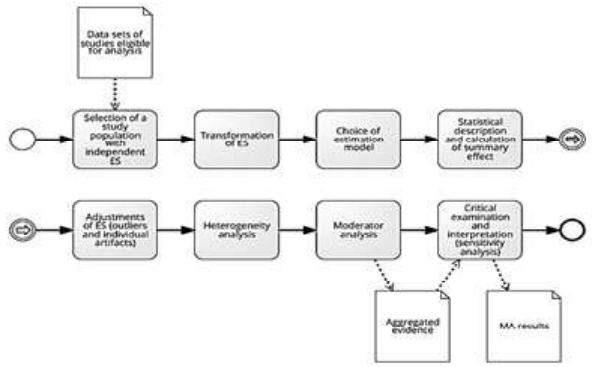
Figure-20 : Process at third stage of MA

Source: Taken from note on MA by Stefan (2015)

The coding protocol consists of a "Coding form" and a "Coding manual". Coding forms are like detailed questionnaires like those of primary studies and coding manual provides guidance on "how to apply coding form items to studies". This process of coding has to be iteratively done so that relevant and optimum information is extracted from the studies.

The next stage is application of statistical methods to integrate the results obtained from different studies. The following figure gives the flow of the process.

Figure-21 : Process at fourth stage of MA



Source: Taken from note on MA by Stefan (2015)

Under this stage, one applies meta-analysis methods on the effect sizes. The analysis helps one in getting information on significance, for example, positively, negatively or non-significant, p-values, and effect sizes, which are estimates and describe strength of the relationship between the variables. Valid conclusions and suggestions on the selected topic, solutions to the problems identified will be done at this stage. The quality of the results depends on the quality of the execution of the steps at the earlier stages.

The above stages of MA have to be iteratively applied till one gets the optimum results. One can refer to the notes of Stefan (2015) to get the steps in more precise way. We now present details of the two types of model considered in MA.

Fixed Effects Model and Random Effects Model

There are two statistical models for MA, fixed effects model and the random effects model. Fixed effects model assumes that the studies considered comes from a population of studies that have a common but unknown true effect size (ES) and the differences in the observed effects are due to sampling error. Another name to this is common-effect model. Under a random effect model, one assumes that studies have varied ES. Usually ES varies with the study as, the studies are conducted independently by different researchers at different places, with different demographic profiles of the respondents. Hence, one can expect that the ES's to be similar but not identical. Under this model, observed ES's are random sample of each study's true ES. One has to select an appropriate model to perform MA, achieve the goals of the study and interpretation of the statistics. In any of the models, the combined effect size is calculated as the weighted mean of the effect sizes. The weights are assigned based on the precision of study, which is the inverse of the variance of ES. More precise studies receive higher weights and other receive as per the magnitude of the variance. Also, the weights are assigned based on the model adopted. Under a fixed effects model, there will be on type variance, within study variance and under a random effects model, there will be within study variance and between study variance.

The fixed effect model for any study i is given by

$$Y = \theta + \varepsilon_i ,$$

where ε_i is the difference between the common true mean and the observed mean for the study i. In a fixed-effect model MA, the overall study error variance is equal to the within-study error variance.

Under this model, for each study a normal curve is superimposed on the true scores and is based on the within-study error variance and gives range within which the observed mean score is likely to fall. The variance is given by $V_i = \frac{\sigma^2}{n}$ and the corresponding weight is given by $W_i = \frac{1}{v_i}$. Using this weight, the weighted mean or the combined effect is computed using the following formula (here k stands for number of studies considered)

$$M = \frac{\sum_{i=1}^{k} W_i Y_i}{\sum_{i=1}^{k} W_i}$$

The variance of the combined effect is defined as the reciprocal of the sums of the weights, or

$$V_i = \frac{1}{\sum_{i=1}^{k} W_i}$$

and the standard error of the combined effect is given as the square root of the variance.

$$SE(M) = \sqrt{V}$$

Using this, one can construct a 95% confidence interval for the combined effect using the following formula

Lower limit= M-1.96 * SE (M)

Upper limit= M+1.96 * SE (M).

Under the fixed-effect model, we can test the null hypothesis that the common true effect size is a specific value X0, where X0 is usually zero. The corresponding test statistic is given by

$$Z = \frac{M - X0}{SE(M)}$$

Using normal distribution, one can calculate the p-value to take the decision on the null hypothesis.

The random effects model for study i is given by

$$Y = \theta + \mu_i + \varepsilon_i$$

where μ_i is the difference between the gran mean (θ) and the true mean (θ_i) for the study i is the difference between the true mean for the study i and the observed mean (Y) for the study i. There are two sources for the variance under this, within-error study variance and the between error study variance. Similar to fixed effects model, a normal curve is superimposed above θ and the standard deviation of the of the distribution is depicted as T and the variance is T-square. Using the variance calculated under the fixed effect model and T-square, total variance is calculated and the same is used to compute the respective weights.

The formula for calculation of weights under random effects model is

$$Q = \sum_{i=1}^{k} W_i Y_i^2 - \frac{\left(\sum_{i=1}^{k} W_i Y_i\right)^2}{\sum_{i=1}^{k} W_i}$$

Q follows Chi-square distribution with u degrees of freedom, u= (Number of studies)-1. Q statistic was proposed by Cohran (1954) and used to test the hypothesis. But, can exhibit poor ability to detect a true heterogeneity among studies when the MA has a small number of studies. Huedo-medina et.al. (2006) argues that I-square detects heterogeneity better than Q. I-square is the percentage of total variability in a set of effect sizes due to true heterogeneity-the intra study variability. It is calculated using the following formula

$$I^2 = \left(\frac{Q - u}{Q}\right) * 100$$

A large value of I-square indicates that the observed variance is actually existent and needs to be explained. Higgins et.al. (2003, pp-559) establishes a scale: low if I-square=25%, moderate I-square =50%, and high I-square=75%. I-square is neither directly influenced by the number of studies not it is an estimate of the underlying true effects. It is a descriptive statistic and only the heterogeneity of the observed measures is addressed.

When Q-statistic rejects the null hypothesis, one can conclude that apart from within error study variance, there will be a contribution from between error study variance. To estimate between variance (T-square), one has to use Q and the degrees of freedom. The following is the formula for calculating T-square.

$$T^2 = \frac{Q - df}{C}$$

where C is calculated using the following formula

$$C = \sum_{i=1}^{k} W_i - \frac{\sum_{i=1}^{k} W_i^2}{\sum_{i=1}^{k} W_i}$$

Based on the decision taken on the rejection of null hypothesis on homogeneity, one can choose the model to be adopted. If the null hypothesis is rejected, then one can conclude that there are two sources of variation (Within and Between) and if not, then there

will be one source of variation. One can adopt the sequence of steps to finally arrive at the model and make use the same to draw conclusions on the proposed objectives. Note that, either the fixed or random effects model, the appropriate conclusions are drawn based on the effect sizes. In a fixed effect model, one computes the combined effect and in a random effects model, one computes an average effect. The effect size is the quantitative measure of the magnitude of a phenomenon. If can be the correlation between the two variables, regression coefficients, mean difference etc. Also, the standard deviation of the effect size is also critically important. A higher value makes the measurement and the conclusion drawn based on the same weaker. Cohen (1992) proposes cut-off points for the effect sizes. If the effect size is around 0.1 in magnitude, one can conclude that the effect is small. If the effect size is around 0.3 in magnitude, one can conclude that the effect is medium and if it is around 0.5 or larger, one can conclude that the effect is large. In meta-analysis studies, the conclusions are usually drawn based on the effect sizes and the related testing. Hence, it is suggested to take larger number of studies to get better estimates for the effect sizes. But, Valentine et.al. (2010) suggest that there has to be at least two studies to conduct the meta-analysis.

In order to perform MA, the above stages and the calculations are essential, and we have adopted the same in the current study, to achieve the objectives of the study.

In the next section, we present the process adopted in the current study.

1. Adoption of meta-analysis in the current study

In this section, we present the sequence of steps adopted for conduct of meta-analysis and present the process adopted to estimate the missing information in the studies considered.

Stage-1: Formulation of the research problem and hypotheses

The current study has been taken up to identify the factors that motivate learners to choose e-learning system. This is the main objective of the study and the related literature is reviewed. The literature considered is taken from the year 2002 to 2019 and the key findings from each study is recorded. To achieve the objective of the study, we have focused more on literature related to model like technology adoption model (TAM), extended TAM etc. The variables/factors and relation between them in the studies are recorded and the same are considered in the current study. For example, factors perceived ease of use (PEOU), perceived usefulness (PU) are very important in TAM and they have a strong relation with dependent variables like attitude to use the system, behavioural intention to use the system and the actual usage of the system. Such factors and their relations have been recorded and the research design is derived. Since we wish to study and explain the associations/ relations between the variables, we consider correlational research design the current study. The data gathered through systematic review of the literature will be used to test the hypotheses constructed. Based on the literature review, we identify the research gap (section-4) and formulate the problem statement (section-5.2). Using the information gathered from the literature, we identify the key factors and propose a comprehensive model to understand the behaviour of the learners towards the usage of the e-learning system. Appropriate hypotheses related to the model are constructed.

Stage-2: Search for the Literature

Literature related to the key variables identified in stage 1, have been collected and relevant information was gathered. The studies have been gathered from different journals and from different data bases (ScienceDirect, IEEExplore, Emerald, Springer etc.) and google is used as the major search engine. The key words used to search include "TAM and E-learning", "Factors impacting E-learning", "TAM and Web-based

learning", "TAM and online learning". A total of 128 relevant studies out of 250 have been finally identified and the data on the variables has been collected. The studies have been carefully selected, based on the variables used in the study, methodology used to address the objectives, quality of the analysis, availability of the data etc. Studies that do not include the variables identified have been excluded. The following tables gives the number of studies considered for each of the factors identified.

Table-2 : Number of studies considered for the Intrinsic Factors

Factor	PU	PEOU	ATU	BI	AU	PS	PENJ
Maximum of studies	73	72	27	65	17	12	19

Source: Constructed by the researcher

Table-3 : Number of studies considered for the Extrinsic Factors

Factor	SN	SE	ANX	IQ	SYQ	SA	COMPA	EXP	SERQ	CQ	CAB	MS
Maximum of studies	25	31	12	10	11	4	3	10	10	8	5	3

Source: Constructed by the researcher

Stage-3: Construction of coding protocol

The studies considered have been thoroughly scrutinized to gather the required information/data. Coding rules were developed to ensure that all the studies were treated consistently. From each study, the following data have been collected.

1. Year of publication and the author details.
2. Sample size- the number of respondents.
3. User type- type of respondents considered in the study.
4. E-learning technology- e-learning system, online based learning, we-based learning.
5. Intrinsic/ dependent factors- Used to finally understand the behavior of the learners/users.
6. Extrinsic/ independent factors/TAM factors- Used to predict the intrinsic factors and explain the behavior.
7. Reliability measures levels- Cronbach alpha, Average variance extracted (AVE) and Composite reliability (CR) (presented in table-).
8. Paths- The relations between the factors (between external and the TAM factors, between the TAM and the intrinsic factors).
9. Effect sizes- Path coefficients are considered as effect sizes.
10. Significance- Whether the path is significant or not. Significance is denoted by "S" and non-significance by "NS".
11. P-values are considered for the calculation of the t-values and the standard error values.

The details of the same are presented in table- and are used to compute the mean effect sizes and test the proposed hypotheses.

Stage-4: Application of Statistical MA-methods

We use random effects model in the current study and consider regression coefficients as the effect sizes. The same are used to compute the weighted effects and test the hypotheses. The standard error (SE) of the effect size is gathered directly from the studies, where available and in cases where they are not available, we use the following process. **Case-1:** SE is directly gathered from the studies.

Case-2: Few studies have reported the t-values and the beta coefficients and SE is calculated by using the following formula

$$SE = \frac{t}{\beta}$$

Case-3: Few studies have only given the details on significance or non-significance or p-values. In such cases, using the p-values, the t-values are computed by using the inverse t-distribution formula and the same are used in calculation of the SE. For example, if the p-value is 0.039, the corresponding t calculated value is computed at the respective degrees of freedom (n-2, n is the sample size considered in the study) using the inverse t-function for a two-tailed test and the same is used in the calculation of SE.

Finally, SE is used to calculate the respective weights, T-square is computed using the same and the respective mean effects are computed to draw conclusions on the hypotheses. We follow Cohen's criterion to identify the paths and drop few if the criterion is not satisfied. We follow this process iteratively, till the final comprehensive model is identified. Section of "Data Analysis and Findings" gives all the details elaboratively.

Final Stage: Presentation of the results

Under this stage, we present the overall results of the analysis and the comprehensive model. Tables related to paths and the corresponding calculations are presented. Towards the end, we present the managerial implications of the findings. The remaining part of the report is organized in the following way.

Section-7 gives the process adopted to propose the comprehensive mode.

Section-8 gives the research questions, objectives and hypotheses of the study.

Section-9 gives the data analysis and the findings of the study.

Section-10 gives the Discussion of the findings and Conclusion.

Section-11 gives Suggestions from the study.

Section-12 gives the Limitations and Future work.

8. Model Building

In this section, we present the process adopted to build the model and finally present the comprehensive model to understand the behaviour of users in adopting the e-learning system.

Technology acceptance model (TAM) was introduced by Davis (1986) with AU as dependent variable and ATU as its antecedent. The study introduces PU and PEOU as two important predictors of ATU and PEOU is linked to PU (Figure-11). Davis, Bagozzi and Warshaw (1989) includes intention to use or BI between ATU and AU (Figure-12). The final version of TAM was proposed by Venkatesh and Davis (1996) by showing a direct influence of BI on AU (Figure-13). Venkatesh and Davis (2000) proposed an extended TAM, TAM2 by specifically considering Subjective norm (SN), Image, Job relevance, Output quality, Result demonstrability as antecedents for PU. Also, experience and Voluntariness as moderators. In this model SN is linked to PU and BI (Figure- 14). Venkatesh and Bala (2008) combines TAM2 and the model of the determinants of PEOU (Venkatesh (2000)) and builds TAM3 (Figure-13). King and He (2006) performs a meta-analysis on usage of TAM in different fields and finds that TAM is valid and robust model. They use 88 published studies. Šumak et.al (2011) considers 42 independent published papers related to e-learning and shows that TAM is the most commonly used in e-learning. Abdullah and Ward (2016) considers 107 studies in e-learning where TAM was used and finds few important factors that predict PU and PEOU. Baki et.al. (2018) considers 203 studies and identifies factors that explains the behaviour of e-learners towards e-learning system. Salloum (2019) builds a comprehensive TAM for e-learning.

Apart from these studies, there are several published studies that have identified both extrinsic and intrinsic factors that can be used to predict the behaviour of the E-learners and the same are considered in the current study. The current study is an attempt to identify new factors and paths between them, which will help one in understanding the behaviour of the

Table-4 L Details of the studies and factors considered in the current study

S.No	1	2	3	5
Year	2019	2019	2019	2019
Study	Mohammed et.al.	Andrea	Sukainah et.al	Marzieh
Sample size	250	500	67	181
User type	Teachers	Students	Students	Students
E-learning technology type	Web-based learning system	E-learning system	E-learning assessment	E-learning acceptance
Theory	TAM	ExTAM	TAM	TAM
Territory	Libya	Hungary	Indonesia	Iran
Factors	PU	PU	PU	PU
	PEOU	PEOU	PEOU	PEOU
	ATU	BI	AU	AU
	BI	System Access		E-learning Motivation
	AU	Computer Anxiety		Online Communication
	Perceived Enjoyment	Social Factors		Perceived Enjoyment
	Computer Anxiety	IT security awareness		
	Computer Playfulness	Smart Tools		
		Traditional Education		
		Digital Learning		

10	9	8	7	6
2019	2019	2019	2019	2019
Flora and Zhang	Salloum et.al.	Damijana et.al.	Dimah et.al.	Farhan et.al.
172	435	539	563	102
Students	Students	Students	Students	Students
E-learning system	E-learning system	E-learning	E-learning system	E-learning system
ExTAM	ExTAM	Others	TAM	TAM
China	UAE	Slovenia	UK	Canada
PU	PU	PU	PU	PU
PEOU	PEOU	Technology acceptance	PEOU	PEOU
BI	ATU	E-teaching	PS	ATU
Subjective norm	BI	Attitude to Face-to-Face	Technical system quality	BI
Experience	AU		Information Quality	
Perceived enjoyment	System Quality		Service Quality	
Computer Anxiety	Content Quality		Educational system Quality	
Self-efficacy	Information Quality		Support system quality	
	Self-efficacy		Learner Quality	
	Subjective Norm		Instructor Quality	
	Perceived Enjoyment			
	Accessibility			
	Computer Playfulness			

15	14	13	12	11
2019	2019	2019	2019	2019
Wang et.al.	Zhi et.al.	Waleed et.al.	Marie et.al.	Anastasia and Nikolaos
170	275	1286	159	345
Students	Students	Students	Employees	Students
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Malaysia	China	Malaysia	Cameroon	Greece
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
BI	BI	BI	BI	ATU
Self-efficacy	Social Influence	Relative advantages	AU	BI
PENJ	System characteristics	Complexity	Subjective norm	Self-efficacy
User Perception	Individual differences	Trialability	Image	Social norm
	Facilitating conditions	Observability	Output Quality	System accessibility
		Perceived compatibility	Facilitating conditions	Year
		Perceived Enjoyment		

20	19	18	17	16
2018	2018	2018	2018	2019
Vululleh	Ali et.al.	Irene et.al.	Abinew et.al.	Rizwan et.al
269	424	2574	400	110
Students	Students	Students	Teachers	Students
E-learning system	E-learning	E-learning	E-learning	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	TAM
Liberia	Pakistan	Spain	Ethiopia	India
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
Social Influence	BI	ATU	BI	ATU
Quality of life	AU	BI	AU	BI
	Subjective Norm	AU	Management Support	Self-efficacy
	Work life quality	Flow	Training	
	Internet experience		Incentive	
	Self-efficacy			
	Facilitating conditions			

25	24	23	22	21
2018	2018	2018	2018	2018
Adhichipta	Qasis et.al.	Aamer et.al.	Hadeel et.al.	Angela et.al.
152	386	437	353	354
Students	Students	Students	Students	Students
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Indoneisa	Jordan	Saudi Arabia	Saudi Arabia	Indonesia
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
ATU	PS	ATU	BI	BI
BI	System quality	BI	Service Quality	Self-efficacy
Subjective norm	Information Quality	Result Demonstrability	Experience	Subjective Norm
Experience	Self-efficacy	Subjective Norm	Acceptance	Experience
Self-efficacy		PENJ		
System Interactivity		Self-efficacy		
Technical Support		Perception of external control		
Screen Design		System accessibility		

30	29	28	27	26
2017	2017	2017	2018	2018
Manuel	Ibrahim	Nadia et.al.	Nisreen et.al.	Liu et.al.
629	95	306	300	156
Students	Students	Students	Students	Students
E-learning technology	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Filipino	Johor		Iraq	China
PU	PU	PU	PU	PU
PEOU	PEOU	Ease of access	PEOU	PEOU
BI	BI	Level of interaction	BI	ATU
Integrated Multimedia	Instructor Characteristics	Service Quality	AU	BI
Perceived quality work of life	Self-efficacy	Internet Quality	Information quality	Social Influence
System Interactivity			Technical Support	Cost tolerance
Social media influence			Subjective norms	
Internet connectivity experience			System Quality	
			Self-efficacy	

35	34	33	32	31
2017	2017	2017	2017	2017
Ahmed and Patrick	Willie et.al.	Marija	Faria and Mariam	Chang et.al.
210	252	286	354	714
Students	Students	Students	Students	Students
E-learning	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Iraq	South Africa	Serbia	Pakistan	
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
BI	BI	ATU	ATU	BI
PS	Perceived Interaction	E-learning design	BI	Subjective norm
Processing	Course design		Subjective norm	Experience
Perception	Interface design		System characteristics	Perceived enjoyment
Inout	Experience		self-efficacy	Computer Anxiety
Understanding			Experience	Self-efficacy
BELSSE			Perceived Enjoyment	
			Computer anxiety	
			Organizational accessibility	

40	39	38	37	36
2016	2016	2017	2017	2017
Said	Richard et.al.	Sanjiv	Priyanto et.al.	Tsai et.al.
286	357	100	132	557
Students	Students	Students	teachers	Nurses
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Saudi arabia	Ghana	New Delhi	Yogyakarta	Taiwan
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
BI	ATU	ATU	BI	ATU
AU	BI	BI	AU	BI
Subjective norm	Self-efficacy	Self-efficacy	Social environment	Information quality
Image		Subjective norm	Facilitating conditions	System quality
Jon relevance		System accessibility		Service quality
Output quality				Perceived enjoyment
Result demonstrability				
Self-efficacy				
Perceptions of external control				
Computer anxiety				
Computer playfulness				
Perceived Enjoyment				
Objective usability				

45	44	43	42	41
2015	2015	2016	2016	2016
Ho and Liu	Kang and Shin	Ramirez-Anormaliza	Biswadip	Moreno et.al.
131	251	131	139	251
Students	Students	teachers	Students	Students
E-learning system	E-learning system	E-learning system	Technology mediated learning (TML)	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
China	South Korea	Spain	USA	Brazil
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
ATU	BI	BI	AU	ATU
BI	Self-efficacy	AU	Individual characteristics	BI
	Systematic Lecture content	Social influence	TML system	System Interactivity
	Subjective norm	Perceived enjoyment	Learning Outcomes	Social Influence
	System accessibility	Technical support	Facilitating conditions	Output Quality
		Self-efficacy		Cognitive Absorption
		Satisfaction		Self-efficacy
				Facilitating conditions
				Prior experience

50	49	48	47	46
2014	2015	2015	2015	2015
Calisir et.al.	Nawaz et.al.	Patricio et.al.	Mohammadi	Ratna
546	394	230	390	116
Blue collar workers	teachers	Students	Students	Students
Web based learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Turkey	Srilanka	Spain and Chile	Iran	India
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
ATU	ATU	BI	BI	ATU
BI	BI	AU	AU	BI
Image	Social influence	Result Demonstrability	PS	
Perceived content quality	Facilitating conditions	Perceived enjoyment	Educational quality	
Perceived system quality		Perception of external control	Service quality	
Anxiety			Technical system quality	
			Information quality	
			Learning assistance	

55	54	53	52	51
2014	2014	2014	2014	2014
Wu and Zhang	Agudo-Peregrina et.al.	Tan and Shao	Lee et.al.	Richard
284	81	133	326	423
Students	Students		Students	Students
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
China	Spain	China	Indonesia	
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
ATU	BI	BI	BI	BI
BI	AU	Subjective norm	Computer self-efficacy	AU
Reliability	Relevance for learning	Output Quality	Internet Self-efficacy	PS
Accessibility	Perceived interaction	Result demonstrability	Instructor attitude	Social Influence
Accuracy	Subjective norm	User friendliness	Learning content	Perceived enjoyment
Completeness	self-efficacy	Environment support	Technology accessibility	Technical support
Sociability	Anxiety			Self-efficacy
Altruism	Personal innovativeness			
	Perceived playfulness			
	Self-reported habit			
	Facilitating conditions			

60	59	58	57	56
2013	2013	2014	2014	2014
Lee et.al.	Ali et.al.	Inma et.al.	Cheng	Ali et.al.
332	569	2530	225	604
Employees	Students	Students	Students	Students
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Taiwan	Beirut	Spain	Taiwan	England
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOu
ATU	BI	ATU	BI	BI
BI	AU	BI	Controllability	Subjective norm
Organizational support	Subjective norm	Resource Quality	Responsiveness	Self-efficacy
Self-eficacy	Quality of working life	Instructor attitude	Two-way communication	
Experience		Presence	Personalization	
Task equivocality		Flow	Perceived enjoyment	

65	64	63	62	61
2013	2013	2013	2013	2013
Cheng	Sa´nchez	Amer et.al.	Nabeel	Rym et.al.
218	226	107	224	200
Nurses	Students	Students	Students	Employees
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	TAM	ExTAM	ExTAM
Taiwan	Huelva	Jordan	Arabia	Tunisia
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
BI	ATU	ATU	ATU	ATU
Learner-System interaction	AU	BI	BI	BI
Instructor-learner interaction	Technical support		University Support	Interpersonal influence
Learner-Learner interaction	Self-efficacy		Self-efficacy	External influence
				Content quality
				Technical assistance
				Self-efficacy

70	69	68	67	66
2012	2012	2012	2013	2013
Hsia et.al.	Cheng	Alfie	Cheung and Vogel	Motaghian et.al.
233	483	249	136	115
Employees	Students	Students	Students	Instructors
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Taiwan	Taiwan	Thailand	China	Iran
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
BI	BI	BI	ATU	BI
Locus of control	Course content quality	Self-efficacy	BI	AU
Self-efficacy	Course design quality	Subjective norm	AU	Information quality
	Support service quality	Perceived enjoyment	Sharing	System quality
	System functionality	Extraversion	Perceived resource	Service quality
	System interactivity	Conscientiousness	Compatibility	Self-efficacy
	System response	Neuroticism	Subjective norm-Peer	Subjective norm
	User interface design		Subjective norm-Media	
	Instructor attitude		Subjective norm-Lecturer	
	Perceived enjoyment		Self-efficacy	

75	74	73	72	71
2012	2012	2012	2012	2012
Lin and Chen	Ramayah et.al.	park et.al.	Chen and Tseng	Purnomo and Lee
412	250	408	402	306
Students	Students	Employees	teachers	Others
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Taiwan	Malaysia	Korea	Taiwan	Indonesia
PU	BI	PU	PU	PU
PEOU	PS	PEOU	PEOU	PEOU
BI	Service quality	PS	BI	BI
PS	System quality	Enjoyment	Motivation to use	Management Support
Course Information quality	Information Quality	Anxiety	Anxiety	Self-efficacy
Platform information quality		Social influence	self-efficacy	Experience
System quality		Organizational support		Anxiety
		Information quality		Compatibility
		System quality		

80	79	78	77	76
2011	2011	2011	2011	2011
Karaali et.al.	Yan Li et.al.	Cheng	Veera	Lee et.al.
546	280	328	207	357
Blue collar workers	Learners	Employees	Students	Employees
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Turkey	China	Taiwan	Thailand	Taiwan
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
ATU	BI	ATU		BI
BI	System Functionality	BI	BI	Subjective norm
Social influence	System Response	AU	Self-efficacy	Organizational support
Facilitating conditions	System Interactivity	Perceived performance	System functionality	Experience
Anxiety	Service Quality	Perceived Enjoyment	Teaching materials	Self-efficacy
	Course quality	Network externality		Task equivocality
	Self-efficacy	Interpersonal influence		Task Interdependence
		External influence		Management support
		System functionality		
		System interactivity		
		System response		
		Content quality		
		Computer Self-efficacy		
		Internet self-efficacy		
		Cognitive absorption		
		Learning goal orientation		

85	84	83	82	81
2010	2010	2010	2010	2011
Jorge et.al.	Liu et.al.	Lee	Abdulhameed et.al.	Basheer and Ibrahim
189	436	363	402	799
Students	Students	Learners	Students	Teachers
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Spain	Taiwan	Taiwan	Malaysia	Malaysia
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
BI	BI	ATU	ATU	BI
AU	Perceived Interaction	BI	BI	Normative pressure
Perceived enjoyment	Online course design	PS	Enjoyment	Experience
Perception of external control	User interface design	Confirmation	Anxiety	Anxiety
	Previous online learning	Perceived enjoyment	Self-efficacy	Computer knowledge
		Concentration	Experience	Management Support
		Subjective norm		
		Perceived behaviour control		

90	89	88	87	86
2009	2009	2009	2010	2010
Wang and Wang	Park	Lee et.al.	Ahmad and Samar	Chen
268	628	250	340	193
teachers	Students	Students	Learners	Employees
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Taiwan	South Korea	South Korea	UAE	Taiwan
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	AU
BI	ATU	BI	E-retention	PS
AU	BI	Instructor characteristics	PS	Information quality
Information quality	Subjective norm	Teaching materials	Design features	System quality
System Quality	self-efficacy	Design of learning contents	Perceived enjoyment	
Service Quality	System accessibility	Playfulness		
Subjective norm				
Self-efficacy				

95	94	93	92	91
2008	2009	2009	2009	2009
Roca and Gagne	Sørebø	Cho et.al.	Muneer et.al.	Akram and Sona
166	124	100	470	155
Workers	teachers	Students	Students	Students
E-learning system	E-learning system	E-learning system	E-learning system	E-learning system
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Others	Norway	Hongkong	Jordan	Iran
PU	PU	PU	PU	PU
PEOU	BI	PEOU	PEOU	PEOU
BI	PS	BI	BI	BI
Perceived Playfulness	Perceived autonomy	PS	Subjective norm	Personal innovativeness in IT
Perceived autonomy support	Perceived competence	Perceived functionality	Experience	Subjective norm
Perceived competence	Perceived relatedness	Perceived user-interface Design	System interactivity	Self-efficacy
Perceived relatedness	Confirmation	Perceived system support	Self-efficacy	
	Intrinsic motivation		Technical support	

100	99	98	97	96
2008	2008	2008	2008	2008
Sheng et.al.	Tobing et.al.	Allan and Will	Hsia and Tseng	Chang and Tung
121	314	152	233	212
Users	Students	teachers	Employees	Students
E-learning system	E-learning system	E-learning system	E-learning system	E-learning
TAM	TAM	ExTAM	ExTAM	ExTAM
China	Malaysia	Hongkong	Taiwan	Taiwan
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
BI	BI	BI	BI	BI
AU	System adaptability	Subjective norm	Self-efficacy	Compatibility
Perceived enjoyment		Efficacy	Perceived flexibility	Perceived system quality
				Self-efficacy

105	104	103	102	101
2008	2008	2008	2008	2008
Tseng and Hsia	Liao and LU	Masoud et.al.	Jaflah and Hamad	Antonio et.al.
204	137	120	155	225
Employees	Students	Students	Students	Students
E-learning system	E-learning system	E-learning system	E-learning	E-learning
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Taiwan	Taiwan	Iran	Baharain	Spain
PU	PU	PU	PU	PU
PEOU	PEOU	PEOU	PEOU	PEOU
BI	BI	BI	BI	ATU
Internal locus control	Ease of use	Experience	Subjective norm	BI
Self-efficacy	Compatibility	Anxiety	Content quality	Self-efficacy
	Image	Self-efficacy	Self-efficacy	
	Result demonstrability	Affect		
	Relative advantage	Age		
	Trialability			

110	109	108	107	106
2007	2008	2008	2008	2008
Fu et.al.	Hsia and Tseng	Park et.al.	Lee	Liao and LU
451	233	191	1107	137
Students	Employees	Instructors	Students	Students
E-learning	E-learning	E-learning	E-learning system	E-learning
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Taiwan	Taiwan	US	Taiwan	Taiwan
PU	PU	PU	PU	PEOU
PEOU	PEOU	PEOU	PEOU	BI
ATU	BI	BI	BI	AU
BI	Computer self-efficacy	AU	Internal computing support	Compatibility
Perceived enjoyment	Perceived flexibility	Motivation	Internal computing training	Relative advantage
Functionality		Compliance with school policy	Internal computing accessibility	Trialability
Interface design		Instructional technology	External computing support	Result demonstrability
Pedagogic		Evaluation of functions	External computing training	Visibility
Community			External computing	Image

115	114	113	112	111
2007	2007	2007	2007	2007
Masrom	Liaw et.al.	Chen et.al.	Chiu and Chang	Hussein et.al.
198	29	214	289	147
Students	Instructors	Students	Students	Students
E-learning system	E-learning system	E-learning system	E-learning	E-learning
TAM	ExTAM	ExTAM	ExTAM	ExTAM
Malaysia	Taiwan	Taiwan	Taiwan	Indonesia
PU	PU	PU	BI	PU
PEOU	PEOU	PEOU	PS	PEOU
ATU	BI	BI	Information quality	BI
BI	PS	AU	System quality	Computer self-efficacy
	Perceived enjoyment	Perceive enjoyment	Service quality	Convenience
	Self-efficacy	System features	System use	Instructional design
	Multimedia instruction	Characteristics of teaching	Distributive fairness	Technological factors
		Self-efficacy	Procedural fairness	Instructors Characteristic
			Interactional fairness	

120	119	118	117	116
2006	2006	2006	2006	2006
Ong and Lai	WU et.al.	Lee	Ifinedo	Roca et.al.
156	187	1085	72	184
Students	Students	Students	Students	Students
E-learning	E-learning system	E-learning system	Web based learning	E-Learning
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Taiwan	Taiwan	Taiwan	Finland	Spain
PU	PU	PU	PU	PU
PEOU	BI	PEOU	PEOU	PEOU
BI	PS	BI	BI	BI
Computer self-efficacy	Confirmation	AU	AU	PS
	Computer self-efficacy	Subjective norm	Technology characteristics	Information quality
		Content quality	User characteristics	Service quality
		Perceived network externality		System quality
		Computer self-efficacy		Confirmation
		Course attributes		Cognitive absorption
		Competing behavioural		Interpersonal influence
				External influence
				Computer self-efficacy
				Internet self-efficacy

125	124	123	122	121
2004	2004	2005	2005	2006
Ong and Wang	Liao et.al.	Lee et.al.	Saade and Bahli	Saadé and Kira
140	172	544	102	114
Employees	Students	Students	Students	Students
E-learning system	E-learning	E-learning	E-learning	E-learning
ExTAM	ExTAM	ExTAM	ExTAM	ExTAM
Taiwan	BI	China	Canada	Canada
PU	AU	PU	PU	PU
PEOU	Performance expectancy	PEOU	PEOU	PEOU
BI	Effort expectancy	ATU	BI	ATU
Computer self-efficacy	Social influence	BI	Cognitive absorption	Affect
Perceived credibility	Facilitating conditions	Perceived Enjoyment		Anxiety

128	127	126
2002	2003	2004
Brown	Yi and Hwang	Xu and YU
78	119	152
Learners	Students	Teachers
Web-based learning	Web-based information	Web-based learning
TAM	ExTAM	ExTAM
Capetown	USA	Hongkong
PU	PU	PU
PEOU	PEOU	PEOU
AU	BI	ATU
Ease of understanding	AU	BI
Ease of finding	Enjoyment	Computer self-efficacy
Self-efficacy	Learning goal orientation	
Computer anxiety	Application specific self-efficacy	

Source: Constructed based on literature review

Table-5 : Path coefficients of the paths considered

			Marzieh	Sukainah et.al				Andrea				Mohammed et.al.			
SD			Beta values	SD	Sig	Beta values		SD	Sig	Beta values	Path	SD		Beta values	Path
0.1425	S	0.57	ELM->PU	0.09	S	0.407	PU->AU	0.05	NS	-0.05	SA->PU	0.05	NS	0.08	PENJ->PU
0.1283	S	0.51	ELM->PEOU	0.09	S	0.324	PEOU->AU	0.04	S	0.254	SA->PEOU	0.06	S	0.137	PENJ->PEOU
0.1113	S	0.45	SE->PU					0.04	S	0.13	SA->BI	0.06	NS	0.038	ANX->PU
0.0801	S	0.32	SE->PEOU					0.06	S	-0.197	ANX->PU	0.07	S	-0.152	ANX->PEOU
0.1275	S	0.51	PENJ->PU					0.05	S	-0.424	ANX->PEOU	0.07	S	0.362	COMPL->PU
0.1857	S	0.74	PENJ->PEOU					0.04	S	-0.146	ANX->BI	0.07	S	0.479	COMPL->PEOU
0.3560	S	0.52	PEOU->AU					0.05	S	0.107	SF->PU	0.06	S	0.373	PEOU->PU
0.4620	S	0.55	PU->AU					0.04	S	0.114	SF->PEOU	0.08	S	0.387	PU->ATU
0.1400	S	0.56	ELM->AU					0.03	NS	0.005	SF->BI	0.07	S	0.39	PEOU->ATU
0.1230	S	0.49	SE->AU					0.06	NS	0.062	IT->PU	0.06	S	0.273	ATU->BI
0.0971	S	0.39	PENJ->AU					0.05	NS	0.084	IT->PEOU	0.06	S	0.53	PU->BI
0.1540	S	0.47	PEOU->PU					0.04	NS	0.007	IT->BI	0.06	S	0.675	BI->AU
								0.05	S	0.204	ST->PU				
								0.04	NS	0.057	ST->PEOU				
								0.04	S	0.172	ST->BI				
								0.05	S	0.211	DL->PU				
								0.04	S	0.189	DL->PEOU				
								0.04	S	0.247	DL->BI				
								0.04	S	0.324	PU->BI				
								0.06	S	0.515	PEOU->PU				
								0.05	S	0.122	PEOU->BI				

		Flora and Zhang				Salloum et.al.				Damijana et.al.				Dimah et.al.			
		Beta values	SD			Beta values	SD			Beta values	SD			Beta values	SD		
S	0.25	SN->PU	0.0446	NS	-0.01	SYQ->PU		S	0.7	ET->PU	0.0394	S	0.085	SYQ->SAT	0.09	S	0.34
S	0.1	SN->PEOU	0.0404	S	0.101	SYQ->PEOU		S	0.2	F2F->PU	0.0451	S	0.079	SYQ->PU	0.08	S	0.49
NS	-0	EXP->PU	0.0533	NS	0.017	CQ->PU		S	0.4	F2F->ET	0.0623	NS	0.043	SYQ->PEOU	0.09	S	0.61
S	0.07	EXP->PEOU	0.0540	NS	-0.06	CQ->PEOU		S	0.3	TA->ET	0.0418	S	0.199	IQ->SAT	0.11	S	0.54
NS	0.01	PENJ->PU	0.0588	S	0.138	IQ->PU					0.0479	S	0.146	IQ->PU	0.11	S	0.39
S	0.15	PENJ->PEOU	0.0686	S	0.154	IQ->PEOU					0.0625	NS	-0.01	IQ->PEOU			
S	0.12	ANX->PU	0.0647	NS	0.057	SE->PU					0.0262	S	0.077	SERQ->PS			
S	0.23	ANX>PEOU	0.0676	S	0.207	SE->PEOU					0.0100	NS	1E-04	SERQ->PU			
NS	-0	SE->PU	0.0682	NS	0.012	SN->PU					0.0400	NS	-0.042	SERQ->PEOU			
NS	0.03	SE->PEOU	0.0710	NS	0.024	SN->PEOU					0.0265	NS	0.009	ESQ->PS			
S	0.26	PU->BI	0.0751	S	-0.2	PENJ->PU					0.0500	NS	0.002	ESQ->PU			
S	0.15	PEOU->BI	0.0626	S	0.132	PENJ-PEOU					0.0417	S	0.143	ESQ->PEOU			
S	0.22	PEOU->PU	0.0567	S	0.128	SA->PU					0.0295	S	0.056	SSQ->PS			
			0.0558	S	0.158	SA->PEOU					0.0336	S	0.179	SSQ->PU			
			0.0559	S	0.157	COMPL->PU					0.0481	S	0.125	SSQ->PEOU			
			0.0586	NS	-0.03	COMPL->PEOU					0.0413	S	0.49	LER->PS			
			0.0573	S	0.296	PEOU->PU					0.0523	S	0.389	LER->PU			
			0.0486	S	0.152	PEOU->ATU					0.0686	S	0.352	LER->PEOU			
			0.0537	S	0.521	PU->ATU					0.0298	S	0.085	INS->PS			
			0.0471	S	0.088	PEOU->BI					0.0378	S	0.109	INS->PU			
			0.0681	S	0.193	PU->BI					0.0500	NS	-0.005	INS->PEOU			
			0.0666	S	0.342	ATU->BI					0.0436	S	0.388	PS->Benefits			
			0.0556	S	0.194	BI->AU					0.0417	S	0.277	PU->PS			

			Waleed et.al.				Marie et.al.				Anastasia and Nikolaos	
SD			Beta values	SD			Beta values	SD			Beta values	SD
0.03	S	0.11	RA->PU	0.03718	NS	-0.08	SN->PU	0.0638	S	0.15	ATU->BI	0.07398
0.02	S	0.28	RA->PEOU	0.09948	S	0.206	Images->PU	0.0349	NS	-0.04	Y->ATU	0.03785
0.01	NS	0.01	CO->PU	0.14583	S	0.302	OQ->PEOU	0.1147	S	0.132	Y->BI	0.02903
0.03	S	0.08	CO->PEOU	0.13503	S	0.457	FC->PEOU	0.0554	NS	-0.08	Y->PU	0.02399
0.03	S	0.06	TR->PU	0.04329	NS	0.082	FC->BI	0.0410	S	0.09	PEOU->ATU	0.01216
0.02	NS	0.03	TR->PEOU	0.09101	S	0.308	PU->BI	0.5281	NS	0.91	PEOU->BI	0.05677
0.03	S	0.07	OB->PU	0.15158	S	0.513	PEOU->BI	0.0739	NS	0.142	PEOU->PU	0.03551
0.03	NS	0.04	OB->PEOU	0.06326	S	0.131	BI->AU	0.0539	S	0.368	PU->ATU	0.06806
0.03	S	0.17	COMP->PU	0.13503	S	0.457	PEOU->PU	0.0496	S	0.108	PU->BI	0.04814
0.03	S	0.19	COMP->PEOU					0.0700	NS	0.123	SE->ATU	0.05340
0.03	S	0.11	PE->PU					0.1137	S	0.247	SE->BI	0.07694
0.02	S	0.28	PE->PEOU					0.0845	S	0.424	SE->PEOU	0.05677
0.03	S	0.59	PEU->PU					0.1480	NS	0.124	SE->PU	0.08326
0.03	S	0.18	PU->BI					0.0701	S	0.246	SON->ATU	
0.03	S	0.54	PEOU->BI					0.0349	S	0.19	SON->BI	
								0.0181	S	0.137	SON->PEOU	
								0.1678	S	0.513	SON->PU	
								0.0637	S	0.55	SA->ATU	
								0.0139	S	0.076	SA->BI	
								0.1076	S	0.302	SA->PEOU	
								0.0009	S	0.008	SA->PU	

			Abinew et.al.				Rizwan et.al				Wang et.al.			
SD			Beta values	SD			Beta values	SD			Beta values	SD		
0.0393	S	0.19	BI->AU	0.0641	S	0.72	PEOU->ATU	0.08	S	0.39	SE->BI	0.1115	S	0.2
0.0724	NS	-0.09	Incentive->AU	0.0878	S	0.41	SE->PEOU	0.08	S	0.31	PENJ->BI	0.3586	S	0.7
0.0458	S	0.251	PEOU->BI	0.0926	S	0.44	SE->ATU	0.09	NS	0.1	PEOU->BI	0.1793	S	0.4
0.0618	S	0.273	PU->BI	0.0604	S	0.78	PU->ATU	0.09	NS	0.07	PU->BI	0.3489	S	0.7
0.0526	S	0.307	MSUP->AU	0.0538	S	0.94	ATU->BI	0.08	NS	0.06	UP->BI	0.0194	NS	0
0.0522	S	0.259	Training->AU									0.2471	S	0.5
												0.4022	S	0.8

		Hadeel et.al.				Angela et.al.				Vululleh				Ali et.al.		
		Beta values	SD			Beta values	SD			Beta values	SD			Beta values	SD	
S	0.34	PEOU->Acceptance	0.06628	S	0.468	SE->PEOU	0.0505	S	0.13	PU->BI	0.2370	S	0.62	WLQ->BI	0.1363	S
S	0.54	PU->Acceptance	0.05433	NS	-0.03	SE->PU	0.0569	S	0.19	PEOU->BI	0.2020	S	0.53	FC->AU	0.1509	S
S	0.42	SERQ->PEOU	0.06027	S	0.237	SN->PEOU	0.0331	S	0.11	SI->BI	0.1528	S	0.4	BI->AU	0.1606	S
S	0.65	Acceptance->BI	0.04811	NS	0.079	SN->PU	0.1227	S	0.41	QL->BI	0.1000	S	0.21	PEOU->BI	0.2239	S
S	0.46	EXP->PU	0.06061	S	0.241	EXP->PEOU	0.1644	S	0.55	BI->AU	0.0659	S	0.11	PU->BI	0.3553	S
			0.04904	NS	0.028	EXP->PU					0.0165	S	0.03	EXP->BI	0.0531	NS
			0.08080	S	0.799	PEOU->PU					0.0065	S	0.01	SN->BI	0.1606	S
			0.08673	NS	0.034	PEOU->BI					0.0124	S	0.02	SE->AU	0.0827	S
			0.11417	S	0.959	PU->BI									0.0827	S

			Liu et.al.				Adhichipta				Qasis et.al.				Aamer et.al.	
SD			Beta values	SD			Beta values	SD			Beta values	SD			Beta values	SD
0.12878	S	0.436	PU->ATU	0.14963	S	0.349	PEOU->PU	0.05	S	0.2	PEOU->PS	0.11427	S	0.38	RD->PU	0.0495
0.17512	NS	0.049	PU->BI	0.11484	S	0.389	PEOU->ATU	0.06	S	0.18	PU->PS	0.13641	S	0.28	SN->PU	0.0576
0.14459	S	0.261	PEOU->ATU	0.19898	S	0.674	PU->ATU	0.06	S	0.16	SYQ->PS	0.09722	S	0.33	PENJ->PEOU	0.0660
0.15932	NS	-0	PEOU->BI	0.25856	NS	-0.05	PU->BI	0.06	S	0.18	IQ->PS	0.01485	NS	0.03	SE->PEOU	0.0604
0.20115	S	0.681	PEOU->PU	0.20572	S	0.647	ATU->BI	0.06	S	0.25	SE->PS	0.16797	S	0.35	PEXC->PEOU	0.0719
0.14808	S	0.351	ATU->BI	0.19425	S	0.658	SN->PU					0.06312	S	0.21	SA->PEOU	
0.07857	S	0.247	SI->PU	0.16921	S	0.36	SN->BI					0.05568	NS	0.11	PU->ATU	
0.07980	S	0.167	SI->ATU	0.08605	NS	-0.13	EXP->PU					0.31737	S	1.06	PEOU->ATU	
0.13221	NS	-0.02	SI->BI	0.09211	S	0.312	EXP->PEOU					0.06046	NS	0.11	PEOU->PU	
0.09186	S	0.243	CT->ATU	0.16016	NS	-0.02	SE->PU					0.10140	S	0.34	PU->BI	
0.15790	NS	-0.11	CT->BI	0.15646	S	0.53	SE->PEOU					0.16332	S	0.55	ATU->BI	
				0.08000	NS	-0.02	SINT->PU									
				0.09189	NS	0.003	SINT->PEOU									
				0.08224	S	0.174	TS->PU									
				0.08847	NS	0.053	TS->PEOU									
				0.08092	NS	-0.07	SD->PU									
				0.08311	NS	0.134	SD->PEOU									

			Manuel				Ibrahim				Nadia et.al.				Nisreen et.al.
SD			Beta values	SD			Beta values	SD			Beta values	SD			Beta values
0.198076	S	0.52	ICE->PEOU	0.23112	NS	0.4	CH->PU	0.1	S	0.2	EOU->PU	0.02436	NS	0.046	IQ->AU
0.448489	S	0.92	ICE->BI	0.12607	NS	0.2	SE->PU	0.1	S	0.2	LOI->PU	0.17563	S	0.589	IQ->SYQ
0.340430	S	0.89	PU->BI	0.36012	S	0.8	SE->PEOU	0.1	S	0.2	SERQ->PU	0.06770	S	0.178	IQ->BI
0.237385	S	0.62	SMI->PU	0.12607	NS	0.2	PEOU->PU	0.1	S	0.4	Inter Quality-	0.08101	S	0.213	IQ->PU
0.471326	S	0.97	SMI->PU	0.12607	NS	0.2	PU->BI					0.14044	S	0.471	TS->IQ
0.174795	S	0.46	PEOU->PU	0.26409	S	0.6	PEOU->BI					0.09154	S	0.307	TS->PEOU
0.175940	S	0.46	PEOU->BI									-0.00303	NS	-0.01	TS->BI
0.243492	S	0.64	SINT->PU									0.07911	S	0.208	TS->AU
0.601180	NS	0.55	SU->QWL									0.00530	NS	0.01	SYQ->AU
0.353356	NS	0.57	QWL->BI									0.07466	S	0.154	SYQ->BI
0.164490	S	0.43	IMI->PEOU									0.07151	NS	0.135	SN->BI
0.483251	NS	0.57	IMI->PQWL									0.07607	S	0.2	SE->BI
												0.08587	S	0.288	PEOU->PU
												0.10459	S	0.275	PEOU->BI
												0.08796	S	0.295	PU->BI
												0.17297	S	0.355	BI->AU

	Willie et.al.				Marija				Faria and Mariam			
	Beta values	SD			Beta values	SD			Beta values	SD		
0.21	PU->BI	0.17286	S	0.6	PU->ATU	0.06864	S	0.135	SE->PEOU	0.13107	S	0.437
0.203	PEOU->BI	0.06557	S	0.2	PEOU->ATU	0.12855	NS	-0.02	SE->PU	0.08132	S	0.213
0.179	PINT->BI	0.04847	S	0.1	E-learning design->ATU	0.04406	S	-0.11	EXP->PEOU	0.06869	NS	0.025
0.083	Course design-					0.05311	S	0.209	PENJ->PEOU	0.06910	S	0.181
0.226	Course design-					0.01843	NS	0.006	ANX->PEOU	0.14877	S	0.496
0.334	Course design-					0.05502	NS	-0.09	OA->PEOU	0.09628	S	0.321
0.405	UI design-					0.19972	S	0.786	SC->PEOU	0.11616	S	0.239
-0.03	UI design-					0.41915	S	-1.18	SC->PU	0.09283	S	-0.19
-0.05	EXP->PU					0.05572	NS	0.023	SN->PU	0.07339	S	-0.15
0.078	EXP->PEOU					0.57146	S	2.249	PEOU->PU	0.01813	NS	0.026
0.076	EXP->BI					0.15932	S	0.627	PEOU->ATU	0.09392	S	0.246
0.486	PEOU->PU					0.06625	S	0.174	PU->ATU	0.09201	S	0.241
0.529	PEOU->PINT					0.17558	S	-0.69	PU->BI	0.14824	S	0.205
						0.55114	S	2.169	ATU->BI	0.06407	NS	0.046

	Sanjiv				Priyanto et.al.				Tsai et.al.				Ahmed and Patrick
	Beta values	SD			Beta values	SD			Beta values	SD			Beta values
0.5	PU->ATU	0.06750	S	0.18	SENV->PU	0.0409	S	0.259	IQ->PU	0.06405	S	0.49	PU->PS
0.4	PEOU->ATU	0.07258	S	0.16	SENV->BI	0.0525	S	0.241	IQ->PEOU	0.06949	S	0.34	PEOU->PS
0.4	SE->PEOU	0.06770	S	0.6	PEOU->PU	0.0136	S	0.089	SYQ->PU	0.12587	S	0.42	PEOU->PU
0.3	SN->PEOU	0.07066	S	0.59	FC->PEOU	0.1362	S	0.286	SYQ->PEOU	0.17516	S	0.59	BELSSE->PEOU
0.3	SA->PEOU	0.09464	S	0.21	FC->AU	0.0426	NS	0.03	SERQ->PU	0.07294	S	0.17	BELSSE->PU
0.5	ATU->BI	0.09158	S	0.35	PU->BI	0.0436	S	-0.28	SERQ->PEOU	0.06637	S	0.44	PU->BI
		0.08930	S	0.28	PEOU->BI	0.0340	S	0.535	PEOU->PU	0.06862	S	0.36	PEOU->BI
		0.09468	S	0.34	BI->AU	0.0484	S	0.279	PENJ->PEOU	0.15764	S	0.53	PEOU->PU
						0.0337	S	0.524	PU->ATU	0.17516	S	0.59	BELSSE->PEOU
						0.0342	S	0.183	PEOU->ATU		S	0.17	BELSSE->PU
						0.0577	S	0.444	ATU->BI				
						0.0548	S	0.352	PU->BI				
						0.0381	S	0.25	PENJ->ATU				

Biswadip				Moreno et.al.				Said				Richard et.al.	
Beta values	SD			Beta values	SD			Beta values	SD			Beta values	SD
TML->PEOU	0.07597	S	0.2	SYSINT->PU	0.07270	S	0.15	SN->PU	0.08	S	0.57	SE->PEOU	0.13144
TML->PU	0.07410	NS	0.14	SI->PU	0.10431	S	0.35	SN->BI	0.1	NS	0	SE->ATU	0.12560
TML->AU	0.06351	NS	0.12	OQ->PU	0.13113	S	0.44	SN->Image	0.11	NS	0.18	SE->PU	0.12267
PEOU->PU	0.08927	S	0.3	CAB->PU	0.06301	S	0.13	Image->PU	0.1	S	0.42	PEOU->PU	0.14600
PEOU->AU	0.08927	S	0.3	CAB->PEOU	0.11325	S	0.38	JR->PU	0.1	S	0.44	PEOU->ATU	0.18631
PU->AU	0.06249	S	0.21	SE->PEOU	0.01212	NS	0.02	RD->PU	0.08	S	0.31	PU->ATU	0.14896
AU->OUT	0.06249	S	0.21	FC->PEOU	0.08724	S	0.18	Self-efficacy-	0.11	S	0.46	ATU->BI	
INDV->PEOU	0.03634	NS	-0.1	EXP->PEOU	0.13411	S	0.45	PEC->PEOU	0.1	NS	0.02	PEOU->ATU	
INDV->AU	0.08234	S	0.17	PEOU->PU	0.05332	S	-0.1	ANX->PEOU	0.1	S	0.3	PU->ATU	
INDV->PU	0.22914	S	0.77	PU->ATU	0.01212	NS	0.02	COMPL->PEOU					
INDV->OUT	0.03798	S	0.1	PEOU->ATU	0.09694	S	0.2	PENJ->PEOU					
FC->PU	0.23211	S	0.78	ATU->BI	0.06259	S	0.21	PEOU->PU					
FC->PEOU	0.05822	NS	0.11	PU->BI	0.07451	S	0.25	PEOU->BI					
FC->AU					0.11027	S	0.37	PU->BI					

			Ho and Liu				Kang and Shin				Ramirez-Anormaliza		
SD			Beta values	SD			Beta values	SD			Beta values	SD	
0.19986	S	0.5	PEOU->PU	0.08499	S	0.64	SE->BI	0.09159	S	0.2	SI->PU	0.14258	S
0.18854	S	0.5	PU->ATU	0.09596	S	0.19	SE->PU	0.13536	S	0.5	PENJ->PU	0.17248	S
0.32429	S	0.9	ATU->BI	0.08696	NS	-0	SE->PEOU	0.13241	S	0.5	PENJ->PEOU	0.16871	S
0.16215	S	0.4	PEOU->ATU	0.08287	NS	-0.2	SLC->PU				TS->PU	0.07248	S
				0.06897	NS	0.04	SLC->PEOU				TS->PEOU	0.11203	NS
				0.14369	S	0.74	SN->PU				SE->PU	0.10388	S
				0.05517	S	0.63	SN->PEOU	0.12064	S	0.4	SE->PEOU	0.11975	S
				0.06780	NS	0.08	SA->PU	0.25600	S	0.9	PU->S	0.07696	S
				0.05945	S	0.28	SA->PEOU	0.15595	S	0.5	PU->BI	0.11754	S
				0.06195	S	0.21	SA->BI	0.15425	S	0.3	PEOU->PU	0.13145	S
				0.12281	NS	0.21	PEOU->PU	0.10593	S	0.4	PEOU->BI	0.10871	S
				0.08631	S	0.29	PEOU->BI	0.18538	S	0.6	BI->AU	0.17834	NS
				0.06918	NS	-0.1	PU->BI				PS->AU	0.09886	S
												0.12881	NS

			Nawaz et.al.				Patricio et.al.				Mohammadi			
SD			Beta values	SD			Beta values	SD			Beta values	SD		
0.04	S	0.714	PU->ATU	0.09809	S	0.3	RD->PU	0.09904	S	0.3	EQ->PS	0.06321	S	0.69
0.03	S	0.189	PEOU->ATU	0.04756	S	0.2	PENJ->PEOU	0.03033	NS	0.1	EQ->BI	0.06912	S	0.47
0.03	NS	-0.01	SI->ATU	0.16943	S	0.6	PEXC->PEOU	0.07999	S	0.2	SERQ->PS	0.07220	S	0.5
0.05	S	0.278	FC->ATU	0.09215	S	0.3	PEOU->PU	0.05977	S	0.2	SERQ->BI	0.07925	S	0.72
				0.08918	S	0.3	PU->BI	0.11047	S	0.3	SYQ->PS	0.06709	S	0.78
				0.08620	S	0.3	PEOU->BI	0.06874	S	0.2	SYQ->BI	0.09595	S	0.68
				0.05351	S	0.2	BI->AU	0.11047	S	0.3	IQ->PS	0.12382	S	0.4
								0.05333	S	0.1	IQ->BI	0.12639	S	0.53
								0.03639	NS	0.1	PEOU->BI	0.13801	S	0.38
								0.12852	S	0.4	AU->LA			
								0.15541	S	0.5	PU->BI			
								0.04782	S	0.2	PEOU->PU			
								0.10162	S	0.3	PS->LA			
								0.05380	S	0.2	PS->AU			
								0.24807	S	0.8	BI->AU			
								0.15541	S	0.5	PS->BI			

		Tan and Shao				Lee et.al.				Richard			
		Beta values	SD			Beta values	SD			Beta values	SD		
S	0.44	SN->PU	0.03031	NS	-0.1	SE->PU	0.04954	S	0.1	SI->PU	0.31751	S	1.06
S	0.37	OQ->PU	0.08057	S	0.27	SE->PEOU	0.10766	S	0.4	PE->PU	0.24862	S	0.83
NS	-0.22	RD->PU	0.07759	S	0.16	ISE->PU	0.09570	S	0.3	PE->PEOU	0.07189	S	-0.2
S	0.35	UF->PU	0.06304	S	0.13	ISE->PEOU	0.06280	S	0.2	SE->PU	0.09286	S	0.31
S	0.32	ES->PU	0.06062	NS	0.1	ISTS->PU	0.18242	S	0.6	SE->PEOU	0.11682	S	0.39
S	0.48	PU->BI	0.11041	S	0.37	LCONT->PU	0.27812	S	0.9	PU->PS	0.22465	S	0.75
S	0.25	PEOU->BI	0.11937	S	0.4	LCONT->PEOU	0.18541	S	0.6	PU->BI			
S	0.21	PEOU->PU	0.06789	S	0.14	TECHA->PEOU	0.10168	S	34	PEOU->BI			
			0.15518	S	0.52	PU->BI	0.08374	S	0.3	PEOU->PU			
			0.10445	S	0.35	PEOU->BI	0.17644	S	0.6	BI->AU			
			0.10146	S	0.34	PEOU->PU	0.11051	S	0.3	PS->AU			

		Ali et.al.				Wu and Zhang				Agudo-Peregrina et.al.	
		Beta values	SD			Beta values	SD			Beta values	SD
S	0.2	PEOU->BI	0.09257	S	0.191	RE->PU	0.13916447	S	0.48	RL->PU	0.065036
S	0.4	PU->BI	0.08314	S	0.279	RE->PEOU	0.11653816	S	0.2	PINT->PU	0.060843
S	0.2	SN->BI	0.05514	NS	-0.09	SA->PEOU	0.04807332	NS	0.08	SN->PU	
S	0.1	SE->BI	0.10311	S	0.346	SA->PU	0.09013748	NS	0.15	SE->PEOU	0.132680
			0.12795	S	0.264	ACCU->PU	0.03605499	NS	-0.1	ANX->PEOU	0.132674
			0.12337	S	0.414	COMPlete->PU	0.12176891	S	0.42	PIN->PEOU	0.159001
			0.08731	S	0.293	SON->PU	0.00600917	NS	0.01	PPLAY->PEOU	0.042161
			0.04848	NS	-0.08	SON->ATU	0.14848332	S	0.31	PU->BI	0.077256
			0.07837	NS	0.148	ALT->ATU	0.09013748	NS	-0.2	PEOU->BI	
			0.18803	S	0.631	PU->ATU	0.104579	S	0.28	PEOU->PU	
			0.08579	S	0.177	PEOU->ATU	0.08621612	NS	-0.2	FC->AU	
			0.19459	S	0.653	PEOU->PU	0.0180275	NS	0.03	BI->AU	
			0.17313	S	0.581	PU->BI	0.24643709	S	0.85	SRH->AU	
							0.12932418	S	0.27	PINT->BI	
							0.09710907	S	0.26	SN->BI	

			Lee et.al.				Ali et.al.				Inma et.al.			
SD			Beta values	SD			Beta values	SD			Beta values	SD		
0.16669	S	0.438	OS->PU	0.058123	S	0.19	PEOU->BI	0.02	S	0.87	ATU->BI	0.10893	S	0.41
0.13054	S	0.343	OS->PEOU	0.042843	S	0.14	PU->BI	0.02	S	0.14	PEOU->ATU	0.14370	S	0.47
0.04304	NS	-0.07	SE->PU	0.034155	S	0.11	SN->BI	0.02	S	0.66	PU->ATU	0.12029	S	0.25
0.15718	S	0.413	SE->PEOU	0.133324	S	0.45	QWL->BI	0.03	S	0.29	PEOU->PU	0.14622	S	0.48
0.11075	S	0.291	EXP->PU	0.174669	S	0.58	BI->AU	0.02	S	0.46	RQ->PEOU	0.15266	S	0.39
0.05671	S	0.149	EXP->PEOU					0.03	S	0.49	RQ->PU	0.12829	S	0.31
0.07808	S	0.161	TE->PU					0.02	S	0.08	INA->PEOU	0.24406	S	0.48
0.02971	NS	-0.05	TE->PEOU					0.02	S	0.08	INA->PU	0.17877	S	0.57
0.08306	NS	0.137	PU->ATU					0.03	S	0.54	INA->RQ	0.10403	S	0.2
0.09058	S	-0.24	PEOU->ATU					0.03	S	0.2	PEOU->Flow	0.12097	S	0.42
0.11569	S	0.304	PEOU->PU					0.03	S	0.13	RQ->Flow	0.07604	S	0.25
0.06279	S	-0.17	ATU->BI					0.07	S	0.28	Flow->ACP	0.10315	S	0.32
0.26945	S	0.708	PU->BI					0.01	S	0.07	Flow->ATU	0.05273	S	0.29
								0.03	S	0.26	RQ->Presence	0.09329	S	0.48
								0.03	S	0.09	INA->Presence	0.04954	S	0.22
								0.03	S	0.76	Presence->Flow	0.05160	S	0.27
								0.02	S	0.07	Presence->BI	0.14390	S	0.38

		Cheng				Sa´nchez et.al.				Amer et.al.				Nabeel	
		Beta values	SD			Beta values	SD			Beta values	SD			Beta values	SD
S	0.22	LSI->PU	0.057692	NS	0.1	TS->ATU	0.12	S	0.27	PU->BI	0.14648	S	0.39	US->PU	0.04
S	0.15	LSI->PEOU	0.089141	S	0.6	PU->ATU	0.19	NS	0.46	PU->ATU	0.08955	S	0.24	US->PEOU	0.04
S	0.18	LSI->Flow	0.078351	S	0.4	PEOU->ATU	0.12	S	0.5	PEOU->PU	0.14685	S	0.39	SE->PU	0.04
S	0.31	ILI->PU	0.089623	S	0.6	PEOU->PU	0.06	S	0.34	PEOU->ATU	0.08614	S	0.23	SE->PEOU	0.04
S	0.38	ILI->PEOU	0.184211	S	0.1	ATU->AU	54	NS	0.33	ATU->BI	0.10663	S	0.28	PU->ATU	0.04
S	0.23	ILI->Flow									0.10625	S	0.28	PEOU->ATU	0.05
S	0.4	Flow->PU									0.14230	S	0.38	PEOU->PU	0.14
S	0.18	Flow->PEOU									0.11384	S	0.3	ATU->BI	0.07
S	0.34	PEOU->PU									0.12712	S	0.34	PU->BI	0.12
S	0.15	Flow->BI													0.14
S	0.43	PU->BI													0.25
S	0.19	PEOU->BI													0.04
															0.06

			Alfie				Cheung and Vogel				Motaghian et.al.
SD			Beta values	SD			Beta values	SD			Beta values
0.09015	S	0.303	SE->PEOU	0.07668	S	0.24	Sharing->PU	0.08943	S	0.22	IQ->PU
0.13032	S	0.438	SE->PENJ	0.06512	S	0.28	Sharing->ATU	0.06849	S	0.15	IQ->PEOU
0.07064	S	0.186	EXTR->PEOU	0.08834	S	0.25	Sharing->BI	0.07576	NS	0.05	IQ->BI
0.09009	S	0.186	EXTR->PENJ	0.10394	S	0.29	Sharing->AU	0.09836	NS	0.06	SYQ->PU
0.11280	S	-0.3	CONSC->PENJ	0.07485	S	0.25	PU->ATU	0.07692	NS	0.05	SYQ->PEOU
0.08508	S	0.224	NEU->SN	0.09192	S	0.33	PEOU->ATU	0.07634	S	0.2	SYQ->BI
0.04747	S	0.098	CONSC->PU	0.08483	S	0.52	PEOU->PU	0.11538	NS	-0.03	SERQ->PU
0.10801	S	0.223	CONSC->SN	0.08295	S	0.18	PRE->PEOU	0.08039	S	0.25	SERQ->PEOU
0.11723	S	0.394	PU->BI	0.07681	S	0.51	COMPA->PEOU	0.08537	NS	-0.14	SERQ->BI
0.09445	S	0.195	PEOU->PENJ	0.06612	S	0.16	COMPA->ATU	0.07740	S	0.5	PU->BI
0.18864	S	0.634	PEOU->PU	0.18530	S	0.58	ATU->BI	0.10288	S	0.25	PEOU->BI
0.05618	S	0.116	PEOU->BI	0.25439	S	0.58	Sub_Peer->BI	0.12871	NS	0.13	PEOU->PU
0.14044	S	0.472	SN->BI	0.08696	NS	-0.1	Sub_Media->BI	0.10954	S	0.31	SN->PU
0.04433	S	0.149	SN->PU	0.05607	NS	0.06	Sub_LECT->BI	0.07985	S	0.21	SN->PEOU
				0.09091	S	0.2	SE->BI	0.02500	NS	0	SN->BI
				0.10290	S	0.39	BI->AU	0.08696	S	0.4	BI->AU
								0.07209	NS	0.04	SE->PU
								0.10526	S	0.39	SE->PEOU
								0.11111	NS	0.02	SE->BI

		Chen and Tseng				Purnomo and Lee				Hsia et.al.		
		Beta values	SD			Beta values	SD			Beta values	SD	
S	0.35	MTU->PU	0.07277	S	0.244	MS->PU	0.15009	S	0.3	LOC->PU	0.03471	S
S	0.31	MTU->PEOU	0.09454	S	0.317	MS->PEOU	0.10652	S	0.2	LOC->PEOU	0.03771	S
NS	0.01	ANX->PU	0.04546	NS	0.075	SE->PU	0.20819	S	0.4	PU->BI	0.03822	S
S	-0.5	ANX->PEOU	0.04061	NS	0.067	SE->PEOU	0.13072	S	0.3	SE->BI	0.03971	S
S	0.13	SE->PU	0.07724	S	0.259	EXP->PU	0.08231	S	0.2	SE->PEOU	0.03515	S
S	0.18	SE->PEOU	0.10826	S	0.363	EXP->PEOU	0.06294	S	0.1	PEOU->BI	0.03936	S
S	0.58	PU->BI	0.07341	S	-0.19	ANX->PU					0.03474	S
S	0.25	PEOU->BI	0.06206	NS	-0.13	ANX->PEOU					0.03765	S
S	0.28	PEOU->PU	0.07784	S	0.261	COPA->PEOU					0.03639	S
			0.11094	S	0.372	COPA->PU					0.03881	S
			0.11810	S	0.396	PU->BI					0.03983	S
			0.04849	NS	0.08	PEOU->BI					0.04455	S
			0.10879	S	0.286	PEOU->PU					0.03240	S
											0.03409	S
											0.03782	S
											0.03701	S
											0.03301	S
											0.03634	S
											0.04245	S
											0.04310	S
											0.03995	S
											0.04358	S
											0.04153	S

			Lee et.al.				Lin and Chen				Ramayah et.al.			
SD			Beta values	SD			Beta values	SD			Beta values	SD		
0.0678	S	0.14	OS->SN	0.07393	S	0.21	CIQ->PU	0.06006	S	0.2	SYQ->PS	0.054218	S	0.723
0.0545	NS	0.09	OS->PEOU	0.08837	S	0.22	PIQ->PU	0.09356	S	0.4	IQ->PS	0.046207	S	0.201
0.0678	S	0.14	OS->PU	0.09420	S	0.22	PIQ->PEOU	0.06673	S	0.2	SERQ->PS	0.055644	S	0.175
0.1178	S	0.31	MS->SN	0.18807	S	0.63	SYQ->PEOU	0.04551	S	0.2	SYQ->BI	0.047442	S	0.294
0.0824	S	0.17	MS->PEOU	0.12528	S	0.42	PEOU->PU	0.10592	S	0.3	SERQ->BI	0.055008	NS	0.067
0.0787	NS	0.13	MS->PU	0.10734	S	0.36	PU->BI	0.07839	S	0.3	PS->BI	0.040444	S	-0.09
0.0581	S	0.12	IEC->PEOU	0.11541	S	0.39	PU->PS					0.050297	S	-0.18
0.0666	NS	-0.1	IEC->PU	0.16863	S	0.56	PEOU->PS					0.043924	S	0.21
0.2279	S	0.6	CSE->PEOU	0.17162	S	0.57	PS->BI					0.073209	NS	0.094
0.0909	NS	-0.2	CSE->PU									0.082750	S	0.39
0.0485	NS	0.08	TE->SN									0.076356	S	0.228
0.0666	NS	-0.1	TE->PEOU									0.069307	NS	0.007
0.0182	NS	0.03	TE->PU									0.073456	S	0.22
0.0242	NS	-0	TI->SN											
0.1114	S	0.23	TI->PEOU											
0.0303	NS	-0.1	TI->PU											
0.1482	S	0.39	SN->PEOU											
0.0920	S	0.19	SN->PU											
0.1444	S	0.38	PEOU->PU											
0.0485	NS	0.08	SN->BI											
0.1520	S	0.4	PU->BI											
0.1368	S	0.36	PEOU->BI											

Basheer and Ibrahim				Karaali et.al.				Yan Li et.al.				Cheng			
Beta values	SD			Beta values	SD			Beta values	SD			Beta values	SD		
PU->BI	0.16175	S	0.54	SI->PU	0.26703	S	0.55	SYF->PU	0.03766	S	0.4	NE->PEOU	0.12709	NS	-0.2
PEOU->BI	0.21866	S	0.73	FC->PEOU	0.23020	S	0.48	SYF->PEOU	0.03541	S	0.3	NE->ATU	0.16620	S	0.56
NP->BI	0.10184	S	-0.3	ANX->PEOU	0.10080	S	0.21	SR->PU	0.04000	S	0.2	NE->BI	0.00605	NS	-0
EXP->BI	0.12581	S	0.42	PU->ATU	0.16574	S	0.34	SR->PEOU	0.03846	S	0.1	IPI->PU	0.15136	S	0.51
ANX->BI	0.07488	S	0.25	PEOU->ATU	0.05348	NS	0.1	SINT->PU	0.03750	S	0.1	EXI->PU	0.09480	S	0.25
COMPK->BI	0.11981	S	0.4	PEOU->PU	0.14442	S	0.3	SINT->PEOU	0.03927	S	0.2	CQ->PU	0.22853	S	0.77
MS->BI	0.04793	S	0.16	ATU->BI	0.29611	S	0.61	SERQ->BI	0.03659	S	0.1	SR->PENJ	0.19588	S	0.66
	0.09585	S	0.32	PU->BI	0.29466	S	0.61	CQ->BI	0.03886	S	0.4	SINT->PU	0.03631	NS	0.06
					0.19773	S	0.41	PEOU->PU	0.03909	S	0.4	SINT-	0.13651	S	0.36
					0.15314	S	0.32	SE->PEOU	0.04344	S	0.2	SINT-			
					0.35620	S	0.74	PU->BI	0.03398	S	0.2	SYF->PU			
					0.34360	S	0.71	PEOU->BI	0.03697	S	0.2	SYF->PEOU			
					0.12261	S	0.25	SE->BI	0.03623	S	0.1	SYF->PENJ			
									0.03812	S	0.1	CSE->PEOU			
									0.03806	S	0.1	ISE->PEOU			
									0.03745	S	0.1	CAB->PU			
									0.03846	S	0.1	CAB-			
									0.03435	S	0.2	LGO->PENJ			
									0.04300	S	0.4	PU->ATU			
									0.04591	S	0.2	PU->BI			
									0.04717	S	0.2	PEOU->PU			
									0.03981	S	0.2	PENJ->ATU			
									0.04223	S	0.2	PENJ->BI			

			Liu et.al.				Lee				Abdulhameed et.al.	
SD			Beta values	SD			Beta values	SD			Beta values	SD
0.16750	S	0.6	OCD->PU	0.084530	S	0.28	CONF->PS	0.043475	S	0.552	ANX->BI	0.081871
0.10680	S	0.2	OCD->PEOU	0.175035	S	0.59	PU->PS	0.043541	S	0.12	SE->BI	0.052786
0.13161	S	0.4	OCD->PINT	0.082962	S	0.17	CONF->PU	0.039609	S	-0.08	PENJ->BI	0.072848
0.14058	S	0.5	UID->PEOU	0.062128	S	0.21	PU->BI	0.071625	S	0.13	PEOU->BI	0.051570
0.08253	S	0.2	UID->PINT	0.054661	S	0.18	PU->ATU	0.042448	NS	0.086	ATU->BI	0.054545
0.07282	S	0.2	POLE->PU	0.074972	S	0.25	PEOU->PU	0.049880	S	0.104	PU->BI	0.050184
0.07282	S	0.2	POLE->PEOU	0.063024	S	0.21	PEOU->ATU					0.066524
0.09273	S	0.3	POLE->BI	0.030765	S	0.1	PENJ->ATU					
0.13161	S	0.4	PU->BI	0.033155	S	0.11	CONC->BI					
0.06281	S	0.2	PEOU->PU	0.070184	S	0.16	ATU->BI					
0.08674	S	0.3	PEOU->PINT	0.068407	S	0.14	SN->BI					
0.05825	S	0.1	PEOU->BI	0.083843	S	0.26	PBC->BI					
0.05825	S	0.1	PINT->BI	0.154724	S	0.52	PS->BI					
				0.056973	NS	0.07	CONC->ATU					
				0.025314	NS	0.02	PENJ->BI					

			Lee et.al.				Ahmad and Samar				Chen			
SD			Beta values	SD			Beta values	SD			Beta values	SD		
0.06093	S	0.43	IC->PU	0.11998	S	0.32	PU->PS	0.102309	S	0.3	IQ->PU	2.243317	S	0.48
0.06091	S	0.24	TM->PU	0.16707	S	0.44	BDF->PS	0.048401	NS	0.1	IQ->PS	0.423459	S	0.61
0.06569	S	0.29	DLC->PEOU	0.12910	S	0.34	PENJ->PS	0.133410	S	0.5	SYQ->PU	0.535862	S	0.08
0.06320	S	0.39	PEOU->PU	0.09298	S	0.19	PEOU->Eret	0.103764	S	0.4	SYQ->PS	0.375490	S	0.27
0.05080	S	0.68	PU->BI	0.20807	S	0.55	PU->Eret	0.139340	S	0.5	PU->AU	0.436430	S	0.11
0.05078	S	0.12	PEOU->BI			NS	BDF->Eret	0.109888	S	0.3	PS->AU	0.176507	S	0.15
0.05570	S	0.59	PL->BI			NS	PENJ->Eret	0.145269	S	0.5	PU->PS	0.448576		0.32
				0.13026	S	0.27	PS->Eret							

	Muneer et.al.				Akram and Sona				Wang and Wang				Park
	Beta values	SD			Beta values	SD			Beta values	SD			Beta values
0.233	IE->PEOU	0.01209	NS	-0	PIIT->PU	0.19001	S	0.5	IQ->PU	0.05808	S	0.23	SE->PU
0.001	SINT->PEOU	0.12472	S	0.33	PIIT->PEOU	0.08741	S	0.23	SYQ->PEOU	0.08192	S	0.58	SE->BI
0.567	SE->PEOU	0.18520	S	0.49	PIIT->SE	0.10905	NS	-0.2	SYQ->PU	0.04505	NS	0.05	SE->ATU
0.062	TS->PEOU	0.13228	S	0.35	SE->PEOU	0.20141	S	0.53	SERQ->PEOU	0.06195	S	0.42	SE->PEOU
0.495	PEOU->PU	0.10583	S	0.28	PEOU->PU	0.17101	S	0.45	PU->BI	0.05016	S	0.46	SN->PU
0.162	SN->PU	0.16252	S	0.43	SN->PU	0.09693	S	-0.2	PEOU->BI	0.05556	NS	-0.02	SN->PEOU
-0.13	IE->PU	0.02417	NS	-0	SN->BI	0.18241	S	0.48	PEOU->PU	0.04160	S	0.27	SN->ATU
0.064	SINT->PU	0.07937	S	0.21	PU->BI	0.18241	S	0.48	SN->BI	0.05233	S	0.18	SN->BI
0.13	SE->PU	0.06276	S	0.13	PEOU->BI	0.11401	S	0.3	SN->PU	0.04301	NS	-0.04	SA->PU
0.218	TS->PU					0.06664	NS	0.11	SE->BI	0.03554	S	0.22	SA->PEOU
0.412	PU->BI					0.09121	S	0.24	SE->PEOU	0.03333	NS	-0.01	SA->ATU
0.45	PEOU->BI					0.28502	S	0.75	BI->AU	0.01667	NS	0	SA->BI
0.119	SN->BI									0.04665	S	0.53	PU->ATU
										0.03591	S	0.2	PEOU->ATU
										0.04528	S	0.12	PEOU->PU
										0.06949	S	0.23	ATU->BI
										0.06667	NS	-0.04	PU->BI
										0.01000	NS	0	PEOU->BI

		Roca and Gagne				Sørebø				Cho et.al.		
		Beta values	SD			Beta values	SD			Beta values	SD	
S	0.2	PAS->PU	0.030167	NS	0.1	PA->PU	0.13724	S	0.47	PF->PU	0.05549	S
S	0.4	PAS->PP	0.091525	S	0.2	PA->IM	0.20147	S	0.69	PUID->PF	0.05263	NS
S	0.1	PCOMP->PU	0.079325	S	0.3	PCOM->PU	0.22191	S	0.76	PUID->PSS	0.07280	S
S	0.2	PCOMP->PP	0.126333	S	0.4	PCOM->Confirmation	0.03011	NS	-0.1	PUID->PU	0.05245	NS
S	0.3	PCOMP->PEOU	0.114581	S	0.4	PCOM->IM	0.16059	S	0.55	PUID->PEOU	0.07351	S
NS	0.1	PR->PU	0.036200	NS	0.1	PR->PU	0.09609	S	0.2	PSS->PEOU	0.06120	NS
S	0.1	PR->PP	0.036200	NS	0.1	PR->IM	0.09052	S	0.31	PEOU->PU	0.05658	NS
S	0.3	PEOU->PU	0.146899	S	0.5	Confirmation->PU	0.09636	S	0.33	PU->BI	0.06964	NS
S	0.2	PP->PU	0.096342	S	0.2	Confirmation->PS	0.12264	S	0.42	PS->BI	0.08045	NS
S	0.2	PP->PEOU	0.076387	S	0.3	Confirmation->IM					0.05322	S
S	0.5	PU->BI	0.138085	S	0.5	PU->PS					0.15026	S
S	0.2	PP->BI	0.126333	S	0.4	PU->BI					0.05795	S
S	0.2	PEOU->BI	0.091525	S	0.2	IM->PS					0.01803	NS
			0.101712	S	0.3	IM->BI						

			Allan and Will				Hsia and Tseng				Chang and Tung	
SD			Beta values	SD			Beta values	SD			Beta values	SD
0.115139	S	0.54	SN->PU	0.125883	S	0.3	SE->PEOU	0.05344	S	0.2	COMPA->BI	0.1111
0.112500	S	0.36	SN->PEOU	0.067783	S	0.1	SE->PU	0.05641	S	0.2	PU->BI	0.1362
0.092105	NS	-0.1	SE->PU	0.130725	S	0.3	SE->PFLEX	0.08016	S	0.3	COMPA->PU	0.0492
0.104530	S	0.3	SE->PEOU	0.198508	S	0.4	PEOU->PU	0.08610	S	0.3	PEOU->PU	0.0918
0.119565	NS	0.22	PU->BI	0.121041	S	0.3	PFLEX->PU	0.07719	S	0.3	PEOU->BI	0.1097
0.120743	S	0.39	PEOU->BI	0.121041	S	0.3	PEOU->BI	0.06291	S	0.1	SYQ->BI	0.0423
0.105263	S	0.22	PEOU->PU	0.087150	S	0.2	PU->BI	0.11876	S	0.4	SE->BI	0.0454
0.104167	NS	0.2	SE->BI	0.154933	S	0.3	PFLEX->BI					0.1497
0.143678	NS	0.25	SN->BI									0.0681
												0.1159
												0.1816
												0.0643
												0.0794

Jaflah and Hamad				Antonio et.al.				Sheng et.al.				Tobing et.al.
Beta values	SD			Beta values	SD			Beta values	SD			Beta values
CQ->PU	0.186904	S	0.63	PU->ATU	0.143091	S	0.38	PU->BI	0.19569	S	0.66	SAD->PU
CQ->PEOU	0.065075	S	0.22	PEOU->ATU	0.087361	S	0.23	PEOU->BI	0.18972	S	0.64	SAD->PEOU
SE->PU	0.139064	S	0.47	PEOU->PU	0.145437	S	0.3	PENJ->BI	0.13901	S	0.47	PU->BI
SE->PEOU	0.093007	S	0.31	SE->PEOU	0.214923	S	0.73	PEOU->PU	0.16854	S	0.57	PEOU->PU
PU->BI	0.067763	S	0.19	SE->BI	0.106287	S	0.36	BI->AU	0.08800	S	0.3	PEOU->BI
PEOU->BI	0.117590	S	0.34	ATU->BI								
SN->BI	0.114666											

		Tseng and Hsia				Liao and LU				Masoud et.al.			
		Beta values	SD			Beta values	SD			Beta values	SD		
S	0.5	PU->BI	0.075473	NS	0.125	PEOU->BI	0.073974	S	0.25	EXP->PU	0.080769	S	0.27
S	0.2	PEOU->BI	0.166103	S	0.564	PEOU->PU				EXP->PEOU	0.071829	S	0.29
S	0.3	ILC->PU	0.191725	S	0.651	PU->BI	0.067516	S	-0.23	ANX->BI	0.073580	S	0.29
S	0.3	ILC->PEOU	0.017510	NS	-0.03	Easeofuse->BI				ANX->PEOU	0.090099	S	0.36
S	0.3	SE->BI	0.115248	S	0.239	COMPA->BI				Age->PU	0.088347	S	0.35
S	0.2	SE->PEOU	0.024755	NS	-0.04	Image->BI	0.096870	S	-0.33	Age->BI	0.090599	S	0.36
S	0.2	PEOU->PU	0.072454	NS	0.12	RD->BI	0.148535	S	0.51	SE->BI	0.074331	S	0.3
			0.108085	S	0.367	RAD->BI				SE->PEOU			
			0.101871	S	0.27	TRIA->BI				Affect->PEOU			
							0.053463	S	0.14	Affect->BI			
							0.148828	S	0.51	PU->BI			
										PEOU->BI			
										PEOU->PU			

		Park et.al.				Lee				Liao and LU	
		Beta values	SD			Beta values	SD			Beta values	SD
S	0.19	Motivation->PEOU	0.029940	S	0.1	ICS->PU	0.090175	S	0.239	COMPA->BI	0.246723
S	0.15	Motivation->PU	0.029909	S	0.23	ICS->PEOU	0.072454	NS	0.12	RAD->BI	0.077403
S	0.23	Motivation->Evaluation of functions	0.027223	S	0.3	ICT->PU	0.075473	NS	0.125	PU->Bi	0.120943
S	-0.1	CSP->BI	0.028834	S	0.22	ICT->PEOU	0.191725	S	0.651	PEOU->BI	0.135456
S	0.13	CSP->EVF	0.020000	NS	0	IEA->PU	0.024755	NS	-0.04	Image->BI	0.159644
NS	-0.1	CSP->AU	0.031250	NS	0.01	IEA->PEOU	0.166103	S	0.564	PEOU->PU	0.087079
NS	0.04	ITC->PU	0.191781	S	0.14	ECS->PU					0.106430
NS	0.06	ITC->PEOU	0.031390	S	0.07	ECS->PEOU					
S	0.2	ITC->EVF	0.030303	NS	0.03	ECT->PU					
S	0.63	PEOU->PU	0.030717	S	0.09	ECT->PEOU					
S	0.41	PU->EVF	0.023810	NS	-0.01	EEA->PU					
S	0.25	PEOU->BI	0.032922	S	0.08	EEA->PEOU					
S	0.48	PU->BI	0.029508	S	0.27	PU->BI					
NS	-0.1	EVF->BI	0.028571	S	0.22	PEOU->PU					
S	0.4	EVF->AU	0.029909	S	0.23	PEOU->BI					
NS	0.03	AU->BI									

			Hussein et.al.				Fu et.al.				Hsia and Tseng	
SD			Beta values	SD			Beta values	SD			Beta values	SD
0.139742	S	0.4	CSE->PEOU	0.063745	S	0.2	SF->PEOU	0.125883	S	0.3	CSE->PEOU	0.07308
0.056652	S	0.2	CSE->PU	0.068826	S	0.3	ID->PEOU	0.067783	S	0.1	CSE->PU	0.05703
0.054367	NS	0.1	Conv->PEOU	0.048159	S	0.3	PEDO->PU	0.130725	S	0.3	CSE->PFLEX	0.06461
0.098197	S	0.3	ID->PU	0.059105	S	0.4	PEDO->PENJ	0.087150	S	0.2	PU->BI	0.05464
0.088491	S	0.3	ID->PEOU	0.055224	S	0.4	COMMU->PEOU	0.121041	S	0.3	PEOU->BI	0.05909
0.073742	S	0.3	TECHF->PU	0.062802	S	0.1	COMMU->PENJ	0.154933	S	0.3	PFLEX->BI	0.07216
0.049099	S	0.1	TECHF->PEOU	0.044309	S	0.5	PU->ATU	0.198508	S	0.4	PEOU->PU	0.06061
0.036244	NS	0.1	ICHA->PU	0.060827	S	0.3	PU->BI	0.121041	S	0.3	PU->PFLEX	0.06818
				0.047826	S	0.1	PEOU->ATU					0.06042
0.049099	S	0.1	PU->BI	0.052681	S	0.6	PEOU->PU					0.05551
0.079313	S	0.2	PEOU->PU	0.053763	S	0.4	PEOU->PENJ					0.06327
0.230076	S	0.8	PEOU->BI	0.034373	S	0.4	PENJ->ATU					0.07331
				0.081181	S	0.4	ATU->BI					0.07908
				0.049521	S	0.3	PENJ->BI					0.07216
												0.06920
												0.07500

Masrom				Liaw et.al.				Chen et.al.				Chiu and Chang
Beta values	SD			Beta values	SD			Beta values	SD			Beta values
PEOU->PU	0.20851	S	0.7	PS->SE	0.15172	S	0.4	PENJ->PU	0.09694	S	0.2	IQ->PS
PEOU->ATU	19.96691	S	91	PS->PU	0.10241	S	0.3	SF->PU	0.07271	S	0.15	SYQ->PS
PU->ATU	0.17075	S	0.6	MULTIN->PENJ	0.12517	S	0.3	CHA->PEOU	0.04848	NS	0.08	SERQ->PS
PU->BI	0.13165	S	0.6	PU->BI	0.20862	S	0.6	SE->PEOU	0.11633	S	0.24	DF->PS
ATU->BI	0.08996	S	0.4	PEOU->BI	0.14793	S	0.4	PU->BI	0.03636	NS	-0.1	DF->BI
					0.15172	S	0.4	PEOU->BI	0.10179	S	0.21	SU->PS
					0.06828	S	0.2	PEOU->PU	0.03636	NS	-0.1	PF->PS
					0.33759	S	0.9	BI->AU	0.05332	S	0.11	PF->BI
									0.08240	S	0.17	IF->PS
									0.03030	NS	-0.1	IF->BI
									0.41684	S	0.86	PS->BI

		Lee				Ifinedo				Roca et.al.			
		Beta values	SD			Beta values	SD			Beta values	SD		
S	0.15	CQ->PU	0.08076	S	0.217	TCHA->PU	0.22724	S	0.6	IQ->CONF	0.06	S	0.749
S	0.4	PNEX->PU	0.12021	S	0.323	TCHA->PEOU	0.08332	S	0.2	SERQ->CONF	0.11	S	-0.32
S	0.28	PNEX->PEOU	0.14217	S	0.382	UCHA->PU	0.12119	S	0.3	SYQ->CONF	0.13	S	0.557
S	0.22	PNEX->BI	0.09267	S	0.249	UCHA->PEOU	0.15528	S	0.4	IQ->PS	0.08	S	0.637
NS	0.06	CSE->PU	0.13956	S	0.375	PEOU->PU	0.06060	S	0.2	SERQ->PS	0.05	NS	0.009
S	0.4	CSE->PEOU	0.04319	NS	0.072	PU->AU	0.10226	S	0.3	SYQ->PS			
S	-0.1	CATTR->PU	0.11612	S	0.312	PU->BI	0.13923	S	0.5	CONF->PU			
NS	0.01	CATTR->PEOU	0.25158	S	0.676	PEOU->AU	0.12119	S	0.3	CONF->PEOU			
S	0.25	SN->PU	0.25009	S	0.672	AU->BI	0.07196	S	0.2	CONF->CAB			
NS	0.01	SN->BI	0.04726	S	-0.13	PEOU->BI	0.11553	S	0.4	CONF->PS			
S	0.28	PU->BI					0.01815	NS	0	INTIF->PS			
S	0.16	PEOU->PU					0.00605	NS	0	EXTIF->PS			
S	0.2	PEOU->BI					0.04545	S	0.1	CAB->PU			
S	0.37	BI->AU					0.11741	S	0.3	CAB->PEOU			
NS	0.05	CBI->AU					0.08711	S	0.2	PEOU->PS			
							0.19315	S	0.5	PS->BI			
							0.06817	S	0.2	CSE->PEOU			
							0.17422	S	0.5	ISE->PEOU			
							0.08711	S	0.2	PU->PS			
							0.06768	S	0.1	CAB->PS			

			Saadé and Kira				Ong and Lai				WU et.al.	
SD			Beta values	SD			Beta values	SD			Beta values	SD
0.04664	S	-0.12	AFF->PU	0.19787	S	0.7	CSE->PEOU	0.100450	S	0.34	PU->PS	0.04505
0.14369	S	0.382	AFF->PEOU	0.09746	S	0.3	CSE->PU	0.107562	S	0.36	PU->BI	0.12015
0.05848	NS	0.097	ANX->PU	0.12404	S	0.4	PU->BI	0.226976	S	0.77	CONF->PU	0.08410
0.11172		-0.3	ANX->PEOU	0.12109	S	0.4	PEOU->BI	0.152305	S	0.51	CONF->PS	0.06608
0.21077	S	0.719	PEOU->PU	0.11518	S	0.4	PEOU->PU					0.03645
123.41109	S	421	PU->ATT					0.045834	S	0.12	CSE->PU	0.12015
0.12677	S	0.337	PEOU->ATT					0.050001	S	0.13	CSE->PS	0.02918
								0.003025	NS	0.01	CSE->BI	0.00607
								0.144009	S	0.49	PS->BI	0.07509
												0.00607
												0.08410
												0.04806
												0.06007
												0.11113
												0.03037

	Ong and Wang				Liao et.al.				Lee et.al.				Saade and Bahli
	Beta values	SD			Beta values	SD			Beta values	SD			Beta values
0.54	CSE->PEOU	0.142857	S	0.34	PEXP->BI	0.05263	S	0.4	PU->ATU	0.10518	S	0.4	CAB->PU
0.17	CSE->PU	0.125000	S	-0	EFEXP->BI	0.05740	S	0.2	PU->BI	0.11534	S	0.2	CAB->PEOU
-0.3	CSE->PCRED	0.119114	S	0.43	SI->BI	0.05600	NS	0.1	PEOU->ATU	0.10510	S	0.3	PEOU->PU
0.34	PU->BI	0.028037	S	0.03	FC->AU	0.05561	S	0.5	PENJ->ATU	0.12563	S	0.4	PU->BI
0.26	PEOU->BI	0.107477	S	0.92	BI->AU	0.06464	S	0.2	PENJ->BI	0.07689	S	0.2	PEOU->BI
0.2	PCRED->BI					0.05910	S	0.5	PEOU->PU				
0.6	PEOU->PU					0.05727	S	0.5	PEOU->PENJ				
0.72	PEOU->PCRED					0.07709	S	0.4	ATU->BI				

			Brown				Yi and Hwang				Xu and YU		
SD			Beta values	SD			Beta values	SD			Beta values	SD	
0.08758	S	0.26	EUND->PEOU	0.146741	S	0.5	PENJ->PU	0.109215	S	0.37	PU->ATU	0.15940	S
0.09334	S	0.22	EOF->PEOU	0.120327	S	0.4	PENJ->PEOU	0.110986	S	0.38	PEOU->ATU	0.08206	S
0.09739	S	0.4	SE->PEOU	0.090348	S	0.2	PENJ->SE	0.136371	S	0.46	PEOU->PU	0.10580	S
0.07175	S	-0.2	ANX->PEOU	0.078409	S	0.1	LGO->PENJ	0.086782	S	0.29	CSE->PEOU	0.12847	S
0.11728	NS	0.04	PU->AU	0.101641	S	0.3	LGO->SE	0.122203	S	0.41	PU->BI	0.09824	S
0.11770	S	0.29	PEOU->AU	0.135002	S	0.5	PU->BI	0.071728	S	0.24	CSE->BI	0.09654	S
0.09495	S	0.39	PEOU->PU	0.105927	S	0.2	PEOU->BI	0.085896	S	0.29	ATU->BI	0.17711	S
				0.143806	S	0.5	SE->PEOU					0.21253	S
				0.091483	S	0.2	BI->AU						
				0.012063	NS	0	PEOU->PU						
				0.088044	S	0.3	SE->AU						

Source: Constructed by the researcher based on literature review

Table-6 : Reliability measure values

Marzieh		Sukainah et.al				Mohammed et.al.	Study
	Cronbach alpha		Cronbach alpha	CR	AVE		
PU	0.681	PU	0.817	0.88	0.65	PU	PU
PEOU	0.817	PEOU	0.811	0.87	0.57	PEOU	PEOU
0		0	0.887	0.93	0.82	ATU	ATU
0		0	0.889	0.93	0.82	BI	BI
AU	0.801	AU	0.777	0.88	0.7	AU	AU
0		0				0	PS
0		0				0	Benefits
E-learning Motivation			0.844	0.91	0.77	Perceived Enjoyment	
Online Communication			0.843	0.9	0.68	Computer Anxiety	
			0.932	0.96	0.88	Computer Playfulness	
Perceived Enjoyment							

	Dimah et.al.				Farhan et.al.			
AVE		Cronbach alpha	CR	AVE	Canada	Cronbach alpha	CR	AVE
0.8	PU	0.911	0.93	0.69	PU	0.782	0.83	0.72
0.8	PEOU	0.87	0.91	0.66	PEOU	0.859	0.85	0.67
	0	0.897	0.93	0.76	ATU			
	0	0.931	0.95	0.83	BI			
	0				0	0.868	0.91	0.76
0.8	PS				0			
0.7	Benefits				0			
0.6	Technical system quality					0.807	0.83	0.68
0.6	Information Quality					0.785	0.87	0.75
0.6	Service Quality							
0.5	Educational system Quality					0.86	0.81	0.73
0.6	Support system quality							
0.6	Learner Quality							
0.5	Instructor Quality							

	Salloum et.al.				Damijana et.al.		
AVE		Cronbach alpha	CR	AVE		Cronbach alpha	CR
0.7	PU	0.843	0.91	0.67	PU	0.9	0.9
0.93	PEOU				0	0.91	0.9
0.8	ATU				0		
0.75	BI				0		
0.86	AU				0		
	0				0	0.9	0.9
	0				0	0.85	0.9
0.86	System Quality	0.661	0.77	0.5	Technology acceptance	0.83	0.9
0.95	Content Quality	0.805	0.89	0.55	E-teaching	0.86	0.9
0.76	Information Quality	0.838	0.91	0.66	Attitude to Face-to-Face	0.85	0.9
0.73	Self-efficacy					0.71	0.8
0.55	Subjective Norm					0.8	0.9
0.81	Perceived Enjoyment					0.84	0.9
0.71	Accessibility					0.75	0.8
0.8	Computer Playfulness						

		Anastasia and Nikolaos				Flora and Zhang		
CR	AVE	Greece	Cronbach alpha	CR	AVE		Cronbach alpha	CR
0.88	0.7	PU	0.84	0.9	0.6	PU	0.677	0.82
0.86	0.67	PEOU	0.92	0.9	0.8	PEOU	0.928	0.97
0.86	0.67	ATU				0	0.749	0.89
0.85	0.75	BI	0.7	0.9	0.5	BI	0.831	0.9
		0				0	0.842	0.93
		0				0		
		0				0		
0.83	0.72	Self-efficacy	0.89	0.9	0.6	Subjective norm	0.842	0.92
0.83	0.62	Social norm	0.86	0.9	0.6	Experience	0.976	0.98
1	1	System accessibility	0.87	0.9	0.6	Perceived enjoyment	0.742	0.86
1	1	Year	0.94	0.9	0.8	Computer Anxiety	0.721	0.85
			0.86	0.9	0.6	Self-efficacy	0.724	0.83
							0.772	0.9
							0.759	0.83
							0.749	0.89

		Waleed et.al.				Marie et.al.	
CR	AVE		Cronbach alpha	CR	AVE	Cameroon	Cronbach alpha
0.9	0.59	PU	0.856		0.7	PU	0.786
0.89	0.64	PEOU	0.86		0.7	PEOU	0.746
		0				0	0.758
0.92	0.61	BI	0.907		0.84	BI	0.722
		0				AU	
0.91	0.61	Relative advantages	0.755		0.67	Subjective norm	0.715
0.89	0.6	Complexity	0.856		0.78	Image	0.699
0.89	0.63	Trialability	0.904		0.84	Output Quality	1
0.84	0.66	Observability	0.837		0.54	Facilitating conditions	1
0.83	0.57	Perceived compatability					
0.91	0.63	Perceived Enjoyment					

			Wang et.al.				Zhi et.al.	
Cronbach alpha	CR	AVE		Cronbach alpha	CR	AVE		Cronbach alpha
	0.86	0.62	PU	0.847			PU	0.907
	0.87	0.63	PEOU	0.841			PEOU	0.846
			0				0	
	0.94	0.7	BI	0.86			BI	0.899
			0				0	
			0				0	
			0				0	
	0.88	0.6	Self-efficacy	0.829			Social Influence	0.899
	0.87	0.64	PENJ	0.895			System characteristics	0.841
	0.92	0.79	User Perception	0.841			Individual differences	0.92
				0.893			Facilitating conditions	0.885
								0.884
								0.906

Irene et.al.				Abinew et.al.				Rizwan et.al
	Cronbach alpha	CR	AVE		Cronbach alpha	CR	AVE	
PU	0.94	1	0.7	PU				PU
PEOU	0.83	0.9	0.7	PEOU				PEOU
ATU				0				ATU
BI	0.9	0.9	0.8	BI				BI
AU	0.91	0.9	0.8	AU				0
Flow				0				0
				0				0
	0.96	1	0.8	Management Support				Self-efficacy
	0.38	0.7	0.4	Training				
	0.83	0.9	0.7	Incentive				

	Vululleh				Ali et.al.			
AVE		Cronbach alpha	CR	AVE		Cronbach alpha	CR	AVE
	PU	0.821			PU	0.925	0.93	0.72
	PEOU	0.75			PEOU	0.902	0.92	0.64
	0				0	0.937	0.94	0.81
	0	0.612			BI	0.845	0.84	0.59
	0	0.704			AU	0.659	0.7	0.51
	0					0.871	0.88	0.71
	Social Influence	0.677			Subjective Norm			
	Quality of life	0.822			Work life quality			
		0.772			Internet experience			
		0.812			Self-efficacy			
		0.752			Facilitating conditions			

	Liu et.al.		Qasis et.al.				Aamer et.al.
Cronbach alpha		Cronbach alpha		Cronbach alpha	CR	AVE	
0.816	PU	0.761	PU	0.874	0.88	0.64	PU
0.862	PEOU	0.764	PEOU	0.74	0.76	0.52	PEOU
0.911	ATU		0	0.783	0.79	0.55	ATU
0.578	BI		0	0.846	0.85	0.65	BI
	0		0				0
	0	0.822	PS				0
	0		0				0
0.855	Social Influence	0.744	System quality	0.792	0.79	0.56	Result Demonstrability
0.649	Cost tolerance	0.701	Information Quality	0.807	0.81	0.59	Subjective Norm
		0.737	Self-efficacy	0.846	0.85	0.65	PENJ
				0.773	0.78	0.55	Self-efficacy
				0.763	0.77	0.53	Perception of external control
				0.758	0.76	0.51	System accessibility

Manuel				Ibrahim		Nadia et.al.
	Cronbach alpha	CR	AVE		Cronbach alpha	
PU	0.823	0.83	0.55	PU	0.816	PU
PEOU	0.832	0.83	0.62	PEOU		
0				0		
BI	0.834	0.84	0.57	BI		
0				0		
0				0		
0				0		
Integrated Multimedia Instruction	0.737	0.74	0.48	Instructor Characteristics	0.707	Ease of access
Perceived quality work of life	0.73	0.75	0.5	Self-efficacy	0.818	Level of interaction
System Interactivity					0.827	Service Quality
Social media influence					0.815	Internet Quality
Internet connectivity experience						

	Faria and Mariam				Chang et.al.			
AVE		Cronbach alpha	CR	AVE		Cronbach alpha	CR	AVE
0.8	PU	0.81	0.9	0.8	PU	0.843		
0.59	PEOU	0.79	0.8	0.6	PEOU	0.828		
0.56	ATU				0			
0.71	BI	0.79	0.9	0.7	BI	0.789		
	0				0			
	0				0			
	0				0			
0.69	Subjective norm	0.82	0.8	0.7	Subjective norm	0.733		
0.54	System characteristics	84	0.9	67	Experience	0.809		
0.51	self-efficacy	0.91	0.9	0.7	Perceived enjoyment	0.806		
0.52	Experience	0.79	0.9	0.7	Computer Anxiety	0.882		
0.7	Perceived Enjoyment	0.9	0.9	0.7	Self-efficacy	0.867		
0.74	Computer anxiety							
0.57	Organizational accessibility							

			Ahmed and Patrick		Willie et.al.		
Cronbach alpha	CR	AVE		Cronbach alpha		Cronbach alpha	CR
0.787	0.88	0.7	PU	0.84	PU	0.923	0.92
0.771	0.85	0.59	PEOU	0.75	PEOU	0.742	0.74
			0		0	0.783	0.79
0.817	0.92	0.85	BI	0.71	BI	0.831	0.83
			0		0		
0.87	0.92	0.79	PS		0		
			0		0		
			Processing	0.73	Perceived Interaction	0.866	0.87
			Perception	0.53	Course design	0.876	0.85
			Inout	0.81	Interface design	0.718	0.76
			Understanding	0.79	Experience	0.797	0.77
0.786	0.88	0.7	BELSSE			0.89	0.88
						0.884	0.89
						0.787	0.8

	Sanjiv	Priyanto et.al.				Tsai et.al.
Cronbach alpha			Cronbach alpha	CR	AVE	
0.87	PU	PU	0.91	0.93	0.74	PU
0.85	PEOU	PEOU	0.913	0.94	0.72	PEOU
0.91	ATU	0	0.931	0.95	0.78	ATU
0.92	BI	BI	0.917	0.94	0.71	BI
	0	AU				0
0.91	Self-efficacy	Social environment	0.914	0.94	0.74	Information quality
0.89	Subjective norm	Facilitating conditions	0.925	0.94	0.77	System quality
0.92	System accessibility		0.936	0.95	0.8	Service quality
			0.933	0.95	0.83	Perceived enjoyment

Biswadip				Moreno et.al.				Richard et.al.
	Cronbach alpha	CR	AVE		Cronbach alpha	CR	AVE	
PU		1	0.757	PU	0.791	0.79	0.66	PU
PEOU		0.9	0.706	PEOU	0.897	0.9	0.69	PEOU
0		1	0.846	ATU	0.885	0.89	0.66	ATU
0		0.9	0.81	BI	0.756	0.77	0.54	BI
AU				0				
Individual characteristics		1	0.865	System Interactivity	0.752	0.77	0.63	Self-efficacy
TML system		0.9	0.624	Social Influence				
Learning Outcomes		0.9	0.865	Output Quality				
Facilitating conditions		0.9	0.578	Cognitive Absorption				
		0.9	0.518	Self-efficacy				
		0.9	0.656	Facilitating conditions				
		0.9	0.608	Prior experience				

	Kang and Shin				Ramirez-Anormaliza			
AVE		Cronbach alpha	CR	AVE		Cronbach alpha	CR	AVE
0.9	PU		1	0.9	PU	0.92	0.94	0.8
0.9	PEOU		1	0.9	PEOU	0.862	0.91	0.71
	0				0			
0.9	BI		1	0.9	BI			
	0		1	0.8	AU	0.803	0.87	0.63
0.8	Self-efficacy		0.9	0.7	Social influence			
0.7	Systematic Lecture content		0.9	0.7	Perceived enjoyment			
0.8	Subjective norm		0.9	0.7	Technical suport	0.843	0.9	0.68
0.8	System accessibility		0.9	0.7	Self-efficacy	0.862	0.89	0.67
			1	0.9	Satisfaction			

Mohammadi		Ratna				Ho and Liu		
	Cronbach alpha		Cronbach alpha	CR	AVE		Cronbach alpha	CR
PU	0.71	PU	0.943	0.96	0.85	PU		1
PEOU	0.77	PEOU	0.937	0.96	0.84	PEOU		1
0	0.615	ATU	0.945	0.96	0.9	ATU		
BI	0.605	BI	0.912	0.95	0.85	BI		1
AU						0		
`								
Educational quality								0.9
Service quality								0.8
Technical system quality								0.9
Information quality								0.9
Learning assistance								

	Nawaz et.al.				Patricio et.al.			
Cronbach alpha		Cronbach alpha	CR	AVE		Cronbach alpha	CR	AVE
0.908	PU	0.88	0.9	0.7	PU	0.868	0.87	0.76
0.877	PEOU	0.86	0.9	0.7	PEOU	0.855	0.87	0.78
0.883	ATU				0			
0.822	BI	0.8	0.9	0.7	BI	0.858	0.88	0.86
					AU	0.865	0.88	0.84
						0.857	0.88	0.76
0.73	Social influence	0.86	0.9	0.8	Result Demonstrability	0.86	0.87	0.76
0.897	Facilitating conditions	0.88	0.9	0.8	Perceived enjoyment	0.85	0.86	0.77
		0.77	0.9	0.7	Perception of external control	0.882	0.88	0.77
						0.869	0.88	0.77
						0.892	0.91	0.72

			Lee et.al.				Calisir et.al.
Cronbach alpha	CR	AVE		Cronbach alpha	CR	AVE	
	0.93	0.76	PU	0.86	0.9	0.5	PU
	0.85	0.6	PEOU	0.82	0.8	0.5	PEOU
			0	0.84	0.9	0.7	ATU
	0.88	0.7	BI				BI
			0				0
			0				
	0.75	0.5	Computer self-efficacy				
	0.81	0.52	Internet Self-efficacy	0.74	0.7	0.5	Image
	0.87	0.62	Instructor attitude	0.71	0.7	0.6	Perceived content quality
	0.79	0.56	Learning content	0.72	0.7	0.6	Perceived system quality
	0.82	0.53	Technology accessibility	0.85	0.9	0.6	Anxiety

			Wu and Zhang				Agudo-Peregrina et.al.	Tan and Shao
Cronbach alpha	CR	AVE		Cronbach alpha	CR	AVE		
0.892	0.9	0.7	PU	0.85	0.9	0.8	PU	PU
0.948	0.9	0.8	PEOU	0.79	0.9	0.7	PEOU	PEOU
0.92	0.9	0.7	ATU				0	0
0.927	0.9	0.7	BI	0.86	0.9	0.9	BI	BI
			0				AU	
			0					
			0					
0.916	0.9	0.7	Reliability	0.89	0.8	0.8	Relevance for learning	Subjective norm
0.898	0.8	0.7	Accessibility	0.9	0.8	0.8	Perceived interaction	Output Quality
0.937	0.9	0.8	Accuracy	0.81	0.7	0.6	Subjective norm	Result demonstrability
0.925	0.9	0.8	Completeness	0.95	0.9	0.9	self-efficacy	User friendliness
0.835	0.8	0.7	Sociability	0.89	0.8	0.7	Anxiety	Environment support
0.836	0.8	0.7	Altruism	0.9	0.8	0.7	Personal innovativeness	
				0.87	0.7	0.8	Perceived playfulness	
				0.88	0.7	0.8	Self-reported habit	
				1	1	1	Facilitating conditions	

		Inma et.al.				Cheng		Ali et.al.
CR	AVE		Cronbach alpha	CR	AVE		Cronbach alpha	
0.91	0.72	PU	0.957	0.94	0.85	PU	0.92	PU
0.88	0.61	PEOU	0.893	0.93	0.81	PEOU	0.92	PEOU
0.91	0.77	ATU				0		0
0.86	0.75	BI	0.931	0.93	0.81	BI	0.89	BI
0.86	0.67	Resource Quality	0.868	0.88	0.72	Controllability	0.83	Subjective norm
0.87	0.68	Instructor attitude	0.859	0.88	0.71	Responsiveness	0.84	Self-efficacy
0.75	0.5	Presence	0.852	0.89	0.67	Two-way communication		
0.88	0.71	Flow	0.871	0.89	0.67	Personalization		
			0.905	0.89	0.73	Perceived enjoyment		

Cheng			Lee et.al.		Ali et.al.	
	CR	AVE		Cronbach alpha		Cronbach alpha
PU	0.86	0.48	PU	0.905	PU	0.906
PEOU	0.82	0.52	PEOU	0.903	PEOU	0.881
0	0.62	0.39	ATU		0	0.905
BI	0.91	0.68	BI	0.657	BI	0.851
				0.868	AU	
Learner-System interaction	0.91	0.56	Organizational support	0.757	Subjective norm	0.853
Instructor-learner interaction	0.92	0.55	Self-eficacy	0.835	Quality of working life	0.854
Learner-Learner interaction	0.88	0.51	Experience			0.748
	0.8	0.54	Task equivocality			0.87

			Cheung and Vogel		Motaghian et.al.			
Cronbach alpha	CR	AVE		Cronbach alpha		Cronbach alpha	CR	AVE
0.84	0.9	0.8	PU	0.956	PU	0.93	0.92	0.79
0.9	0.9	0.8	PEOU	0.878	PEOU	0.886	0.93	0.82
0.89	0.9	0.8	ATU		0			
0.95	1	0.9	BI	0.904	BI	0.961	0.95	0.86
0.84	0.9	0.7	AU	0.815	AU			
0.84	0.9	0.7	Sharing	0.721	Information quality	0.868	0.9	0.75
0.81	0.9	0.6	Perceived resource	0.77	System quality	0.745	0.85	0.66
0.81	0.9	0.7	Compatibility	0.828	Service quality	0.923	0.88	0.71
0.93	1	0.9	Subjective norm-Peer	0.833	Self-efficacy			
0.82	0.9	0.7	Subjective norm-Media	0.746	Subjective norm			
0.87	0.9	0.8	SN-Lecturer					
0.93	1	0.9	Self-efficacy					

	Purnomo and Lee			Hsia et.al.				Cheng
AVE		CR	AVE		Cronbach alpha	CR	AVE	
0.52	PU	0.8	0.6	PU	0.931	0.92	0.75	PU
0.52	PEOU	0.8	0.5	PEOU	0.838	0.84	0.58	PEOU
	0			0				0
0.55	BI	0.7	0.6	BI	0.916	0.92	0.8	BI
								0
0.53	Management Support	0.8	0.5	Locus of control	0.947	0.92	0.79	Course content quality
0.5	Self-efficacy	0.9	0.6	Self-efficacy	0.913	0.89	0.73	Course design quality
0.53	Experience				0.828	0.84	0.64	Support service quality
0.74	Anxiety				908	0.91	0.64	System functionality
0.59	Compatibility				0.896	0.9	0.75	System interactivity
					958	0.95	0.87	System response
					0.966	0.94	0.83	User interface design
					0.936	0.92	0.65	Instructor attitude
					0.859	0.92	0.79	Perceived enjoyment

		park et.al.				Chen and Tseng	
CR	AVE		Cronbach alpha	CR	AVE		CR
0.88	0.65	PU	0.912	0.91	0.73	PU	0.76
0.89	0.66	PEOU	0.874	0.9	0.76	PEOU	0.76
						0	
			0.93	0.93	0.77	BI	0.83
0.93	0.81	PS					
0.94	0.85	Enjoyment	0.891	0.92	0.79	Motivation to use	0.76
0.78	0.63	Anxiety	0.923	0.92	0.75	Anxiety	0.75
0.93	0.86	Social influence	0.935	0.94	0.79	self-efficacy	0.82
0.85	0.53	Organizational support					0.92
0.88	0.65	Information quality					0.85
0.81	0.59	System quality					

			Lin and Chen				Ramayah et.al.
Cronbach alpha	CR	AVE		Cronbach alpha	CR	AVE	
0.931	0.93	0.82	PU				0
0.933	0.93	0.82	PEOU				0
							0
0.934	0.93	0.88	BI	0.837	0.7	0.5	BI
0.929	0.93	0.82	PS	0.911	0.8	0.8	PS
0.932	0.93	0.7	Course Information quality		0.8	0.5	Service quality
0.929	0.91	0.71	Platform information quality	0.901	0.8	0.5	System quality
0.849	0.85	0.59	System quality	0.896	0.8	0.5	Information Quality

Cheng				Veera			Lee et.al.
	Cronbach alpha	CR	AVE		CR	AVE	
PU	0.874	1	0.61	PU	0.86	0.67	PU
PEOU	0.826	1	0.53	PEOU	0.7	0.44	PEOU
ATU							
BI	0.79	1	0.52	BI	0.9	0.7	BI
AU							
Perceived performance							
Perceived Enjoyment							
Network externality	0.634	1	0.38	Self-efficacy	0.9	0.83	Subjective norm
Interpersonal influence	0.67	0.8	0.5	System functionality	0.81	0.59	Organizational support
External influence	0.632	1	0.38	Teaching materials	0.88	0.67	Experience
System functionality					0.88	0.54	Self-efficacy
System interactivity					0.78	0.55	Task equivocality
System response					0.74	0.51	Task Interdependence
Content quality					0.79	0.56	Management support
Computer Self-efficacy							
Internet self-efficacy							
Cognitive absorption							
Learning goal orientation							

		Karaali et.al.			Yan Li et.al.			
CR	AVE		CR	AVE		Cronbach alpha	CR	AVE
0.8	0.6	PU	0.87	0.59	PU	0.93	0.9	0.8
0.8	0.6	PEOU	0.76	0.52	PEOU	0.81	0.8	0.6
0.9	0.7	ATU			0	0.92	0.9	0.8
0.8	0.6	BI	0.7	0.53	BI	0.97	0.9	0.8
						0.92	0.9	0.7
						0.95	0.9	0.8
						0.81	0.8	0.6
0.8	0.6	Social influence	0.9	0.63	System Functionality	0.91	0.9	0.7
0.6	0.5	Facilitating conditions	0.83	0.62	System Response	0.85	0.9	0.7
0.9	0.7	Anxiety	0.86	0.68	System Interactivity	0.96	1	0.9
			0.73	0.53	Service Quality	0.92	0.9	0.7
			0.72	0.5	Course quality	0.9	0.9	0.8
			0.69	0.53	Self-efficacy	0.86	0.9	0.8
						0.91	0.9	0.8
						0.86	0.9	0.7
						0.9	0.9	0.8
						0.83	0.8	0.6
						0.94	0.9	0.7

		Lee		Abdulhameed et.al.		Basheer and Ibrahim	
CR	AVE		Cronbach alpha		Cronbach alpha		Cronbach alpha
0.9	0.73	PU	0.79	PU	0.86	PU	0.82
0.9	0.75	PEOU	0.89	PEOU	0.8	PEOU	0.83
0.9	0.72	ATU	0.88	ATU			0.84
0.9	0.79	BI	0.9	BI	0.89	BI	0.8
0.9	0.82	PS					
0.8	0.6	Confirmation	0.86	Enjoyment	0.82	Normative pressure	0.83
0.8	0.69	Perceived enjoyment	0.87	Anxiety	0.88	Experience	0.62
0.8	0.69	Concentration	0.91	Self-efficacy	0.76	Anxiety	0.84
0.9	0.73	Subjective norm	0.82	Experience	0.92	Computer knowledge	
0.9	0.77	Perceived behaviour control			0.82	Management Support	

Ahmad and Samar			Chen			Liu et.al.	
	CR	AVE		Cronbach alpha	AVE		Cronbach alpha
PU	1	0.8	PU	0.89	1	PU	0.91
PEOU				0.89	1	PEOU	0.9
							0.91
E-retention				0.88	1	BI	0.89
			AU				
PS	1	0.9	PS				0.92
				0.87	1	Perceived Interaction	
Design features	0.9	0.7	Information quality	0.9	1	Online course design	0.8
Perceived enjoyment	92	0.7	System quality	0.87	1	User interface design	0.8
				0.71	1	Previous online learning experience	0.81
							0.88
							0.89

			Wang and Wang		Lee et.al.		
Cronbach alpha	CR	AVE		Cronbach alpha		CR	AVE
0.942	0.93	0.71	PU	0.903	PU	0.9	0.6
0.93	0.92	0.73	PEOU	0.697	PEOU	0.9	0.7
0.879	0.9	0.83	BI	0.821	BI	0.9	0.6
0.9	0.91	0.7	AU				
						0.9	0.7
0.905	0.9	0.7	Information quality	0.675	Instructor characteristics	0.8	0.5
0.938	0.93	0.74	System Quality	0.634	Teaching materials	0.9	0.7
0.917	0.91	0.68	Service Quality	0.661	Design of learning contents		
0.836	0.86	0.68	Subjective norm	0.82	Playfulness		
0.881	0.9	0.7	Self-efficacy				

		Hsia and Tseng		Cho et.al.		Muneer et.al.
Cronbach alpha	AVE		Cronbach alpha		Cronbach alpha	
0.88	0.7	PU	0.872	PU	0.847	PU
0.74	56	PEOU	0.85	PEOU	0.874	PEOU
0.83	0.7	BI	0.868	BI	0.877	BI
			0.817	PS		
0.86	0.7	Self-efficacy	0.797	Perceived functionality	0.844	Subjective norm
0.86	0.6	Perceived flexibility	0.858	Perceived user-interface Design	0.864	Experience
			0.679	Perceived system support	0.846	System interactivity
					0.836	Self-efficacy
					0.802	Technical support

Antonio et.al.			Sheng et.al.		Tobing et.al.		Allan and Will
	Cronbach alpha	CR	China	Cronbach alpha		Cronbach alpha	
PU	0.889	0.92	PU	0.839	PU	0.867	PU
PEOU	0.858	0.9	PEOU	0.843	PEOU	0.773	PEOU
ATU							
BI	0.789	0.91	BI	0.768	BI	0.588	BI
	0.601	0.82	AU				
Self-efficacy	0.864	0.92	Perceived enjoyment	0.86	System adaptability	0.688	Subjective norm
						0.867	Efficacy

Lee		Liao and LU			Tseng and Hsia	
	Cronbach alpha		Cronbach alpha	AVE		Cronbach alpha
PU			0.81	0.6	PU	0.939
PEOU	0.86	PEOU	0.78	0.5	PEOU	0.861
						0.806
BI	0.94	BI	0.83	0.6	BI	0.912
	0.81	AU				
Internal computing support	0.91	Compatibility	0.83	0.6	Internal locus control	0.884
Internal computing training	0.94	Relative advantage	0.86	0.6	Self-efficacy	
Internal computing accessibility	0.82	Trialability				
External computing support	0.87	Result demonstrability				
External computing training	0.94	Visibility				
External computing accessibility	0.96	Image				

Fu et.al.			Hsia and Tseng		Park et.al.	
	Cronbach alpha	AVE		Cronbach alpha		Cronbach alpha
PU	0.88	0.7	PU	0.84	PU	0.86
PEOU	0.74	0.6	PEOU	0.8	PEOU	0.79
ATU						
BI	0.83	0.7	BI		BI	0.81
					AU	
Perceived enjoyment	0.86	0.7	Computer self-efficacy		Motivation	0.82
Functionality	0.86	0.6	Perceived flexibility		Compliance with school policy	0.73
Interface design					Instructional technology clusters	0.89
Pedagogic					Evaluation of functions	0.84
Community						0.93
						0.71

	Masrom			Chiu and Chang		Hussein et.al.		
Cronbach alpha		CR	AVE		Cronbach alpha		Cronbach alpha	AVE
0.89	PU			PU	0.922	PU	0.9	0.8
0.89	PEOU				0.816	PEOU	0.82	0.6
0.85	ATU						0.94	0.8
0.85	BI	1	0.9	BI	0.805	BI		
		0.9	0.8	PS				
		0.9	0.6	Information quality	0.84	Computer self-efficacy	0.95	0.9
		0.9	0.6	System quality	0.828	Convenience	0.87	0.7
		0.9	0.7	Service quality	0.817	Instructional design	0.91	0.8
		0.7	58	System use	0.766	Technological factors	0.88	0.7
		1	0.9	Distributive fairness	0.843	Instructors Characteristic	0.86	0.7
		0.9	0.7	Procedural fairness				
		1	0.8	Interactional fairness				

Saadé and Kira		Lee			Ifinedo
	Cronbach alpha		CR	AVE	
PU	0.825	PU	0.93	0.82	PU
PEOU	0.781	PEOU	0.92	0.73	PEOU
ATU					
	0.889	BI	0.95	0.91	BI
	0.843	AU	0.96	0.91	AU
Affect	0.724	Subjective norm	0.94	0.65	Technology characteristics
Anxiety	0.792	Content quality	0.92	0.63	User characteristics
	0.731	Perceived network externality			
	0.713	Computer self-efficacy			
	0.797	Course attributes			
	0.877	Competing behavioural intention			

	Ong and Wang		Liao et.al.			Lee et.al.	
		Cronbach alpha		CR	AVE		Cronbach alpha
0.9	PU			0.8	0.5	PU	0.821
0.9	PEOU			0.8	0.5	PEOU	0.929
				0.9	0.7	ATU	0.823
0.9	BI	0.97	BI	0.9	0.8	BI	
			AU				
0.9	Computer self-efficacy	0.93	Performance expectancy	0.8	0.6	Perceived Enjoyment	0.901
0.9	Perceived credibility	0.91	Effort expectancy				0.879
		0.85	Social influence				
		0.73	Facilitating conditions				

Xu and YU		PU	PEOU	ATU	BI				Computer self-efficacy										
	Cronbach alpha	0.907	0.839	0.8	0.863				0.879										
	AVE	0.62	0.63	0.62	0.61				0.65										
Brown		PU	PEOU			AU			Ease of understanding	Ease of finding	Self-efficacy	Computer anxiety							
	Cronbach alpha	0.93	0.93						0.85	0.81	0.92	0.93							

Source: Constructed by the researcher based on literature review

Based on the above tables, we have identified factors and the corresponding paths, which will help one to understand the behaviour of the users towards adoption of the e-learning system.

Note that, those paths that are present in at least two studies are considered in the current study (Valentine et.al.). This is based on the principle that, at least two distinct values will help one to understand the variability in the data better. Also, more studies will give better consistencies in the calculation of path coefficients. We only consider those paths that are significant and exclude those paths that are insignificant. This will help one in getting precise estimates that are significant. The following table gives the factors identified from the above tables and the same are used to build the model. The model is built by considering only those paths that are significant.

Table-7 : Details of Extrinsic factors considered in the literature

S.No	Extrinsic factors		
1	Self-Efficacy (SE)	12	System Accessibility (SA)
2	Anxiety (ANX)	13	Work life quality/Quality of life (WLQ)
3	Subjective Norm/ Social Norm/Influence (SN)	14	Cognitive absorption (CAB)
4	System Quality (SYQ)	15	Information Quality (IQ)
5	Content Quality (CQ)	16	Compatibility (COMP)
6	Management Support (MS)	17	Computer Playfulness (COMPL)
7	Confirmation (CONF)		
8	Result Demonstrability (RD)		
9	Service Quality (SERQ)		
10	Experience (EXP)		
11	Facilitating conditions (FC)		

Source: Constructed by the researcher based on table- 4

Table-8 : Details of Intrinsic factors considered in the literature

S.No	Intrinsic factors
1	Perceived Usefulness
2	Perceived Ease of Use
3	Perceived Enjoyment
4	Perceived Satisfaction

Table-9 : Dependent Factors considered in the literature

S.No	Dependent factor
1	Actual system usage
2	Behavioural Intention
3	Attitude to use the system

Source: Constructed by the researcher based on table- 4

We now present the tables that gives the paths between the factors and the figure presented after the tables give the model proposed.

Table-10 : Paths identified for the dependent factors

Dependent Factor	Intrinsic Factors	Extrinsic Factors
AU	BI	FC
	PU	SE
	PEOU	
	PS	
BI	PS	ANX
	PEOU	SE
	PENJ	SYQ
	PU	COMPA
		WLQ
		EXP
		IQ
		SA
		SN/ SON/I
		SERQ
		ATU
ATU	PU	SN /SON/I
	PENJ	
	PEOU	

Source: Constructed by the researcher based on table- 5

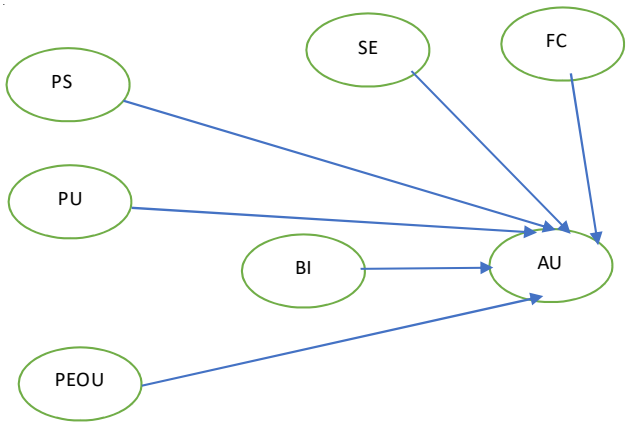
Table-11 : Paths identified for Intrinsic factors

Intrinsic Factor	Intrinsic Factor	Related Factors
PS	PU	CONF
	PEOU	IQ
		SYQ
		SERQ
		SE
PU	PENJ	SYSF
	PEOU	CONF
		CAB
		IQ
		RD
		SN/ SON/I
		EXP
		CQ
		SQ
		ANX
		SE
PEOU	PENJ	FC
		CAB
		SA
		EXP
		IQ
		CQ
		SQ
		SN/ SON/I
		ANX
		SE
		SERQ
		MSUP
PENJ	PEOU	SYSF

Source: Constructed by the researcher based on table- 5

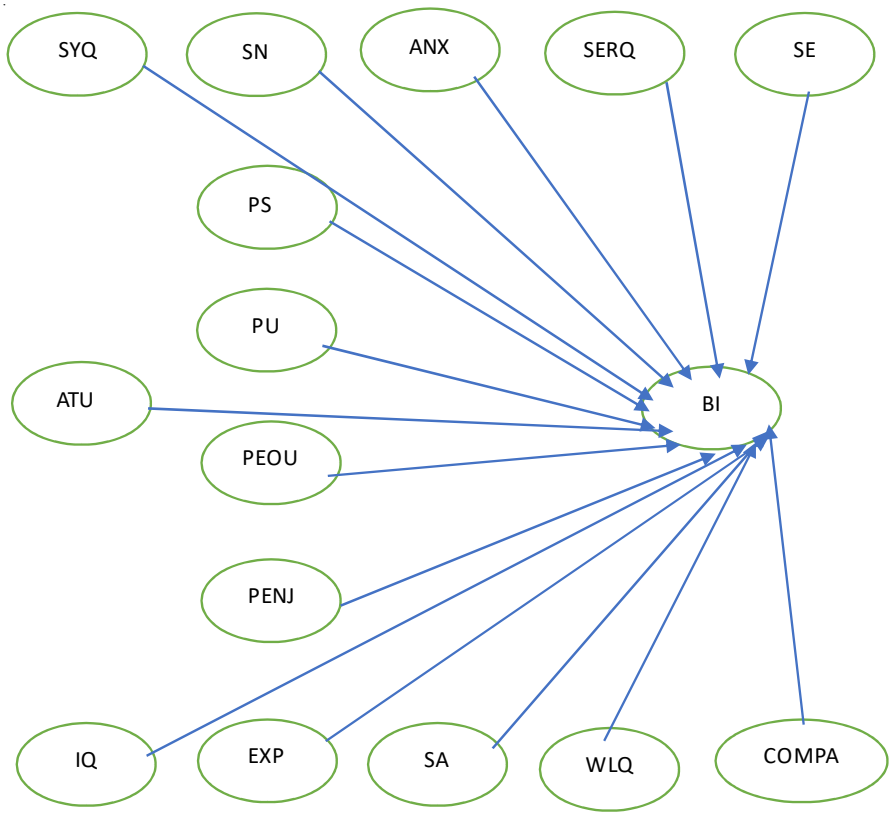
We now present the paths for each of the factors and the corresponding hypotheses. Using meta-analysis, we test the hypotheses.

Figure-22 : Paths for the factor AU



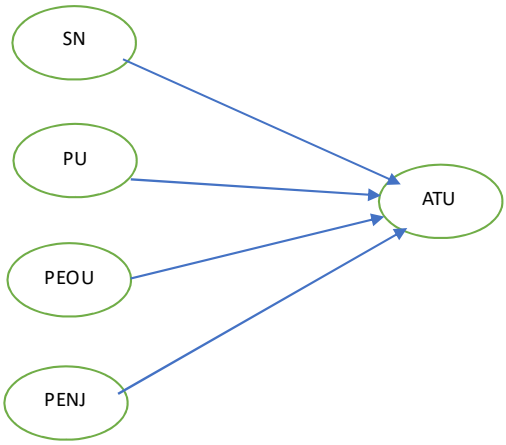
Source: Developed by the researcher from the literature review

Figure-23 : Paths for the factor BI



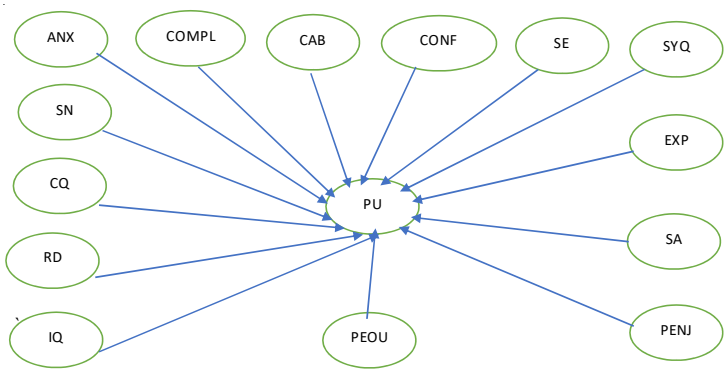
Source: Developed by the researcher from the literature review

Figure-24 : Paths for the factor ATU



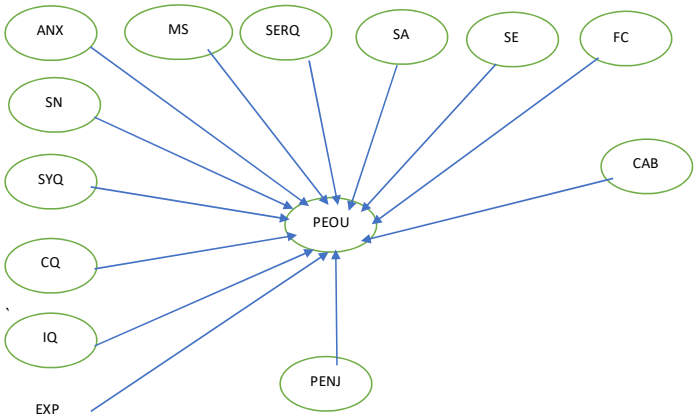
Source: Developed by the researcher from the literature review

Figure-25 : Paths for the factor PU



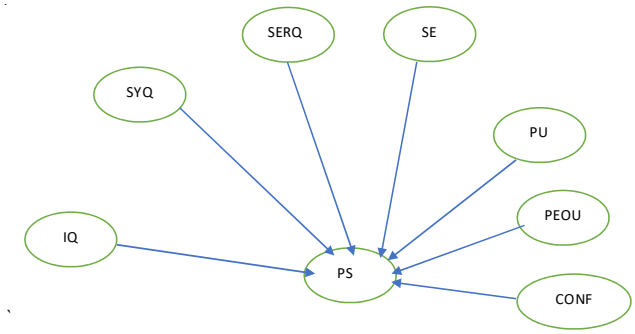
Source: Developed by the researcher from the literature review

Figure-26 : Paths for the factor PEOU



Source: Developed by the researcher from the literature review

Figure-27 : Paths for the factor PS



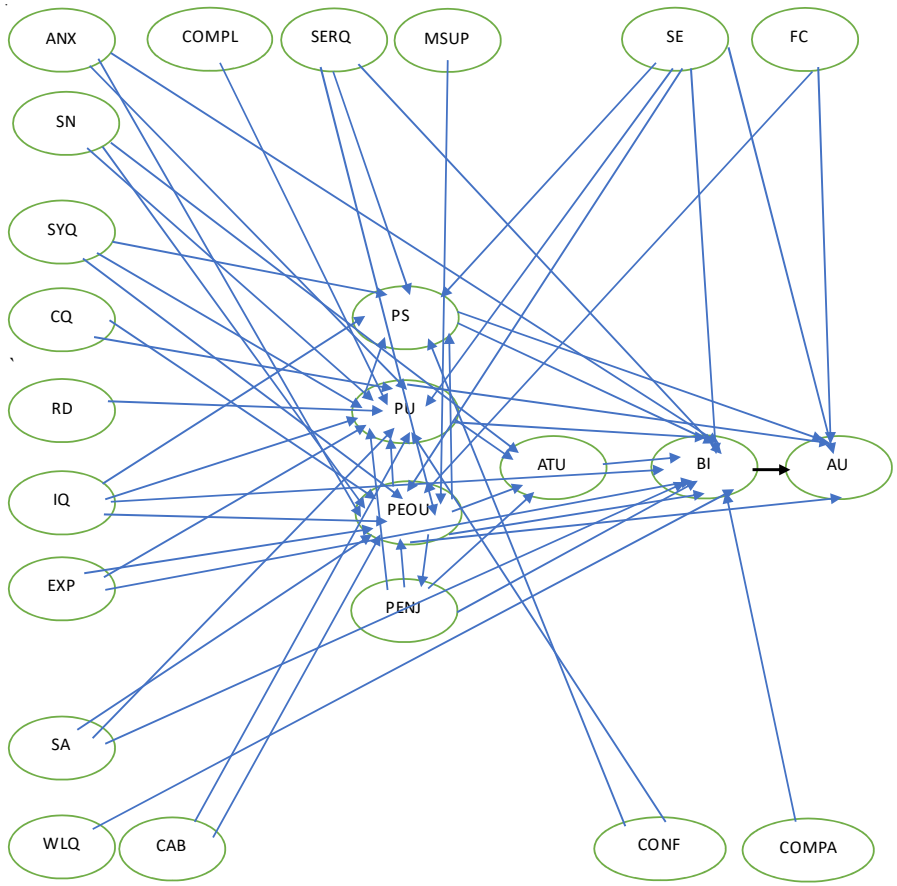
Source: Developed by the researcher from the literature review

Figure-28 : Paths for the factor PENJ

Source: Developed by the researcher from the literature review

Using the above paths, we construct a comprehensive extended TAM for E-learning adoption.

Figure-29 : Comprehensive Extended TAM for E-learning



Source: Developed by the researcher from the literature review

We now propose the research questions, objectives and hypotheses, based on the above model.

1. Research Questions, Objectives and Hypotheses

1.1. Research Questions

Based on the model built, we have the following questions.

1. Will all the factors identified in predicting PU have a significant relation with it?
2. Can one claim that those factors that are proposed to predict PEOU will have sufficient strength in predicting PEOU?
3. Will the intrinsic factors that have been identified in the model, have significant impact on BI, ATU and AU?
4. Will the role of BI be significant in predicting AU?
5. Can one claim that the relations between the extrinsic factors the other intrinsic factors are significant?

1.2. Research Objectives

Based on the above questions raised, we have the following as the objectives of the study.

1. To identify the factors that are significant in predicting PU and PEOU.
2. To examine and identify other intrinsic factors that are significant and can explain the behavior of the learners towards e-learning system.
3. To find the strengths of each of the factors in explaining the behavior of e-learners towards e-learning systems.
4. To present the aggregate of the results found by the earlier studies using meta-analysis.

1.3. Research Hypotheses

Based on the model built, questions and the objectives of the study, we build the following research hypotheses.

1. All the factors may be significantly related with PU and PEOU, related to e-learning system.
2. The intrinsic factors may be significantly related with BI, ATU and AU, related to e-learning system.
3. All the paths identified may be having significant strengths in explaining the model, related to e-learning system.
4. Other intrinsic factors identified may be significantly related with BI, ATU and AU, related to e-learning system.
5. The relation between the extrinsic factors and the intrinsic factors may be significant.

1.4. Null and Alternative hypotheses

H01: The factors related to PU and PEOU are not significant in explaining their behaviour, related to e-learning system.

Ha1: The factors related to PU and PEOU are significant in explaining their behaviour, related to e-learning system.

H02: The intrinsic factors are not significant in predicting BI, ATU and AU of the e-learning system.

Ha2: The intrinsic factors are significant in predicting BI, ATU and AU of the e-learning system.

H03: The strengths of the paths identified are not significant in explaining the behaviour of e-learners.

Ha3: The strengths of the paths identified are significant in explaining the behaviour of e-learners.

H04: Other intrinsic factors identified are not significantly related with BI, ATU and AU.

Ha4: Other intrinsic factors identified are significantly related with BI, ATU and AU.

H05: The relation between the extrinsic factors and the intrinsic factors is not significant.

Ha5: The relation between the extrinsic factors and the intrinsic factors is significant.

We now present the data analysis the key findings from the same. Throughout the study, we fix the level of significance at 5%. This is mainly used while testing the hypotheses related to the paths based on meta-analysis. For example, Z-test for significance of the mean effect sizes of the paths, and Q-statistic for checking homogeneity.

2. Data Analysis and Findings

We now present the analysis based on beta coefficients (effect sizes) and construct the final model. The analysis is based on Cohen (1992), where a small correlation coefficient is around 0.1 in magnitude, a medium-sized correlation is about 0.3, and a large correlation coefficient is close to 0.5 or larger. Those paths that are having less effect sizes are excluded and only those that are in these ranges are considered. Also, using the z-test we check the significance of each of the mean effect sizes. We now start the analysis with dependent factors and then present for intrinsic factors.

Before presenting the analysis for each of the factors, we first present the reliability values for each of the factors, based on the reliability levels collected from the literature.

Cronbach alpha

Cronbach alpha is used to check the reliability or internal consistency of variables in measuring a construct. In the current study, we have collected the Cronbach alpha values from the studies considered to build the model and calculated the average value of these values. Note that, studies that have considered wither TAM or extended Tam have measured the factors using the variables and have reported the values of Cronbach for each of the factors they have considered. The same are used in the current study. The following tables give the details.

Table-12 : Cronbach Alpha for Intrinsic factors

	PU	PEOU	ATU	BI	AU	PS	PENJ
Average	0.8663	0.8453	0.8592	0.8437	0.8133	0.8847	0.8718
Minimum	0.6770	0.6970	0.6150	0.5780	0.6010	0.8170	0.7720
Maximum	0.9570	0.9480	0.9450	0.9700	0.9200	0.9500	0.9500
Variance	0.0037	0.0035	0.0057	0.0074	0.0076	0.0020	0.0021
STD	0.0606	0.0588	0.0758	0.0860	0.0872	0.0448	0.0455
Number of studies	73	72	27	65	17	10	16

Source: Constructed based on the analysis done using the data collected from literature review

Table-13 : Cronbach Alpha for extrinsic factors- 1

	SN	SE	ANX	IQ	SYQ	SA
Average	0.8100	0.8318	0.8666	0.8469	0.8401	0.8050
Minimum	0.6770	0.6340	0.7600	0.7010	0.7200	0.7580
Maximum	0.9300	0.9500	0.9400	0.9320	0.9380	0.8980
Variance	0.0043	0.0068	0.0029	0.0081	0.0057	0.0065
STD	0.0659	0.0824	0.0543	0.0901	0.0753	0.0805
Number of studies	25	30	12	10	10	3

Source: Constructed based on the analysis done using the data collected from literature review

Table-14 : Cronbach Alpha for extrinsic factors- 2

	COMPA	EXP	SERQ	CQ	MS	FC
Average	0.8680	0.8420	0.8565	0.8670	0.8900	0.7987
Minimum	0.8100	0.7720	0.8160	0.7100	0.8200	0.6200
Maximum	0.9100	0.9300	0.9360	0.9760	0.9600	0.8970
Variance	0.0027	0.0023	0.0020	0.0126	0.0098	0.0105
STD	0.0519	0.0480	0.0450	0.1123	0.0990	0.1024
Number of studies	3	10	8	5	2	7

Source: Constructed based on the analysis done using the data collected from literature review

For convenience, we have divided the extrinsic factors into two tables. From the above tables, one can note that the level of Cronbach alpha for all the constructs are above the required cut-off and close to the good level (0.8 to 0.9, Cronbach (1951)). Hence, we conclude that all the factors considered in the model are reliable.

We now compute the average variance extracted (AVE) for each of the factors, based on the data collected. AVE is measure of the amount of variance that is captured by a construct in relation to the amount of variance due to measurement error.

Table-15 : Average Variance Extracted (AVE) for Intrinsic factors

	PU	PEOU	ATU	BI	AU	PS	PENJ
Average	0.6922	0.6601	0.7187	0.7210	0.7388	0.7767	0.7232
Minimum	0.4820	0.4400	0.3890	0.5110	0.5130	0.6500	0.5800
Maximum	0.8600	0.9320	0.9010	0.9100	0.9140	0.8600	0.8700
Variance	0.0088	0.0127	0.0143	0.0157	0.0120	0.0031	0.0072
STD	0.0940	0.1127	0.1198	0.1253	0.1097	0.0553	0.0847
Number of studies	61	59	22	55	12	12	19

Source: Constructed based on the analysis done using the data collected from literature review

Table-16 : Average Variance Extracted (AVE) for extrinsic factors- 1

	SN	SE	ANX	IQ	SYQ	SA	COMPA
Average	0.6790	0.6482	0.6918	0.6803	0.6649	0.6670	0.6293
Minimum	0.5070	0.3770	0.6000	0.5400	0.5100	0.5090	0.5700
Maximum	0.9400	0.9000	0.7800	0.7670	0.8560	0.7600	0.7300
Variance	0.0121	0.0164	0.0034	0.0064	0.0120	0.0120	0.0077
STD	0.1102	0.1279	0.0581	0.0801	0.1095	0.1094	0.0876
Number of studies	20	31	10	10	11	4	3

Source: Constructed based on the analysis done using the data collected from literature review

Table-17 : Average Variance Extracted (AVE) for extrinsic factors- 2

	EXP	SERQ	CQ	CAB	MS	FC
Average	0.5780	0.6325	0.7678	0.6090	0.6157	0.5783
Minimum	0.5000	0.5300	0.5600	0.5780	0.5250	0.4500
Maximum	0.6700	0.7960	0.9540	0.6400	0.7600	0.6660
Variance	0.0049	0.0101	0.0261	0.0019	0.0160	0.0105
STD	0.0701	0.1006	0.1615	0.0438	0.1264	0.1026
Number of studies	10	10	4	2	3	4

Source: Constructed based on the analysis done using the data collected from literature review

From the above tables, one can observe that the AVE for each of the factors is more than 0.5 and hence we conclude that the factors explain good percentage of total variance.

We now look at the composite reliability (CR), which is the indicator of the shared variance among the observed variables used as an indicator of the latent construct (Fornell and Larcker (1981)). The cut-off for the composite reliability is 0.6 and the tables below give the values of the same. The average CR values are computed using the data collected from the studies considered. Note that, the data are nothing, but the CR values reported in each of these studies.

Table-18 : Composite reliability (CR) for Intrinsic factors

	PU	PEOU	ATU	BI	AU	PS	PENJ
Average	0.8953	0.8764	0.8832	0.8856	0.8834	0.8988	0.8834
Minimum	0.7630	0.7020	0.6150	0.6800	0.7000	0.7600	0.8090
Maximum	0.9900	1.0000	0.9600	0.9900	0.9550	0.9500	0.9520
Variance	0.0025	0.0041	0.0064	0.0050	0.0045	0.0027	0.0017
STD	0.0500	0.0643	0.0803	0.0707	0.0667	0.0521	0.0413
Number of studies	55	53	20	50	13	12	18

Source: Constructed based on the analysis done using the data collected from literature review

Table-19 : Composite reliability (CR) for extrinsic factor- 1

	SN	SE	ANX	IQ	SYQ	SA	COMPA
Average	0.8606	0.8475	0.8747	0.8909	0.8631	0.8050	0.8553
Minimum	0.6600	0.5410	0.7770	0.7800	0.7100	0.7570	0.8250
Maximum	0.9700	0.9700	0.9300	0.9360	0.9430	0.8300	0.8900
Variance	0.0047	0.0094	0.0022	0.0020	0.0059	0.0017	0.0011
STD	0.0686	0.0968	0.0473	0.0452	0.0768	0.0416	0.0327
Number of studies	19	24	10	10	11	3	3

Source: Constructed based on the analysis done using the data collected from literature review

Table-20 : Composite reliability (CR) for extrinsic factor- 2

	EXP	SERQ	CQ	CAB	MS	FC
Average	0.8279	0.8548	0.8803	0.8650	0.7760	0.7957
Minimum	0.5060	0.7340	0.7100	0.8400	0.7640	0.6200
Maximum	0.9290	0.9510	0.9840	0.8900	0.7880	0.8870
Variance	0.0179	0.0051	0.0140	0.0013	0.0003	0.0232
STD	0.1339	0.0716	0.1183	0.0354	0.0170	0.1522
Number of studies	8	9	4	2	2	3

Source: Constructed based on the analysis done using the data collected from literature review

From the above tables once can note that, all the factors have CR values more than the required cut-off and hence can be considered in building the comprehensive model.

Based on the above tables and the values we conclude that, all the factors have required reliability levels and can be used in building the model. We now look at the analysis for each the dependent and intrinsic factor paths. This analysis gives use information of the impact each of the paths have on the respective factors. We start with analysis on dependent factors and then present the analysis for other intrinsic factors.

Analysis for dependent factors-AU, BI and ATU

As indicated in the table- 4, AU, ATU and BI are the dependent factors and the following tables give the beta (path) coefficients for each of the factors. Note that, we only consider those paths that are considered in at least two studies. The following table gives the paths retained finally for Actual e-learning system usage (AU).

Table-21 : Paths for AU

AU	BI	FC
	PU	SE
	PEOU	
	PS	

The following table gives the path coefficients for AU. The table is split into two parts for clear understanding. It gives information on sample size of path, effect size (beta coefficient), significance of the path and the standard error of the path.

Table-22 : Path coefficients for the factor AU-1

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
250	BI->AU	0.675	S	0.0610	67	PU->AU	0.407	S	0.0870
435	BI->AU	0.194	S	0.0556	181	PU->AU	0.551	S	0.4620
159	BI->AU	0.131	S	0.0633	139	PU->AU	0.285	S	0.1039
400	BI->AU	0.19	S	0.0393	116	PU->AU	0.378	S	0.1380
2574	BI->AU	0.17	S	0.0827	193	PU->AU	0.47	S	0.1393
424	BI->AU	0.401	S	0.1528	72	PU->AU	0.072	NS	0.0432
269	BI->AU	0.552	S	0.1644	78	PU->AU	0.04	NS	0.1173
300	BI->AU	0.355	S	0.1730					
132	BI->AU	0.342	S	0.0947					
131	BI->AU	0.63	S	0.1854					
116	BI->AU	0.395	S	0.1238					
390	BI->AU	0.83	S	0.2481					
230	BI->AU	0.18	S	0.0535					
423	BI->AU	0.59	S	0.1764					
81	BI->AU	0.03	NS	0.0180					
569	BI->AU	0.583	S	0.1747					
115	BI->AU	0.4	S	0.0870					
136	BI->AU	0.39	S	0.1029					
328	BI->AU	0.64	S	0.0498					
189	BI->AU	0.153	S	0.1765					
268	BI->AU	0.75	S	0.2850					
121	BI->AU	0.362	S	0.1063					
214	BI->AU	0.89	S	0.3376					
1085	BI->AU	0.37	S	0.1111					
1085	CBI->AU	0.05	NS	0.0304					
172	BI->AU	0.92	S	0.1075					
119	BI->AU	0.19	S	0.0915					

Source: Constructed based on table- 5

Table-23 : Path coefficients for the factor AU-2

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
67	PEOU->AU	0.324	S	0.0930	424	FC->AU	0.53	S	0.202(
181	PEOU->AU	0.524	S	0.3560	132	FC->AU	0.21	S	0.094(
139	PEOU->AU	0.137	NS	0.1120	139	FC->AU	0.162	NS	0.128(
116	PEOU->AU	0.533	S	0.1264	81	FC->AU	-0.18	NS	0.086(
72	PEOU->AU	0.676	S	0.2516	172	FC->AU	0.03	S	0.028(
78	PEOU->AU	0.29	S	0.1177					

Source: Constructed based on table- 5

Table-24 : Path coefficients for the factor AU-3

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
390	PS->AU	0.18	S	0.0538	181	SE->AU	0.493	S	0.1230
423	PS->AU	0.29	S	0.1105	424	SE->AU	0.021	S	0.0124
193	PS->AU	0.29	S	0.1099	119	SE->AU	0.3	S	0.0880

Source: Constructed based on table- 5

From the above tables, we obtain the average path coefficients and the following table gives the same. Note that, we only consider those paths that are significant in further calculations. The following table gives the average path coefficient and its significance. Based on these results, we test the hypotheses and then propose the final paths that are significant.

Table-25 : Summary of the effect size of the factor AU

Path	BI->AU	PU->AU	PEOU->AU	FC->AU	PS->AU	SE->AU
Number of samples	25	5	5	3	3	3
Total sample size	9549	696	514	728	1006	724
Average Path Coefficient	0.44	0.4	0.45	0.28	0.25	0.25
Standard deviation	0.0861	0.1828	0.1975	0.1685	0.1434	0.1567
95% Lower Limit	0.26607904	0.04185	0.06558	-0.0511	-0.0317	-0.0519
95% Upper Limit	0.60367241	0.75829	0.83994	0.60949	0.53065	0.56246
Z	5.04960393	2.18896	2.292	1.65651	1.73934	1.62865
p (effect size)	0.0001	0.0286	0.0219	0.0976	0.0819	0.1033
Heterogeneity test (Q)	542.92	35.99	34.12	9.25	15.23	27.37
df (Q)	24	4	4	2	2	2
p (Heterogeneity)	0.0001	0.0001	0.0001	0.0196	0.0009	0.0001
I^2	0.96	0.99	0.99	0.99	0.99	99

Source: Constructed based on data analysis

As per the Cohen (1992), one can note that the path BI->AU is having almost large effect size and has higher impact on AU. That is, an individual's intention to use the e-learning system decides their actual usage of the system. Hence, one can develop the system such that it can create an intention of usage in the mind of the user, which can make them use the system finally. From the table, one can note that PEOU and PU also have almost large effect size on AU. This indicates that, an individual who perceives that the system is useful, actually uses the system. Also, a perception that the system can be used with ease makes one to use the system. We also note that the paths FC->AU, PS->AU and SE->AU have low effects and also are not significant ($p>0.05$). Hence, we drop them from the final model. The following figure gives the modified paths for AU. Also, note that the I-square value is very high indicating the appropriateness of a random effect model. The same is also reflected in the testing using Q-statistic.

Figure-30 : Modified paths for the factor AU

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Source: Constructed by the researcher based on table-25

We now present the analysis for the factor ATU and the following table gives the path factors.

Table-26 : Paths for the factor ATU

ATU	PU	SN /SON/SI
	PENJ	
	PEOU	

Source: Constructed from table- 5

The following tables give the path coefficients along with their significance.

Table-27 : Path coefficients for the factor ATU-1

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	S
250	PU->ATU	0.3870	S	0.07600	250	PEOU->ATU	0.3900	S	0.0
102	PU->ATU	0.3410	S	0.09300	102	PEOU->ATU	0.4940	S	0.0
435	PU->ATU	0.5210	S	0.05372	435	PEOU->ATU	0.1520	S	0.0
345	PU->ATU	0.3680	S	0.05391	345	PEOU->ATU	0.0900	S	0.0
110	PU->ATU	0.7770	S	0.06039	110	PEOU->ATU	0.7170	S	0.0
2574	PU->ATU	0.7300	S	0.35527	2574	PEOU->ATU	0.1000	NS	0.0
437	PU->ATU	0.1050	NS	0.05568	437	PEOU->ATU	1.0610	S	0.3
152	PU->ATU	0.6740	S	0.19898	152	PEOU->ATU	0.3890	S	0.1
156	PU->ATU	0.4360	S	0.12878	156	PEOU->ATU	0.2610	S	0.1
354	PU->ATU	0.1740	S	0.06625	354	PEOU->ATU	0.6270	S	0.1
286	PU->ATU	0.5800	S	0.17286	286	PEOU->ATU	0.2200	S	0.0
557	PU->ATU	0.5240	S	0.03375	557	PEOU->ATU	0.1830	S	0.0
100	PU->ATU	0.4500	S	0.13144	100	PEOU->ATU	0.4300	S	0.1
357	PU->ATU	0.3070	S	0.08400	357	PEOU->ATU	0.4420	S	0.1
357	PU->ATU	0.2990	S	0.09500	357	PEOU->ATU	0.0180	NS	0.0
251	PU->ATU	0.7700	S	0.22914	251	PEOU->ATU	0.1000	S	0.0
131	PU->ATU	0.5000	S	0.18854	131	PEOU->ATU	0.4300	S	0.1
116	PU->ATU	0.4950	S	0.07220	116	PEOU->ATU	0.4680	S	0.0
394	PU->ATU	0.7140	S	0.04100	394	PEOU->ATU	0.1890	S	0.0
546	PU->ATU	0.3900	S	0.11682	546	PEOU->ATU	0.3100	S	0.0
284	PU->ATU	0.6310	S	0.18803	284	PEOU->ATU	0.1770	S	0.0
2530	PU->ATU	0.6610	S	0.01800	2530	PEOU->ATU	0.1380	S	0.0
332	PU->ATU	0.1370	NS	0.08306	332	PEOU->ATU	-0.238	S	0.0
224	PU->ATU	0.2810	S	0.10663	224	PEOU->ATU	0.2800	S	0.1
107	PU->ATU	0.4620	NS	0.18500	107	PEOU->ATU	0.3400	S	0.0
226	PU->ATU	0.5500	S	0.08914	226	PEOU->ATU	0.3800	S	0.0
136	PU->ATU	0.2500	S	0.07485	136	PEOU->ATU	0.3300	S	0.0
328	PU->ATU	0.3500	S	0.04300	546	PEOU->ATU	0.2500	S	0.0
546	PU->ATU	0.4200	S	0.12581	363	PEOU->ATU	0.2110	S	0.0

363	PU->ATU	0.1830	S	0.05466	628	PEOU->ATU	0.2000	S	0.0
628	PU->ATU	0.5300	S	0.04665	225	PEOU->ATU	0.2190	S	0.0
225	PU->ATU	0.6290	S	0.18690	451	PEOU->ATU	0.1100	S	0.0
451	PU->ATU	0.5100	S	0.04431	198	PEOU->ATU	-0.322	S	0.1
198	PU->ATU	0.5570	S	0.12500	544	PEOU->ATU	0.0700	NS	0.0
544	PU->ATU	0.3900	S	0.05263	114	PEOU->ATT	0.3370	S	0.1
152	PU->ATU	0.3700	S	0.10922					

Source: Constructed based on table- 5

Table-28 : Path coefficients for the factor ATU-2

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
557	PENJ->ATU	0.25	S	0.03810	156	SI->ATU	0.1670	S	0.0798
328	PENJ->ATU	0.17	S	0.03981	394	SI->ATU	-0.0120	NS	0.0300
363	PENJ->ATU	0.103	S	0.03077	345	SN->ATU	0.2460	S	0.0701
451	PENJ->ATU	0.43	S	0.03437	284	SN->ATU	-0.0800	NS	0.0485
544	PENJ->ATU	0.53	S	0.05561	628	SN->ATU	0.2700	S	0.0416

Source: Constructed based on table- 5

Using the path coefficients that are significant, we compute the average effect size and other measures. The following table gives the calculations. We consider only those paths that are significant and based on the further calculations, the final paths for the factor are identified.

Table-29 : Summary of the effect size of the factor ATU

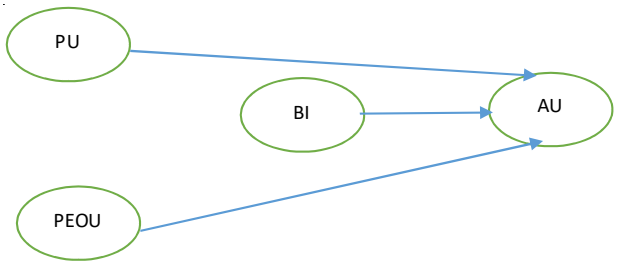
Path	PU->ATU	PEOU->ATU	PENJ->ATU	SN->ATU
Number of samples	33	30	5	3
Total sample size	14408	11481	2243	1129
Average Path Coefficient	0.47	0.31	0.3	0.23
Standard deviation	0.0949	0.0473	0.1373	0.1389
95% Lower Limit	0.28618	0.21591	0.02648	-0.04338
95% Upper Limit	0.65848	0.40142	0.56492	0.50129
Z	4.97325	6.52248	2.15278	1.64777
p (effect size)	0.0001	0.0001	0.0313	0.099
Heterogeneity test (Q)	2406.33	609.1	259.23	29.47
df (Q)	32	29	4	2
p (Heterogeneity)	0.0001	0.0001	0.0001	0.0001
I^2	0.98	0.95	0.98	0.99

Source: Constructed based on data analysis

From the above table, we conclude that except for the path SN->ATU (low effect size), all other paths are significant. The path PU->ATU has almost high effect size and from the confidence interval, one can note that it can reach to the value 0.65 and decrease to 0.28 (still at low size), but significant. Hence, we conclude that one has to develop an e-learning platform such that learners/users should feel that it

will be useful to them and this will impact their attitude towards the usage of the system. Similarly, PEOU (effect size=0.31, medium) and PENJ (effect size=0.30, medium) are significantly related with ATU. This indicates that, the ease in using the e-learning platform will have an impact on one's attitude to use the platform and one has to take this into consideration while developing a platform. Also, PENJ has an effect size 0.30 (medium effect) and significant impact on ATU. This indicates that, the platform developed has to make the learning enjoyable and should provide opportunities for one to learning with joy. This implies that, while developing an e-learning platform one has to design the platform in such-a-way that learning is joyful. Taking these into consideration, the final paths for the ATU are given in the following figure.

Figure-30 : Modified paths for the factor AU



Source: Constructed by the researcher based on table- 25

We now present the analysis for the factor ATU and the following table gives the path factors.

Table-26 : Paths for the factor ATU

BI	PS	ANX
	PEOU	SE
	PENJ	SYQ
	PU	COMPA
	ATU	WLQ
		EXP
		IQ
		SA
		SN/ SON/I
		SERQ

Source: Constructed from table- 5

The following tables give the path coefficients along with their significance ?

Table-27 : Path coefficients for the factor ATU-1

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
250	PU->ATU	0.3870	S	0.07600	250	PEOU->ATU	0.3900	S	0.07
102	PU->ATU	0.3410	S	0.09300	102	PEOU->ATU	0.4940	S	0.08
435	PU->ATU	0.5210	S	0.05372	435	PEOU->ATU	0.1520	S	0.04
345	PU->ATU	0.3680	S	0.05391	345	PEOU->ATU	0.0900	S	0.04
110	PU->ATU	0.7770	S	0.06039	110	PEOU->ATU	0.7170	S	0.06
2574	PU->ATU	0.7300	S	0.35527	2574	PEOU->ATU	0.1000	NS	0.05
437	PU->ATU	0.1050	NS	0.05568	437	PEOU->ATU	1.0610	S	0.31
152	PU->ATU	0.6740	S	0.19898	152	PEOU->ATU	0.3890	S	0.11
156	PU->ATU	0.4360	S	0.12878	156	PEOU->ATU	0.2610	S	0.14
354	PU->ATU	0.1740	S	0.06625	354	PEOU->ATU	0.6270	S	0.15
286	PU->ATU	0.5800	S	0.17286	286	PEOU->ATU	0.2200	S	0.06
557	PU->ATU	0.5240	S	0.03375	557	PEOU->ATU	0.1830	S	0.03
100	PU->ATU	0.4500	S	0.13144	100	PEOU->ATU	0.4300	S	0.12
357	PU->ATU	0.3070	S	0.08400	357	PEOU->ATU	0.4420	S	0.10
357	PU->ATU	0.2990	S	0.09500	357	PEOU->ATU	0.0180	NS	0.09
251	PU->ATU	0.7700	S	0.22914	251	PEOU->ATU	0.1000	S	0.03
131	PU->ATU	0.5000	S	0.18854	131	PEOU->ATU	0.4300	S	0.16
116	PU->ATU	0.4950	S	0.07220	116	PEOU->ATU	0.4680	S	0.06
394	PU->ATU	0.7140	S	0.04100	394	PEOU->ATU	0.1890	S	0.03
546	PU->ATU	0.3900	S	0.11682	546	PEOU->ATU	0.3100	S	0.09
284	PU->ATU	0.6310	S	0.18803	284	PEOU->ATU	0.1770	S	0.08
2530	PU->ATU	0.6610	S	0.01800	2530	PEOU->ATU	0.1380	S	0.01

2530	PU->ATU	0.6610	S	0.01800	2530	PEOU->ATU	0.1380	S	0.01
332	PU->ATU	0.1370	NS	0.08306	332	PEOU->ATU	-0.238	S	0.09
224	PU->ATU	0.2810	S	0.10663	224	PEOU->ATU	0.2800	S	0.10
107	PU->ATU	0.4620	NS	0.18500	107	PEOU->ATU	0.3400	S	0.05
226	PU->ATU	0.5500	S	0.08914	226	PEOU->ATU	0.3800	S	0.07
136	PU->ATU	0.2500	S	0.07485	136	PEOU->ATU	0.3300	S	0.09
328	PU->ATU	0.3500	S	0.04300	546	PEOU->ATU	0.2500	S	0.07
546	PU->ATU	0.4200	S	0.12581	363	PEOU->ATU	0.2110	S	0.06
363	PU->ATU	0.1830	S	0.05466	628	PEOU->ATU	0.2000	S	0.03
628	PU->ATU	0.5300	S	0.04665	225	PEOU->ATU	0.2190	S	0.06
225	PU->ATU	0.6290	S	0.18690	451	PEOU->ATU	0.1100	S	0.04
451	PU->ATU	0.5100	S	0.04431	198	PEOU->ATU	-0.322	S	0.11
198	PU->ATU	0.5570	S	0.12500	544	PEOU->ATU	0.0700	NS	0.05
544	PU->ATU	0.3900	S	0.05263	114	PEOU->ATT	0.3370	S	0.12
152	PU->ATU	0.3700	S	0.10922					

Source: Constructed based on table- 5

Table-28 : Path coefficients for the factor ATU-2

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
557	PENJ->ATU	0.25	S	0.03810	156	SI->ATU	0.1670	S	0.0798
328	PENJ->ATU	0.17	S	0.03981	394	SI->ATU	-0.0120	NS	0.0300
363	PENJ->ATU	0.103	S	0.03077	345	SN->ATU	0.2460	S	0.0701
451	PENJ->ATU	0.43	S	0.03437	284	SN->ATU	-0.0800	NS	0.0485
544	PENJ->ATU	0.53	S	0.05561	628	SN->ATU	0.2700	S	0.0416

Source: Constructed based on table- 5

Using the path coefficients that are significant, we compute the average effect size and other measures. The following table gives the calculations. We consider only those paths that are significant and based on the further calculations, the final paths for the factor are identified.

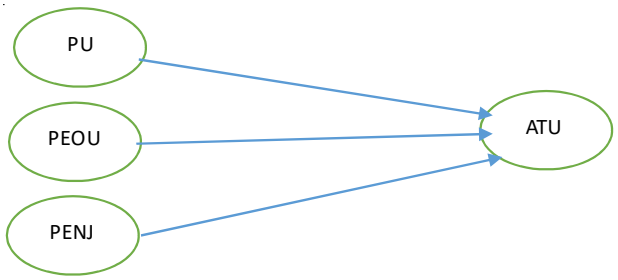
Table-29 : Summary of the effect size of the factor ATU

Path	PU->ATU	PEOU->ATU	PENJ->ATU	SN->ATU
Number of samples	33	30	5	3
Total sample size	14408	11481	2243	1129
Average Path Coefficient	0.47	0.31	0.3	0.23
Standard deviation	0.0949	0.0473	0.1373	0.1389
95% Lower Limit	0.28618	0.21591	0.02648	-0.04338
95% Upper Limit	0.65848	0.40142	0.56492	0.50129
Z	4.97325	6.52248	2.15278	1.64777
p (effect size)	0.0001	0.0001	0.0313	0.099
Heterogeneity test (Q)	2406.33	609.1	259.23	29.47
df (Q)	32	29	4	2
p (Heterogeneity)	0.0001	0.0001	0.0001	0.0001
I^2	0.98	0.95	0.98	0.99

Source: Constructed based on data analysis

From the above table, we conclude that except for the path SN->ATU (low effect size), all other paths are significant. The path PU->ATU has almost high effect size and from the confidence interval, one can note that it can reach to the value 0.65 and decrease to 0.28 (still at low size), but significant. Hence, we conclude that one has to develop an e-learning platform such that learners/users should feel that it will be useful to them and this will impact their attitude towards the usage of the system. Similarly, PEOU (effect size=0.31, medium) and PENJ (effect size=0.30, medium) are significantly related with ATU. This indicates that, the ease in using the e-learning platform will have an impact on one's attitude to use the platform and one has to take this into consideration while developing a platform. Also, PENJ has an effect size 0.30 (medium effect) and significant impact on ATU. This indicates that, the platform developed has to make the learning enjoyable and should provide opportunities for one to learning with joy. This implies that, while developing an e-learning platform one has to design the platform in such-a-way that learning is joyful. Taking these into consideration, the final paths for the ATU are given in the following figure.

Figure-31 : Modified paths for the factor ATU



Source: Constructed by the researcher based on table-29

We now present the analysis and findings related to the factor BI. The following table gives the paths for the same.

Table-30 : Paths for the factor BI

BI	PS	ANX
	PEOU	SE
	PENJ	SYQ
	PU	COMPA
	ATU	WLQ
		EXP
		IQ
		SA
		SN/ SON/I
		SERQ

Source: Constructed by the researcher based on table- 5

The following tables give the path coefficients for the factor BI. (Due to the size, the table of path coefficients has been divided in to two parts.)

Table-31 : Path coefficients for the factor BI-1

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
250	PU->BI	0.53	S	0.0570	500	PEOU->BI	0.1220	S	0.0450
500	PU->BI	0.324	S	0.0360	435	PEOU->BI	0.0880	S	0.0471
102	PU->BI	0.386	S	0.1100	172	PEOU->BI	0.1500	S	0.0568
435	PU->BI	0.193	S	0.0681	345	PEOU->BI	0.9100	NS	0.5281
172	PU->BI	0.26	S	0.0769	159	PEOU->BI	0.5130	S	0.1516
345	PU->BI	0.108	S	0.0496	1286	PEOU->BI	0.5370	S	0.0340
159	PU->BI	0.308	S	0.0910	275	PEOU->BI	0.8300	S	0.4022
1286	PU->BI	0.18	S	0.0300	170	PEOU->BI	0.0980	NS	0.0940
275	PU->BI	0.51	S	0.2471	400	PEOU->BI	0.2510	S	0.0458
170	PU->BI	0.072	NS	0.0920	424	PEOU->BI	0.2060	S	0.1000
400	PU->BI	0.273	S	0.0618	269	PEOU->BI	0.1910	S	0.0569
2574	PU->BI	0.17	S	0.0827	354	PEOU->BI	0.0340	NS	0.0867
424	PU->BI	0.112	S	0.0659	156	PEOU->BI	-0.0010	NS	0.1593
269	PU->BI	0.133	S	0.0505	300	PEOU->BI	0.2750	S	0.1046
354	PU->BI	0.959	S	0.1142	95	PEOU->BI	0.5500	S	0.2641
437	PU->BI	0.339	S	0.1014	629	PEOU->BI	0.4610	S	0.1759
152	PU->BI	-0.047	NS	0.2586	714	PEOU->BI	0.2050	S	0.1482
156	PU->BI	0.049	NS	0.1751	252	PEOU->BI	0.2030	NS	0.1300
300	PU->BI	0.295	S	0.0880	210	PEOU->BI	0.3580	S	0.0686
95	PU->BI	0.24	NS	0.1261	132	PEOU->BI	0.2770	S	0.0893
629	PU->BI	0.892	S	0.3404	286	PEOU->BI	0.2500	S	0.0745
714	PU->BI	0.241	S	0.0920	131	PEOU->BI	0.3600	S	0.1059
354	PU->BI	-0.691	S	0.1756	251	PEOU->BI	0.2900	S	0.0863
252	PU->BI	0.21	S	0.1060	116	PEOU->BI	0.7820	S	0.0671
210	PU->BI	0.443	S	0.0664	390	PEOU->BI	0.0600	NS	0.0364
557	PU->BI	0.352	S	0.0548	230	PEOU->BI	0.2900	S	0.0862
132	PU->BI	0.348	S	0.0916	423	PEOU->BI	0.3400	S	0.1017
286	PU->BI	0.37	S	0.1103	326	PEOU->BI	0.3500	S	0.1044
251	PU->BI	0.11	NS	0.0582	133	PEOU->BI	0.2490	S	0.0422
131	PU->BI	0.53	S	0.1560	81	PEOU->BI	-0.1500	NS	0.0901
251	PU->BI	-0.11	NS	0.0692	604	PEOU->BI	0.2000	S	0.0599
116	PU->BI	0.723	S	0.0793	225	PEOU->BI	0.4800	S	0.0933
390	PU->BI	0.52	S	0.1554	569	PEOU->BI	0.1940	S	0.0581
230	PU->BI	0.3	S	0.0892	218	PEOU->BI	0.1880	S	0.0670
546	PU->BI	0.75	S	0.2247	115	PEOU->BI	0.2500	S	0.1029
423	PU->BI	0.62	S	0.1854	249	PEOU->BI	0.1160	S	0.0562
326	PU->BI	0.52	S	0.1552	483	PEOU->BI	0.3060	S	0.0431
133	PU->BI	0.484	S	0.1590	233	PEOU->BI	0.1300	S	0.0629
81	PU->BI	0.31	S	0.1485	306	PEOU->BI	0.0800	NS	0.0485
284	PU->BI	0.581	S	0.1731	402	PEOU->BI	0.2500	S	0.0747
604	PU->BI	0.37	S	0.1109	357	PEOU->BI	0.3600	S	0.1368
225	PU->BI	0.292	S	0.0527	207	PEOU->BI	0.0600	NS	0.0363
569	PU->BI	0.143	S	0.0428	280	PEOU->BI	0.7090	S	0.3436
332	PU->BI	0.708	S	0.2694	799	PEOU->BI	0.3600	S	0.0528
224	PU->BI	0.335	S	0.1271	402	PEOU->BI	0.1300	S	0.0716
107	PU->BI	0.265	S	0.1190	436	PEOU->BI	0.1200	S	0.0583
218	PU->BI	0.425	S	0.0762	189	PEOU->BI	0.3190		0.4486
115	PU->BI	0.5	S	0.0774	250	PEOU->BI	0.1170	S	0.0508
249	PU->BI	0.394	S	0.1172	628	PEOU->BI	0.0010	NS	0.0100

483	PU->BI	0.351	S	0.0424	268	PEOU->BI	-0.1600	S	0.0969
233	PU->BI	0.43	S	0.2082	155	PEOU->BI	0.1300	S	0.0628
306	PU->BI	0.396	S	0.1181	470	PEOU->BI	0.4500	S	0.0580
402	PU->BI	0.58	S	0.1734	166	PEOU->BI	0.2100	S	0.0794
412	PU->BI	0.359	S	0.1073	212	PEOU->BI	0.2600	S	0.0772
357	PU->BI	0.4	S	0.1520	233	PEOU->BI	0.2500	S	0.1210
207	PU->BI	0.66	S	0.1959	152	PEOU->BI	0.3900	S	0.1207
328	PU->BI	0.23	S	0.0459	314	PEOU->BI	0.2950	S	0.0880
280	PU->BI	0.735	S	0.3562	121	PEOU->BI	0.2320	S	0.0874
546	PU->BI	0.32	S	0.0959	155	PEOU->BI	0.3620	S	0.0906
799	PU->BI	0.28	S	0.0819	137	PEOU->BI	0.1250	NS	0.0755
402	PU->BI	0.104	S	0.0499	204	PEOU->BI	0.1600	S	0.0774
363	PU->BI	0.208	S	0.0621	137	PEOU->BI	0.6510	S	0.1917
436	PU->BI	0.44	S	0.1316	1107	PEOU->BI	0.2300	S	0.0299
189	PU->BI	0.27	S	0.3755	191	PEOU->BI	0.2500	S	0.0733
250	PU->BI	0.679	S	0.0508	233	PEOU->BI	0.2500	S	0.1210
628	PU->BI	-0.04	NS	0.0667	147	PEOU->BI	0.7800	S	0.2301
268	PU->BI	0.45	S	0.1710	214	PEOU->BI	0.4000	S	0.1517
155	PU->BI	0.21	S	0.0794	29	PEOU->BI	0.4100	S	0.0900
470	PU->BI	0.412	S	0.1503	72	PEOU->BI	-0.1270	S	0.0473
100	PU->BI	0.33	S	0.0964	1085	PEOU->BI	0.2000	S	0.0601
124	PU->BI	0.43	S	0.1263	156	PEOU->BI	0.4100	S	0.1211
166	PU->BI	0.48	S	0.1816	102	PEOU->BI	0.1600	S	0.0769
212	PU->BI	0.19	S	0.0564	140	PEOU->BI	0.2600	S	0.0982
233	PU->BI	0.18	S	0.0871	119	PEOU->BI	0.2200	S	0.1059
152	PU->BI	0.22	NS	0.1196					
314	PU->BI	0.466	S	0.1390					
121	PU->BI	0.38	S	0.1431					
155	PU->BI	0.353	S	0.0883					
120	PU->BI	0.507	S	0.1488					
137	PU->BI	0.651	S	0.1917					
204	PU->BI	0.51	S	0.2467					
137	PU->Bi	0.125	NS	0.0755					
1107	PU->BI	0.27	S	0.0295					
191	PU->BI	0.48	S	0.0791					
233	PU->BI	0.18	S	0.0871					
451	PU->BI	0.25	S	0.0608					
147	PU->BI	0.13	S	0.0491					
214	PU->BI	0.39	S	0.1479					
29	PU->BI	0.6	S	0.1316					
198	PU->BI	0.637	S	0.0750					
72	PU->BI	0.312	S	0.1161					
1085	PU->BI	0.28	S	0.0841					
187	PU->BI	0.363	S	0.1076					
156	PU->BI	0.42	S	0.1240					
102	PU->BI	0.43	S	0.1256					
544	PU->BI	0.19	S	0.0574					
140	PU->BI	0.34	S	0.1285					
152	PU->BI	0.414	S	0.1222					
119	PU->BI	0.46	S	0.1350					

Source: Constructed based on table- 5

Table-32 : Path coefficients for the factor BI-2

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
390	PS->BI	0.52	S	0.1554	345	SE->BI	0.247	S	0.1137
250	PS->BI	0.31	S	0.0784	170	SE->BI	0.385	S	0.0780
412	PS->BI	0.574	S	0.1716	300	SE->BI	0.2	S	0.0761
363	PS->BI	0.518	S	0.1547	251	SE->BI	0.64	S	0.0850
100	PS->BI	0.42	S	0.1226	604	SE->BI	0.12	S	0.0360
289	PS->BI	0.86	S	0.4168	115	SE->BI	0.02	NS	0.1111
184	PS->BI	0.51	S	0.1932	136	SE->BI	0.2	S	0.0909
187	PS->BI	0.486	S	0.1440	233	SE->BI	0.27	S	0.1307
					280	SE->BI	0.253	S	0.1226
					402	SE->BI	0.12	S	0.0435
					628	SE->BI	0.58	S	0.0819
					268	SE->BI	0.11	NS	0.0666
					212	SE->BI	0.4	S	0.1188
					152	SE->BI	0.2	NS	0.1042
					225	SE->BI	0.188	S	0.0678
					120	SE->BI	0.506	S	0.1485
					204	SE->BI	0.33	S	0.1596
					187	SE->BI	0.005	NS	0.0030
					152	SE->BI	0.243	S	0.0717

Source: Constructed based on table- 5

Table-33 : Path coefficients for the factor BI-3

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
500	ANX->BI	-0.146	S	0.0440	300	SYQ->BI	0.154	S	0.0747
799	ANX->BI	-0.06	S	0.0545	390	SYQ->BI	0.23	S	0.0687
402	ANX->BI	0.552	S	0.0435	115	SYQ->BI	0.2	S	0.0763
120	ANX->BI	-0.23	S	0.0675	250	SYQ->BI	0.18	S	0.0455
					212	SYQ->BI	0.13	S	0.0629

Source: Constructed based on table- 5

Table-34 : Path coefficients for the factor BI-4

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
390	SERQ->BI	0.2	S	0.059775	424	EXP->BI	0.028	S	0.0164
115	SERQ->BI	-0.14	NS	0.085366	252	EXP->BI	0.076	NS	0.0
250	SERQ->BI	0.3	S	0.105918	799	EXP->BI	0.46	S	0.051
280	SERQ->BI	0.611	S	0.296109	172	EXP->BI	0.34	S	0.1428
					172	EXP->BI	-0.04	S	0.1

Source: Constructed based on table- 5

Table-35 : Path coefficients for the factor BI-5

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
269	QL->BI	0.412	S	0.1227	424	SN->BI	0.011	S	0.0065	300	IQ->BI	0.178	S	0.0677
424	WLQ->BI	0.622	S	0.2370	152	SN->BI	0.36	S	0.1692	390	IQ->BI	0.14	S	0.0533
					300	SN->BI	0.135	NS	0.0715	115	IQ->BI	0.05	NS	0.0758
					714	SN->BI	0.437	S	0.1311					
					286	SN->BI	0.35	S	0.1043					
					81	SN->BI	0.26	S	0.0971					
					604	SN->BI	0.16	S	0.0480					
					569	SN->BI	0.114	S	0.0342					
					115	SN->BI	0.001	NS	0.0250					
					249	SN->BI	0.472	S	0.1404					
					357	SN->BI	0.08	NS	0.0485					
					363	SN->BI	0.141	S	0.0684					
					628	SN->BI	0.18	S	0.0523					
					268	SN->BI	0.48	S	0.1824					
					155	SN->BI	-0.04	NS	0.0242					
					470	SN->BI	0.119	NS	0.0180					
					152	SN->BI	0.25	NS	0.1437					
					155	SN->BI	0.297	S	0.0743					
					1085	SN->BI	0.01	NS	0.0061					
					345	SN->BI	0.19	S	0.0349					
					269	SI->BI	0.111	S	0.0331					
					156	SI->BI	-0.021	NS	0.1322					
					172	SI->BI	0.43	S	0.1191					

Source: Constructed based on table- 5

Table-36 : Path coefficients for the factor BI-6

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
500	SA->BI	0.13	S	0.035	250	ATU->BI	0.273	S	0.056
345	SA->BI	0.076	S	0.013899	102	ATU->BI	0.543	S	0.11
251	SA->BI	0.21	S	0.061947	435	ATU->BI	0.342	S	0.066628
628	SA->BI	0.002	NS	0.016667	345	ATU->BI	0.15	S	0.06383
					110	ATU->BI	0.944	S	0.053795
					2574	ATU->BI	0.33	S	0.1606
					437	ATU->BI	0.546	S	0.163322
					152	ATU->BI	0.647	S	0.205718
					156	ATU->BI	0.351	S	0.148078
					354	ATU->BI	2.169	S	0.551136
					557	ATU->BI	0.444	S	0.057745
					100	ATU->BI	0.51	S	0.148962
					357	ATU->BI	0.461	S	0.108
					251	ATU->BI	0.78	S	0.232115
					131	ATU->BI	0.86	S	0.324294
					116	ATU->BI	0.684	S	0.095946
					2530	ATU->BI	0.872	S	0.02
					332	ATU->BI	-0.165	S	0.062794
					224	ATU->BI	0.3	S	0.113841
					107	ATU->BI	0.325	NS	54
					136	ATU->BI	0.58	S	0.185304
					328	ATU->BI	0.18	S	0.053097
					546	ATU->BI	0.16	S	0.047926
					402	ATU->BI	0.086	NS	0.042448
					363	ATU->BI	0.164	S	0.070184
					628	ATU->BI	0.23	S	0.069486
					225	ATU->BI	0.342	S	0.11759
					451	ATU->BI	0.44	S	0.081181
					198	ATU->BI	0.009	NS	0.051
					544	ATU->BI	0.35	S	0.077093
					152	ATU->BI	0.291	S	0.085896

Source: Constructed based on table- 5

Table-37 : Path coefficients for the factor BI-7

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
170	PENJ->BI	0.308	S	0.081	212	COMPA->BI	0.18	S	0.053441
225	PENJ->BI	0.222	S	0.049543	137	COMPA->BI	0.239	S	0.115248
483	PENJ->BI	0.205	S	0.039953	137	COMPA->BI	0.239	S	0.090175
328	PENJ->BI	0.22	S	0.042226					
402	PENJ->BI	-0.081	S	0.039609					
363	PENJ->BI	0.02	NS	0.025314					
121	PENJ->BI	0.302	S	0.145437					
451	PENJ->BI	0.31	S	0.049521					
544	PENJ->BI	0.17	S	0.064639					

Source: Constructed based on table- 5

Using the above table, we compute the necessary values for the paths related to BI.

Table-38 : Summary of the effect size of the factor BI-1

Path	PS->BI	ANX->BI	WLQ->BI	IQ->BI	PENJ->BI	PU->BI	PEOU->BI	SYQ->BI	SN->BI	SA->BI
Number of samples	8	3	2	2	7	89	62	5	15	3
Total sample size	2175	1419	693	690	2724	30264	19700	1267	4493	1096
Average Path Coefficient	0.5	-0.14	0.51	0.16	0.25	0.38	0.28	0.18	0.23	0.13
Standard deviation	0.1671	0.0886	0.3721	0.1132	0.0922	0.0374	0.0386	0.0812	0.0417	0.0724
95% Lower Limit	0.1758	-0.3173	-0.2199	-0.0634	0.0649	0.3049	0.2045	0.0194	0.1459	-0.0084
95% Upper Limit	0.8310	0.0302	1.2384	0.3802	0.4266	0.4516	0.3560	0.3378	0.3093	0.2756
Z	3.0119	-1.6196	1.3689	1.3993	2.6637	10.1094	7.2511	2.1984	5.4614	1.8441
p (effect size)	0.0025	0.105	0.171	0.1617	0.00773	0.0001	0.0001	0.02792	0.0001	0.0651
Heterogeneity test (Q)	70.94	15.77	7.81	6.9	113.88	1662.91	1100.48	32.26	158.84	28.16
df (Q)	7	2	1	1	6	88	61	4	14	2
p (Heterogeneity)	0.0001	0.00075	0.01037	0.01719	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
I^2	0.9	0.99	0.99	0.99	0.95	0.95	0.94	0.99	0.91	0.99

Source: Constructed based on data analysis

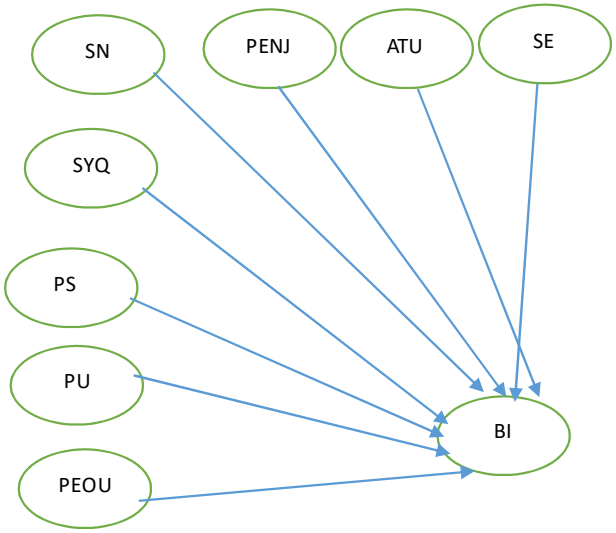
Table-39 : Summary of the effect size of the factor BI-2

Path	COMPA->BI	SE->BI	EXP->BI	SERQ->BI	ATU->BI
Number of samples	3	15	3	3	28
Total sample size	486	4262	1567	920	12886
Average Path Coefficient	0.22	0.31	0.27	0.32	0.46
Standard deviation	0.1251	0.0771	0.1707	0.1794	0.1137
95% Lower Limit	-0.0281	0.1571	-0.0650	-0.0314	0.2355
95% Upper Limit	0.4623	0.4596	0.6042	0.6720	0.6813
Z	1.7352	3.9967	1.5791	1.7852	4.0315
p (effect size)	0.0827	0.0001	0.1143	0.07423	0.0001
Heterogeneity test (Q)	13.26	207.1	31.28	13.23	1870.61
df (Q)	2	14	2	2	27
p (Heterogeneity)	0.00263	0.0001	0.0001	0.00267	0.0001
I^2	0.99	0.93	0.94	0.99	0.98

Source: Constructed based on data analysis

From the above tables one can note that, the factors ANX, WLQ, IQ, SA, COMPA, EXP, and SERQ are insignificant. Also, PS (ES=0.5), PENJ (ES=0.25), PU (ES=0.38), PEOU (ES=0.28), SYQ (ES=0.18), SN (ES=0.23), SE (ES=0.31), and ATU (ES=0.46) are significantly related with BI. Hence while building an e-learning platform, one has to take these factors into consideration. Taking this into consideration, we rebuild the paths related to BI and the following figure gives the same.

Figure-32 : Modified paths for the factor BI



Source: Constructed by the researcher based on tables- 38 and 39

The managerial implication of the above model is, while building an e-learning platform one has to take into consideration these factors. It means that, one's behavioural intention to use e-learning platform for learning is influenced by these factors. Among these factors, PS is having more impact with size of 0.5 and implies that if one perceives that the platform gives them satisfaction with respect to learning, then they may have an intention to use the platform. Hence, one has to build a platform that gives learning satisfaction to the learners/users. The next factor one has to consider is attitude to use the platform. If one has an attitude to use a platform or the platform creates a positive feeling towards the platform, then it may create an intention in the minds of the learners to choose the platform for learning. The next factor that is significant is PU with medium effect size 0.38 and this indicates that the platform has to be built in such-a-way that it has to be useful for learning. This creates an intention to use the platform. These factors are followed by PEOU, PENJ, SYQ, and, SN. This indicates that a platform that should be designed such that it gives enjoyment to the learners in learning, one should perceive that it is easy to use, the platform should be qualitative in terms of usability, reliability, availability and adaptability, and should be in such-a-way that there will be a social influence to choose the platform. Practitioners have to take these into consideration while developing an e-learning platform.

We now present the analysis for the intrinsic factors.

Analysis for the Intrinsic factors- PU, PEOU, PENJ and PS

We first present the analysis for Perceived usefulness (PU) and the following table gives the paths of PU.

Table-40 : Paths for the factor PU

PU	PENJ	SYSF
	PEOU	CONF
		CAB
		IQ
		RD
		SN/ SON/I
		EXP
		CQ
		SQ
		ANX
		SE
		COMPL

Source: Constructed by the researcher based on table- 5

The following tables give the paths and the path coefficients and the same will be used for further calculations.

Table-41 : Path coefficients for the factor PU-1

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
250	PENJ->PU	0.08	NS	0.0520	250	PEOU->PU	0.373	S	0.0580
181	PENJ->PU	0.511	S	0.1275	500	PEOU->PU	0.515	S	0.0640
435	PENJ->PU	-0.201	S	0.0751	181	PEOU->PU	0.472	S	0.1540
172	PENJ->PU	0.01	NS	0.0122	102	PEOU->PU	0.607	S	0.0930
714	PENJ->PU	0.321	S	0.0963	435	PEOU->PU	0.296	S	0.0573
131	PENJ->PU	0.46	S	0.1354	172	PEOU->PU	0.22	S	0.0833
408	PENJ->PU	0.294	S	0.0474	345	PEOU->PU	0.142	NS	0.0739
214	PENJ->PU	0.4	S	0.1517	159	PEOU->PU	0.457	S	0.1350
119	PENJ->PU	0.5	S	0.1467	275	PEOU->PU	0.04	NS	0.0194
					2574	PEOU->PU	0.46	S	0.2239
					354	PEOU->PU	0.799	S	0.0808
					437	PEOU->PU	0.114	NS	0.0605
					152	PEOU->PU	0.349	S	0.1496
					156	PEOU->PU	0.681	S	0.2011
					300	PEOU->PU	0.288	S	0.0859
					95	PEOU->PU	0.24	NS	0.1261
					629	PEOU->PU	0.458	S	0.1748
					714	PEOU->PU	0.046	NS	0.0641
					354	PEOU->PU	2.249	S	0.5715
					252	PEOU->PU	0.486	S	0.0880
					210	PEOU->PU	0.424	S	0.1259
					210	PEOU->PU	0.531	S	0.1576
					557	PEOU->PU	0.535	S	0.0340
					132	PEOU->PU	0.601	S	0.0677
					357	PEOU->PU	0.416	S	0.0980
					286	PEOU->PU	0.21	S	0.0626
					251	PEOU->PU	0.17	S	0.0823
					139	PEOU->PU	0.143	S	0.0725
					131	PEOU->PU	0.32	S	0.1542
					251	PEOU->PU	0.21	NS	0.1228
					131	PEOU->PU	0.53	S	0.1999
					116	PEOU->PU	0.687	S	0.0632
					390	PEOU->PU	0.16	S	0.0478
					230	PEOU->PU	0.31	S	0.0921
					423	PEOU->PU	0.28	S	0.0837
					326	PEOU->PU	0.34	S	0.1015
					133	PEOU->PU	0.214	S	0.0773
					81	PEOU->PU	0.28	S	0.1046
					284	PEOU->PU	0.653	S	0.1946
					225	PEOU->PU	0.376	S	0.1439
					2530	PEOU->PU	0.293	S	0.0250
					332	PEOU->PU	0.304	S	0.1157
					224	PEOU->PU	0.375	S	0.1423
					107	PEOU->PU	0.504	S	0.1230
					226	PEOU->PU	0.57	S	0.0896
					218	PEOU->PU	0.34	S	0.0727
					115	PEOU->PU	0.13	NS	0.1287
					136	PEOU->PU	0.52	S	0.0848
					249	PEOU->PU	0.634	S	0.1886
					483	PEOU->PU	0.233	S	0.0415

					483	PEOU->PU	0.233	S	0.0415
					306	PEOU->PU	0.286	S	0.1088
					402	PEOU->PU	0.28	S	0.0837
					408	PEOU->PU	0.175	S	0.0556
					412	PEOU->PU	0.419	S	0.1253
					357	PEOU->PU	0.38	S	0.1444
					207	PEOU->PU	0.36	S	0.1365
					328	PEOU->PU	0.2	S	0.0472
					328	PEOU->PU	0.33	S	0.0450
					280	PEOU->PU	0.408	S	0.1977
					546	PEOU->PU	0.4	S	0.1198
					363	PEOU->PU	0.251	S	0.0750
					436	PEOU->PU	0.21	S	0.0628
					189	PEOU->PU	0.106	S	0.4364
					250	PEOU->PU	0.389	S	0.0632
					628	PEOU->PU	0.12	S	0.0453
					268	PEOU->PU	0.48	S	0.1824
					155	PEOU->PU	0.28	S	0.1058
					470	PEOU->PU	0.495	S	0.0735
					100	PEOU->PU	0.31	S	0.0905
					166	PEOU->PU	0.31	S	0.1497
					212	PEOU->PU	0.29	S	0.0861
					233	PEOU->PU	0.41	S	0.1985
					152	PEOU->PU	0.22	S	0.1053
					314	PEOU->PU	0.565	S	0.1685
					121	PEOU->PU	0.732	S	0.2149
					225	PEOU->PU	0.468	S	0.1391
					137	PEOU->PU	0.564	S	0.1661
					204	PEOU->PU	0.22	S	0.1064
					137	PEOU->PU	0.564	S	0.1661
					1107	PEOU->PU	0.22	S	0.0286
					191	PEOU->PU	0.63	S	0.0555
					233	PEOU->PU	0.41	S	0.1985
					451	PEOU->PU	0.56	S	0.0527
					147	PEOU->PU	0.21	S	0.0793
					214	PEOU->PU	0.18	S	0.0683
					198	PEOU->PU	0.749	S	0.0620
					72	PEOU->PU	0.375	S	0.1396
					1085	PEOU->PU	0.16	S	0.0481
					156	PEOU->PU	0.39	S	0.1152
					114	PEOU->PU	0.719	S	0.2108
					102	PEOU->PU	0.28	S	0.1051
					544	PEOU->PU	0.51	S	0.0591
					140	PEOU->PU	0.6	S	0.1771
					152	PEOU->PU	0.462	S	0.1364

Source: Constructed based on table- 5

Table-42 : Path coefficients for the factor PU-2

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
563	IQ->PU	0.146	S	0.04787	563	SYQ->PU	0.0790	S	0.0451
435	IQ->PU	0.138	S	0.05885	435	SYQ->PU	-0.0050	NS	0.0446
300	IQ->PU	0.213	S	0.08101	557	SYQ->PU	0.0890	S	0.0136
557	IQ->PU	0.259	S	0.04093	115	SYQ->PU	0.0600	NS	0.0984
115	IQ->PU	0.22	S	0.08943	408	SYQ->PU	0.0070	NS	0.0693
408	IQ->PU	0.228	S	0.07636	193	SYQ->PU	0.4500	S	0.1334
412	IQ->PU	0.214	S	0.07393	268	SYQ->PU	-0.1800	NS	0.1091
412	IQ->PU	0.223	S	0.08837					
193	IQ->PU	0.27	S	0.10231					
268	IQ->PU	0.5	S	0.19001					

Source: Constructed based on table- 5

Table-43 : Path coefficients for the factor PU-3

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
435	SN->PU	0.0120	NS	0.0682	172	EXP->PU	-0.04	NS	0.0290
172	SN->PU	0.2500	S	0.0740	354	EXP->PU	0.028	NS	0.0490
159	SN->PU	-0.0770	NS	0.0372	353	EXP->PU	0.456	S	0.0719
354	SN->PU	0.0790	NS	0.0481	152	EXP->PU	-0.131	NS	0.0860
437	SN->PU	0.2810	S	0.1364	714	EXP->PU	0.181	S	0.0691
152	SN->PU	0.6580	S	0.1943	252	EXP->PU	-0.052	NS	0.0910
714	SN->PU	0.2130	S	0.0813	332	EXP->PU	0.291	S	0.1107
354	SN->PU	0.0230	NS	0.0557	306	EXP->PU	0.259	S	0.0772
286	SN->PU	0.1500	S	0.0727	120	EXP->PU	0.252	S	0.0740
251	SN->PU	0.7400	S	0.1437					
133	SN->PU	0.4360	S	0.0650					
81	SN->PU	0.0800	NS	0.0481					
115	SN->PU	0.3100	S	0.1095					
249	SN->PU	0.1490	S	0.0443					
357	SN->PU	0.1900	S	0.0920					
628	SN->PU	0.4600	S	0.0502					
268	SN->PU	0.3000	S	0.1140					
155	SN->PU	0.4300	S	0.1625					
470	SN->PU	0.1620	NS	0.0612					
152	SN->PU	0.5400	S	0.1151					
1085	SN->PU	0.2500	S	0.0751					
345	SN->PU	0.5130	S	0.1678					
284	SN->PU	0.2930	S	0.0873					
275	SI->PU	0.2300	S	0.1115					
156	SI->PU	0.2470	S	0.0786					
251	SI->PU	0.1400	NS	0.0741					
131	SI->PU	0.1900	S	0.0916					
423	SI->PU	0.1300	S	0.0495					
408	SI->PU	0.2100	S	0.0439					
546	SI->PU	0.5400	S	0.1617					
500	SF->PU	0.1070	S	0.0470					
214	SF->PU	0.2700	S	0.1024					

Source: Constructed based on table- 5

Table-44 : Path coefficients for the factor PU-4

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
435	CQ->PU	0.0170	NS	0.0533	500	SA->PU	-0.050	NS	0.052(
483	CQ->PU	0.2250	S	0.0347	435	SA->PU	0.128	S	0.056
328	CQ->PU	0.1500	S	0.0393	345	SA->PU	0.008	S	0.000
155	CQ->PU	0.2710	S	0.0808	251	SA->PU	0.080	NS	0.067
1085	CQ->PU	0.1500	S	0.0451	284	SA->PU	0.346	S	0.103
					628	SA->PU	-0.040	NS	0.043(

Source: Constructed based on table- 5

Table-45 : Path coefficients for the factor PU-5

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
181	SE->PU	0.4460	S	0.1113	437	RD->PU	0.382	S	0.114
435	SE->PU	0.0570	NS	0.0647	286	RD->PU	0.02	NS	0.012
172	SE->PU	-0.0300	NS	0.0481	230	RD->PU	0.33	S	0.098
345	SE->PU	0.1240	NS	0.1480					
354	SE->PU	-0.0270	NS	0.0543					
152	SE->PU	-0.0230	NS	0.1602					
95	SE->PU	0.2400	NS	0.1261					
714	SE->PU	0.0260	NS	0.0181					
354	SE->PU	-0.0240	NS	0.1285					
357	SE->PU	0.1830	NS	0.1050					
251	SE->PU	0.1900	S	0.0960					
423	SE->PU	0.2100	S	0.0628					
326	SE->PU	-0.0500	NS	0.0303					
326	ISE->PU	0.1600	S	0.0776					
332	SE->PU	-0.0710	NS	0.0430					
224	SE->PU	0.3870	S	0.1469					
115	SE->PU	0.0400	NS	0.0721					
306	SE->PU	0.0750	NS	0.0455					
402	SE->PU	0.1300	S	0.0631					
357	SE->PU	-0.1500	NS	0.0909					
207	SE->PU	-0.2100	NS	0.1271					
628	SE->PU	0.2300	S	0.0581					
470	SE->PU	0.1300	NS	0.0804					
233	SE->PU	0.1400	S	0.0678					
152	SE->PU	-0.0700	NS	0.0921					
155	SE->PU	0.2940	S	0.0736					
233	SE->PU	0.1400	S	0.0678					
147	SE->PU	0.1500	S	0.0567					
1085	SE->PU	0.0600	NS	0.0364					
187	SE->PU	0.1210	S	0.0458					
156	SE->PU	0.3300	S	0.0975					
140	SE->PU	0.1700	S	0.0821					

Source: Constructed based on table- 5

Table-46 : Path coefficients for the factor PU-6

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
251	CAB->PU	0.3	S	0.0893	250	ANX->PU	0.0380	NS	0.0560
328	CAB->PU	0.1	S	0.0375	500	ANX->PU	-0.1970	S	0.0640
184	CAB->PU	0.12	S	0.0454	172	ANX->PU	0.1200	S	0.0355
102	CAB->PU	0.36	S	0.1052	714	ANX->PU	-0.1910	S	0.0928
					306	ANX->PU	-0.1930	S	0.0734
					402	ANX->PU	0.0100	NS	0.0061
					408	ANX->PU	-0.0910	S	0.0404
					114	ANX->PU	0.0970	NS	0.0585

Source: Constructed based on table- 5

Table-47 : Path coefficients for the factor PU-7

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
250	COMPL->PU	0.362	S	0.0680	363	CONF->PU	0.171	S	0.0830
435	COMPL->PU	0.157	S	0.0559	184	CONF->PU	0.47	S	0.1392
					187	CONF->PU	0.766	S	0.2270

Source: Constructed based on table- 5

Table-48 : Summary of the effect size of the factor PU-1

Path	PENJ->PU	PEOU->PU	CONF->PU	IQ->PU	RD->PU	SN->PU
Number of samples	7	88	3	10	2	25
Total sample size	2202	29005	734	3663	667	8436
Average Path Coefficient	0.32	0.4	0.45	0.23	0.36	0.32
Standard deviation	0.1327	0.0425	0.2584	0.07106	0.2523	0.059
95% Lower Limit	0.0571	0.3165	-0.0589	0.0903	-0.1390	0.1960
95% Upper Limit	0.5774	0.4835	0.9544	0.3689	0.8503	0.4275
Z	2.3906	9.3922	1.7321	3.2313	1.4092	5.2808
p (effect size)	0.0168	0.0001	0.0832	0.00123	0.1587	0.00001
Heterogeneity test (Q)	79.33	2225.46	20.44	88.99	11.24	337.5
df (Q)	6	87	2	9	1	24
p (Heterogeneity)	0.0001	0.0001	0.0001	0.0001	0.001604	0.0001
I^2	0.92	0.96	0.99	0.9	0.99	0.93

Source: Constructed based on data analysis

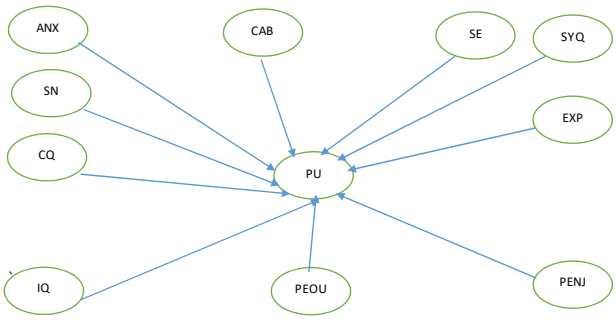
Table-49 : Summary of the effect size of the factor PU-2

Path	EXP->PU	CQ->PU	SYQ->PU	SA->PU	SE->PU	CAB->PU	ANX->PU	COMPL->PU
Number of samples	5	4	3	2	14	4	5	2
Total sample size	1825	2051	1313	719	3896	865	2100	685
Average Path Coefficient	0.29	0.2	0.16	0.23	0.21	0.21	-0.164	0.26
Standard deviation	0.136	0.0971	0.0824	0.1841	0.05545	0.09417	0.082	0.1972
95% Lower Limit	0.0211	0.0067	-0.0037	-0.1299	0.1052	0.0230	-0.3256	-0.1282
95% Upper Limit	0.5543	0.3873	0.3196	0.5921	0.3226	0.3922	-0.0040	0.6452
Z	2.1153	2.0288	1.9149	1.2545	3.8561	2.2043	-2.0085	1.3104
p (effect size)	0.0344	0.0424	0.055	0.2096	0.0001	0.0275	0.04459	0.19
Heterogeneity test (Q)	60.29	54.7	18.01	9.83	108.33	29.37	19.48	20.09
df (Q)	4	3	2	1	13	3	3	1
p (Heterogeneity)	0.0001	0.0001	0.000245	0.00344	0.0001	0.0001	0.00043	0.0001
I^2	0.93	0.94	0.99	0.99	0.88	0.99	0.99	0.99

Source: Constructed based on data analysis

From the above tables one can conclude that, factors CONF, RD, SYQ, and COMPL are not significant in explaining the behaviour of PU. Other factors, EXP, CQ, SE, CAB, ANX, PENJ, PEOU, IQ, and SN are significant in explaining the behaviour of PU. The following figure gives the modified paths for PU.

Figure-33 : Paths for the factor PU



Source: Constructed based on tables- 48, 49

From the analysis, we suggest that the platform have to be designed in such-a-way that it will be useful for the learners/users. To achieve this, one has to design the platform that will give enjoyment to the learners, users feel ease in using the platform, the platform gives information that is qualitative, gives the users learning to fulfil the social norms or pressures, gives one to use their experience in using the platform and considers their experience, provides the content that is qualitative, qualitative system, one should feel that they can learn on the platform on their own, should give deep learning experience so that they get totally absorbed in learning, and should not create more anxiety in using the system while choosing the e-learning system Among these, PEOU is having higher impact with more than medium effect size, PENJ and SN have medium effect sizes, EXP has an effect size of 0.29 (medium effect), IQ has an effect size of 0.23, CQ, SE and CAB have almost equal effect sizes (above low effect sizes), SYQ has low effect size and ANX has negative impact on PU with the low effect size of -0.164. Note that, all the paths are significant and can be used while designing the e-learning platform.

We now present the analysis related to PEOU and the path coefficients are used to compute the necessary values and rebuild the model. The following table gives the path for the factor PEOU.

Table-50 : Paths for the PEOU

PEOU	PENJ	FC
		CAB
		SA
		EXP
		IQ
		CQ
		SQ
		SN/ SON/I
		ANX
		SE
		SERQ
		MSUP

Source: Constructed by the researcher based on table- 5

Using the path coefficients in the following tables, we compute the required values for testing the paths. Only those paths that are significant are considered in the calculations.

Table-51 : Path coefficients for the factor PEOU-1

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
159	FC->PEOU	0.457	S	0.13503	250	PENJ->PEOU	0.1370	S	0.05800
275	FC->PEOU	0.72	S	0.34891	181	PENJ->PEOU	0.7440	S	0.18569
132	FC->PEOU	0.593	S	0.07066	172	PENJ->PEOU	0.1500	S	0.05677
251	FC->PEOU	0.21	S	0.06249	437	PENJ->PEOU	0.3250	S	0.09722
139	FC->PEOU	0.373	S	0.09886	714	PENJ->PEOU	0.2390	S	0.11616
546	FC->PEOU	0.73	S	0.21866	354	PENJ->PEOU	0.2090	S	0.05311
					557	PENJ->PEOU	0.2790	S	0.04842
					286	PENJ->PEOU	0.2000	S	0.09694
					131	PENJ->PEOU	0.4500	S	0.13241
					230	PENJ->PEOU	0.1600	S	0.04756
					408	PENJ->PEOU	0.0670	NS	0.05501
					189	PENJ->PEOU	0.0780	S	0.53586
					119	PENJ->PEOU	0.4100	S	0.12033

Source: Constructed based on table- 5

Table-52 : Path coefficients for the factor PEOU-2

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
250	ANX->PEOU	-0.1520	S	0.0670	500	SA->PEOU	0.254	S	0.0420
500	ANX->PEOU	-0.4240	S	0.0510	435	SA->PEOU	0.158	S	0.0558
714	ANX->PEOU	-0.1510	S	0.0734	345	SA->PEOU	0.302	S	0.1076
354	ANX->PEOU	0.0060	NS	0.0184	437	SA->PEOU	0.211	S	0.0631
286	ANX->PEOU	-0.1100	S	0.0533	100	SA->PEOU	0.32	NS	0.1863
546	ANX->PEOU	-0.2400	S	0.0719	251	SA->PEOU	0.28	S	0.0594
81	ANX->PEOU	-0.0600	NS	0.0361	284	SA->PEOU	-0.091	NS	0.0551
306	ANX->PEOU	-0.1280	NS	0.0621	628	SA->PEOU	0.22	S	0.0355
402	ANX->PEOU	-0.5200	S	0.1554					
408	ANX->PEOU	-0.1780	S	0.0503					
546	ANX->PEOU	-0.3400	S	0.1018					
114	ANX->PEOU	-0.2970	S	0.1117					
78	ANX->PEOU	-0.2200	S	0.0717					
172	ANX->PEOU	0.2300	S	0.0681					

Source: Constructed based on table- 5

Table-53 : Path coefficients for the factor PEOU-3

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
435	SN->PEOU	0.024	NS	0.0710	172	EXP->PEOU	0.07	S	0.0240
172	SN->PEOU	0.1	S	0.0378	354	EXP->PEOU	0.241	S	0.0606
354	SN->PEOU	0.237	S	0.0603	152	EXP->PEOU	0.312	S	0.0921
714	SN->PEOU	0.025	NS	0.0687	714	EXP->PEOU	0.496	S	0.1488
100	SN->PEOU	0.26	NS	0.1460	354	EXP->PEOU	-0.11	S	0.0441
251	SN->PEOU	0.63	S	0.0552	252	EXP->PEOU	0.078	NS	0.0910
115	SN->PEOU	0.21	S	0.0798	251	EXP->PEOU	-0.06	NS	0.0363
357	SN->PEOU	0.39	S	0.1482	332	EXP->PEOU	0.149	S	0.0567
628	SN->PEOU	-0.02	NS	0.0556	306	EXP->PEOU	0.363	S	0.1083
152	SN->PEOU	0.36	S	0.1125					
345	SN->PEOU	0.137	S	0.0181					

Source: Constructed based on table- 5

Table-54 : Path coefficients for the factor PEOU-4

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
181	SE->PEOU	0.3210	S	0.0801	563	IQ->PEOU	-0.01	NS	0.0625
435	SE->PEOU	0.2070	S	0.0676	435	IQ->PEOU	0.154	S	0.0686
172	SE->PEOU	0.0300	NS	0.0534	557	IQ->PEOU	0.241	S	0.0525
345	SE->PEOU	0.4240	S	0.0845	115	IQ->PEOU	0.15	S	0.0685
110	SE->PEOU	0.4090	S	0.0878	412	IQ->PEOU	0.22	S	0.0942
354	SE->PEOU	0.4680	S	0.0663					
437	SE->PEOU	0.0280	NS	0.0148					
152	SE->PEOU	0.5300	S	0.1565					
95	SE->PEOU	0.7500	S	0.3601					
714	SE->PEOU	0.2460	S	0.0939					
354	SE->PEOU	0.1350	S	0.0686					
100	SE->PEOU	0.4200	S	0.1227					
357	SE->PEOU	0.5720	S	0.0820					
251	SE->PEOU	0.2100	S	0.0625					
131	SE->PEOU	0.4100	S	0.1206					
251	SE->PEOU	-0.0400	NS	0.0870					
423	SE->PEOU	0.6100	S	0.1824					
326	SE->PEOU	0.2700	S	0.0806					
326	ISE->PEOU	0.1300	S	0.0630					
81	SE->PEOU	0.1500	NS	0.0901					
332	SE->PEOU	0.4130	S	0.1572					
224	SE->PEOU	0.2270	S	0.0861					
115	SE->PEOU	0.3900	S	0.1053					
249	SE->PEOU	0.3030	S	0.0902					
233	SE->PEOU	0.1700	S	0.0823					
306	SE->PEOU	0.0670	NS	0.0406					
402	SE->PEOU	0.1800	S	0.0538					
357	CSE->PEOU	0.6000	S	0.2279					
207	SE->PEOU	0.5600	S	0.1662					
328	CSE->PEOU	0.1300	S	0.0381					
328	ISE->PEOU	0.1100	S	0.0381					

280	SE->PEOU	0.3160	S	0.1531					
628	SE->PEOU	0.4200	S	0.0619					
268	SE->PEOU	0.2400	S	0.0912					
155	SE->PEOU	0.3500	S	0.1323					
470	SE->PEOU	0.5670	S	0.0728					
233	SE->PEOU	0.2600	S	0.1259					
152	SE->PEOU	0.3000	S	0.1045					
225	SE->PEOU	0.3130	S	0.0930					
155	SE->PEOU	0.3600	S	0.0901					
204	SE->PEOU	0.18	S	0.0871					
233	CSE->PEOU	0.26	S	0.1259					
147	CSE->PEOU	0.37	S	0.1397					
214	SE->PEOU	0.55	S	0.2086					
184	CSE->PEOU	0.18	S	0.0682					
184	ISE->PEOU	0.46	S	0.1742					
1085	CSE->PEOU	0.4	S	0.1201					
156	CSE->PEOU	0.67	S	0.1979					
140	CSE->PEOU	0.54	S	0.1594					
152	CSE->PEOU	0.294	S	0.0868					
119	SE->PEOU	0.49	S	0.1438					
78	SE->PEOU	0.4	S	0.0974					

Source: Constructed based on table- 5

Table-55 : Path coefficients for the factor PEOU-5

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
435	CQ->PEOU	-0.062	NS	0.0540	563	SYQ->PEOU	0.0430	NS	0.0623
483	CQ->PEOU	0.194	S	0.0377	435	SYQ->PEOU	0.1010	S	0.0404
155	CQ->PEOU	0.287	S	0.0718	557	SYQ->PEOU	0.2860	S	0.1362
					546	SYQ->PEOU	0.8300	S	0.2486
					115	SYQ->PEOU	0.0500	NS	0.0769
					408	SYQ->PEOU	0.2200	S	0.0735
					412	SYQ->PEOU	0.6290	S	0.1881
					268	SYQ->PEOU	0.2300	S	0.0874

Source: Constructed based on table- 5

Table-56 : Path coefficients for the factor PEOU-6

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
251	CAB->PEOU	0.3	S	0.0893	563	SERQ->PEOU	-0.042	NS	0.04	306	MS->PEOU	0.317	S	0.0945
328	CAB->PEOU	0.1	S	0.0385	353	SERQ->PEOU	0.4200	S	0.0660	357	MS->PEOU	0.17	S	0.0824
184	CAB->PEOU	0.31	S	0.1174	557	SERQ->PEOU	-0.284	S	0.0436					
102	CAB->PEOU	0.24	S	0.1153	115	SERQ->PEOU	0.2500	S	0.0804					
					268	SERQ->PEOU	0.5300	S	0.2014					

Source: Constructed based on table- 5

Table-57 : Summary of the effect size of the factor PEOU-1

Path	FC->PEOU	PENJ->PEOU	ANX->PEOU	SA->PEOU	SN->PEOU	EXP->PEOU
Number of samples	6	11	9	6	7	5
Total sample size	1502	3620	3902	2596	1964	1858
Average Path Coefficient	0.49	0.28	-0.25	0.25	0.29	0.3
Standard deviation	0.1916	0.0762	0.0873	0.1008	0.106	0.1252
95% Lower Limit	0.1177	0.1318	-0.4232	0.0526	0.0821	0.0573
95% Upper Limit	0.8689	0.4309	-0.0807	0.4478	0.4979	0.5485
Z	2.5744	3.6877	-2.8839	2.4814	2.7336	2.4175
p (effect size)	0.01	0.0002	0.0039	0.013	0.0062	0.0156
Heterogeneity test (Q)	92.7	117.21	118.57	96.72	184.77	45.41
df (Q)	5	10	8	5	6	4
p (Heterogeneity)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
I^2	0.95	0.91	0.93	0.94	0.97	0.99

Source: Constructed based on data analysis

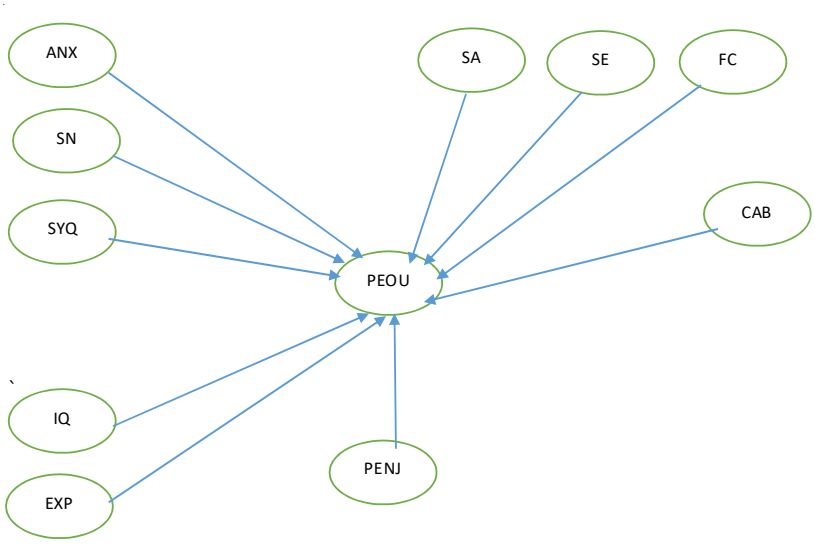
Table-58 : Summary of the effect size of the factor

Path	SE->PEOU	IQ->PEOU	CQ->PEOU	SYQ->PEOU	SERQ->PEOU	CAB->PEOU	MS->PEOU
Number of samples	47	4	2	6	4	4	2
Total sample size	12891	1519	638	2656	1293	865	663
Average Path Coefficient	0.35	0.19	0.24	0.33	0.21	0.23	0.24
Standard deviation	0.047	0.093	0.1731	0.114	0.1739	0.1143	0.1798
95% Lower Limit	0.2575	0.0067	-0.1003	0.1044	-0.1343	0.0066	-0.1102
95% Upper Limit	0.4420	0.3727	0.5784	0.5514	0.5475	0.4546	0.5947
Z	7.4302	2.0314	1.3808	2.8760	1.1877	2.0176	1.3473
p (effect size)	0.0001	0.042	0.1673	0.004	0.2349	0.04363	0.17789
Heterogeneity test (Q)	610.97	31.69	18.23	41.94	63.9	22.17	8.23
df (Q)	46	3	1	5	3	3	1
p (Heterogeneity)	0.0001	1E-04	0.0001	0.0001	0.00001	0.00012	0.00823
I^2	0.92	0.99	0.99	0.99	0.99	0.99	0.99

Source: Constructed based on data analysis

The following figure gives the modified paths for PEOU and the same will be used to build the final model.

Figure-34 : Modified paths for the factor PEOU



Source: Constructed based on the tables- 57, 58

From the analysis we conclude that except for CQ, SERQ, and MS all other factors are significant in explaining the behaviour of PEOU in the model. Among the factors, FC has almost high effect size, followed by SE, SYQ, EXP, SN, PENJ, SA, CAB, IQ, and ANX. Hence while designing an e-learning platform, one has to consider these factors. If one wants the platform to be adopted, it should be designed in such-a-way that it is used with ease. To achieve this, one has to develop the platform such that an organization or institute where the learner is working supports them to learning through the platform. Similarly, other factors have to be considered to build an effective platform.

The next factor in the sequence is PENJ and only PEOU is the factor that impacts PENJ.

Table-59 : Path for the factor PENJ

Intrinsic Factor	Intrinsic Factor	Related Factors
PENJ	PEOU	

Source: Constructed by the researcher based on table- 5

Using the following tables, we compute the necessary values to test its significance in the model.

Table-60 Path coefficients for the factor PENJ

Sample size	Path	Beta	Sig	SE
225	PEOU->PENJ	0.268	S	0.051598
249	PEOU->PENJ	0.195	S	0.094447
483	PEOU->PENJ	0.108	S	0.043584
328	PEOU->PENJ	0.23	S	0.041071
451	PEOU->PENJ	0.35	S	0.053763
544	PEOU->PENJ	0.52	S	0.057269

Source: Constructed based on table- 5

Table-61 : Summary of the effect size of the factor PENJ

Path	PEOU->PENJ
Number of samples	6
Total sample size	2280
Average Path Coefficient	0.28
Standard deviation	0.1222
95% Lower Limit	0.039185927
95% Upper Limit	0.518362476
Z	2.2806
p (effect size)	0.02257
Heterogeneity test (Q)	161.57
df (Q)	5
p (Heterogeneity)	0.00001
I^2	0.97

Source: Constructed based on data analysis

From the above table, we conclude the PEOU is significant in understanding the behaviour of PENJ. That is, if one feels that the platform is easy to use, they may feel that they may enjoy in using the platform for learning.

We now present the analysis for perceived satisfaction and in similar lines we use only those paths that are significant in calculating the needed measures. The following table gives the paths for PS.

Table-62 : Paths for the factor PS

Intrinsic Factor	Intrinsic Factor	Related Factors
PS	PU	CONF
	PEOU	IQ
		SYQ
		SERQ
		SE

Source: Constructed by the researcher based on table- 5

Table-63 : Path coefficients for the factor PS-1

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
563	PU->PS	0.277	S	0.0417	386	PEOU->PS	0.203	S	0.0530
386	PU->PS	0.184	S	0.0580	210	PEOU->PS	0.335	S	0.0695
210	PU->PS	0.494	S	0.0640	408	PEOU->PS	0.201	S	0.0462
423	PU->PS	0.93	S	0.2781	412	PEOU->PS	0.564	S	0.1686
408	PU->PS	0.723	S	0.0542	184	PEOU->PS	0.23	S	0.0871
412	PU->PS	0.386	S	0.1154					
363	PU->PS	0.586	S	0.1750					
193	PU->PS	0.49	S	0.1453					
340	PU->PS	0.316	S	0.1200					
124	PU->PS	0.47	S	0.1381					
184	PU->PS	0.23	S	0.0871					
187	PU->PS	0.339	S	0.1005					

Source: Constructed based on table- 5

Table-64 : Path coefficients for the factor PS-2

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
363	CONF->PS	0.2830	S	0.0845	386	IQ->PS	0.1840	S	0.0580
184	CONF->PS	0.3900	S	0.1155	390	IQ->PS	0.2900	S	0.1105
187	CONF->PS	0.5140	S	0.1523	250	IQ->PS	0.3700	S	0.0936
					193	IQ->PS	0.0800	NS	0.0484
					289	IQ->PS	0.2000	S	0.0969
					184	IQ->PS	0.4100	S	0.1553

Source: Constructed based on table- 5

Table-65 : Path coefficients for the factor PS-3

Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE	Sample size	Path	Beta	Sig	SE
386	SYQ->PS	0.1570	S	0.0610	563	SERQ->PS	0.0770	S	0.0262	386	SE->PS	0.2490	S	0.0580
390	SYQ->PS	0.2900	S	0.1105	390	SERQ->PS	0.2100	S	0.0800	187	CSE->PS	0.1320	S	0.0500
250	SYQ->PS	0.2000	S	0.0601	250	SERQ->PS	0.2000	S	0.0667					
193	SYQ->PS	0.3500	S	0.1038	289	SERQ->PS	0.0800	NS	0.0485					
289	SYQ->PS	0.1500	S	0.0727	184	SERQ->PS	0.1600	S	0.0606					
184	SYQ->PS	0.2700	S	0.1023										

Source: Constructed based on table- 5

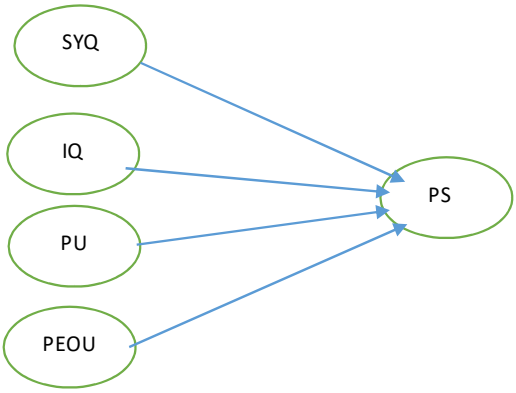
Table-66 : Summary of the effect size of the factor PS

Path	PU->PS	PEOU->PS	CONF->PS	IQ->PS	SYQ->PS	SERQ->PS	SE->PS
Number of samples	12	5	3	5	6	3	2
Total sample size	3793	1600	734	1499	1692	1387	573
Average Path Coefficient	0.44	0.29	0.39	0.28	0.23	0.19	0.19
Standard deviation	0.1295	0.1192	0.2232	0.1249	0.0916	0.1093	0.1409
95% Lower Limit	0.1860	0.0580	-0.04596	0.0403	0.0520	-0.0249	-0.0863
95% Upper Limit	0.6938	0.5255	0.829067	0.5300	0.4114	0.4037	0.4660
Z	3.3960	2.4466	1.754096	2.2822	2.5271	1.7324	1.3475
p (effect size)	0.00068	0.01442	0.079414	0.0224	0.0115	0.0832	0.1778
Heterogeneity test (Q)	318.59	58.13	22.70	34.34	39.31	15.2	13.54
df (Q)	11	4	2	4	5	2	1
p (Heterogeneity)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0004
I^2	0.96	0.93	0.99	0.99	0.99	0.99	0.99

Source: Constructed based on data analysis

The above table indicates that all except CONF, SERQ and SE, all other factors are significant in studying the behaviour of PS. Hence, one has to consider all other factors while building a platform that gives learning satisfaction to the learners/users. The following figure gives the modified paths for PS.

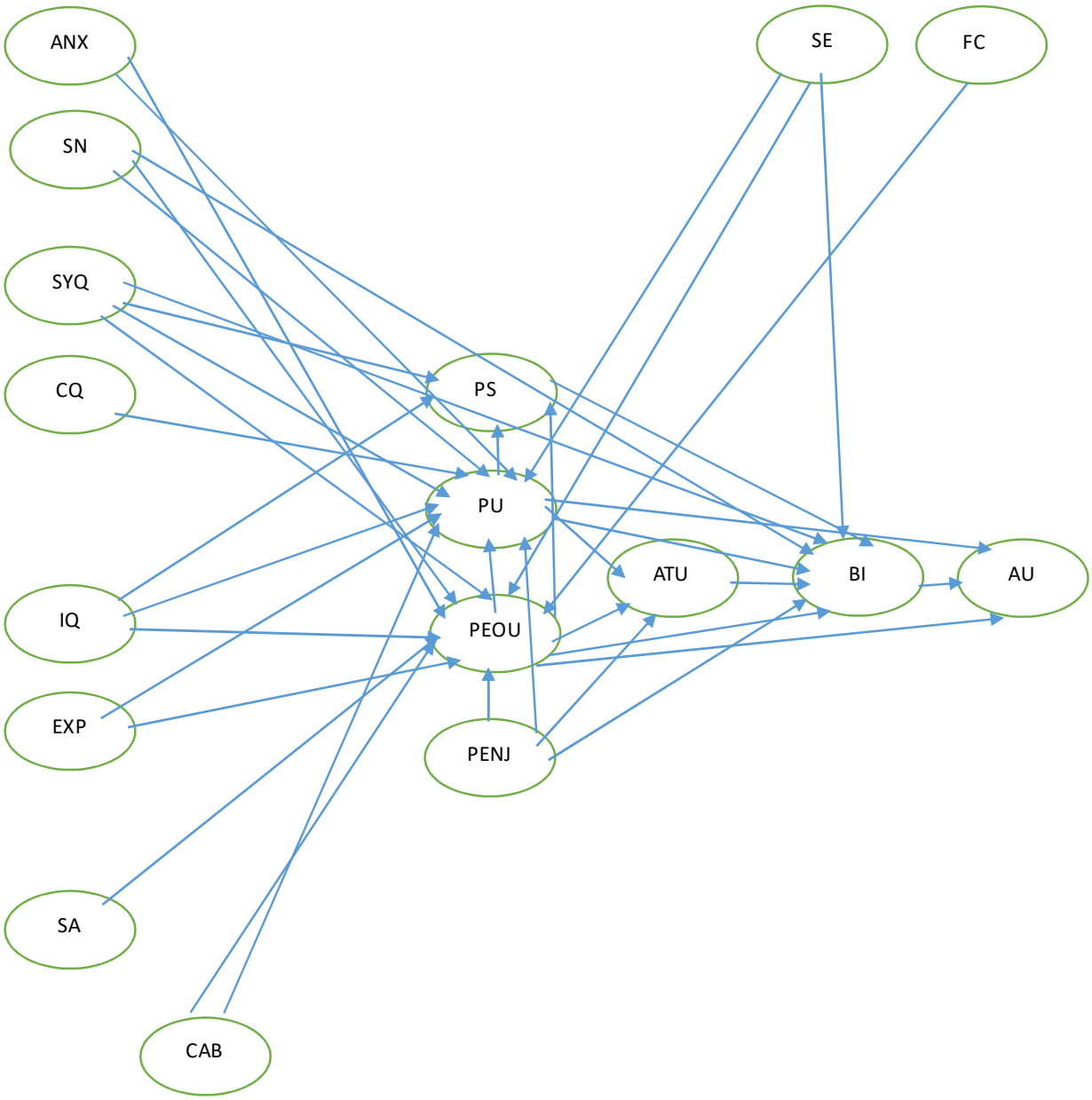
Figure-34 : Paths for the factor PS



`Source: Constructed based on table- 66

Based on the entire analysis, we now present the final model that has significant paths explaining the dependent factors and also other intrinsic factors.

Figure-35 : Final model for E-learning adoption



Source: Constructed based on the meta-analysis

11. Conclusion

The main objective of the study is to synthesize the results found by researchers over the years and present a comprehensive model that will help one know the factors that may impact the choice of an e-learning platform. TAM and Extended TAM are the main model considered in the study and related studies have been considered. We used meta-analysis to achieve this objective and considered 128 studies that have either used TAM or Extended TAM. Few are based on meta-analysis but have not taken the recent developments and the current study will fill that gap. The factors are usually divided into extrinsic and intrinsic. From the studies considered, we have

identified the paths between the factors and the corresponding path coefficients. Note that, paths are considered if they are reported in at least two studies and are significant. Insignificant paths have not been considered. These path coefficients or beta coefficients are the effect sizes and the same have been used in meta-analysis. We have considered a random-effect model with the assumption that the effect sizes across the studies are different. The mean effect size for each path is computed and tested for its significance using Z-test and, Q-statistic and I-square are computed to check the homogeneity of the effect sizes. From the two statistics we note that, the effect sizes are heterogenous and hence the use of random-effect model is justified. We finally have identified those paths that are significant and excluded those paths that are not significant. The paths for each of the factors are constructed and the final model is built. We use system and platform alternatively indicating an e-learning system or platform.

We draw the following conclusions from the analysis:

1. The actual usage of the platform is significantly dependent on one's intention to use it, how one perceives it as useful for them for learning and how one perceives that it is easy to use the platform for learning. Interestingly all the three have almost similar effects on AU. But, from the 95% confidence interval we note that PEOU has higher impact than other two factors.

2. We conclude that one's attitude to use the platform is influenced by PU, PEOU and PENJ. Among the three, PU has higher effect on ATU, followed by PEOU and PENJ.

3. One's behavioral intention (BI) is dependent on intrinsic factors PEOU, PU, PENJ and PS. Among the extrinsic factors, BI is dependent on SYQ, SN, ATU and SE. From the analysis we conclude that, ATU has higher impact on BI. That is, if one designs a platform that will create a positive opinion, then there are higher chances that the learner may actually use the platform.

4. Among the factors that influence PU, PEOU has higher impact, followed by SN, PENJ etc. That is, a platform that is easy to use may make learners more comfortable and make them feel that it is useful for their learning. Also, a platform that fulfills the social obligations of the learners may create a perception that it is useful for them and if the learning process is enjoyable, then they may perceive that it is useful for them.

5. Among the factors that influence PEOU, FC has higher effect size than other factors. That is, if the organization or institute provides facilities (technical or non-technical) or opportunities for one to use the platform, then one may feel that it is easy to use the platform for learning. The other factors that influence PEOU are IQ, EXP, SYQ, SN, ANX, SA, SE, CAB and PENJ. Interestingly ANX has a negative impact on PEOU. This may be due to the fact that, if a person is so anxious in using the platform, then it may reduce his ease in using the platform.

6. PENJ is influenced only by PEOU. This implies that, if learning through the platform is easy, then one can enjoy the learning process.

7. PU has evolved as the factor that has high influence on PS. That is, if an e-learning platform makes one feel that it is useful for learning, then it creates a perception of satisfaction on using the platform.

Finally, we conclude that, new factors and their link with other factors (paths) have to be taken into consideration while designing an e-learning platform.

We now present the managerial implications of the study.

12. Managerial Implications

From the study, we present the following managerial implications:

1. In order to predict the actual usage of the system

by the learners, one has to design an e-learning platform that will create a perception in the minds of the users that the platform is useful (PU) for them and easy to use (PEOU). Also, design a platform that creates an intention (BI) of usage in the minds of the user and this should motivate them to actually use the system.

2. In order to create an attitude amongst the users to use the system, one has to design a platform that will create a perception in the mind of the users that the platform is useful to them for learning and easy to use. One also has to create a perception in the minds of the users that the platform gives them enjoyment of learning.

3. To create an intention to use the platform, one has to take design it in such a way that the platform should be useful for learning, easy to use the platform for learning, should create a sense of satisfaction, the learning platform should be qualitative, should provide the learning opportunity such that it will help one to fulfill the social pressures or requirement, should make the learning enjoyable, should build an attitude to use the system or platform and should make one feel that they are capable of using the platform. A platform with these features can create an intention in one's mind to use the platform for learning.

4. In order to make one feel that the e-learning platform is useful for learning, one has to design the platform such that it should not create more anxiety while using the platform. If it creates more anxiety, then there is a chance of not using the platform for learning. It should be designed such that, it gives a learning that will fulfil the social obligations, content given should be qualitative, information provided should be qualitative, it should make one feel that using platform is easy, should make the learning enjoyable, should give value to the prior experience one has and also one should feel that their experience can be used while learning, the platform should be qualitatively designed, and should make one feel that they are capable of using the platform.

5. In order to make the platform easy to use, one has to design the platform such that it should not create anxiety in the minds of the users on usage of the platform, should fulfil the social norms, should be a qualitative platform, provides qualitative information, should take one's prior experience into consideration, should make the learning enjoyable, the platform should be designed such that it absorbs the learner completely and make them totally involved in the learning, platform should be designed in such-a-way that the organizations or institutes will get motivated to provide necessary support (technical or non-technical) for the learning process, should make one feel that they are capable of handling the platform, platform should be accessible and make one to extract the required information for learning.

6. In order to make the learners satisfied of the platform, one has to design it in such-a-way that it will be qualitative (overall), information given in it is qualitative, it should be useful and should be easy to use it.

7. In order to make the system enjoyable, one has to ensure that it will be easy to use.

Taking the above suggestions, one can design an e-learning platform and make the learning effective. These suggestions can be taken even by the learners/users while selecting a platform for learning, teachers while getting into an agreement to float a course, developers for designing the platform, employers to encourage their employees to take up the platform for learning.

13. Limitations and Future Work

In this section, we present the limitations of the current work and also the future work that fills the limitations of the study.

The current study is taken up to find the factors that motivate one to choose the e-learning system for learning. Among different models, technology acceptance model (TAM) is the most frequently used model to identify the factors. These factors are related to the perception of the learners/users towards e-learning system and helps one to understand the behaviour of the users better. Over the years, researchers have extended the model by linking other factors and this has given one an opportunity to understand the behaviour of the learners further. Several studies have been conducted and have proposed several factors.

The current study is an attempt to synthesize these results and build a comprehensive model. It has mainly considered TAM but not other models like UTAUT, UTAUT2, TRA, TPB etc. Also, the study is not generic in nature do not take general factors into consideration. One can also take up demographic factors and study the impact of the same on the factors. The model built in this study can be tested by taking primary data from learners. The study has taken only data related to students but nor other users (employees, trainers, developers etc) and one can take up studies to identify the factors from their viewpoint. Not many studies have been conducted in the Indian context and one can take up the studies in the Indian context. One can also conduct a study that integrates TAM and other models, to identify other factors and paths that are significant. For example, integrating TAM with TPB. The study doesn't look at moderating and mediating effects of relevant factors and one can take up the same. One can also construct models related to different geographical regions and compare them to find the differences in the factors. One can look at institutes and their requirements and build models.

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