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Research Article

Rethinking E-learning Continuance Intention for Turkish Adult Learners: A Combined Model

Taner ARABACIOĞLU [1,*]

[1] *Aydın Adnan Menderes University, Aydın, Türkiye, tarabacioglu@adu.edu.tr*

[*] *Corresponding Author: tarabacioglu@adu.edu.tr*

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Abstract

This research aims to determine the factors affecting the e-learning continuance intention of adult learners by testing the model established by combining the variables frequently found in the literature and the factors influencing adult education. Convenience sampling, a non-random sampling method, was used; 372 graduate students of non-thesis programs from a state university in Türkiye constituted the sample. The model, tested with R, revealed that usability, outcome expectations, perceived value, confirmation, and satisfaction all have similar positive effects on continuance intention and predicts 69 percent. Usability and outcome expectation account for 68 and 69 percent of the explanation for confirmation and satisfaction, respectively. In consideration of the existing limitations, it is notable that the tested model differs from the existing literature in in some major aspects. Confirmation has no effect on satisfaction, while perceived value has a positive effect only on continuance intention.

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Introduction

The volume of information generated in this century has reached staggering proportions. In addition, rapid advancements in technology impact on the daily, business-related, and educational lives of people, forcing individuals and businesses to change. Changes in the business environment cause employers to modify their expectations of employees. According to Mohammed et al. (2022), knowledge, education, and innovation are the main indicators of economic growth in a globalizing world. Thus, technological changes inevitably require employees to constantly update their knowledge and skills.

Lucas and Moll (2014) emphasize two important factors in workplace training: the effort of the individual and the environment in which learning takes place. As a learning environment, Mason (2006) contends that online learning is appropriate for adult education. Knightley (2007), who corroborated Mason's findings, revealed that participants found

distance education more easily accessible and that the experience was useful for them. Lu et al. (2022) aimed to determine the factors affecting adult education through a systematic literature review of 124 experimental studies; adult learners in this study stated that life-oriented, structured, and flexible online courses are more suitable for them due to their time constraints and responsibilities. It was also concluded that adult learners have lower ICT skills than regular students and are reluctant to participate in online discussions.

In interpreting these differences, Knowles's principles should be carefully examined. Knowles et al. (2005) highlighted the difference between andragogy and pedagogy with six assumptions: need to know, self-concept, experiences, readiness to learn, orientation to learning, and motivation. The principle of necessity posits that there is a need to ascertain the answers to the questions of what, why, and how adult learners learn. The concept of self-concept posits that adult learners are autonomous and self-directed individuals, and its impact on learning processes is evaluated. The concept of "experiences" is predicated on the notion that adult learners draw from their prior learning experiences when constructing new ones. Readiness to learn, in this context, refers to the degree to which adult learners are prepared to engage in the learning process, with an emphasis on their expectations at the conclusion of their educational journey. Orientation to learning, on the other hand, signifies the prioritization of subject-centered learning by adult learners, thereby underscoring the significance of subject matter content. The final principle underscores the significance of external incentives. They reveal that adult learners exhibit behaviors that differ from those of other students in learning-teaching processes. In addition, LeNoue et al. (2011) stated that because individual differences between people increase with age, differences in styles, time, and learning speed should be taken into account in adult education. Thus, they state that teachers should be facilitators who are involved in the process of mutual inquiry rather than transferring knowledge.

Given that distance education is an important option for adult education and that the characteristics of adult learners differ from those of other learners, it is imperative that distance education processes be planned differently. Dzubinski et al. (2012) state that work, education, and family and leisure time factors pose different challenges for adult learners, requiring adult education graduate programs to consider how best to meet the changing needs of today's learners. Therefore, determining the constructs that will affect adult learners' use of online learning environments is crucial to the success of e-learning.

Therefore, the main purpose of this study is to answer the question "Do adult learners differ from other students in their use of online learning systems?" In this study, the aim is to analyze how usability, outcome expectations, perceived value, confirmation, and satisfaction impact the intention to use e-learning systems.

Adult Learning

The first concept in relation to adult education to be mentioned is andragogy. Knowles et al.'s (2005) contributions are important in distinguishing between pedagogy and andragogy, as well as the basic principles of andragogy. According to Knowles et al. (2005), pedagogy is a model designed for children where the teacher assumes responsibility, whereas andragogy is a model that focuses on the education of adults and is based on six principles. These principles include adult learners being aware of the necessity for learning, assuming responsibility for their decisions, starting education with their past experiences, being prepared to learn, and being life-centered and intrinsically motivated. Along with these principles, the type of adult education is also significant. Adult basic or community education, credit or non-credit education will impact learner expectations. Simply put, the reasons for learning are influenced by societal, individual, or institutional factors affecting adult education.

The first of these factors is adult learners are expected to combine education, work, and family life. These three factors should be elaborated within themselves. Bellare et al. (2023) explained the reasons adult learners return to higher education based on three basic structures: individual factors, career expectations and the sector in which they work. Morris and Rohs (2021) emphasized the importance of adapting to changing working conditions. Similarly, Botha et al. (2015) stated that students who have a strong sense of self-direction are more confident in their employability according to the results of a study conducted in South African open distance higher education institutions with predominantly female participants working in industry. Das and Kumar (2022) highlighted the seven motivational factors that influence Indian adult learners: communication skills and social contact, professional advancement, intellectual recreation, cognitive interest, family togetherness, relationship with children, and educational compensation.

Gender is another factor influencing the learning process of adults. Öz (2022) summarized 51 studies conducted in Türkiye between 2012 and 2021 highlighting gender differences. The findings revealed that women showed more positive tendencies toward

lifelong learning than did men. Fiorini et al. (2022) found that satisfaction levels with online learning were particularly high among female students, those without young children, those with spouses who work more than 40 hours a week, those who can pursue courses from a location other than home, and those who pursue non-technical courses. Several benefits of online learning were also cited, including the flexibility of time, the ability to study from the comfort of one's home, and the fact that lectures can now be recorded and viewed later. However, negative aspects were also reported, such as the inconveniences associated with the technology and the lack of interaction between students. The results of the studies reveal a variety of factors that influence adult education. Therefore, as Bellare et al. (2023) state, it is important to establish a balance between school and work life. Failure to balance the physical and mental needs of these aspects will negatively affect both work and school performance. In order to establish this balance, the difficulties experienced by adult learners should be identified and solutions should be devised accordingly. Osam et al. (2017) categorized the difficulties experienced by adult learners in the education experience as situational, institutional, and dispositional barriers. Situational barriers comprise one's financial situation, family life, health, work conflict, and transportation, while institutional barriers are the learning processes that are not organized according to work life conditions and exemplified by difficulty navigating the educational system and course scheduling conflicts.Dispositional barriers include personal characteristics such as fear of failure and attitude. Examples of these personal characteristics include anxiety about succeeding academically and low self-esteem.

In solving the problems mentioned, Lanford (2021) stated that motivating adult learners is a complex process, highlighting the importance of having not only institutional support but also caring and tolerant instructors who respect adult learners and facilitate their development. Finn (2011) asserted that in adult learning environments, the learner's experiences and the appropriateness of instruction should be considered. Bellare et al. (2023) mentioned that online courses provide significant flexibility for adult learners. Although the flexibility provided is a great convenience, according to Shi and Lin (2021), adult learners' participation in online course work may exhibit periodic volatility. Therefore, the characteristics of adult learners need to be taken into account. According to Ginsberg and Wlodkowski (2020), adults are pragmatic learners whose experiences strongly impact their view of the learning process.

Information System Usage Continuance

Theory-based research on the use of information systems has increased since the 1990s (Bhattacherjee, 2001a). Throughout this process, several different models or theories have been proposed, such as the expectation confirmation theory (ECM; Oliver, 1980), technology acceptance model (TAM; Davis et al. 1989), innovation diffusion theory (Rogers, 1995), theory of planned behavior (Ajzen, 1991), information systems success model (IS; Delone & McLean, 1992), and technology continuance theory (TCT; Liao et al., 2009).

It can be seen that certain components are common among these models. Yet, upon studying the hierarchy of these models satisfaction plays a crucial role in predicting intention to use. Martin and Bolliger (2022) defines satisfaction as "the fulfillment of a student's need and perceptions of contentment with learner, instructor, course, program, and organizational related factors in the online learning environment." Satisfaction plays a vital role in e-learning continuance, as it influences learners' intention to persist and engage in the e-learning process (El-Sayad et al., 2021). Learners who are satisfied with their e-learning experiences are more likely to continue using e-learning platforms or systems (Dziuban et al., 2015). Satisfaction in the context of e-learning refers to learners' overall contentment with their learning experiences (Alqurashi, 2019), including the quality of instruction, course materials, interactions, and the learning environment (Mohammed et al., 2022). Satisfaction with e-learning is also influenced by perception of usability, e-learning self-efficacy, interaction, and learning style (Bismala & Manurung, 2021). Several studies have investigated the effects of different variables on satisfaction and have reported their effects (Dangiso et al., 2022). The findings of a systematic literature review by Martin and Bolliger (2022) revealed that online learning satisfaction includes four different themes comprising learner, course, instructor, program and organization structures. However, according to Dziuban et al. (2015), the process of determining the variables that predict satisfaction is both a complex and dynamic process.

Another common variable in these models is confirmation. According to Bhattacherjee (2001b), confirmation is a cognitive evaluation process that determines the extent to which consumers' expectations about a service are realized. The output of this evaluation process is satisfaction or subsequent intention to use, which determines whether consumers will continue to use the service in question. This is also supported by the meta-analysis study conducted by Ambolov (2018), who revealed the strong relationship between

confirmation and satisfaction in his analysis of 51 studies examining the ECM model. In e-learning, examining the factors that affect students' confirmation of the process reveals many different variables. Zhang et al. (2020) found that college students' confirmation process was significantly influenced by time distortion and focused attention, components associated with the flow experience. Time distortion is phenomena that results in individuals losing track of time (Esteban-Millat et al., 2014). Also, Cheng (2020) highlighted the impact of interactivity, course content quality, and course design quality on continuance intention; Sorebo et al. (2009) emphasized the effect of perceived competence on perceived usefulness, confirmation and intrinsic motivation.

Dağhan and Akkoyunlu (2016) found that factors like usability, outcome expectations, and perceived value predict the use of information systems, even when not explicitly included in models. Zaharias (2004) highlights usability as a critical element in evaluating e-learning technology. According to ISO (2018), usability refers to the effective, efficient, and acceptable use of a system, product, or service in relation to its design. Preece et al. (2019) define usability as a quality indicator that assesses the ease of use of a user interface. Gunesekera et al. (2019) identified in their literature review on usability in e-learning that usability issues affect user satisfaction and bonding. Additionally, usability helps reduce cognitive load and enhance motivation and engagement (Davids et al., 2014). Factors that influence usability in e-learning systems include system navigation, learnability, visual design, information quality, instructional assessment, and system interactivity. Computer self-efficacy, enjoyment, perceived ease of use, usefulness, and user perception also impact usability (Wang et al., 2019). Moreover, Koohang and Paliszkiewicz (2014) argue that the presentation of information (understandability, relevancy, adequacy/task match) affects usability. The usability of e-learning systems becomes more crucial when considering the age and technological competencies of adult learners.

Another factor that positively influences the use of information systems is outcome expectations (Kwahk et al., 2018) - the assessment of potential consequences of a behavior (Bandura, 1986). This assessment covers physical, emotional, and social outcomes, forming a key element of Bandura's (1986) social cognitive theory (Fasbender, 2020). According to Fasbender (2020), outcome expectations actively encourage behavior change and are effective in various areas, from health to career pursuits. People tend to adopt behaviors with favorable outcomes and forsake those with negative consequences (Bandura, 1986). Bervell

and Umar (2020) highlight the importance of outcome expectations not only for students but also for instructors in distance education. However, Zalazar-Jaime et al. (2023) suggest that outcome expectations have a limited impact on satisfaction.

Understanding the value students place on e-learning is of great importance for researchers and higher education providers (Toufaily et al., 2018). Zeithaml (1988) defines perceived value as a consumer's overall assessment of the utility of a product based on what they receive and what they give. In addition, the price paid for the product, expectations from the product, and the quality obtained for the price paid are important in determining its perceived value. In the context of learning-teaching, perceived value consists of the following four sub-dimensions: curiosity and knowledge acquisition in the epistemic value dimension, interaction between students in the social dimension, psychological and affective states in the emotional dimension, and decision-making process in the conditional value dimension (Seo & Um, 2023). The importance of perceived value for educational institutions is that it facilitates positive results such as student loyalty to the institution, encouraging peers about education, and decreasing school dropout rates (Killburn et al., 2016). In addition, according to Liao et al. (2022), perceived value has an important role in the adoption and formation of intention toward e-learning. In addition, many studies are based on the TAM, overlooking the perceived value variable. In addition, Kumar (2022) emphasized the relationship between perceived value and intrinsic motivation, highlighting this as a very important factor for e-learning programs.

The literature on the use of information systems varies according to different characteristics of learners. However, the fact that the sample constituting the literature is generally composed of undergraduate students will not be adequate to explain the use of e-learning systems by adult learners. It is inevitable that the difference in pedagogy and andragogy, the difference in expectations from life or the demographic variables in the education period will lead to differences in the use of e-learning systems. Therefore, it is assumed that the expectations of adult learners, the usability of e-learning systems and the perceived value of e-learning systems will significantly affect lifelong learning outcomes, continuity of use and satisfaction. With this respect, the research will provide a different perspective to the lifelong learning literature.

Research Model and Hypotheses Development

This study utilized a quantitative methodology by employing a cross-sectional questionnaire survey to examine the effect of variables on the adult learners' continuance intention of the e-learning system at the university. The research model is a combination of variables common to ECM, IS, COG, and TCT models and variables that will affect the intention to use online learning systems in the context of adult education (Figure 1). These models, although not as popular as TAM, technology readiness index, or unified theory of acceptance and use of technology (Marikyan et al., 2023), have strong theoretical foundations and can provide valuable insights. The variables include usability (usa), outcome expectations (out), perceived value (pval), confirmation (conf), satisfaction (sat), and continuance intention (cont).

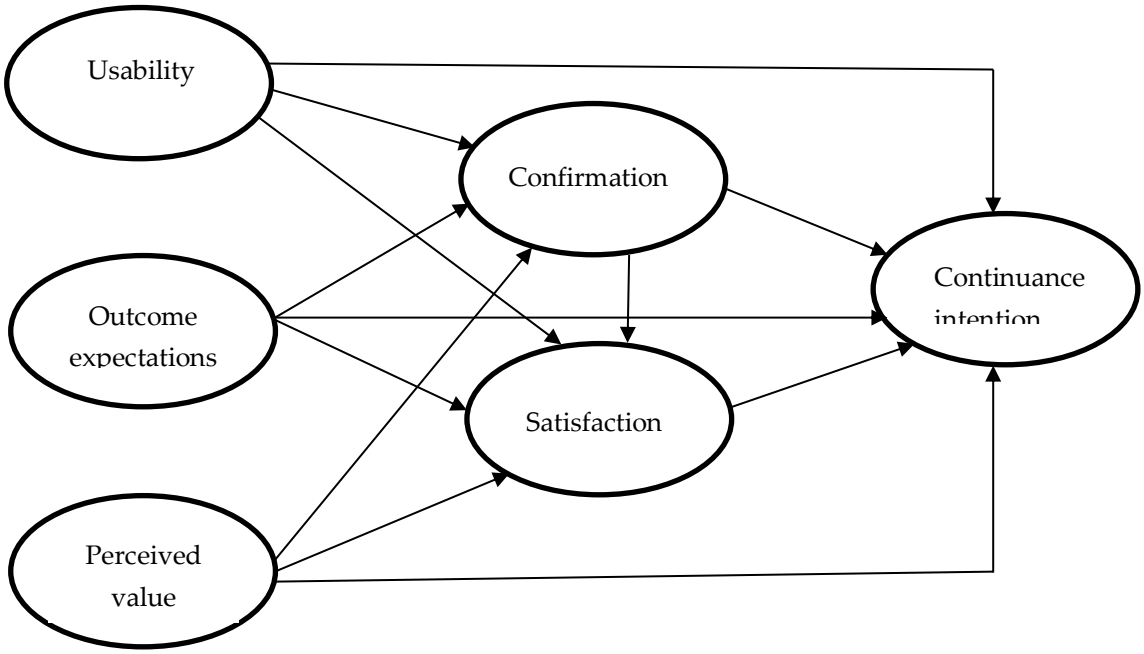

Figure 1. Proposed research model

Usability is essential for adult learners of different ages, educational levels, and readiness. It greatly influences confirmation, satisfaction, and the intention to continue using an e-learning system (Gunesekera et al., 2019; Ilgaz & Gülbahar, 2015; Islam et al., 2017). The following hypotheses demonstrate these relationships:

H1: Usability has a positive impact on confirmation.

H2: Usability positively influences satisfaction.

H3: Usability has a positive effect on the intention to continue using the e-learning system.

Outcome expectations, an essential component of social cognitive theory, refer to how adult learners assess the potential outcomes of an e-learning system. These assessments influence the confirmation of the e-learning system (Oliver, 1980), satisfaction (Zalazar-Jaime et al., 2023), and the intention to continue utilizing it (Karakis, 2022). The relationships between the hypotheses are as follows:

H4: Outcome expectations positively influence the confirmation.

H5: Outcome expectations positively impact satisfaction

H6: Outcome expectations positively influence the intention to continue using e-learning systems.

The learning outcomes of adult learners impact their confirmation, satisfaction (Hsu & Lin, 2015; Seo & Um, 2022), and intention to continue using the e-learning system (Liao et al., 2022). This relationship is outlined in the following hypotheses:

H7: Perceived value positively influences confirmation.

H8: Perceived value positively influences satisfaction.

H9: Perceived value positively influences the intention to continue using the e-learning system.

The impact of e-learning system confirmation on continuation intention and satisfaction has been extensively studied (Bhattacherjee, 2001a, 2001b; Liao et al., 2009; Oliver, 1980; Zhang et al., 2020). The literature indicates a strong positive effect of satisfaction on intention to continue (Bhattacherjee, 2001b; Liao et al., 2009; Oliver, 1980). Based on these findings, the following hypotheses are proposed:

H10: Confirmation positively influences intention to continue using the e-learning system.

H11: Confirmation positively influences satisfaction.

H12: Satisfaction positively influences intention to continue using the e-learning system.

Method

Participants

In line with the research purpose, convenience sampling, a non-random sampling method, was used, as it is very difficult to recruit adult learners pursuing distance education using other sampling methods. In this sampling method, two important factors are that the sample meets the specified criteria and is easily accessible (Robinson, 2014). The university's

educational research ethics committee (E-84982664-050.01.04-289121) granted the necessary approvals for the research. Furthermore, the participants were provided with a clear explanation of the research objectives prior to completing the questionnaire, and they were specifically requested to respond on a voluntary basis. The sample consists of 372 master's degree students of non-thesis programs attending a state university in Türkiye through distance education. The average age of the 298 male and 74 female participants was 36 years. The youngest and oldest participants were 25 and 60 years old, respectively. Of the participants, 365 worked in 22 different sectors, while 7 stated that they were not working. The research sample consists of individuals who prioritize their personal growth and have career goals following their education, even if they are non-academic. Furthermore, it is of importance to note that the participants selected for this study are those who are pursuing their education via distance and are thus accessible to the researcher.

Data Collection and Analysis

The measurement tool developed by Daghan and Akkoyunlu (2016) was administered to the research sample at the end of the semester. The scale consisted of 10 construct and 41 items. In this research only seven construct used for the research. These are usability, outcome expectations, confirmation, satisfaction, perceived value and Continuance intention. The reliability coefficient of these seven construct between .77 and .89. Google Forms were used to collect data from the participants. The online survey comprised two parts. The first part included questions about age, gender, and the sector in which the participants work to determine the participant's profile. The second part comprised a seven-point Likert-type scale (1: Definitely Disagree, 7: Definitely Agree) of the constructs that can predict participants' continuity of use in online learning environments.

For the structural equation model with the Lavaan library in R 4.3 software to determine the variables predicting adult distance learners' intention to use online e-learning environments because it is widely used in social sciences (Davvetas et al., 2020). Before conducting the analysis, the outliers were identified and 17 data points were excluded from the analysis process. Consequently, a total of 372 data points were subjected to analysis. Prior to conducting the analysis, the normality of the data was assessed using skewness and kurtosis metrics. Subsequently, the multivariate normality of the data was assessed through the examination of scatter plot scatter diagrams, with particular attention given to the presence of an ellipse or a distribution closely resembling an ellipse. Single normal

distribution data are presented in Table 1 and multiple normal distribution data are presented in Figure 2. The structural equation modeling was performed with the maximum likelihood method based on these results.

Table 1. Univariate normal distribution metrics

Construct	Usability	Perceived value	Confirmation	Outcome expectations	Satisfaction	Continuance intention
Skewness	-.363	-.257	-.196	-.053	-.435	-.878
Kurtosis	-.461	-.658	-.580	-.617	-.293	-.071

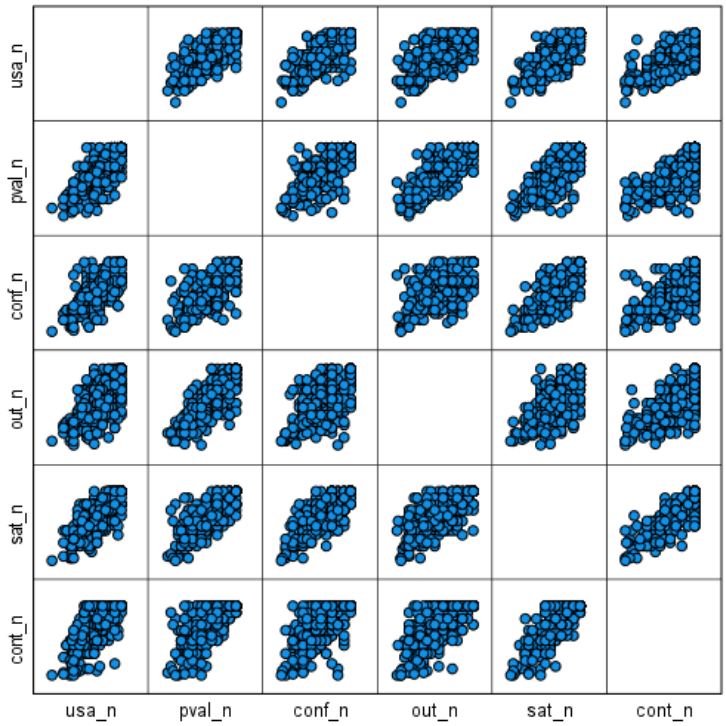

Figure 2. Scatter plot for multivariate normal distribution

Finding

In the path analysis of the proposed model, hypotheses H7, H8, and H11 were not supported. Subsequently, when they were removed from the analysis and the path analysis was performed again, the model was an explanatory model with excellent fit indices according to İlhan and Çetin (2014). Table 2 summarizes the fit indices of the model (p>.05).

Table 2. Model goodness of fit indices

Fit indices	Value	Perfect fit indices	Acceptable fit indices
χ^2/df	3.800/3	$0 \leq \chi^2/df \leq 2$	$2 \leq \chi^2/df \leq 3$
AGFI	.995	.90≤ AGFI ≤1.00	.85≤ AGFI ≤.90
GFI	.999	.95≤ GFI ≤1.00	.90≤ GFI ≤.95
CFI	.999	.95≤ CFI ≤1.00	.90≤ CFI ≤.95
NFI	.997	.95≤ NFI ≤1.00	.90≤ NFI ≤.95

NNFI	.997	.95≤ NNFI ≤1.00	.90≤ NNFI ≤.95
RFI	.988	.95≤ RFI ≤1.00	.90≤ RFI ≤.95
IFI	.999	.95≤ IFI ≤1.00	.90≤ IFI ≤.95
RMSEA	.027	.00≤ RMSEA ≤.05	.05≤ RMSEA ≤.08
SRMR	.007	.00≤ SRMR ≤.05	.05≤ SRMR ≤.10

The path analysis results of each hypothesis of the model are presented in Figure 3 and Table 3.

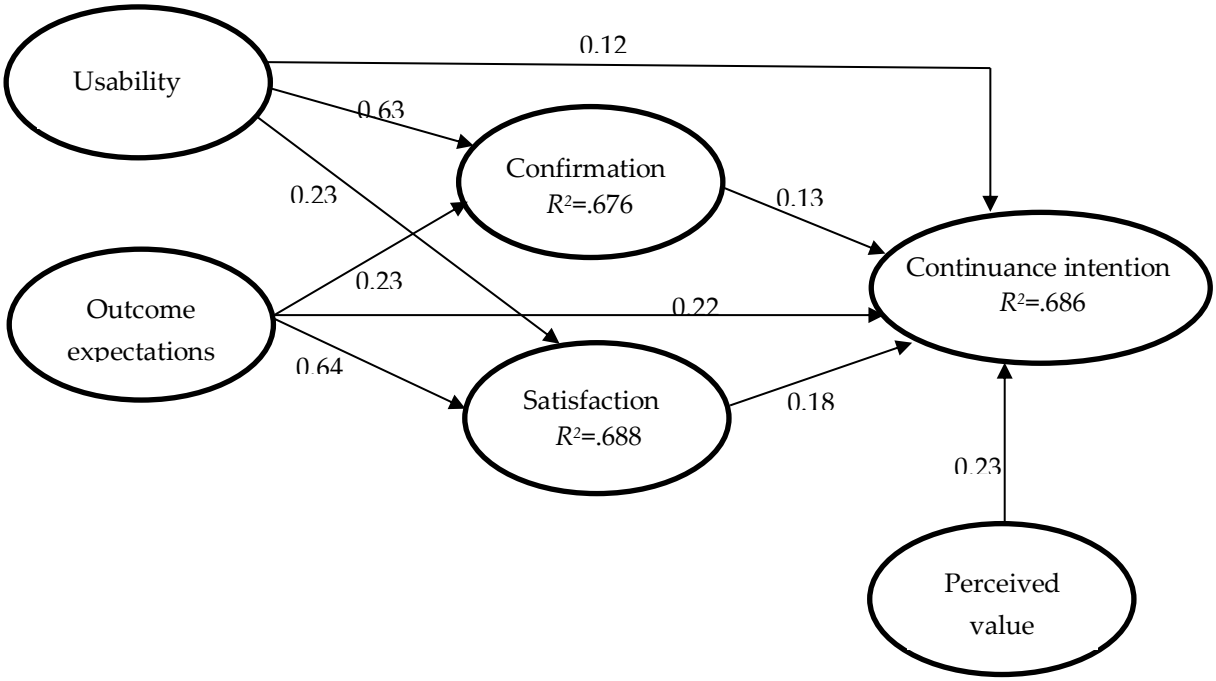

Figure 3. Testing the results of the research model

Table 3. Summary of hypothesis testing

Hypothesis	Path	β	Z value	CI lower	CI upper
H1	usa → conf	0.63	12.988	0.957	1.297
H2	usa → sat	0.23	4.778	0.144	0.345
H3	usa → cont	0.12	2.852	0.052	0.281
H4	out → conf	0.23	4.791	0.252	0.600
H5	out → sat	0.64	13.500	0.605	0.810
H6	out → cont	0.22	3.354	0.089	0.340
H9	pval → cont	0.23	4.549	0.125	0.314
H10	conf → cont	0.13	2.477	0.014	0.121
H12	sat → cont	0.18	3.460	0.069	0.251

A positive and significant relationship was observed for all the hypotheses defined according to the confidence interval values in Table 2. According to the variance explained (R2) values, usability and outcome expectations predict confirmation and satisfaction by 67%

and 69%, respectively. Usability, outcome expectations, confirmation, satisfaction, and perceived value explain 69% of the variance in the use of online learning environments.

Discussion, Conclusion and Limitations

The results of the research, which aims to determine the variables predicting adult learners' use of online learning systems, reveal that usability, outcome expectations, perceived value, confirmation, and satisfaction predict continuance intention. The result differs with the current body of literature. This disparity can be ascribed to the composition of the research sample. While prior studies were generally conducted with undergraduate students, this research was conducted on a sample of working individuals with an average age of 36 years. It is hypothesized that differences in age, experience, and educational background within the sample could impact the research results.

One of the notable differences between the results of the research and the literature relates to the variables predicting continuance intention and their prediction levels. Ming-Chi (2010) asserted that the most important factor affecting continuance intention is satisfaction. This is similar to the information systems success model, cognitive model, ECT, and TCT. However, this phenomenon differs for adult learners. The explanatory power of satisfaction in explaining continuance intention is almost equally shared among usability, confirmation, outcome expectations, and perceived value. Although this is considered an important difference in terms of theoretical foundations, Liu et al. (2022) identified 21 factors that positively affect the intention to continue e-learning, based on their meta-analysis. The fundamental differences between androgogy and pedagogy should be taken into account to explain continuation intention, which is influenced by several factors. The differences in learners' experience, readiness to learn, and motivation mentioned by Knowles et al. (2005) are important factors in the emergence of these findings. The sample comprises adult learners from 22 different sectors, bringing together diverse experiences and knowledge. To sustain their motivation, it is crucial to assist this eager-to-learn group with experiential learning activities that leverage their prior knowledge and experience. Additionally, perceiving their learning as "beneficial" will positively affect their use of the e-learning system.

In addition, when evaluating satisfaction as meeting students' expectations from the course, instructor, and program, the usability of the e-learning system and students' belief in the positive results of the e-learning process are important factors. In other words, usability

and outcome expectations are the most important factors affecting the cognitive evaluation of e-learning. Given that participants are adult learners, the potential career changes resulting from distance education or the positive reflections in their sociocultural environment influence their approval of the e-learning system.

The research results reveal that perceived value is only related to intention to use, unlike other variables. In this context, a general benefit assessment made by lifelong learners about e-learning will directly affect their usage intention. It is not unusual for lifelong learners who resume studies after a break to compare their past educational experiences with the current situation. This evaluation should be expected to be between formal education and distance education. Although distance education offers several conveniences, it will certainly be compared with formal education in social, cognitive, or economic terms. In addition, this is an important parameter to understand how adult learners perceive and evaluate the e-learning system. In other words, unlike undergraduate students, adult learners reveal their expectations of "benefit" from the e-learning system independently of confirmation or satisfaction.

Another noteworthy point is the effect of usability on confirmation and outcome expectations on satisfaction. The usability of an e-learning system significantly impacts its confirmation by learners, while the outcome expectations of learners significantly impact satisfaction. In quantifiable expressions, usability and outcome expectations can explain 68 percent of confirmation and 69 percent of satisfaction. Similar research results by Gunesekera et al.'s literature review (2019) demonstrate that usability affects satisfaction. Ramadhan et al. (2022) highlighted the positive effect of usability on both confirmation and satisfaction.

One of the most important differences of this study from prior studies is that the relationship between confirmation and satisfaction is not confirmed. Ambolov (2018) emphasizes the strong relationship between confirmation and satisfaction as a result of a meta-analysis of experimental studies conducted between 2001 and 2017 regarding the ECM model. However, Li et al. (2022) contend that confirmation has no direct effect on satisfaction, based on a research they conducted on university students during the pandemic. This reveals that when e-learning is perceived as a necessity by students, similar results to the current research are observed, suggesting that adult learners perceive e-learning as a necessity for career change.

The analyzed model revealed that 69 percent of the intention to use online learning systems can be explained by the combination of usability, outcome expectations, confirmation, satisfaction, and perceived value variables. However, each of these variables has similar effects on continuance intention. In other words, the dominant effect of satisfaction on continuance intention is not reflected in the results of this study. Thus, it differs from some models or theories in the literature. Another perspective reveals that one variable is not less valuable than the others and all variables should be taken into consideration. Upon theoretical examination of the variables that explain the intention to continue online learning, it becomes evident that usability, outcome expectation and perceived value, in addition to confirmation and satisfaction, hold significant importance. Usability plays a crucial role in human-computer interaction, outcome expectation maintains a prominent position in social cognitive theory, and perceived value is supported by the rationale in marketing literature. These variables carry similar weights in affecting the intention to continue online learning. As such, the model makes an important contribution to the adult education and e-learning literature. This study also provides a novel perspective for future research. It presents different results from the dominant models or theories in the literature with good fit indices and explanatory power. This may support a new beginning in the literature. In this regard, it is expected to encourage new research in explaining adult learners' intentions to continue e-learning.

For practitioners, the research results have important implications for design and learning. Outcome expectations significantly impact satisfaction. This means that the possible academic, psychological or social consequences of e-learning have a significant impact on learner satisfaction. Educators and educational administrators should analyze the expectations of adult learners carefully and plan the learning process in line with these expectations. To enhance adult learners' outcome expectations, it is recommended to communicate e-learning outcomes also utilize flexible e-learning considering learning materials, time, job and family responsibilities. Implementing theoretical concepts in practical courses and providing immediate responses to inquiries would enhance the perceived value of the e-learning system. It will also have a positive impact on student motivation and engagement. Furthermore, the usability of the e-learning system significantly impacts its confirmation. Hence, it is imperative to consider the characteristics of adult learners while designing e-learning systems. System designers should conduct a

comprehensive analysis of the usability of the e-learning system across various age demographics.

It is crucial to acknowledge that the research relies on self-reports, introducing limitations such as social desirability or response bias. In addition, the study data is limited to the learning management system of a state university in Türkiye. This is a limitation, as that there may be e -learning barriers specific to the culture and the country in which the research is conducted. Additionally, the research sample comprises of higher education graduates, who may exhibit distinct characteristics compared to other adult education groups. More detailed analyses should be conducted to overcome these issues. Besides, conducting studies with different samples using different learning management systems will enable the results to be confirmed by other studies. Future research should, thus, include more variables from different theories and models. Finally, this study employs a quantitative research approach. Although it is difficult to include adult learners in different cities, in-depth information can be collected through interviews or online meetings to support quantitative data.

Ethical Committee Permission Information

Name of the board that carries out ethical assessment: Aydın Adnan Menderes University Scientific Research Ethics Committee for Social and Human Sciences

The date and number of the ethical assessment decision: 22.12.2022/289121

Author Contribution Statement

Taner ARABACIOĞLU: *Carried out the design and implementation of the research, to the analysis of the results and to the writing of the manuscript.*

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