

FACTORS THAT AFFECT THE INTENTION TO USE E-LEARNING SITES: A STUDY
FROM THE PERSPECTIVE OF TECHNOLOGY ACCEPTANCE MODEL

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İSTANBUL, 2023

PLAGIARISM

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ABSTRACT

The internet is a major technological development changing our life. This study investigates students' intents to use of electronic learning (e-learning) platforms using Technology Acceptance Model, known as TAM. Our model consists seven variables mainly, technology related variables, instructor related factors, course related factors, perceived usefulness, known as PU, perceived ease of use, known as PEOU, enjoyment and intention to use. Data have been gathered through google forms. Likert type questionnaire and applied 209 adult students who are older than 20. Results shown that instructor and course related factors and PU and PE positively affect desire of using e-learning. However, PEOU doesn't affect to PU. At last technology related-factors don't affect the PU, PEOU, PE. By means of this we concluded that the technology doesn't affect to intention use of e-learning.

Keywords: Electronic-learning (e-learning); TAM (Technology Acceptance Model); Technology-related factors; Instructor-related factors; course-related factors.

ÖZET

İnternet, hayatımızı değiştiren önemli bir teknolojik gelişme olarak karşımıza çıkmaktadır. Bu çalışma, Teknoloji Kabul Model'ini kullanarak öğrencilerin e-öğrenme web sitelerini kullanma niyetini araştırmaktadır. Modelimiz başlıca yedi değişkeni içeriyor: teknoloji ile ilgili değişkenler, öğretmen ile ilgili değişkenler, ders ile ilgili değişkenler, algılanan fayda, algılanan kullanım kolaylığı, keyif ve kullanma niyeti. Veriler Google Forms aracılığıyla toplandı. 20 yaşından büyük 209 yetişkin öğrenciye uygulanan bir Likert tipi anket kullanıldı. Sonuçlar, öğretmen ve ders ile ilgili faktörlerin, algılanan fayda ve keyif faktörlerinin e-öğrenme web sitelerini kullanma niyetini olumlu yönde etkilediğini göstermektedir. Ancak algılanan kullanım kolaylığının algılanan faydaya olumlu etki etmediği görüldü. Son olarak, teknoloji ile ilgili faktörlerin algılanan fayda, algılanan kullanım kolaylığı ve keyif üzerinde olumlu etkisi olmadığı sonucuna varıldı. Bu sayede teknolojinin e-öğrenme web sitelerini kullanma niyetine etki etmediği sonucuna varıldı.

Anahtar Kelimeler: E-öğrenme; Teknoloji kabul modeli, teknoloji ile ilgili faktörler; Öğretmen ile ilgili faktörler; Ders ile ilgili faktörler

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TABLE OF CONTENTS

PLAGIARISM	i
ABSTRACT	ii
ÖZET	iii
ACKNOWLEDGMENTS	iv
TABLE OF CONTENTS	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
1. INTRODUCTION	1
1.1. Significance of the Topic	2
1.2. Aim of the Study	3
1.3. Scope of the Study	4
2. LITERATURE REVIEW	5
2.1. Theories & Models in Technology Acceptance	6
2.2. Evolution of Technology Acceptance Model (TAM)	8
2.3. Theory of Reasoned Action	12
3. GENERAL EXAMINATION OF E-LEARNING	15
3.1. Evolution of the E-learning Definitions Over Time	17
3.2. Benefits & Challenges of E-Learning	22
3.3. E-Learning in Turkey	23
4. THEORETICAL FRAMEWORK	25
4.1. Perceived Intention to Use E-learning Web-sites	25
4.2. Perceived Usefulness	28
4.3. Perceived Ease of Use	29
4.4. Perceived Enjoyment	30

4.5. Effects of Technology Related Factors on the Constructs	32
4.5.1. Interface	33
4.5.2. Interaction	34
4.6. Effects of Instructor Related Factors	36
4.6.1. Attitude Towards Students	36
4.6.2. Instructor Technical Competence	38
4.7. Effects of Course Related Factors	39
4.7.1. Course Content Quality	39
4.7.2. Course Design Quality	40
5. METHODOLOGY	43
5.1. Data Collecting and Sampling Method	43
5.2. Variables, Sub-scale Sentences & Sources	44
6. FINDINGS	46
6.1. Sample Profile	46
6.2. Descriptive Statistics	47
6.3. Data Analysis	49
6.3.1. Factor Analysis	50
6.3.2. Reliability Analysis	52
6.4. Correlation Analysis & Hypothesis Testing	55
6.4.1. Determinants of Perceived Usefulness	56
6.4.2. Determinants of Perceived Ease of Use	57
6.4.3. Determinants of Perceived Enjoyment	58
6.4.4. Determinants of Intention to Use	59
6.5. Hypothesis Testing	60
7. DISCUSSION AND CONCLUSION	62
8. LIMITATIONS AND FURTHER RECOMMENDATIONS	66
REFERENCES	68

APPENDIX A: List of Symbols / Abbreviations	74
APPENDIX B: Questionnaire in English.....	75
APPENDIX C: Questionnaire in Turkish	79



LIST OF TABLES

Table 1: Historical Development of Distance Learning in the World	19
Table 2: The History of E-Learning	20
Table 3: Major Benefits and Challenges of E-learning.....	23
Table 4: Variables & Sources.....	44
Table 5: Demographics of Characteristics	46
Table 6: Descriptive Statistics of Independent Variables	47
Table 7: Rotated Component Matrix of Factors.....	51
Table 8: Proposed Hypotheses	52
Table 9: Revised Hypotheses	53
Table 10: Correlation Analysis	55
Table 11: Determinants of Perceived Usefulness Model Summary.....	56
Table 12: Determinants of Perceived Usefulness ANOVA	56
Table 13: Determinants of Perceived Usefulness towards Intention to Use Regression Analysis	56
Table 14: Determinants of Perceived Ease of Use Model Summary	57
Table 15: Determinants of Perceived Usefulness ANOVA	57
Table 16: Determinants of Perceived Ease of Use Regression Analysis	58
Table 17: Determinants of Perceived Enjoyment Model Summary.....	58
Table 18: Determinants of Perceived Enjoyment ANOVA	58
Table 19: Determinants of Perceived Enjoyment Regression Analysis.....	59
Table 20: Determinants of Intention to Use Model Summary	59
Table 21: Determinants of Intention to Use ANOVA.....	59
Table 22: Determinants of Intention to Use Regression Analysis	60
Table 23: Hypothesis Testing Results	60

LIST OF FIGURES

Figure 1: Technology Acceptance Model	6
Figure 2: Unified Theory of Acceptance and Use of Technology.....	8
Figure 3: TAM.....	9
Figure 4: TAM-2 (Extended TAM).....	10
Figure 5: TAM-3	12
Figure 6: TRA (Theory of Reasoned Action).....	13
Figure 7: Research Model	42
Figure 8: Revised Hypotheses	54
Figure 9: Revised Hypotheses Testing	61



1. INTRODUCTION

The societal and interpersonal aspects of human existence are profoundly influenced by the progression and modifications in technology. One of the areas influenced by these technological developments is education. The development of new alternative educational techniques is a result of advancements in internet and communication technology (Avcı & Yıldız, 2021). The emergence of the Internet in the early 1990s led to the incorporation of e-learning technologies into educational institutions. Due to the quick advancements in information technology, there are numerous new technical applications available today. E-learning is the process of distributing educational resources and knowledge to people by using the internet and a computer or other technical device. One of the most common technological uses in our daily life has been e-learning (Chang, Hajiyeve, & Su, 2017).

The shift from traditional education to web-based, individualized, flexible, and interactive education via the internet has been accelerated by one of the unexpected and hazardous COVID-19 pandemics all over the world. Besides COVID-19, economic pressures forced governments to facilitate web-based learning systems. The popularity of e-learning systems has been steadily expanding due to the various advantages they offer in regarding cost, time, location, content, and accessibility. Due to these factors, e-learning systems must incorporate students and learners. The success and quality of the distant education system are greatly influenced by the students' and teachers' ability to adapt to technological changes, their level of technology literacy, and their acceptance of new technological developments (Avcı & Yıldız, 2021). Because it is a tool of education, it is more important to use the system properly (Chang and Tung, 2008). The adaptability of students and teachers is identified via the model, which was designed by Fred Davis (1985), TAM (Technology Acceptance Model).

In this section, significance, research objectives, and scope of the study are presented.

1.1. Significance of the Topic

Advances in information technology caused to appearance of recent applications, including e-banking, e-commerce, e-learning, and health technology. Electronic learning, commonly known as distance learning or e-learning, has been adopted into education. Principal goal of ICT is to eliminate time and place limitations, granting unhindered access to desired information (Chang & Hajiyeve & Su, 2017). Numerous factors can lead to a disappointing or outright failure of implementing an information system within an organization. Understanding the essential requirements for e-learning system is imperative for achieving success. Both students and teachers adapting to technological changes, having a high level of technological literacy, and embracing technological advancements have an impact on the success and quality of the distance education system. Hence, it is imperative to comprehend crucial elements such as perceived simplicity of use, perceived quality, and student happiness when evaluating a remote education system that is extensively utilised.

The Technology Acceptance Model (TAM), created by Davis (1985), is used in this study to determine these elements. Since distant learning is a computer-based system, this study was carried out using TAM. According to TAM, the effectiveness of an e-learning system is determined by factors such as perceived usefulness, convenience of use, and impact on intended use. Numerous more variables that affect the PU, PEOU, and I through the evaluation of TAM have been researched in addition to these primary TAM variables. The external factors influencing the Technology Acceptance Model (TAM) encompass subjective norms, image, quality of output, confidence in computing, computer anxiousness, and experiences, among others. Numerous studies have incorporated these external variables into their research during the past three decades.. Sung Youl Park (2009) focused on subjective norms and computer self-efficacy, Cho & Cheng (2009) focused on user-interface design and

R. Ibrahim et al., (2017) focused on features of the instructor, computer self-efficacy, course design.

This study prioritises an examination of many elements, including technology-related elements, instructor-related elements, and content-related ones. Considering that the rate of internet usage is expected to increase faster in emerging markets compared to developed ones, educational institutions should prepare for the anticipated growth of e-learning in these emerging markets. Making and distributing educational resources in a style that is simple to use on mobile devices could be one beginning step. Alternatively, institutions can go a step further by investing in the development of mobile learning applications, enabling learners to access and share content conveniently while on the move. This approach would undoubtedly contribute to expanding access to e-learning for students worldwide, particularly in emerging markets (Wong & Sixl-Daniel, 2016).

1.2. Aim of the Study

The exclusive implementation of a web-based learning system has not yielded favourable outcomes. A comprehensive comprehension of how learners view and responses to e-learning components is vital for institutes and developers of e-learning. Numerous research have been conducted to investigate several external factors that may elucidate the adoption of e-learning among users, with the aim of comprehending its acceptance inside corporate settings. They also need to employ e-learning strategies to maximise the learning experience. (Cheng, 2012). Furthermore, gaining insight into students' intentions towards the utilisation of e-learning and the factors that shape their perceptions of it can assist educational administrators and supervisors in devising strategies to promote greater adoption among students. Hence, it is imperative to do further comprehensive research on the attitudes and intentions of learners towards the use of e-learning (Park, 2009). This study centres on the factors that facilitate learners' intentions to utilise e-learning platforms, as viewed through the lens of the

Technology Acceptance Model (TAM). According to the Technology Acceptance Model (TAM), one's intent to use is determined by a sense of enjoyment and utility.

Nevertheless, it has been acknowledged during this stage of the literary analysis that the initial TAM has undergone modifications. It is evident that there is a paucity of study pertaining to external elements, encompassing technical, educational, and course-related dimensions. The fundamental objective of this study is to analyse the various technological, instructional, and course-related factors that impact students' intents to utilise e-learning. In addition to the Technology Acceptance Model (TAM) variables included in this study, felt enjoyment, perceived usefulness, and perceived enjoyment have been incorporated into the model.

1.3. Scope of the Study

The initial phase of this study involves doing a comprehensive literature review, which encompasses the exploration of the technology acceptance model, various theories and models associated with it, as well as the many forms of TAM. This paper provides a comprehensive examination of e-learning, encompassing its various definitions and tracing its evolutionary trajectory. Next, the theoretical framework is introduced, which encompasses the factors that influence one's intent to utilise online learning, as viewed through the lens of the Technology Acceptance Model (TAM). This section also presents the hypotheses that will be examined in the study. Subsequently, the methodology section elucidates the procedures involved in sampling, gathering information, and the subsequent analysis and interpretation of the acquired data. The findings part explains the findings and results in a detailed way. By means of examining the data, hypothesis testing has been done. The research has concluded with the conclusion and discussion part, as well as further study parts.

2. LITERATURE REVIEW

Along with trust and demand for computer systems and new computerised technologies, user acceptance of technology gained importance. The research endeavour sought to ascertain the various factors that influence the user's inclination towards adopting the technology. The Technology Acceptance Model (TAM), which was initially proposed by Davis and his colleagues (Yi & Hwang, 2003). In the mid-1980s, IBM Canada, Ltd. wanted Davis to create a model which predicts acceptancy of technology and the behaviour of sing it. (Celik and Uslu, 2023) The theory of TAM is adapted from Fishbein and Adjen's Theory of Reasoned Action for discovering effective measurements of technology acceptance. Davis (1985) explained the behavioural intentions of the new technology and the engagement of computer-based information ystems. The Technology Acceptance Model (TAM) focuses on the examination of behavioural intention as a determinant of actual system usage. Nevertheless, the key determinants that impact the utilisation of a system are the perceived level of utility and the degree of convenience with which it can be employed. According to Davis (1989: 320), perceived usefulness can be defined as the degree to which an individual enhances their work performance, whereas perceived ease of use refers to the extent to which minimal effort is required. (Davis et al., 1989). Behavioural intention is the subjective likelihood of an individual to continue engaging in a certain behaviour, whereas attitude pertains to the overall evaluation or perception of that behaviour.

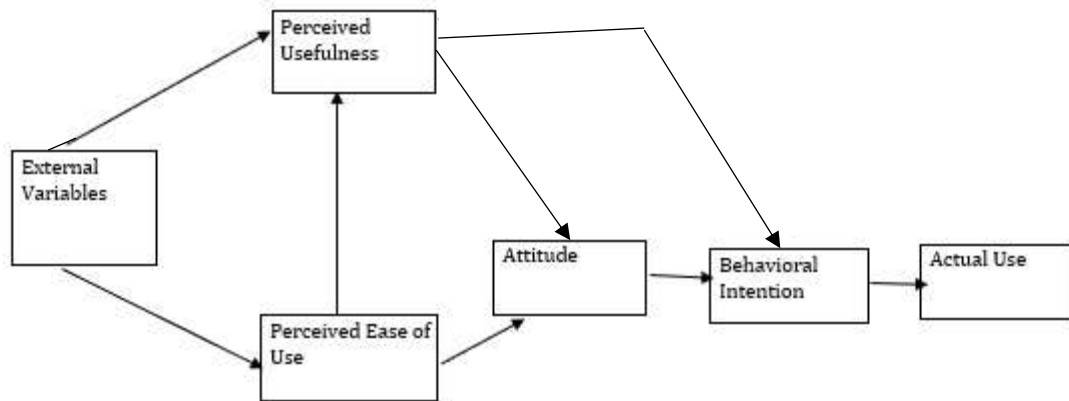


Figure 1: Technology Acceptance Model

Source: Davis, 1985.

Numerous studies have demonstrated a positive correlation between customers' perception of the usefulness and simplicity of use of new technologies and their subsequent acceptance and adoption rates. Attitude, among other variables in the model, refers to individuals' positive or negative behavioural tendencies towards a situation or phenomenon. The higher a person's attitude towards new technologies, the more likely they are to engage in using that technology. The preparedness to conduct an activity is represented by intention, and the actual usage that follows attitude and intention is referred to as behaviour (Avcı & Yıldız, 2021).

2.1. Theories & Models in Technology Acceptance

The advent of the internet and mobile technology has propelled technological progress to unprecedented heights, hence exposing the fact that customers voluntarily or begrudgingly adopt and utilise novel technological innovations (Avcı & Yıldız, 2021). Consequently, various theories have been proposed to explain the patterns of consumers' acceptance and utilisation of novel technology.

The diffusion of technology is explained by the Theory of Diffusion of Innovation, as stated in Rogers' book published in 1962. Innovation is described as a thought, practise, or thing

that someone or any adoptive aspect perceives as novel. Something doesn't have to be created in order to be considered novel.

The adoption of an innovation is contingent upon the evaluation made by individuals within a given social system, taking into account factors such as the innovation's comparative advantage, suitability, complexity, feasibility, and observability (Altinkaya, 2022). The Technology Acceptance Model, proposed by Davis (1989), elucidates the concept that the acceptance of innovation is not solely contingent upon its adoption, but is also influenced by customers' intentions and behaviours in embracing and utilising new technology.

The Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh, Morris, G. Davis, and F. Davis (2003), integrated and consolidated eight prominent ideas and models that had been previously established via preceding research. The Unified Theory of Acceptance and Use of Technology (UTAUT) was established as a comprehensive framework for understanding the process of adopting and utilising information technology. The theories and models discussed in this study include the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model (MM), the Theory of Planned Behaviour (TPB), the Combined TAM and TPB (C-TAM-TPB), the Model of PC Utilisation (MPCU), the Innovation Diffusion Theory (IDT), and the Social Cognitive Theory (SCT). The UTAUT framework provides a more nuanced comprehension of the dynamics by which the factors influencing intention and behaviour evolve over time (Chang et al., 2017). Business intelligence (BI) serves as a metric for measuring the extent of technology adoption. In the context of the links proposed in the Unified Theory of Acceptance and Use of Technology (UTAUT), BI encompasses performance expectation, effort expectancy, and social effect, which are further influenced by factors such as gender, age, volunteerism, and relationship experience (Maruping et al., 2017).

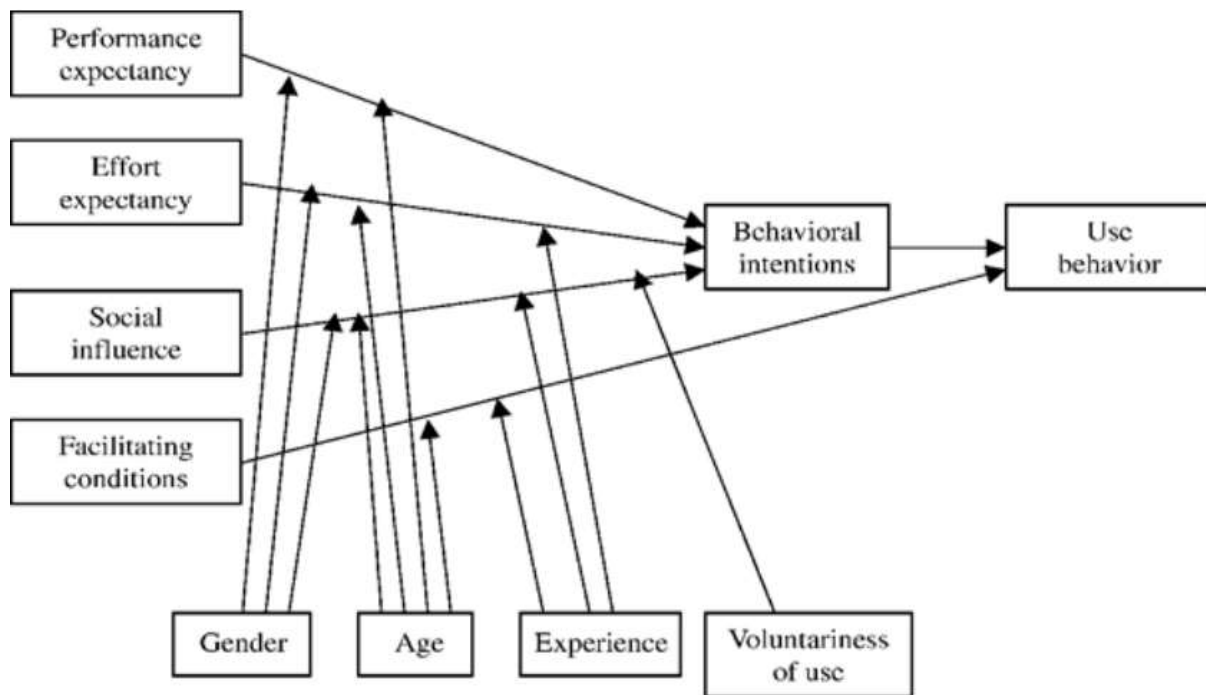


Figure 2: Unified Theory of Acceptance and Use of Technology

Source: Venkatesh et al., 2003

2.2. Evolution of Technology Acceptance Model (TAM)

User acceptability of technology has gained importance in recent years. , particularly with the widespread use of computer systems and new computerised technologies. Numerous research endeavours are dedicated to the identification of diverse elements that have influence on the acceptability of technology by users.

The technology acceptance model (TAM), which was introduced by Davis and his colleagues (1989), is widely used in this area of research (Yi & Hwang, 2003). Therefore, it is imperative to analyse the Technology Acceptance Model (TAM), which is a derivative of Fishbein and Ajzen's (1975) Theory of Reasoned Action.

The technological Acceptance Model (TAM) was developed by Davis (1985) with the objective of identifying reliable indicators of technological acceptance. There are several key factors that play a significant role in determining outcomes, including behavioural intention and subjective norms.

The intention of behaviour can be defined as the degree to which an individual intends to engage in a certain behaviour, while attitude pertains to an individual's overall inclination or disinclination towards a stimulus (Fishbein & Ajzen, 1973). The concept posits that the determination of the actual use of the system is contingent upon the individual's behavioural intention. Nevertheless, the key determinants impacting the utilisation of a system are the perceived usefulness (PU) and the perceived ease of use (PEOU). According to Davis (1989), Perceived usefulness (PU) is a measure of the degree to which a user perceives that a system enhances their capacity to effectively complete their tasks. On the other hand, perceived ease of use (PEOU) refers to the amount to which a user believes that a system demands minimal effort on their behalf. (Chatzoglou et al., 2009) conducted a study. The perception of conduct is a determinant of favourable or unfavourable affective and cognitive states associated with the execution of an action. According to Yavuz (2021), According to Oliver's (2010) research, intention refers to the probability or likelihood of an individual engaging in a specific behaviour.

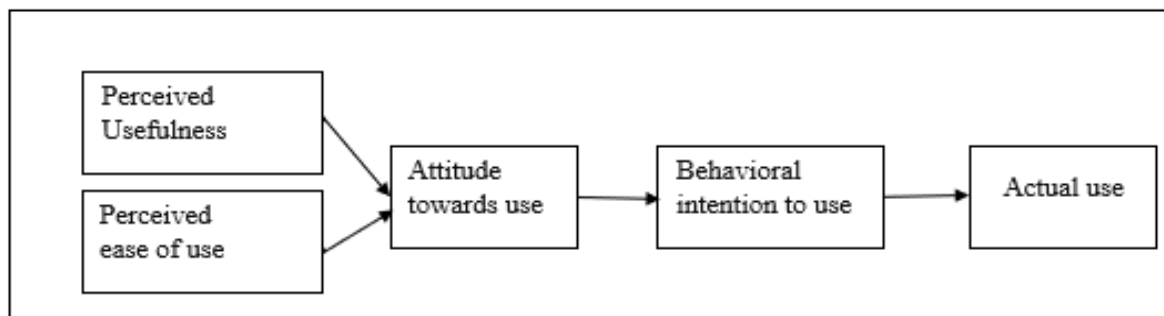


Figure 3: TAM

Source: Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, Vol: 35, No:8: 985.

TAM-2, also known as Extended TAM, created by Venkatesh and Davis (2000). This version includes social and academic factors, such as subjective norms, image, value of the task, output quality, willingness, and demonstrability of results, which constitute the framework

that shows their effect on PU (Bağlıbel, Samanoğlu, & Summak, 2010). In addition to the variables that affect PU, the variables that affect PEOU should also be taken into consideration. One of the main contributions of TAM 2 is the inclusion of social influence factors such as. TAM 1 only included perceived usefulness and perceived ease of use as factors that influence an individual's intention to use technology. However TAM 2 recognizes that opinions and behaviors of others can also influence an individual's perceived usefulness and ease of technology. Another noteworthy contribution of TAM 2 is the inclusion of cognitive instrumental processes that mediate the impact of outside factors on how well technology is received. The usage of technology is influenced by external factors including social conventions and perceived behavioural control, although this was not made clear in TAM 1. TAM 2 on the other hand contends that these factors have an impact on the intention to use technology by having an impact on cognitive processes like attitudes and beliefs. TAM 2 thus offers a more thorough picture of technology adoption and utilisation.

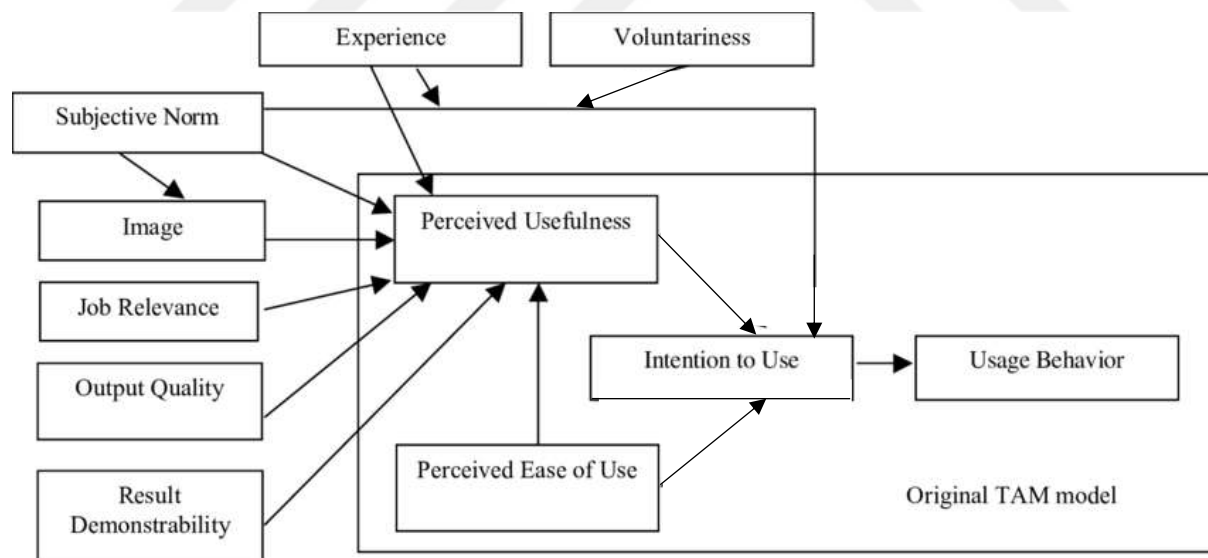


Figure 4: TAM-2 (Extended TAM)

Source: Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186-204.

Above all these contributions of TAM 2, the variables PEOU are added to the extended version of TAM, and TAM-3 is referred to as a complementary model analysing their significance on behavioural intention (Yavuz, 2021).

In general, the Technology Acceptance Model (TAM) is widely regarded as a reliable method for forecasting the extent to which new technology tools will be adopted and utilised. The purpose of this measure is to assess individuals' inclination to utilise technology, as determined by its perceived usefulness and simplicity of use. Moreover, the Technology Acceptance Model (TAM) elucidates the impact of external factors on the intention to utilise a technology through the lens of perceived usefulness and perceived ease of use (Venkatesh & Bala, 2008).

Additional iterations of the Technology Acceptance Model (TAM) have incorporated several factors, including subjective norm, reputation, enjoyment, and output quality, in order to elucidate customers' attitudes, behavioural intents, and actual usage patterns (Çelik & Uslu, 2023). The inclusion of additional components in the Technology Acceptance Model (TAM) enhances the understanding of many factors that influence the adoption and usage of a system (Shin & Kim, 2000). The system is characterised as being user-friendly in relation to online course layout, user-interface layout, prior learning background, and perceived interaction. Users exhibit a higher frequency of engagement with the learning system due to their perception of its greater value (Lui, Chen, Wible, & Kuo, 2009).

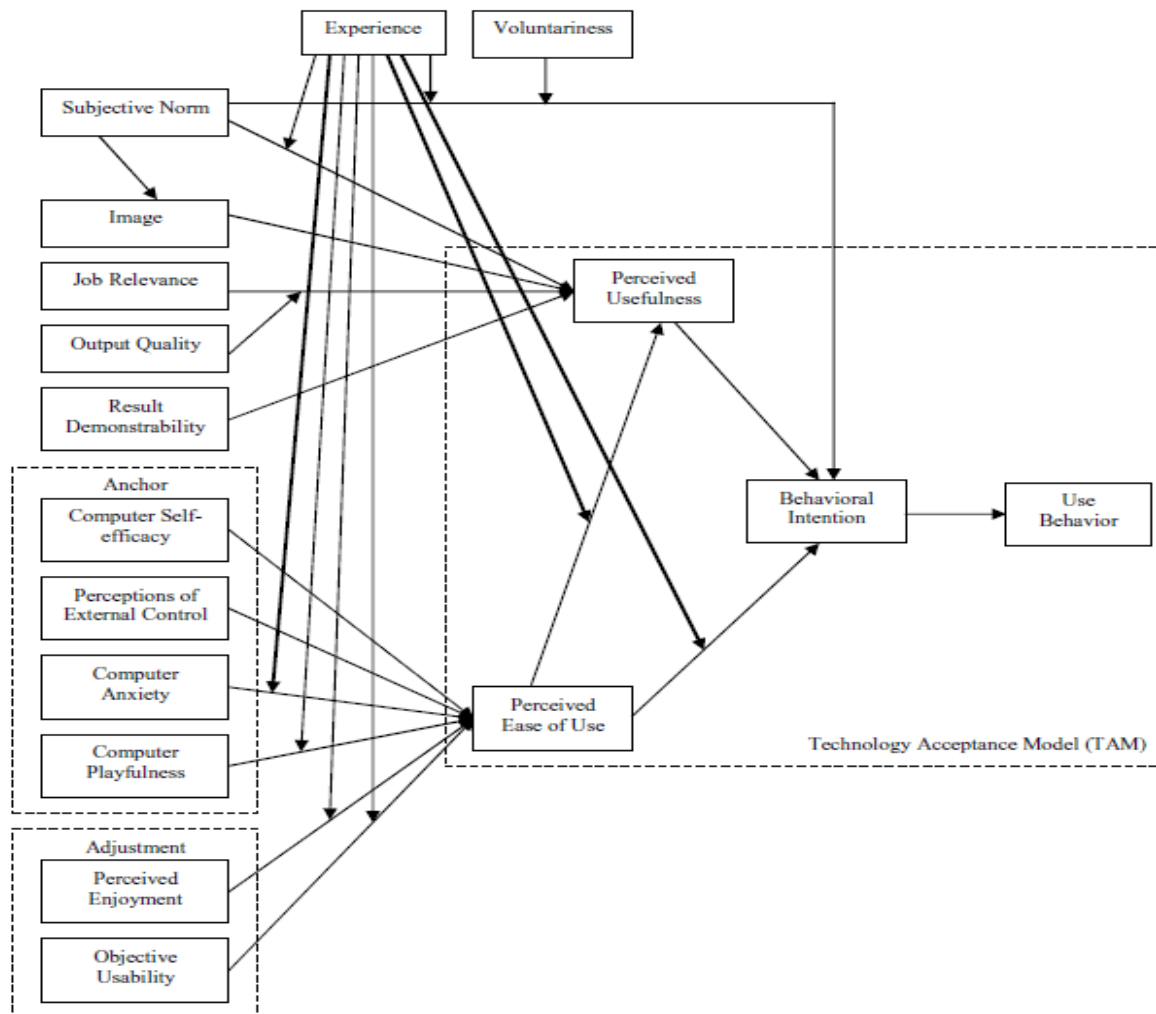


Figure 5: TAM-3

Source: Venkatesh, V. & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273–315.

2.3. Theory of Reasoned Action

The concept of reasoned action is a theoretical construct developed to elucidate human behaviour. In 1975, Fishbein and Ajzen created it. TRA looks at people's underlying motives to predict and explain the repercussions of their actions. Consequently, the determination to partake in a specific behaviour precedes the actual execution of this behaviour. The determinants of mindset and personal standard are considered to be the underlying factors influencing intention. Four determinants in this theory are attitude, subjective norm, intention, and behaviour (Altinkaya, 2022).

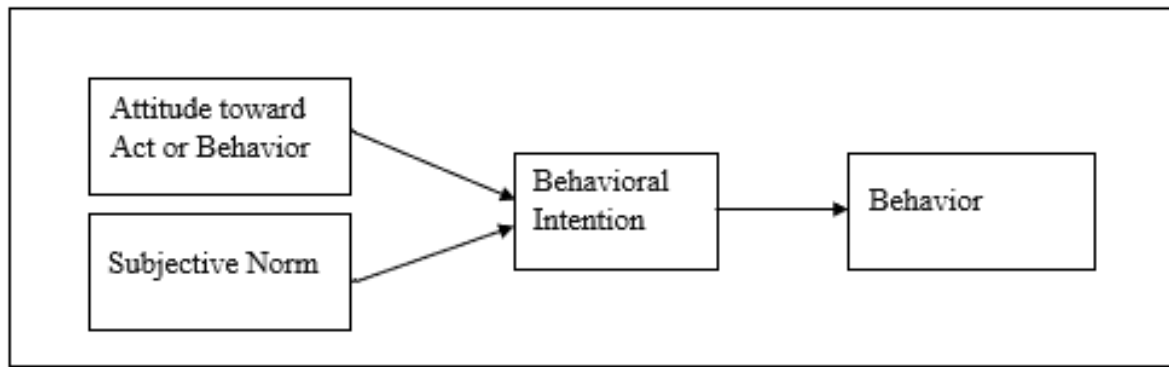


Figure 6: TRA (Theory of Reasoned Action)

Source: Azjen, I., & Madden, T. (1986). Prediction of Goal-Directed Behavior: Attitudes, Intentions, and Perceived Behavioral Control. *Journal of Experimental Social Psychology*, 22(5), 453–474.

The study conducted by Ibrahim et al. (2017) aimed to investigate the factors influencing the adoption of e-learning, employing the technology acceptance model (TAM) as a theoretical framework. This study is part of a broader body of research that centres around the technology acceptance model and the various aspects that influence the utilisation of web-based services. The study involved the participation of undergraduate students in Malaysia who utilised an e-learning platform as a supplementary tool for their academic pursuits. The results of the study indicate that the acceptability of e-learning was shown to be significantly impacted by factors such as perceived utility, perceived ease of use, and attitude towards the adoption of e-learning. The research findings also revealed that individuals' attitudes regarding the adoption of e-learning were shown to be significantly impacted by the impact of society, which encompasses the influence exerted by peers and instructors. Based on the findings of the study, it is recommended that e-learning programmes be designed with a focus on practicality and user-friendliness. Additionally, the promotion of these programmes should consider their potential social impact (Ibrahim et al., 2017).

In a study conducted by Cheng (2012), the objective was to investigate the impact of quality antecedents, including the standard of service, system and information, on the acceptability of electronic learning.

The study involved the participation of graduate students in Taiwan who utilised an e-learning platform as a supplementary tool for their academic courses. The results of the study indicate that there was no statistically significant impact of information quality on the acceptability of e-learning. However, it was found that both service quality and system quality had a substantial influence on electronic learning acceptability. The study also found that the association between quality antecedents and acceptance of e-learning was influenced by individuals' judgements of the usefulness and usability of the e-learning platform. In the study conducted by Cheng (2012), it was suggested that the development of electronic learning platforms should prioritise the provision of high-quality services and systems, with the aim of enhancing users' impressions of the platforms' utility and usability.

3. GENERAL EXAMINATION OF E-LEARNING

In the contemporary era, with the profound impact of knowledge and communication technology (ICT) on every area of a person's existence, the world transitioned into an information-centric age. The continuous advancements in ICT have revolutionised education and learning methods, giving rise to a new system known as e-learning. E-learning involves the utilisation of electronic equipment for teaching and learning, encompassing a broad range of applications and processes (Kumar, 2018).

The educational approach referred to as "e-learning" involves persons acquiring knowledge and skills through the use of mobile devices or computers connected to the internet. Furthermore, the ability to access information is not constrained by temporal or spatial limitations, allowing for both asynchronous and synchronous utilisation. Visual and auditory stimuli, when employed as a means of instruction, have the potential to augment the comprehension of educational concepts (Tanyıldızı, 2016).

E-learning can be defined as the utilisation of Internet technology to enhance knowledge and performance, as evidenced by the provided definitions. Through the utilisation of e-learning technology, individuals are able to personalise their educational experiences in accordance with their specific learning objectives. This is achieved by granting learners autonomy over several aspects, including the content they engage with, the learning process itself, the pace at which they progress, the timing of their studies, and the frequent utilisation of multimedia resources.

The utilisation of electronic learning (e-learning) platforms offers a multitude of study prospects, as well as ongoing difficulties in effectively documenting scholarly work. The advancements in e-learning technologies indicate a significant transformation in the field of education.

These innovations enable the customization of learning experiences through adaptive learning, facilitate increased interaction among learners through collaborative learning, and bring about a fundamental shift in the role of educators. E-learning refers to the implementation of various Internet technologies to enhance knowledge and performance by providing a diverse array of solutions. E-learning encompasses the use of Internet technologies to provide a diverse range of solutions aimed at expanding knowledge, improving performance, and facilitating the presentation of alternatives to conventional educational approaches (Jethro, Thomas, & Adewumi, 2012).

Especially towards the end of 2019, the COVID-19 pandemic has suddenly appeared all over the world. It unfortunately affected all aspects of our lives, including education. The traditional education system, which was implemented physically, has transitioned entirely into a remote learning system conducted over the internet. As a result, millions of students and thousands of teachers have had to learn and adapt to the remote education system. The success and quality of the remote education system are determined by both students' and teachers' ability to adjust to technological changes, having a high level of technological literacy, embracing the new technological advancements (Avcı & Yıldız, 2021). The e-learning technology acceptance model created by Davis (1985) is used in this research to identify the quality elements.

From the viewpoint of the technology acceptance model, literature defines the quality factors of e-learning implementations (Almaiah & Alyoussef, 2019). Self-efficacy, subjective norms, and system accessibility are centred in an extended form of the Technology Acceptance Model, which affects the system's perceived usefulness, perceived ease of use, attitude, and intention to be used. (Choi et al., 2007). User interface design clarity and contact between the teacher and other students should be taken into consideration in order to measure students satisfaction and understand the failure reasons of e-learning courses.

In addition to this, technological infrastructure, content of learning activity, and learner characteristics are the contributors to attitude towards e-learning (Ibrahim et al., 2017).

The connection between the quality criteria and learners' beliefs affects their intention to use an e-learning system (Cheng, 2012). Students' intention to use the system is impacted by subjective norms (Park, 2009). Effects of subjective norms, computer self-efficacy, and user-friendly interface design on intention to use learning management systems from the perspective of extended TAM and UID are significant both for PEU-PU and BIU. The use of the system will be increased by the participation of the instructors (Eraslan Yalçın & Kutlu, 2019). Volery and Lord (2000) conducted research about important components of online education success. They listed three crucial success factors for online delivery: the technology (ease of access and navigation, interface design, and level of interaction), the instructor (attitudes towards students, instructor technical competence, and classroom interaction), and prior technology use. Moreover, education through the internet can be considered very useful as long as the technology is supported by programmes, technological developments, instructors' technological skills, and interactive teaching methods.

Technology, instructor, and course design are the three external variables in this research that affect perceived usefulness, perceived ease of use, and perceived enjoyment. TAM is an appropriate model that can help understand behaviour and intention to use e-learning.

3.1. Evolution of the E-learning Definitions Over Time

In contemporary times, the utilisation of web-based learning, commonly referred to as e-learning, has gained global recognition as a prominent educational approach. Prior to presenting an argument concerning e-learning, it is imperative to underscore the distinction between remote education and electronic learning.

The National Centre for Educational Statistics defines distance education as the delivery of educational or training courses to remote locations through various technologies, including audio, video, or computer-based methods. Such instructions can be synchronous or asynchronous. Internet-based education, often known as web-based education, is a style of remote learning that uses the internet to provide content. The existing definitions of remote education mainly apply to virtual schools and programmes that make use of internet-based technologies. Online learning, sometimes known as e-learning, is a branch of remote learning that focuses on integrating web-based or internet technology. (Rice, 2009).

According to Chatzoglou and his colleagues (2009) research, e-learning can be defined as the utilisation of computer network technology, specifically through the intranet or internet, for the purpose of disseminating information and providing instruction to individuals.

The concept of e-learning involves the delivery of educational instruction using various electronic platforms, such as the web, intranets, extranets, satellite broadband services, audio/video cassette, interactive TV, and CD-ROM. E-learning, conversely, can be conceptualised as the latest advancement in the field of distant learning.

Distance education, which first emerged through postal services in the year 1728, has evolved into more advanced forms such as teleconferencing and internet applications today, thanks to advancements in information technology. Through remote education, visual and auditory communication can be established between instructors and students (Yavuz, 2021).

The historical evolution of distant learning on a global level;

As seen in the table, the tools used in distance education are divided into 3 periods and 5 phases. When these periods and phases are examined, it is possible to say that advancements in technology have led to certain changes and improvements in remote education, which are shown in Table 1 below.

Table 1: Historical Development of Distance Learning in the World

1st Period: Correspondency	
	With letters (1720)
2nd Period: With Visual and Auditory Tools	
	Radio and Television (1925)
	Open University (1970)
	Teleconference (1980)
3rd Period: Information Technology-based	
	Internet-Web (1990 -)

Source: Yavuz (2021). Determination of University Students' Attitudes and Intentions towards Online Education in the Covid-19 Process: A Study within the Framework of Technology Acceptance Model.

Distance education has undergone a significant transformation, progressing from traditional correspondence classes to modern interactive web applications. In recent years, the advancement of internet technologies, particularly the emergence of the Internet and technologies for online communication, has played a pivotal role in shaping distance education. These technological advancements have empowered educators to design and deliver interactive web-based courses that seamlessly combine tests, graphics, and audio-video materials. This integration of multimedia resources not only enhances the overall learning experience but also fosters greater interactivity between teachers and students. Furthermore, these advancements have facilitated a more adaptable and convenient approach to education, allow learners to engage with their studies at their own pace and convenience (Rice, 2009). The advent of the internet throughout the 1990s has prompted extensive research on the subject of e-learning, as seen by the studies conducted by Volery and Lord (2000). In the scholarly discourse, a multitude of definitions have emerged, encompassing several terms such as distance learning, computer-based education, perpetual education, and distributed learning. Within the scope of many definitions, online delivery, also referred to as e-learning, can be classified as a form of distributed learning that is facilitated over the internet. Table 2 provides a concise overview of the historical development of e-learning.

Table 2: The History of E-Learning

Year	Period
1900	Traditional and computer based education
2000	E-learning period
2005	Combination of mixed and not time based education

Source: Tanyıldızı, 2016. Historcial development of e-learning. The Attitudes of Personnels' in Career Jobs the Ministry of Energy and Natural sources Towards E-Learning

According to Tanyıldızı (2016), by means of visual and auditory simulations, personal simulations, occupational simulations, and different educational interactivities, many new e-learning definitions have been added to the literature. In relation to this matter, e-learning, as defined by Sumak, Pusnik, and Heriko (2012), employs technology for communication and information to provide educational and training opportunities to individuals, irrespective of their geographical location or time constraints.

The term "e-learning" refers to the process of learning that is facilitated and enhanced via the utilisation of technology for communication and information. E-learning refers to the dissemination of educational content to individuals using diverse electronic platforms., including CD-ROMs, corporate intranets, the internet, mobile devices, and mobile phones. E-learning is a method for learning that can offer a variety of educational materials and examinations with audio and visual components, make it easier to obtain relevant knowledge, and foster interaction (Tanyıldızı, 2016). Volery & Lord (2000) conducted a notable study in the field of e-learning, focusing on elucidating the distinction between distributed learning and online delivery. Their research findings indicate that online delivery can be categorised as a variant of distributed learning, since it effectively harnesses the capabilities of the internet. The utilisation of this technology allows students to conveniently access educational materials, engage in communication and collaboration with both fellow students and faculty members, complete examinations, and receive necessary administrative and student assistance.

Online delivery has emerged as a superior alternative to traditional computer-based learning due to its comprehensive utilisation of digital technologies. The provision of anytime, anywhere access to course materials enables the implementation of distant education. In contrast to conventional approaches, online distribution presents numerous benefits. For example, the platform offers collaboration capabilities that provide a virtual workspace, enabling students to engage in real-time or asynchronous interactions with one another. This promotes interpersonal communication among students. Furthermore, the platform provides interactive resources that empower students to progress through exercises and self-evaluations at their individual speed, including simulations or self-administered assessments. However, collaborative tools possess certain limitations as they do not facilitate direct communication between students and their peers or teachers, but rather rely on technological mediums for interaction.

In their study, Choi, Kim, and Kim (2007) conducted research to examine the efficacy of utilising an internet-based learning system for the purpose of ERP (enterprise resource planning) training. The research was carried out in a manufacturing organisation situated in Korea, wherein the individuals involved were employees who possessed no prior exposure or familiarity with Enterprise Resource Planning (ERP) systems. The findings indicated that the online learning cohort had a superior degree of academic attainment in comparison to the traditional classroom training cohort. The online learning cohort exhibited elevated levels of satisfaction with the training programme and demonstrated more favourable attitudes towards Enterprise Resource Planning (ERP) technologies. According to Choi's research, web-based learning has been found to be a potentially useful approach for teaching personnel in enterprise resource planning (ERP), especially those who have limited experience with ERP systems. The study additionally underscores the need of integrating user happiness and attitudes towards technology into the assessment of online learning programmes' efficacy.

3.2. Benefits & Challenges of E-Learning

The rapid progress in computer and communication technology has significantly expanded the potential for electronic learning. The use of emerging multimedia technology and internet resources in the field of education is often regarded as a means to augment the accessibility, efficacy, and overall excellence of the learning process. This strategy not only enables the ease of accessing resources and services, but also promotes distant exchanges and partnerships. As a result, electronic education has arisen as a novel paradigm and educational philosophy, with the objective of serving as a platform for knowledge-based advancement in modern society. E-learning presents benefits for individuals in professional capacities who are unable to dedicate themselves to conventional full-time learning approaches. According to Kumar (2018), students possess the capacity to engage in autonomous learning, progressing at their preferred speed and in any geographical setting, facilitated by a range of valuable educational materials like videos, visuals, papers, quizzes, and reports that complement their academic curriculum. Another advantage of e-learning is its expedited nature, wherein instructional contents are often reiterated.

When we handle the challenges of e-learning, we see that the technology can be confusing and expensive. E-learning requires technology literacy skills. The success of e-learning programmes relies on continuous engagement and feedback from a facilitator. However, challenges may arise due to inadequate computer and internet skills, limited experience in internet-based teaching, and a lack of organisational support. Despite these obstacles, e-learning introduces a distinct learning style that sets it apart from traditional methods (Kamba, 2009). It becomes hard to adapt to this new learning style. Table 3 presents the major benefits and challenges:

Table 3: Major Benefits and Challenges of E-learning

Benefits of E-Learning	Challenges of E-Learning
There is no limitation of timing and place for following the lessons. Students can join the lessons where and when they want.	The students and teachers can feel isolated and alone because of no physical relations and physical classes.
Information is given at equal conditions. Students benefits from the education equally.	It is hard to use e-learning for applicable courses and laboratory work.
Participants have their own responsibilities in learning.	It is hard for the students and teachers who hasn't enough technological skills and knowledge.
The role of teacher shifts from tutoring to leading and operator.	It takes time to leave traditional education habits and transition to new system.
The introvert and shy students have a chance to feel secure and relax during the lessons	Some new kind of expenses like service, licence appear.
Because of visual and auditory layouts students can learn more effectively.	Technological and infratructure problems affect the quality of e-learning system negatively.

Source: Tanyıldızı, 2016. The Attitudes of Personnels' in Career Jobs the Ministry of Energy and Natural sources Towards E-Learning.

3.3. E-Learning in Turkey

Distance education implementation in Turkey was initiated in 1974. In order to obtain the necessary educated workforce, leverage communication technologies, provide effective education, and deliver education to a wide audience, the Centre for Higher Education by Correspondence was established. Several steps were taken to create an education system suitable for the conditions of the time, with the most notable being the establishment of the Open Education Institute in 1975. Subsequently, the Open Education Faculty was established at Anadolu University in 1981.

In 1999, a regulation regarding distance education was published, making another significant step. With the development of the internet, distance education began to be implemented online, and the Middle East Technical University became the first to introduce this application in 1996. In the following years, advancements in technology and information sharing started to make distance education more widespread. In addition to conventional educational methods, Turkish institutions have also used distant education as a means of instruction.

The advent of the pandemic in 2019 prompted the country, like other nations globally, to fully embrace the concept of distance learning. However, prior to the pandemic, Turkey had already incorporated distance education applications such as Fatih and EBA into its educational system, and during the pandemic, efforts were made to integrate these systems with Zoom to achieve an effective distance education system (Avcı & Yıldız, 2021).



4. THEORETICAL FRAMEWORK

In a broad sense, individuals have the potential to augment their educational journey and achieve scholastic accomplishments through the adoption of technology inside educational frameworks. The Technology Acceptance Model (TAM) is employed to assess the importance of students' intentions to utilise e-learning systems. The concept aims to optimise the educational environment and motivate students to use technology as an essential element of their educational experience. According to Eraslan Yalçın and Kutlu (2019), Based on the Technology Acceptance Model (TAM), the components that hold significant importance, although are relatively less concentrated, include technology-related factors, instructor factors, and information/course design. The objective of this study is to develop a theoretical framework that elucidates the elements influencing learners' acceptance and intention to utilise e-learning platforms. This framework incorporates perceived utility, perceived simplicity of use, and perceived enjoyment, which are influenced by technology-related, instructor-related, and information-related factors.

4.1. Perceived Intention to Use E-learning Web-sites

Perceived intention, a crucial element of TAM, describes a person's subjective assessment of another person's intention to carry out a specific behaviour or action. Based on the theoretical framework of perceived intention, an individual's view of the usefulness and simplicity of technology is influenced by how they perceive the designers of the system to have intended to make a useful and simple system. The concept of perceived intention was introduced by Davis (1989) in his original TAM model and further elaborated by Venkatesh and Davis (2000) in their extended TAM. According to the Technology Acceptance Model (TAM), the perception of intention plays a crucial role in determining the perceived utility and simplicity of a technology. These factors, in turn, influence an individual's attitude towards utilising the technology and their subsequent behaviour in terms of actual usage.

The Technology Acceptance Model, also known as the TAM, is a widely recognised theoretical framework that aims to elucidate the factors influencing individuals' adoption and utilisation of technology. According to this paradigm, the inclination of an individual to utilise a specific technology is significantly influenced by their attitude towards its usage. The views of students towards e-learning sites may have an impact on their intention to utilise these platforms.

Several studies have investigated the correlation between attitudes and intentions to utilise e-learning platforms. An investigation conducted by Al-Rahmi et al. (2015) revealed that the disposition towards e-learning emerged as a noteworthy determinant of students' inclination to utilise e-learning platforms. The research findings indicated that students who exhibited favourable views towards e-learning shown a higher propensity to engage with e-learning platforms, as opposed to their counterparts who held unfavourable attitudes. In a study conducted by Alshorman and Bawaneh (2018), it was discovered that the attitudes of students regarding the utilisation of e-learning systems had a substantial impact on their inclination to employ such systems. The research findings indicated a favourable correlation between students' favourable views towards e-learning and their increased utilisation of e-learning systems, in comparison to students who held negative attitudes towards e-learning.

The impact of perceived usefulness on students' views towards e-learning platforms is an additional factor to consider. According to the Technology Acceptance Model (TAM), the perception of utility is a crucial factor in shaping individuals' attitudes towards technology. Numerous scholarly investigations have been conducted to explore the correlation between perceived usefulness and attitude towards e-learning. An investigation conducted by Paul, Chau, Olivia, Sheng and Tam (2012) discovered a substantial relationship between perceived utility and students' attitudes towards e-learning systems. The findings of the study indicate

that there is a positive relationship between students' perception of the usefulness of online learning sites and their desire to use such platforms.

According to Park's (2009) study, all associations between the components are statistically significant, excluding the metrics PU, PEOU, and system accessibility in relation to the behavioural intent to use.

Six variables were utilised by Eraslan Yalcin and Kutlu (2019) to understand how university students use LMS. They found that social norms, self-efficacy with computers and the interface layout all have a favourable impact on students' accept of their intent to utilise a system for managing learning (LMS). The study's findings supported the significance of the hypotheses under consideration PEOU-PU, PU-BIU, and PEOU-BIU as well as the objectives of the study.

In their study, Chang and Tung (2008) conducted an analysis of students' behavioural desires to utilise virtual course websites. They employed a unique hybrid technology acceptance model for this purpose. The researchers arrived at the determination that the inclination to engage in the use of online learning platforms was positively influenced by the perception of the quality of the system and one's self-confidence. Furthermore, the advantageous influence of perceived value and perceived usability on the intent to exploit learning course websites is evident.

The purpose of the study was to examine the relationship between PU, PEOU, PE, and intention to use, which has been studied and aimed to lead to increased adoption and usage of e-learning sites among students. Positive relationships between perceived usefulness and perceived ease of use are more likely to lead to increased intention to use e-learning sites.

4.2. Perceived Usefulness

The concept of perceived utility holds significant importance within the framework of the Technology Acceptance Model (TAM), initially proposed by Davis in 1989. Perceived usefulness, as defined by Davis (1989, p. 320), refers to an individual's assessment of the extent to which the adoption of a particular system will enhance their job performance.

In essence, it delineates the extent to which an individual perceives a specific technology or system as augmenting their ability to perform a specific activity or achieve a specific aim. The utilisation of web-based learning sites has experienced a substantial rise due to the convenience and flexibility they provide. The sustainability of e-learning site usage is heavily contingent upon users' willingness and intention to adopt technology. Perceived usefulness is a significant factor that influences users' intentions to utilise e-learning platforms. The objective of this literature review is to examine the impact of perceived utility on individuals' desire to utilise e-learning platforms.

According to Venkatesh et al. (2003), there is a strong correlation between the perceived usefulness of e-learning sites and the intent to employ them. In their study, Elkatesh, Wong, and Fung (2015) aimed to investigate the factors influencing the behavioural intentions of students and teachers in Libyan higher education to utilise e-learning as a tool for teaching and learning. These factors were examined in terms of perceived utility, perceived simplicity, utilisation, societal effects, and reported enjoyment. The study indicates that societal effect exerts considerable influence on students' inclination to utilise online learning, whereas it does not appear to have a comparable effect on teachers' intents. The results suggest that the influence of teachers on students' inclination to utilise e-learning is negligible, however the impact of friends, coworkers, family members, and supervisors is significant. Consistent with previous research, the present study also revealed that social influence significantly affects the perceived value and usability of e-learning among students.

Nevertheless, it is worth noting that the impact of social influence on instructors' evaluations of the tool's usefulness and usability was shown to be insignificant, aligning with other studies conducted in this area.

In accordance with the findings of Al-rahmi and Zeki (2018), their study conducted among university students in Malaysia revealed a notable beneficial impact of perceived utility on the inclination to utilise e-learning platforms.

Chen & Huang (2019) also conducted research on Chinese rural secondary students and reported similar findings. They found that perceived usefulness had a positive effect on the intention to use e-learning sites, and this effect was mediated by attitudes towards e-learning.

H1: Perceived usefulness positively affects the intention to use e-learning.

4.3. Perceived Ease of Use

Other key component of TAM is Perceived Ease of Use (PEOU). According to Davis (1989) it is defined as the degree of a person's belief that using a particular technology will be free of effort. It describes how much a user expects a technology to be simple to use and need little effort to complete the intended job.

The utilisation of e-learning platforms has experienced a substantial surge due to the progress of technology and the widespread availability of the internet. E-learning platforms provide individuals a versatile and accessible means of acquiring knowledge and developing skills. The efficacy of electronic learning platforms is contingent upon their usability and the degree to which they are embraced by users.

The perceived ease of use of e-learning sites is a crucial determinant that impacts user acceptance and the intention to utilise them. The purpose of this literature review is to present a comprehensive analysis of existing studies pertaining to the influence of perceived simplicity upon individuals' intention to utilise e-learning platforms.

Numerous scholarly investigations have been conducted to explore the impact of perceived simplicity of use on individuals' desire to utilise e-learning platforms. Chen and Wu (2012) conducted a study that revealed a noteworthy positive impact of perceived ease of use on individuals' propensity to utilise e-learning platforms. The study additionally discovered that the perception of utility and enjoyment has a positive influence on the intent to utilise e-learning platforms.

In a study conducted by Al Gahtani (2016), it was determined that there exists a noteworthy beneficial impact of perceived simplicity of use on individuals' propensity to utilise e-learning platforms. The research additionally discovered that the perception of usefulness and the attitude towards e-learning exhibit a favourable impact on the intention to utilise e-learning platforms.

In a separate study conducted by Lee, Hsu, and Hsu (2010), it was found that the inclination to utilise e-learning platforms is considerably influenced in a positive manner by the perception of ease of use. The research findings also indicate that subjective norm and perceived utility exert a positive influence on individuals' inclination to utilise e-learning platforms.

H2: Perceived ease of use positively affects the perceived usefulness of e-learning.

H3: Perceived ease of use positively affects the perceived enjoyment of e-learning.

H4: Perceived ease positively affects the intention to use of e-learning.

4.4. Perceived Enjoyment

Park et al. (2012) suggest that perceived enjoyment (PE) is a fundamental element of the Technology Acceptance Model (TAM). The concept being referred to is commonly defined as "the extent to which the act of utilising a specific system is perceived as pleasurable in and of

itself, regardless of any performance-related consequences that may arise from system usage."

According to the research conducted by Venkatesh et al. (2003), it is contended that the construct of perceived enjoyment (PE) holds significant influence on individuals' perceptions of utility and ease of use. The authors put up an expanded Technology adoption Model (TAM) that incorporates Perceived Enjoyment (PE) as an additional influential factor in determining user adoption and usage patterns. The utilisation and examination of this comprehensive approach have been extensively employed across many sectors, encompassing e-commerce, social media, and mobile apps.

A considerable body of research has been dedicated to investigating the determinants that affect the adoption and utilisation of novel technologies, such as online education platforms, through the use of the technology acceptance model (TAM). One determinant is the perception of enjoyment, denoting the user's individualised encounter of pleasure or satisfaction during the utilisation of a specific technological device or system. The primary objective of this literature review is to investigate the correlation between individuals' reported satisfaction and their intention to utilise e-learning platforms, as elucidated by the Technology Acceptance Model (TAM).

The Technology Acceptance Model (TAM) places emphasis on two key aspects that play a significant role in shaping a user's inclination to adopt and utilise a particular technology: the perceived usefulness and the perceived simplicity of use. Nonetheless, scholars have also discovered that the subjective perception of pleasure can significantly influence individuals' views towards a technological tool, specifically within the realm of electronic learning.

The correlation between individuals' perceived satisfaction and their inclination to utilise e-learning platforms has been extensively investigated and documented in various scholarly

publications. In a study conducted by Liaw, Huang, and Chen (2006), it was observed that the perception of enjoyment had a noteworthy positive impact on the inclination to utilise an e-learning platform among those enrolled in higher education. In a study conducted by Chao (2019), it was discovered that the perception of enjoyment had a crucial role in predicting the likelihood of individuals adopting an online learning system.

Based on the findings of Abdullah and Ward (2016), the majority of research investigations have consistently indicated a positive correlation between Enjoyment and Perceived Ease of Use (PEOU), as well as between Perceived Usefulness (PU) and Enjoyment.

When students derive satisfaction from utilising e-learning platforms, they are more inclined to avail themselves of the system's benefits. The objective of their research was to forecast the inclination of undergraduate students towards utilising e-learning. The study's findings indicate a statistically significant correlation between the level of enjoyment and the perceived usefulness (PU) and perceived ease of use (PEOU). According to Chang et al. (2017), there exists a positive link between PU, PEOU, and BI. This study aims to establish the same association.

Nevertheless, it is important to acknowledge that the relationship between perceived enjoyment and the intention to utilise e-learning platforms is not consistently easy. According to Jung (2015), several investigations have revealed that the influence of perceived enjoyment on the inclination to utilise e-learning platforms could potentially be influenced by additional variables, such as the individual's level of computer self-efficacy.

H5: Perceived enjoyment positively affects the intention to use an e-learning.

4.5. Effects of Technology Related Factors on the Constructs

It is imperative to acknowledge that the provision of an online learning system alone does not guarantee a favourable outcome in the realm of e-learning. The incorporation of quality

assessment has become an essential requirement in the evaluation of the viability of e-learning. The characteristics that influence intention in relation to technology can be categorised into three main areas: ease of navigation, interface design, and interaction capabilities.

4.5.1. Interface

A well-designed user interface encompasses various elements such as control bars, screen design, icons, and more. The effective utilisation of these interface components enhances technology acceptance and improves usability. The technological elements have a significant impact on how people view the system's advantages and usefulness.

When teaching materials incorporate appropriate visual elements and clear text, learners can easily comprehend the content and are more inclined to utilise them. Additionally, a user-friendly interface design enables students to easily navigate the learning process and get the needed information (Yalçın and Kutlu, 2019).

The effectiveness of a self-paced e-learning tool can be enhanced by ensuring that its interface is well-designed, hence facilitating learners' proficiency in utilising the technology. The e-learning tool can provide many entry points to specific functions, hence improving its usability from the users' perspective.

If the screen layouts of the self-paced e-learning tool exhibit a well-structured organisation and the instructions are concise and unambiguous, learners will have the capacity to effortlessly traverse the content and acquire information.

Students' likelihood of utilising the e-learning system is positively correlated with their familiarity with its UI.

Cho and Cheng (2009) conducted a study to investigate the significance of interface design in a system for e-learning. Their findings indicated that the Perceived User Interface Design

(PUIID) plays a crucial role in the utilisation of such a system. The investigation conducted by Cheng (2012) focuses on the examination of the interface as a determinant of e-learning acceptability. The impact of user-interface design on perceived usefulness (PU), perceived ease of use (PEOU), and perceived enjoyment (PE) has been well-documented.

H6: Interfaces positively affect the perceived usefulness of e-learning.

H7: Interface positively affects perceived ease of use of e-learning.

H8: Interfaces positively affect perceived enjoyment of e-learning.

4.5.2. Interaction

In a web environment, interactivity holds great potential for engaging students through quick Learning is now seen as a social process rather than an individual one, where knowledge and abilities are produced through interaction with both the teacher and other students (Choi et al., 2007). and complete interactions and feedback. Further, presenting educational material in a problem-based manner can also enhance student engagement. When students demonstrate active engagement, there is a higher likelihood of increased motivation in their instructional endeavours. The perceived richness of the technology utilised should have an impact on the efficacy of online distribution. The interaction of medium abundance constitutes a fundamental element.

The study conducted by Baki, Birgören, and Aktepe (2020) suggests that the perception of a user about the level of engagement can significantly influence the perceived value of an e-learning system. This level pertains to the extent to which an individual perceives that electronic instruction has the potential to foster interaction between educators and learners. The utilisation of the electronic instruction system for interaction among peers leads to the perception of ease of use by users. According to Cheng (2012), learners have a greater inclination to engage in interactions with the system.

Extensive research has consistently demonstrated a robust association between interaction, intention, and perceived utility. According to Widjaja and Widjaja (2022), the efficacy of the e-learning process is believed to be significantly impacted by interaction-based activities.

The study done by Widjaja and Widjaja (2022) aimed to assess the influence of interaction variables and learner characteristics on perceived utility and perceived satisfaction inside the learning system, as well as their subsequent effect on intention continuancy.

The study was conducted at an institution of learning located in Jakarta, Indonesia, with a sample of 120 undergraduates who were enrolled in accounting and management programmes. The researchers reached the conclusion that the influence of interaction on the perception of usefulness is statistically significant. Furthermore, Baki et al. (2020) have found a significant association between the perceived utility of digital learning systems (DLS) and the inclination to continue using them. The researchers examined the impact of external factors on students' satisfaction and intention to use Digital Learning Systems (DLS) using the concepts of Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). The consideration of factor interaction is considered to be a significant variable in the field of PU. In contrast, learners may exhibit a preference for accessing instructional videos online as a potential resolution to their challenges. Additionally, the system's ability to facilitate efficient and timely communication between instructors and students has a significant influence on their view of the advantages it offers. In a separate investigation conducted by Yoo, Lee, and Park (2010), it was shown that effective communication with consumers plays a vital role in achieving corporate success. The findings from the screening procedure indicate that the presence of two-way interactivity is a significant determinant of both hedonic value and utilitarian value for customers.

H9: Interaction positively affects the PU of the e-learning.

H10: Interaction positively affects the PEOU of the e-learning.

H11: Interaction positively affects the PE of the e-learning.

4.6. Effects of Instructor Related Factors

4.6.1. Attitude Towards Students

Collis (1995) underlined the significance of instructors within the e-learning system, asserting that the efficacy of learning is contingent upon the instructional implementation of technology rather than the technology itself.

Students who enrol in a course instructed by a technologically supportive and positively inclined instructor are more likely to encounter favourable learning outcomes. In distributed learning environments, students often experience a sense of isolation due to the absence of a conventional classroom setting that facilitates direct engagement with the instructor. In order to tackle this matter, educators could utilise interactive pedagogical approaches and actively promote student participation, hence cultivating a more immersive learning encounter (Volery & Lord, 2000). Webster and Hackley (1997) believe that the disposition towards students, pedagogical approach, and management of technology exert influence on internet-based learning.

The behaviour of users is directly influenced by the attitude of the instructor (Zhou, 2011). According to Cheng (2012), students are more likely to see the e-learning system as pleasant and valuable when instructors demonstrate a considerate approach to managing their online education and promptly address their needs.

By performing interactive teaching styles characterised by clear explanations and actively facilitating interactions between learners and instructors, instructors have the potential to create an environment where learners eagerly engage in such interactions. As a result, these

learners are more likely to encounter a state of flow during the e-learning process (Cheng, 2012). Instructor's positive attitude plays a significant role in fostering students' inclination to utilise the system. (Volery & Lord, 2000). According to Lee, Yoon, and Lee (2009), instructor attitude and care about the learners' needs positively affect the PU. According to Choi et al. (2007), instructor attitude positively affects the PE of the system. The study done by Cheng (2012) aimed to identify the elements that influence employees' acceptance of e-learning. The study's results indicate that both PU (Problem-based Learning) and PE (Project-based Learning) demonstrate positive outcomes when implemented with a student-centered approach.

The construct of Perceived Ease of Use (PEOU) has an indirect influence on the intention to use the system, mediated by Perceived Usefulness (PU) and Perceived Enjoyment (PE). Additionally, the link between external factors, PU, PEOU, and intention is found to be favourable. The results align with the expected findings for this research.

In contrast, Ibrahim et al. (2017) conducted a study that specifically focused on assessing the level of acceptability among students in higher education towards e-learning. Notably, their research did not incorporate variables such as attitude, instructor traits, and perceived usefulness (PU) into their model. The researchers discovered that of the factors examined, namely computer self-efficacy, perceived ease of use (PEOU), and intention, only these three variables exhibited a statistically significant relationship with students' utilisation of electronic learning in the context of higher education.

H12: Instructor attitude towards students positively affects the PU of the e-learning.

H13: Instructor attitude towards students positively affects the PEOU of the e-learning.

H14: Instructor attitude towards students positively affects PE in the e-learning.

4.6.2. Instructor Technical Competence

Technical issues are a common occurrence for students in distance learning classes. Therefore, it is vital for the educator to exhibit superior technological skills and be capable of executing fundamental troubleshooting duties. Haynes, Pouraghabagher, and Seu (1997) emphasise that the instructor's mastery of technology is closely intertwined with their organisational skills. According to Volery and Lord's 2000 study, a questionnaire was given to 47 undergraduate students enrolled in Global Business 650 to gauge success criteria in online education. The results show that the lecturers should be very skilled in using the technology.

However, the instructor's role extends beyond being a mere repository of knowledge; they can serve as a valuable knowledge navigator of the system technology alongside the internet.

From the standpoint of student-centered learning, the implementation of e-learning necessitates the incorporation of interactive and reciprocal discussions. Therefore, it is imperative for educators to obtain the requisite competencies and demonstrate the mandated expertise in the creation of instructional materials for online learning. This allows individuals to effectively leverage their knowledge and skills in the digital learning setting, in accordance with the particular demands of their respective disciplines. Eslaminejad, Masood, and Nor (2010) performed a survey of 60 medical academic members in Iran to assess the correlation between instructor technical ability and e-learning. A significant disparity was identified between the level of technical proficiency in e-learning and the computer skills possessed by instructors.

In the existing body of scholarly works, there aren't enough studies pertaining to the instructor's technical competence. Most of the literature pertains to the computer's self-efficacy and attitude towards the instructor. This study aimed to make a contribution to the literature in terms of instructor technical competence from the perspective of TAM.

H15: Instructor technical competence positively affects the PU of the e-learning.

H16: Instructor technical competence positively affects the PEOU of the e-learning.

H17: Instructor technical competence positively affects the PE of the e-learning.

4.7. Effects of Course Related Factors

4.7.1. Course Content Quality

Kumar, Saxena, and Baber (2021) give the definition of course content as: Learning content encompasses a wide range of elements within various subjects or learning domains, including knowledge, skills, values, attitudes, beliefs, behaviours, concepts, and facts.

These components are typically organised and grouped together to form the foundation of teaching and learning. Additionally, e-learning content refers to digital files such as documents, presentations, audio recordings, or video materials that are utilised in the delivery of online learning experiences (Ehlers, 2004).

According to Cheng (2012), information quality pertains to the excellence of both the content and form of reports generated by information systems (IS). It holds considerable influence over perceived utility and perceived simplicity. Moreover, elevated levels of information quality can also contribute to heightened user playfulness.

Within the e-learning context, the most commonly utilised indicators of information quality encompass the quality of course content and the quality of course design. In addition, his study presents that the course content quality positively affects PU, PEOU, and PE, as it is tried to be shown in the purposed study.

The present study conducted by Shishakly (2021) investigates the primary determinants of e-learning utilisation among instructors and students in universities located in the United Arab Emirates (UAE). The beneficial significance of CCD on participants' perceived usefulness

and perceived inclination to use online educational tools is widely acknowledged. This study aims to elucidate the impact of CCD on PU and PEOU, while also intentionally examining the influence of CCD on PE and intentions to use.

H18: Course content quality positively affects the PU of the e-learning.

H19: Course content quality positively affects the PEOU of the e-learning.

H20: Course content quality positively affects the PE of the e-learning.

4.7.2. Course Design Quality

The concept of course design comprises a range of elements that establish the framework and substance of a given course. The components encompassed under the course framework consist of course content, goals for instruction, course layout, and course output. These elements collectively contribute to the overall structure and consequences of the course. According to Almaiah and Alyoussef (2019).

In their study, Almaiah and Alyoussef studied 600 undergraduate and graduate students at King Faisal University. As an extension of e-UTAUT, the most crucial elements from the literature covering course design showed that course design significantly improves real system utilisation.

The significance of the course material is of great value to learners in the design of online courses. According to Cheng (2012), the successful adaptation of online course design to accommodate learners' diverse demands and provide accessible access to learning materials leads to a favourable perception of usefulness among learners in relation to the utilisation of the e-learning system.

In a study conducted by Sun, Tsai, Finger, Chen, and Yeh (2008), the researchers examined many variables, including student, educator, course, technology, layout, and surroundings, in

order to investigate their impact on learners' satisfaction. The dimensions of e-learning have a favourable impact on satisfaction. Ibrahim and colleagues conducted a study to assess the impact of course design on the Perceived Ease of Use (PEOU), as documented in prior research. The researchers reached the conclusion that Perceived Ease of Use (PEOU) exerts a substantial impact on individuals' propensity to adopt and utilise e-learning platforms. In addition to examining the impact of CDQ on PU and PEOU, the primary objective of this study was to elucidate the association between course design quality and perceived enjoyment.

H21: Course design quality positively affects the PU of the e-learning.

H22: Course design quality positively affects the PEOU of the e-learning.

H23: Course design quality positively affects the PE of the e-learning.

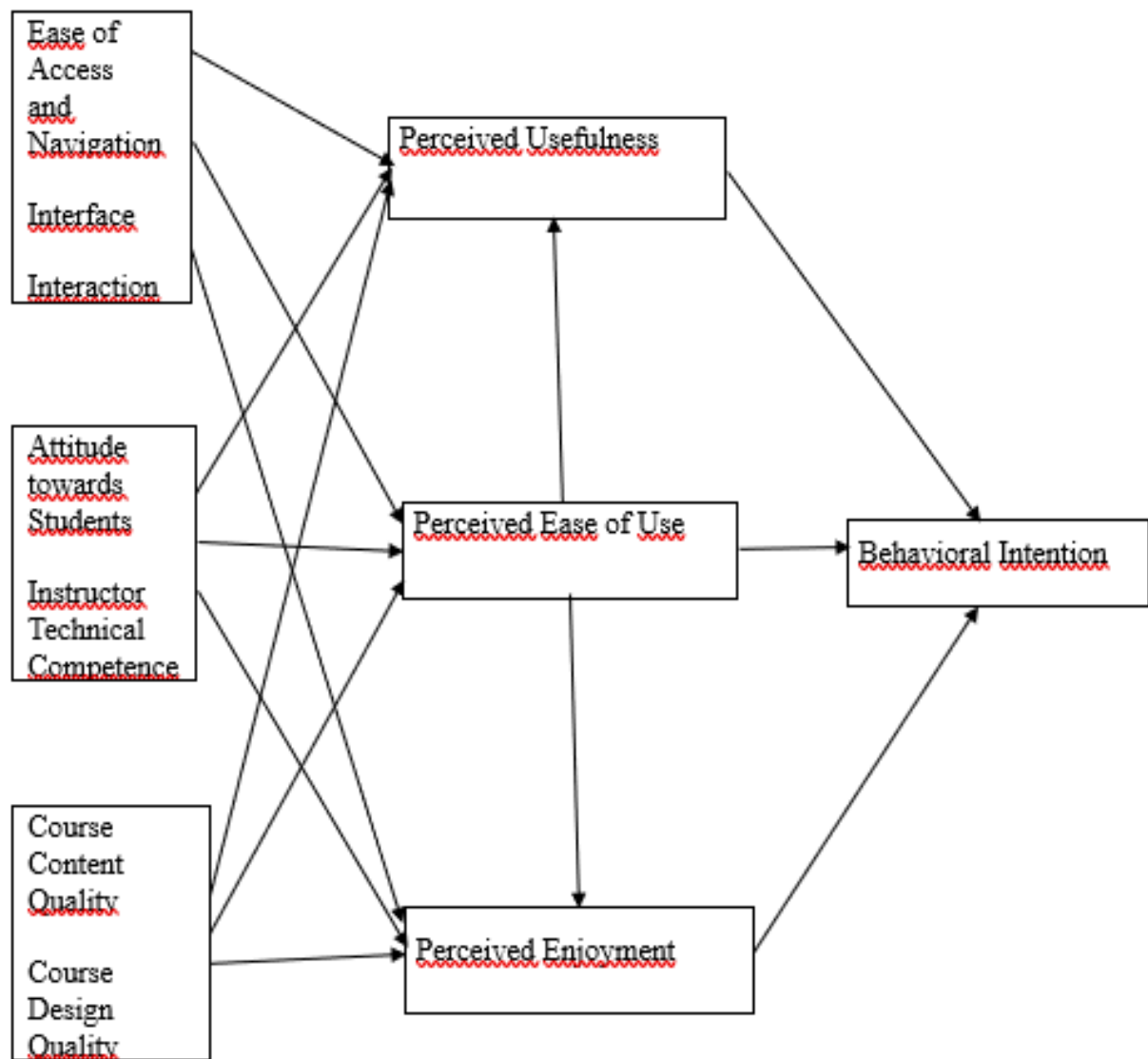


Figure 7: Research Model

5. METHODOLOGY

The present study employs a comprehensive analysis of the extant literature, with a specific emphasis on e-learning and the determinants influencing individuals' behavioural intent to adopt electronic learning (Chang et al., 2017). The present use of e-learning can be deduced from the prominent studies on the technological adoption model developed by Davis (1989), which highlight external influences. A comprehensive analysis of the existing literature reveals that there are three primary components that exert influence on PU (Perceived Usefulness), PEOU (Perceived Ease of Use), PE (Perceived Enjoyment), and BI (Behavioural Intention).

5.1. Data Collecting and Sampling Method

The study encompassed a sample size of 209 individuals who were adults and had utilised a minimum of one e-learning platform for their educational pursuits. The questionnaire items underwent a thorough evaluation process by professionals, resulting in appropriate modifications being implemented. The data were collected via an online survey administered using Google Forms.

A total of 209 participants, representing diverse demographic backgrounds, were surveyed and requested to complete the questionnaire. The survey instrument utilised a 5-point Likert scale format. The questionnaire was partitioned into four distinct sections. The initial inquiry pertains to the commonly utilised e-learning platforms. Subsequently, the first three sections of the questionnaire concentrate on technology-related factors, instructor-related factors, and course-related factors.

The objective is to assess the impact of independent and dependent variables on the intention to utilise e-learning, as depicted in Table 2. The final section of the study centres on demographic characteristics and the frequency of internet usage.

The data is processed using Google Forms and sent via email, WhatsApp, or Instagram integrated with Messenger. 209 people in total responded to the survey. 15 persons participated in a pilot research to gauge the consistency of the questions. The samples are chosen from various demographics who have experience with at least one e-learning web site. The data were collected between the dates 02/01/2023-02/03/2023.

5.2. Variables, Sub-scale Sentences & Sources

Table 4: Variables & Sources

Interface	
Information was well structured and presented.	Volery and Lord (2000)
I found screen design pleasant.	Volery and Lord (2000)
Web site contained useful features.	Volery and Lord (2000)
Interaction	
The website provided me with immediate feedback.	Volery and Lord (2000)
Through Web, I could communicate with students.	Volery and Lord (2000)
I have the capability to easily establish communication with the instructor.	Volery and Lord (2000)
Instructor Attitude Towards Students	
The instructor shown a high level of enthusiasm in delivering the course content.	Volery and Lord (2000)
I was engaged by the instructor's presentational manner.	Volery and Lord (2000)
Instructor was friendly towards individual students	Volery and Lord (2000)
The instructor had a sincere and authentic interest in the students.	Volery and Lord (2000)
The students experienced a sense of tolerance and encouragement while seeking information or assistance.	Volery and Lord (2000)
The instructor demonstrates a timely response to student emails via the e-learning system.	Choi et al. (2007)
The lecture notes in the e-learning system are regularly updated by the teacher for the benefit of the students.	Ozkan and Koseler (2009)
Teacher Technical Competence	
Teacher encouraged student interaction	Volery and Lord (2000)
Teacher handled Web technology effectively	Volery and Lord (2000)
Teacher gave instructions on how to use the website.	Volery and Lord (2000)

I believe teacher was eager for us to use the website.	Volery and Lord (2000)
Course Content Quality	
I can get enough educational material through online learning platform.	Arbaough (2000)
Online learning platform frequently offers the most recent information.	Lee (2006)
The e-learning platform can give me the learning materials I require.	Lee et al. (2009)
Course Design Quality	
The instructional material's degree of difficulty is adequate.	Choi et al. (2007)
The learning content delivery schedule is configurable.	Lee et al. (2009)
I can get individualised learning management through online learning platform	Lee et al. (2009)
Perceived Usefulness	
My ability to learn is enhanced by using the e-learning system.	Davis (1989)
My ability to learn more effectively thanks to the online learning platform	Ngai et al. (2007)
I have more control over my learning thanks to online learning platform	Ngai et al. (2007)
In my learning, I found online learning method helpful.	Ngai et al. (2007)
Perceived Ease of Use	
The mental effort required for engaging with online learning platform is minimal.	Davis (1989)
Usage of online learning platform is simple for me.	Ngai et al. (2007)
Communication with the online learning platform is understandable and clear.	Ngai et al. (2007)
Enabling the customization of the e-learning system to align with my desired objectives is an easy task for me.	Ngai et al. (2007)
Perceived Enjoyment	
I find the utilisation of online learning to be quite valuable.	Davis et al. (1992)
Utilising online learning platform is a nice experience.	Lee et al. (2005)
I enjoy utilising online learning platform.	Lee et al. (2005)
Intention to Use	
I'll continue to regularly use online learning platform.	Matheison (1991)
In the following period, I intend utilising online learning curriculum on a regular basis.	Bhattacharjee (2001)
I will advocate for the utilisation of the online learning platform.	Roca et al. (2006)

6. FINDINGS

6.1. Sample Profile

Among the participants answered the questionnaire, 33,49% were men and 66,50% were women. The majority of them 41 to 50 years old, making up up to 38,75% of the samples, followed by 20 to 30 16,74%, 31 to 40 37,32%, and 51 to 60 5,74%. The majority of those answering the questionnaire spent 0 to 3 hours on the internet, making up 47,36% of the sample, followed by 3 to 6 hours (37,79%), 6 hours, and above 14,83%. The vast majority of respondents have an undergraduate degree (79.90%), followed by an advanced degree (11% and a minority of the respondents have a high school degree (6.22%). Among the respondents, 169 work actively, which makes up 80, 36%, and 40 don't work, which makes up 19%. 118 respondents are teachers (56.5%), and 91 belong to other jobs (43.54%). The majority of respondents earn 15.000 and above (77.99%), followed by 10.000 to 15.000 (11.96%), 8506 to 10.000 (6.22%), and 0 to 8505 (3.28%). The demographic information is presented in Table 3.

Table 5: Demographics of Characteristics

Sample Demographics		
Baseline Characteristics	N	%
Gender		
Female	139	%66,50
Male	70	%33,49
Age		
20-30	38	%16,74
31-40	78	%37,32
41-50	81	%38,75
51-60	12	%5,74
Education		
High School Degree	13	%6,22
Bachelors Degree	23	%79,90
Masters Degree	23	%11
Occupation		
Occupied	169	%80,86
Not Occupied	40	%19,13
Jobs		
Teacher	118	%56,45
Other Jobs	91	%43,54
Daily Internet Usage Rate		
0-3 hours/day	99	%47,63

3-6 hours/day	79	%37,79
6 hours and above	31	%41,83

6.2. Descriptive Statistics

The questionnaire was applied to 209 respondents. A Likert was chosen for the entire study, which consists of 46 questions. Of the 7 demographics, 2 are about the e-learning sites. The rest of the 37 questions are about the variables of the study. In order to ensure the normality of the data, descriptive statistics are applied in Table 4. The highest mean is identified. “Usage of online learning platform is simple for me. ” (PEOU), which is calculated at 3,78. The lowest mean is identified as “ Through the Web, I could communicate with students.” (interaction), which is calculated at \$3,00. For Skewness and Kurtosis testing, all response values are between -2 and +2, which is generally in the acceptable range and provides a lack of outliers. (George D., 2011; George & Mallery, 2011). The data exhibits a relatively normal distribution.

Table 6: Descriptive Statistics of Independent Variables

Variable	Mean	SD	Skewness	Kurtosis
Technology Related Variables				
Techn. 1	3,7560	1,25299	,168	,335
Techn. 2	3,6124	1,27401	,168	,335
Techn. 3	3,7895	1,23790	,168	,335
Techn. 4	3,3923	1,24388	,168	,335
Techn. 5	3,0048	1,38153	,168	,335
Techn. 6	3,2440	1,44873	,168	,335
Instructor Related Variables				
Inst. 1	3,4737	1,45791	,168	,335
Inst. 2	3,4641	1,42771	,168	,335
Inst. 3	3,4163	1,51401	,168	,335

Inst. 4	3,4163	1,53295	,168	,335
Inst. 5	3,4785	1,47764	,168	,335
Inst. 6	3,2344	1,51517	,168	,335
Inst. 7	3,4354	1,48612	,168	,335
Inst. 8	3,4306	1,50519	,168	,335
Inst. 9	3,5694	1,49879	,168	,335
Inst. 10	3,4258	1,55523	,168	,335
Inst. 11	3,5167	1,53202	,168	,335
Content Related Variables				
Cont. 1	3,5646	1,13379	,168	,335
Cont. 2	3,6459	1,11760	,168	,335
Cont. 3	3,7033	1,14692	,168	,335
Cont. 4	3,6507	1,09083	,168	,335
Cont. 5	3,5598	1,12126	,168	,335
Cont. 6	3,6890	1,18237	,168	,335
Perceived Usefulness				
Pu 1	3,6842	1,20328	,168	,335
Pu 2	3,7321	1,13297	,168	,335
Pu 3	3,6603	1,13697	,168	,335
Pu 4	3,7847	1,11655	,168	,335
Perceive Ease of Use				
Peou 1	3,2823	1,23713	,168	,335
Peou 2	3,7943	1,14806	,168	,335
Peou 3	3,6746	1,12206	,168	,335

Peou 4	3,7799	1,13907	,168	,335
Perceived Enjoyment				
Pe 1	3,6077	1,15156	,168	,335
Pe 2	3,7129	1,11970	,168	,335
Pe 3	3,6842	1,12907	,168	,335
Intention				
Int. 1	3,6411	1,17687	,168	,335
Int. 2	3,6459	1,13891	,168	,335
Int. 3	3,6699	1,18934	,168	,335

The initial set of inquiries aimed to ascertain the perspectives of participants regarding the information and screen design of the e-learning platforms. The subsequent three inquiries pertained to the level of interaction exhibited by the online lessons. In order to ascertain the impact of the instructor's attitude, respondents were posed with a series of seven inquiries. There are three inquiries pertaining to the quality of the information, followed by three inquiries concerning the presentation of that information during the duration of the course. The remaining inquiries were conducted to ascertain the extent of Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Perceived Enjoyment (PE) among the participants of e-learning platforms. The final trio of questions focused on the respondents' intentions to utilise e-learning websites.

6.3. Data Analysis

Questionnaires that had been prepared via Google Forms were transferred into Excel form, and the data gathered through Likert scales 1–5 were analysed with the aid of SPSS. The analyses performed in the study are factor analysis and reliability analysis, followed by hypothesis testing.

6.3.1. Factor Analysis

By utilizing factor analysis, the objective is to reduce the quantity of items by identifying underlying dimensions that may be utilised in regression models.

The study employed exploratory factor analysis using component evaluation and rotation of varimax with Kaiser normalisation. An essential prerequisite for conducting factor analysis is the presence of a certain level of correlation or relationship among variables.

The Bartlett's sphericity test assesses the presence of a significant link between variables. When the p-value of the Bartlett test is less than the predetermined significance level of 0.05, it indicates the presence of a statistically significant link between the variables, which is deemed enough for the purpose of conducting factor analysis. In the event that the outcome of this test does not yield statistical significance, it might be inferred that the variables under consideration are not appropriate for factor analysis. (Durmuş, Yurtkoru & Çinko, 2022).

For his study, KMO and the Bartlett Test, communalities, and explained variance For all the variables, Eigenvalue was selected as 1. The outcomes of the factor analysis are illustrated in the following manner:

A score of $p = 0.000 < 0.05$ means that the results are an excellent example of all and higher than $KMO = .500$.

It can be inferred that the study is appropriate for conducting factor analysis.

The KMO study is afterwards extended by the application of the Cronbach alpha test in order to assess the reliability factor.

Moreover value of total loading is 75,252.

Table 7: Rotated Component Matrix of Factors

	Component		
	1	2	3
InsAttitude4	,841		
InsTech2	,839		
InsAttitude3	,837		
InsAttitude5	,803		
InsTech4	,799		
InsAttitude2	,790		
InsAttitude1	,785		
InsTech3	,774		
InsTech1	,761		
InsAttitude7	,697		
InsAttitude6	,694		
ContQual3		,893	
DesQual1		,878	
DesQual3		,878	
ContQual2		,866	
ContQual1		,857	
DesQual2		,817	
Interaction3			,790
Interaction1			,754
Interaction2			,707
Interface2			,705
Interface1			,673
Interface3			,653

Factors are above score of .500 in table of Rotated Component Matrix. Consequently, seven factors dropped to three. Proposed factors are:

1. Technology = Interaction + Interface
2. Instructor = Attitude + Technical Competence
3. Course = Design Quality + Content Quality

After redesigning the factors based on KMO and Bartlett's tests, the results were significant. According to the rotated component matrix, all factors, since interface 1 (.673) and interface 3 (.653) are above 0.700, the result is considered meaningful.

6.3.2. Reliability Analysis

The Cronbach tests the reliability factor. The rates of alpha coefficients explain the need for repetition in factor analysis. High alpha coefficients indicate that there is no need to repeat the factor analysis. The Cronbach value of technology = interaction + interface factor is .920, .958 for instructor = attitude + technical, and .961 for course = design quality + content quality. All results are above 0.800; in this way, all of the independent factors are reliable. This is the new classification of independent variables in the model.

The model incorporated factor analysis and reliability analysis to assess the dependent variables, namely perceived usefulness (PU), perceived ease of use (PEOU), perceived enjoyment, and intention to use.

The results of the KMO and Bartlett's test are presented as PU = .878 and $p < .001$, PEOU = .835 and $p < .001$, PE = .773 and $p < .001$, and intention to use = .760 and $p < .001$ are significant.

When we consider the total variance values, %91,251 of PU, %81,255 of PEOU, %93,196 of PE, and %93,432 of intention are explained by the components.

Cronbach alpha test results of reliability statistics: PU is .968, PEOU is .920, PE is .963, and intention is .964. All results are above 0.800, which means all of the dependent factors are reliable.

The hypotheses that were first proposed have undergone a revision, resulting in the presentation of the study model depicted in Figure 7.

Table 8: Proposed Hypotheses

H1	Perceived usefulness positively affects to intention to use of e-learning.
H2	Perceived ease of use positively affects the perceived usefulness of e-learning.
H3	Perceived ease of use positively affects the perceived enjoyment of e-learning.

H4	Perceived ease of use positively affects the intention to use of e-learning.
H5	Perceived enjoyment positively affects the intention of e-learning.
H6	Perceived usefulness positively affects intention to use.
H7	Perceived ease of use positively affects intention to use.
H8	Interface of the web site positively affect perceived enjoyment of e-learning.
H9	Interaction of the web site positively affects the PU of the e-learning.
H10	Interaction of the web site positively affects the PEOU of the e-learning.
H11	Interaction of the web site positively affects the PE of the e-learning.
H12	Instructor's attitude towards students positively affects the PU of the e-learning.
H13	Instructor's attitude towards students positively affects the PEOU of the e-learning.
H14	Instructor's attitude towards students positively affects PE in the e-learning.
H15	Instructor's technical competence positively affects the PU of the e-learning.
H16	Instructor's technical competence positively affects the PEOU of the e-learning.
H17	Instructor's technical competence positively affects the PE of the e-learning.
H18	Course content quality positively affects the PU of the e-learning.
H19	Course content quality positively affects the PEOU of the e-learning.
H20	Course content quality positively affects the PE of the e-learning.
H21	Course design quality positively affects the PU of the e-learning.
H22	Course design quality positively affects the PEOU of the e-learning.
H23	Course design quality positively affects the PE of the e-learning.

The proposed hypotheses have been redesigned after factor analysis and variables loaded on technology, instructor and course related factors. Moreover we revised our hypotheses as in Table 9.

Table 9: Revised Hypotheses

H1	Technology related factors positively affects perceived usefulness.
H2	Technology related factors positively affects perceived ease of use.
H3	Technology related factors positively affects perceived enjoyment.
H4	The instructor related factors positively affects perceived usefulness.
H5	The instructor related factors positively affects perceived ease of use.
H6	The Instructor related factors positively affect perceived enjoyment.

H7	Course related factors positively affect perceived usefulness.
H8	Course related factors positively affect perceived ease of use.
H9	Course related factors positively affects perceived enjoyment.
H10	Perceived usefulness positively affects intention to use.
H11	Perceived ease of use positively affects perceived usefulness.
H12	Perceived ease of use positively affects perceived enjoyment.
H13	Perceived ease of use positively affects intention to use.
H14	Perceived enjoyment positively affects intention to use.

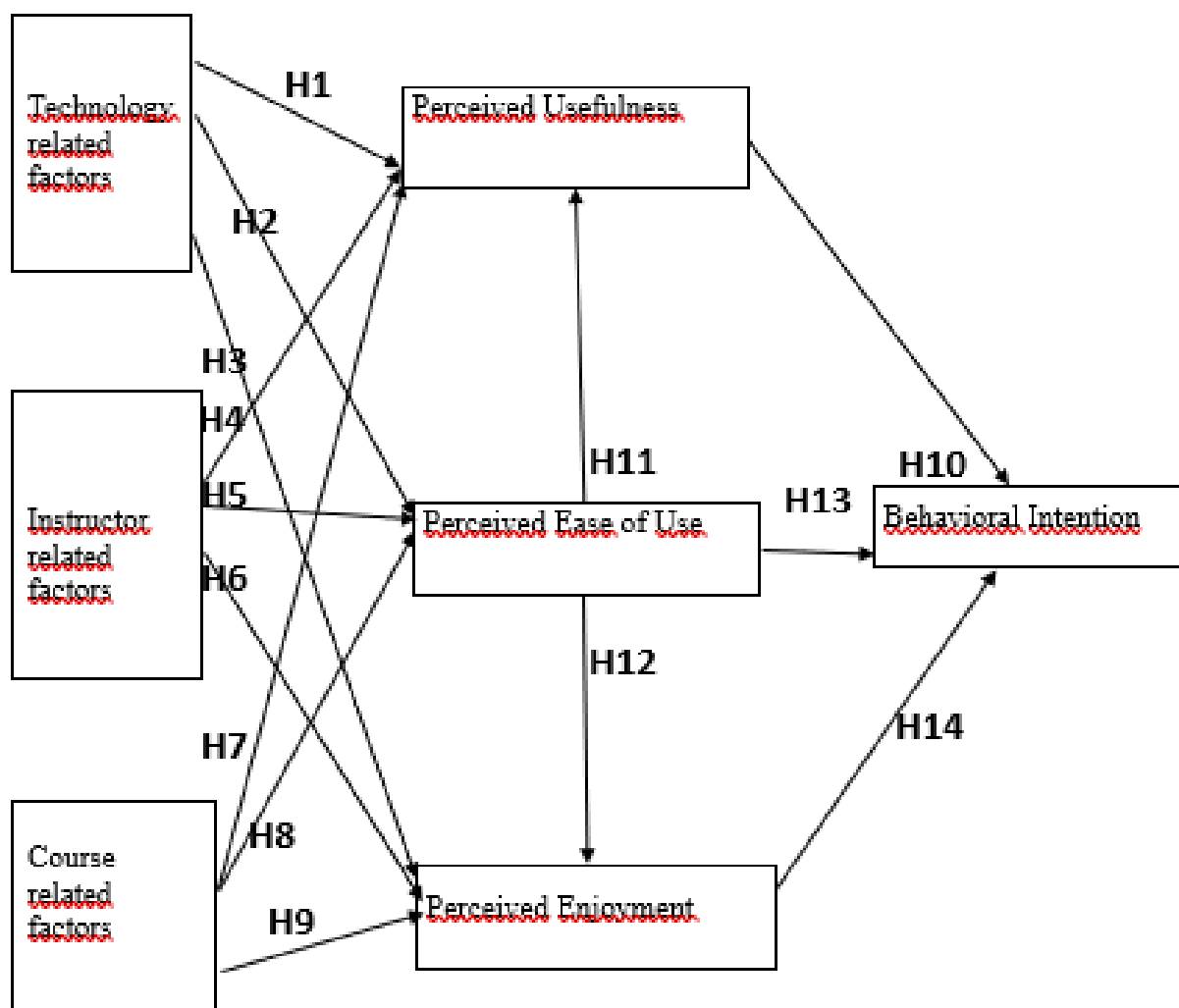


Figure 8: Revised Hypotheses

6.4. Correlation Analysis & Hypothesis Testing

The correlations between technology, instructor, and course as independent factors and perceived utility as a dependent factor elucidate the link.

Based on the chosen significance level, it is evident that a positive association exists among the variables of perceived usefulness (PU), technology, instructor, and course. The observed data in the aforementioned table exhibit a substantial connection with PU, as indicated by a p-value of less than 0.01 ($P < 0.01$).

Table 10: Correlation Analysis

		Perceived Usefulness	Technology	Instructor	Course
Pearson Correlation	Perceived Usefulness	1,000	,537	,491	,774
	Technology	,537	1,000	,655	,620
	Instructor	,491	,655	1,000	,476
	Course	,774	,620	,476	1,000
Sig. (1-tailed)	Perceived Usefulness	.	,000	,000	,000
	Technology	,000	.	,000	,000
	Instructor	,000	,000	.	,000
	Course	,000	,000	,000	.
N	Perceived Usefulness	209	209	209	209
	Technology	209	209	209	209
	Instructor	209	209	209	209
	Course	209	209	209	209

The subsequent stage of the research, referred to as the regression analysis, was performed utilising dependent factors and predictive variables. The independent factors in this study consist of elements related to technology, instructor characteristics, and course characteristics. Perceived usefulness, perceived ease of use, and perceived enjoyment will be included as both independent and dependent factors in the study. The factor that is dependent in this study is the intention to use.

6.4.1. Determinants of Perceived Usefulness

Course, instructor, and technology have been used as determinants that indicate independent factors, while the dependent factor is perceived usefulness.

Table 11: Determinants of Perceived Usefulness Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,787 ^a	,619	,613	,68192	1,859

Technology positively affects PU for revised model .

From the table above, these variables explain 61.3% of perceived usefulness, as we can see from the adjusted R square value. Also, we can state that the model is significant since the sig. value of 0.000 suggests the ANOVA test.

Table 12: Determinants of Perceived Usefulness ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	154,607	3	51,536	110,825	,000 ^b
	Residual	95,329	205	,465		
	Total	249,936	208			

According to the findings, a difference that is statistically significant was found in the PU ($p < 0.05$). A favourable link between each factor can be predicted.

Table 13: Determinants of Perceived Usefulness towards Intention to Use Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,549	,185		2,970	,003		
	Technology	,001	,064	,001	,022	,982	,448	2,230
	Instructor	,137	,050	,158	2,744	,007	,563	1,775
	Course	,739	,059	,698	12,613	,000	,607	1,647

Course design's beta value was computed ($\beta.698$), which means course design is the most significantly meaningful of the variables. H1, about technology related factors is rejected ($\beta.001$), but H4, about instructor related factors ($\beta.158$) is accepted and H7, about course related factors ($\beta.698$) is accepted. Behind this, there is no multi-collinearity since the VIF values below 10 are still acceptable.

6.4.2. Determinants of Perceived Ease of Use

The independent variables in this study include course, instructor, and technology, while the dependent variable is perceived ease of use.

Table 14: Determinants of Perceived Ease of Use Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,762 ^a	,580	,574	,68132	2,043

From the table above, these variables explain 57.4% of perceived ease of use, as we can see from the adjusted R square value. Also, we can state that the model is significant since the sig. value of 0.000 suggests the ANOVA test.

Table 15: Determinants of Perceived Usefulness ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	131,591	3	43,864	94,493	,000 ^b
	Residual	95,162	205	,464		
	Total	226,753	208			

According to the findings, a difference that is statistically significant was found in the PEOU ($p < 0.05$).

A favourable link between the variables can be predicted.

Table 16: Determinants of Perceived Ease of Use Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,687	,185		3,721	,000		
	Technology	,055	,064	,058	,857	,392	,448	2,230
	Instructor	,107	,050	,129	2,137	,034	,563	1,775
	Course	,657	,059	,651	11,216	,000	,607	1,647

Course design's beta value was computed ($\beta.651$), which means course design is the most significantly meaningful of the variables. H2, about technology related factors is rejected ($\beta.058$) but H5, about instructor relates factors($\beta.129$) and H8, about course design ($\beta.651$) are accepted. Behind this, there is no multi-collinearity since the VIF values below 10 are still acceptable.

6.4.3. Determinants of Perceived Enjoyment

Table 17: Determinants of Perceived Enjoyment Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,766 ^a	,587	,581	,70790	1,928

From the table above, these variables explain 58.1% of perceived enjoyment; we can see that from the adjusted R square value. Also, we can state that the model is significant since the sig. value of 0.000 suggests the ANOVA test.

Table 18: Determinants of Perceived Enjoyment ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	146,269	3	48,756	97,294	,000 ^b
	Residual	102,730	205	,501		
	Total	248,999	208			

According to the findings, a difference that is statistically significant was found in the PE ($p < 0.05$). A favourable link between the variables can be predicted.

Table 19: Determinants of Perceived Enjoyment Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	,540	,192		2,818	,005		
Technology	,103	,066	,104	1,558	,121	,448	2,230
Instructor	,106	,052	,122	2,049	,042	,563	1,775
Course	,661	,061	,625	10,863	,000	,607	1,647

Course design's beta value was computed ($\beta.625$), which means course design is the most significantly meaningful of the variables. H3, about technology related factors is rejected ($\beta.104$), but H6, about instructor related factors ($\beta.052$) and H9, about course related factors are accepted. Behind this, there is no multi-collinearity since the VIF values below 10 are still acceptable.

6.4.4. Determinants of Intention to Use

Table 20: Determinants of Intention to Use Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,920 ^a	,846	,844	,44574	2,050

From the table above, these variables explain 84.4% of the intention to use e-learning sites, as we can see from the adjusted R square value. Also, we can state that the model is significant since the sig. Value sig. Value sig. 0.000 suggests from the ANOVA test.

Table 21: Determinants of Intention to Use ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	224,450	3	74,817	376,567	,000 ^b
Residual	40,729	205	,199		
Total	265,179	208			

According to the findings, a statistically significant difference was found in intention ($p < 0.05$).

A favourable link between the variables can be predicted.

Table 22: Determinants of Intention to Use Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	,008	,115		,070	,945		
Perceived Usefulness	,508	,061	,493	8,394	,000	,217	4,610
Perceived Ease of Use	,072	,065	,066	1,104	,271	,209	4,791
Perceived Enjoyment	,408	,072	,395	5,659	,000	,154	6,514

H10, about PU, most significantly meaningful of the variables ($\beta.493$), is accepted and that is followed by H14, about PE ($\beta.395$) is accepted. H11, about PEOU is rejected ($\beta.066$) but H10 about PU and H14 about PE are accepted. Behind this, there is no multi-collinearity since the VIF values below 10 are still acceptable.

6.5. Hypothesis Testing

Table 23: Hypothesis Testing Results

H1	Technology related factors positively affects perceived usefulness.	Rejected
H2	Technology related factors positively affects perceived ease of use.	Rejected
H3	Technology related factors positively affects perceived enjoyment.	Rejected
H4	Instructor related factors positively affects perceived usefulness.	Not Rejected
H5	Instructors related factors positively affects perceived ease of use.	Not Rejected
H6	Instructors related factors positively affects perceived enjoyment.	Not Rejected
H7	Course related factors positively affects perceived usefulness.	Not Rejected
H8	Course related factors positively affects perceived ease of use.	Not Rejected
H9	Course related factors positively affects perceived enjoyment.	Not Rejected
H10	Perceived usefulness positively affects intention to use.	Not Rejected
H11	Perceived ease of use positively affects perceived usefulness.	Rejected

H12	Perceived ease of use positively affects perceived enjoyment.	Not Rejected
H13	Perceived ease of use positively affects intention to use.	Not Rejected
H14	Perceived enjoyment positively affects intention to use.	Not Rejected

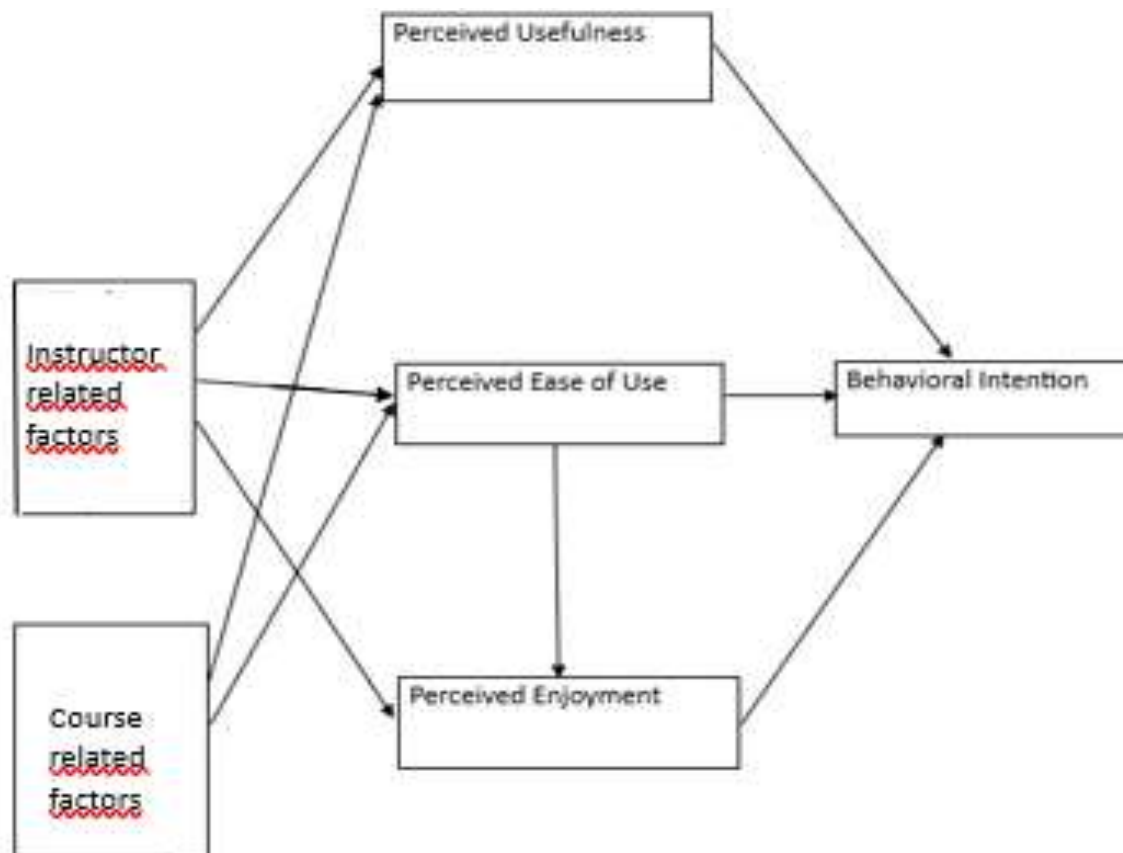


Figure 9: Revised Hypotheses Testing

7. DISCUSSION AND CONCLUSION

Web-based learning is a distinctive advancement of the traditional education system. Especially as a result of isolation attempts during the COVID-19 pandemics, strict precautions were taken in the education system. Schools were closed, and students attended their classes by accessing the internet via their electronic devices in their houses. This situation led the e-learning systems to have greater place and importance in our lives. Moreover, people and organisations needed to adapt themselves to the new system. This study was undertaken within the framework of the Technology Acceptance Model (TAM) to evaluate the usage of remote education across all levels of education. Initially, a total of 26 hypotheses were formulated. However, based on the applied factor analyses, the hypotheses were revised. Data analysis was carried out with the revised set of 14 hypotheses. The data analysis generated hypotheses. The hypotheses related to instructor and course quality were found to be supported, whilst hypotheses related to technology were found to be unsupported. The theory regarding the impact of technology on perceived usefulness (PU), perceived ease of use (PEOU), and perceived enjoyment (PE) has been rejected. In regard to factors of technology (interaction and interface), they were found to have insignificant effects on PU, PEOU, and PE.

The findings of this research indicate a positive impact of teachers on Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Perceived Enjoyment (PE). The result is consistent with the studies of Volery & Lord (2000), Choi et al. (2007), and Cheng (2011). Students who are enrolled in a course taught by a trainer who demonstrates a good attitude to remote learning and who actively supports the integration of technological devices are more likely to experience beneficial educational outcomes. Technical issues frequently arise in online distance learning courses via the internet. Therefore, it is imperative for the trainer to have

mastery over technological devices and the capacity to do basic troubleshooting tasks (Volery & Lord, 2000). Demonstrating the communicative and supportive behaviour of an instructor leads students to become more concentrated and feel enthusiastic during the courses.

The findings of this study indicate that both the material and layout quality of a course have a favourable impact on Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Perceived Enjoyment (PE). Regarding course content and design (CCD), there exists a constructive impact on the perception of usefulness (PU). This study posits that a student's propensity to utilise e-learning tools is influenced by the content and design of the course. This discovery aligns with prior research, emphasising the notable influence of content quality on perception of usefulness (PU). This finding aligns with the research investigations conducted by Shishakly (2021) and Cheng (2011). The content and design of a course exhibit a favourable impact on the Perceived Ease of Use (PEOU). When e-learning is designed to cater to the specific needs of learners and provides accurate and consistent content, it fosters a sense of ease and efficiency among learners in utilising the e-learning platform. The user-friendly nature of the e-learning system is further enhanced by the online course layout, which effectively accommodates the different needs of learners and improves their accessibility to learning resources.

The present study demonstrates that the design and content of a course have a beneficial impact on learners' perceived effectiveness of physical education (PE) when they think that the course material and design provided by the online learning system are well-suited to their particular needs. This alignment will facilitate a seamless progression of their educational journey. Cheng (2011) conducted a study.

The principal determinant in assessing students' propensity to employ the educational information system is the extent to which they can obtain advantages from its use. Perceived

usefulness (PU) demonstrates a favourable impact on the intention to utilise the online educational system within the context of this particular study. When individuals perceive the system as advantageous to their learning experience, they demonstrate a willingness to engage with it. In order to stimulate enthusiasm for utilising the application, multiple supportive factors are required. In this instance, these factors include usability and user-friendliness (Wijaya, 2021). This study demonstrates that the perceived simplicity of use has a positive influence on the perceived intentions. However, the perceived usefulness remains untouched by the perceived simplicity of use under the proposed paradigm of the study. Perceived Enjoyment (PE) aspect focuses on the emotional experiences of individuals in elucidating their non-beneficial behaviours towards accepting and using information systems and information technology, which cannot be entirely clarified through the TAM framework alone. The Technology Acceptance Model, or TAM, operates on the assumption that individuals engage in a rational evaluation and analysis of external stimuli. This study aims to provide empirical data about the factors influencing the acceptance and intent to use e-learning. Specifically, it focuses on the external motivating variables of perceived usefulness (PU) and perceived ease of use (PEOU), as well as the internal driving factor of perceived enjoyment (PE). Results of the analysis show us that PE is positively affected by PEOU in reverse to the negative relationship between PEOU and PU in the model.

To sum up, among all of the three external factors, instructor and course design are significantly important to intention to use rather than technology. Furthermore, this study demonstrates that the factors of PU (perceived usefulness), PEOU (perceived ease of usage), and PE (perceived enjoyment) have an impact on the perceived intention (PI) to utilise online educational platforms. The findings indicate users demonstrate a propensity to utilise the online educational system when they perceive it to be beneficial, pleasurable, and user-

friendly. The findings presented align with the research conducted by Cheng (2012), Lee et al. (2005), and Chatzoglou et al. (2009).



8. LIMITATIONS AND FURTHER RECOMMENDATIONS

Some limitations can be acknowledged in this study. Study and analysis have been held from the perspective of TAM. In this way, some of the limitations can arise from the factors that are chosen. Initially, there has been a focus on technology, instructors, and course content; nevertheless, it is important to acknowledge that there are other aspects that can influence the desire to use the system. The inclusion of computer anxiety, computer playfulness, and subjective norms in the research model will contribute to a comprehensive exploration of the inner and outer determinants of individuals' desire to utilise e-learning systems.

Furthermore, the study was carried out using a significantly restricted sample size, and it was also executed within a condensed timeframe. Non-probabilistic sampling was used in this study. Using samples that aren't based on probability and whose associated traits don't completely represent the overall population.

As a result, this leads to discrepancies in drawing conclusions about the study and its results. Moreover, this study was limited to people who are demographically between the ages of 20 and 50 and live in Turkey. The inclusion of a younger sample in the research makes sense due to their significant integration with technology and use of e-learning systems. This will allow for the measurement of the impact of technology to be reassessed in subsequent research studies. A diverse global population use e-learning platforms, necessitating the selection of a sample that encompasses many countries. As the analysis is conducted via Google Forms, it will be easier to reach people who live in different countries.

Third, the analysis has been done in a limited time period of just two months. Respondents to whom we sent the forms generally regard answering a questionnaire as a waste of time. The researcher had to send the forms again and again and remind the respondents to answer the questionnaire.

The opinions that students have towards e-learning systems are significantly influenced by their instructors. Encourage professors to develop a friendly and helpful attitude towards students when they are studying online. Regular communication, prompt feedback, and ease of access have the potential to enhance students' perspectives of the utilisation, fulfilment, and user-friendliness of the platform.

The happiness of learners with the electronic learning experience is significantly impacted by the technical reliability and competence of the instructors, leading to positive effects on their learning outcomes and level of engagement. These suggestions can be added to e-learning platforms to improve learners' intentions to utilise the system.

The study's results have illuminated the significant influence of course design quality and course content quality on users' perceptions and intents to utilise electronic learning platforms, in addition to the instructor-based elements. The analysis conducted has shown that these elements have a mutual influence and together influence users' perception of utility, convenience of use, and enjoyment, which subsequently affects their propensity to utilise electronic learning platforms. Educators and electronic learning platform developers should collaborate to ensure that courses are designed with pedagogical principles in mind, fostering a conducive learning environment that supports learners' cognitive processes and motivations.

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APPENDIX A: List of Symbols / Abbreviations

TAM	Technology Acceptance Model
PEOU	Perceived Ease of Use
PU	Perceived Usefulness
PE	Perceived Enjoyment
I	Intention
BIU	Behavioral Intention to Use
UTAUT	Unified Theory of Acceptance and Use of Technology
TRA	Theory of Reasoned Action
TPB	Theory of Planned Behavior
IDT	Innovation and Diffusion of the Technology
MPCU	Model of Personel Computer Utilization
SCT	Social Computer Theory
MM	Motivational Model
ICTs	Information and Communication Technologies
CD-ROMs	Compact Disc Read-Only Memory
IT	Information Technology
EBA	Education and Information Network (Eđitim ve Biliřim Ađı)
LMS	Learning Management System
SN	Subjective Norm
CSE	Computer Self Efficacy
UID	User Interface Design
MEMs	Multi Media Electronic Learning Systems
DLS	Distance Learning System
IS	Information System
CCD	Course Content Design
CDQ	Course Design Quality
UAE	United Arab Emirates
SPSS	Statistical Package for the Social Sciences
p	Probablity Level
t	t Test Statistics
β	Beta
VIF	Variance Inflation Factor
VR	Virtual Reality
AR	Augmented Reality

APPENDIX B: Questionnaire in English

Effects of Technology Acceptance Model Factors on to Intention to Use of E-learning Web-sites

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Information was well structured/presented.					
I found the screen design pleasant.					
Web site contained useful features.					
Web site gave me direct/timely feedback.					
Through the Web, I could communicate with students.					
I have the capability to easily establish communication with the instructor.					
The instructor shown a high level of enthusiasm in delivering the course content.					
I was engaged by the instructor's presentational manner.					
Instructor was friendly towards individual students					
The instructor had a sincere and authentic interest in the students.					
The students experienced a sense of tolerance and encouragement while seeking information or assistance					

The instructor demonstrates a timely response to student emails via the e-learning system.

The lecture notes in the e-learning system are regularly updated by the teacher for the benefit of the students.

Teacher encouraged student interaction

Teacher handled Web technology effectively

The teacher gave instructions on how to use the website.

I believe the teacher was eager for us to use the website.

I can get enough educational material through online learning platform.

Online learning platform frequently offers the most recent information.

The e-learning platform can give me the learning materials I require.

The instructional material's degree of difficulty is adequate.

The learning content delivery schedule is configurable.

I can get individualised learning management through online learning programme.

My ability to learn is enhanced by using the e-learning system.

My ability to learn more effectively thanks to the e-learning system

I have more control over my learning thanks to e-learning.

In my learning, I found online learning method to be helpful.

The mental effort required for engaging with online learning platform is minimal.

Usage of online learning platform is simple for me.

Communication with the online learning platform is understandable and clear.

Enabling the customization of the e-learning system to align with my desired objectives is an easy task for me.

I find the utilisation of online learning to be quite valuable.

Utilising online learning platform is a nice experience.

I enjoy utilising the e-learning programme.

I'll continue to regularly use online learning platform

In the following period, I intend utilising online learning curriculum on a regular basis.

I will advocate for the utilisation of the online learning platform.

Thick only one choice

Gender

Female ☐

Male ☐

Age

Consider your education and which one describes you better?	Primary School Graduate	☐
	Secondary School Graduate	☐
	High School Graduate	☐
	University Graduate	☐
	Other	☐
Which one describes your monthly income?	0-8505 (minimum wage)	☐
	8506-10.000	☐
	10.001-15.000	☐
	15.001 ve üzeri	☐
Do you work?	Yes	☐
	No	☐
What is your occupation?		
How much time do you spent on the internet?	0-3 hours	☐
	3-6 hours	☐
	6 hours and more	☐

APPENDIX C: Questionnaire in Turkish

Teknoloji kabul modeli faktörlerinin e-öğrenme sitelerini kullanma niyetine olan etkileri

Kesinlikle Katılmıyorum Katılmıyorum Ne Katılıyorum ne Katılmıyorum Katılıyorum Kesinlikle Katılıyorum

Web sitesinde bilgi iyi bir şekilde yapılandırılmış ve sunulmuştu.

Ekran tasarımını hoş buldum.

Web sitesi faydalı özellikleri içeriyordu.

Web sitesi bana anında geri bildirim sağladı.

Sınıf arkadaşlarımla Web sitesi üzerinden iletişim kurabildim.

Öğretmen ile kolayca iletişim kurabildim.

Öğretmen dersi işlerken coşkuluymdu.

Öğretmenin sunum tarzı ilgimi çekti.

Öğretmen öğrencilere karşı cana yakındı.

Öğretmen öğrencilerle ilgilenirken içtendi.

Öğrenciler yardım istediklerinde, öğretmen onları nezaketle karşıladı.					
Öğretmen öğrencilerin internet sitesi üzerinden gelen e-maillerine zamanında cevap verdi.					
Öğretmen internet sitesi üzerindeki ders notlarını sık sık güncelledi.					
Öğretmen öğrencileri iletişim kurlmaları için cesaretlendirdi.					
Öğretmen internet teknolojisini etkili biçimde kullanmıştır.					
Öğretmen Web sitesinin nasıl kullanılacağını açıkladı.					
Öğretmenin internet sitesini kullanmada istekli olduğunu hissettim.					
E-Öğrenme sistemi bana yeteri kadar öğrenme içeriği sağlayabilir.					
E-öğrenme sistemi sıklıkla güncel bilgi sunar.					
E-Öğrenme sistemi bana ihtiyacım olan öğrenme içeriğini sağlayabilir.					
Öğrenme içeriğinin zorluk derecesi makuldü.					
Öğrenme içeriğinin programı esnekti					
Öğrenme sistemi bana kişisel öğrenme yönetimi kazandırabilir.					
E-öğrenme sistemi kullanmak benim öğrenme performansımı geliştirdi.					
E-öğrenme sistemini kullanmak benim öğrenmedeki etkinliğimi arttırdı/yükseltti.					
E-öğrenme kullanımı beni öğrenme üzerinde/öğrenmede					

daha fazla kontrol sahibi yaptı.

E-öğrenme sisteminin öğrenmemde faydalı olduğunu düşünüyorum.					
E-öğrenme sitesi üzerinden iletişim çok fazla zihinsel efor sarf etmemi gerektirmez.					
E-öğrenme sitesinin kullanımı kolaydır.					
E-öğrenme sitesi ile iletişimim açık ve anlaşılabilir.					
E-öğrenme sisteminden istediğimi bulmam kolaydır.					
E-öğrenme sitesinin kullanımı eğlenceli buluyorum.					
E-öğrenme sitesini kullanımındaki güncel işleyiş memnun ediciydi.					
E-öğrenme sitesini kullanırken keyif aldım.					
E-öğrenme sistemini gelecekte düzenli olarak kullanacağım.					
E-öğrenme sistemini gelecekte sıklıkla kullanacağım.					

E-öğrenme sitesini başkalarına şiddetle tavsiye ederim.

Yalnızca bir şıkkı işaretleyin

Cinsiyet

Kadın ☐

Erkek ☐

Yaşınız

Eğitiminizi düşünerek hangisi sizi en iyi tarif ediyor?

İlkokul Mezunu ☐

Ortaokul Mezunu ☐

Lise Mezunu ☐

Lisans Mezunu ☐

Diğer ☐

0-8505 (asgari ücret) ☐

Sizce ailenizin gelir düzeyi ne kadardır?

8506-10.000 ☐

10.001-15.000 ☐

15.001 ve üzeri ☐

Çalışıyor musunuz? Evet ☐
Hayır ☐

Mesleğiniz nedir?

İnternet Üzerinde ne kadar zaman geçiriyorsunuz? 0-3 saat ☐
3-6 saat ☐
6 saat ve üzeri ☐

