Hakemli Yazılar / *Refereed Papers*

Determinants of User Acceptance of Digital Libraries

Dijital Kütüphanelerin Kullanıcı Kabul Belirleyicileri

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Abstract

Using the Decomposed Theory of Planned Behavior this research aims to determine the factors that affect the intentions of teaching staff towards using digital library services. Data are collected from 426 respondents and structural equation modeling is used to analyze the responses. Study results showed that attitude toward use and subjective norm have an important positive effect but perceived behavioral control does not have an effect on intention. Another finding is that compatibility is more effective than relative advantage in this context and it is seen that the system's ease of use is more related with perceived behavioral control rather than attitude.

Keywords: User acceptance of digital libraries; user acceptance of information technology; Decomposed Theory of Planned Behavior; Theory of Planned Behavior; perceived behavioral control.

Öz

Bu çalışma, Parçalara Bölünmüş Planlı Davranış Teorisini kullanarak öğretim üyelerinin dijital kütüphane hizmetlerini benimseme niyetlerini belirlemeyi amaçlamaktadır. 426 katılımcıdan toplanan verinin analizi için yapısal eşitlik modellemesinden yararlanılmıştır. Çalışma sonuçları kullanıma yönelik tutum ve öznel normun niyet üzerinde olumlu yönde önemli bir etkiye sahip olduğunu, algılanan davranış denetiminin ise bir etkisi olmadığını göstermektedir. Diğer bir bulgu ise, bu bağlamda uyumun göreli üstünlük değişkeninden daha etkili olduğu ve sistemin kullanım kolaylığı değişkeninin de tutum yerine algılanan davranış denetimi ile daha ilişkili olduğudur.

Anahtar Sözcükler: Kullanıcının dijital kütüphane kabulü; kullanıcının bilgi teknolojisini kabulü; Parçalara Bölünmüş Planlı Davranış Teorisi; Planlı Davranış Teorosi; algılanan davranış denetimi.

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Introduction

Along with the digital revolution in the 1970s, information and communication technologies have started to take an important place in our daily lives. These new technologies have provided access to large amounts of information much more quickly and easily than users could achieve previously. This change has also affected the universities and due to the increase in the amount of information, it has paradoxically become both much easier and more difficult for scientists to be updated in their fields. At this point, the roles and strategies of university libraries in scientific communication have been changing dramatically. A transition is taking place from paper-based to digital systems in the information services offered by libraries. Libraries are enriching their collections with digital books, journals, databases etc. and attempting to serve their users more effectively. Therefore, the physical libraries of the past are leaving their places to digital ones which are virtual destinations (Tonta, 2009, p. 744).

As of the 1990s, in parallel with the digitization of libraries, academic research on this field has also increased in volume (Hong et al., 2002). In these studies the prominent topics include system architecture and technologies, digital content and collections, metadata, interoperability and standards (Shiri, 2003). User and usability analysis seem to take a back seat in the field. However, besides the technical aspects, user acceptance is a key factor in the success and full utilization of digital libraries (Nov and Ye, 2008). In the design of these systems, just as in commercial enterprises, user/consumer orientation is a necessity and beyond system properties academic research should also focus on the interaction between the system and the users. Therefore, there is a need to understand users' acceptance of digital libraries and identify the factors that can influence their intention to use digital libraries.

There is a large number of models used in the explanation of the acceptance and use of technology. The Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB) and Technology Acceptance Model (TAM) are the most widely used models. However, these models address only a limited number of determinants of usage behavior. Furthermore, a decomposed TPB model based on Taylor and Todd's (1995a, 1995b) work, draws upon constructs from the innovations characteristics literature, and more completely explores the dimensions of subjective norm (i.e. social influence) and perceived behavioral control by decomposing them into specific belief dimensions (Taylor and Todd, 1995a). It allows additional factors that have been shown to be important determinants of behavior to be incorporated in the model. Thus, decomposed TPB provides a more complete understanding of technology usage behavior. Therefore, the objective of this study is to identify critical variables that have significant external effects on potential users' intention to use digital libraries by using decomposed TPB as a framework.

This paper consists of three sections. The first section describes the theoretical background of the decomposed Theory of Planned Behavior and the research model. The following section explains the procedures and results of the survey. Finally, this paper ends with a discussion of the results of our research.
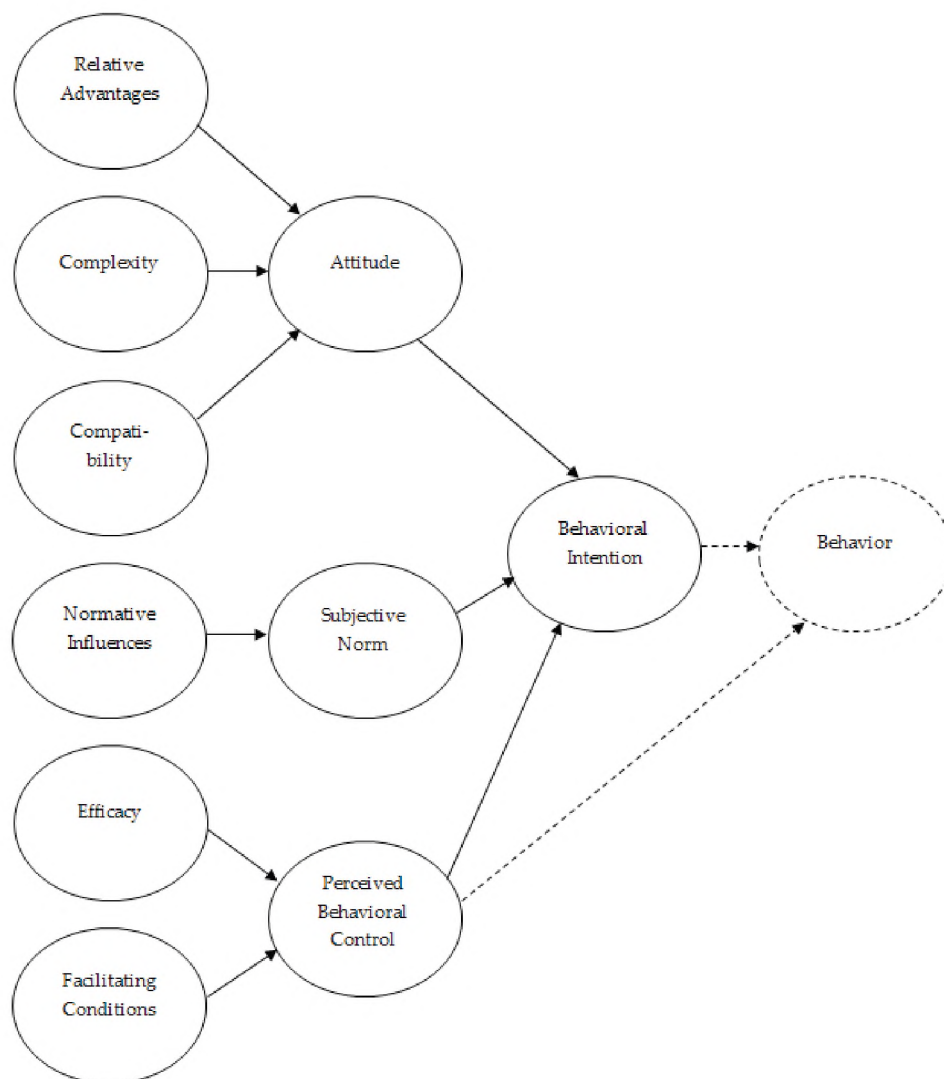
Theory of Planned Behavior

The Theory of Planned Behavior is one of the most commonly used models to explain human behavior in the field of social psychology. Because of its structure focusing on the understanding and predicting of the behavior, the theory strives to reveal the determining factors of the behavior and with a series of intermediate steps, correlates the behavior of a person with his/her prominent and explicit beliefs.

According to the theory, the first determinant of behavior is the intention of a person to fulfill (or not fulfill) a behavior. The intention is the function of three key elements; attitude toward the behavior forming the individual factor, subjective norm reflecting the social impact and perceived behavioral control on a behavior reflecting a person's perception of the ease and challenge of enacting a behavior (Ajzen, 1991). As a general rule, the more positive the attitude and subjective norm are and the higher the perceived control over a behavior is, the stronger the intention of fulfilling the behavior is (Ajzen, 1988, page 133). These three basic factors are affected by a person's explicit or prominent beliefs. Ultimately, the person's behavior can be explained by taking his beliefs into account. Figure 1 shows these variables and relationships in the theory.
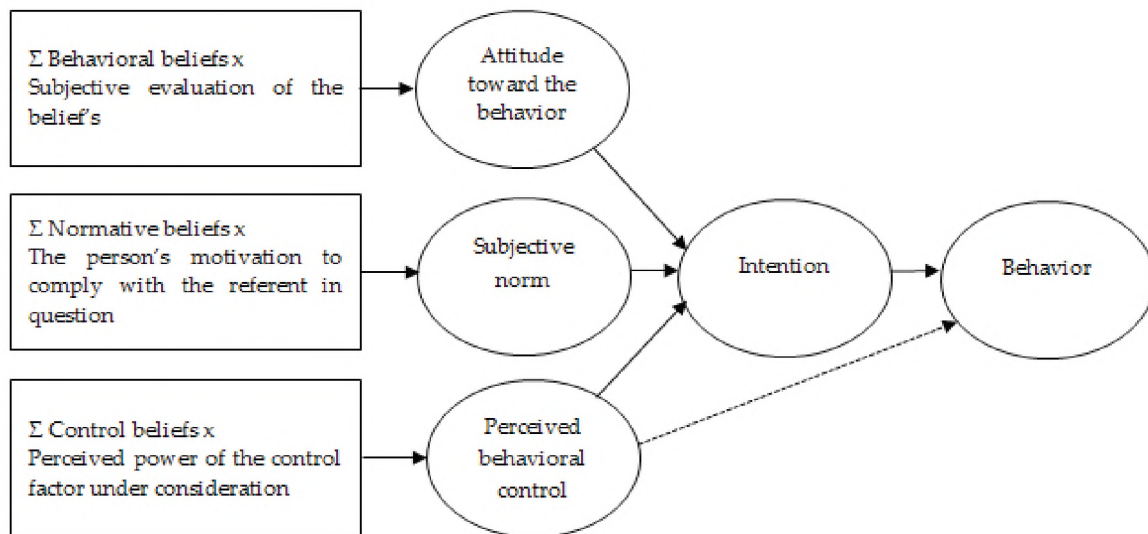
(Figure 1): Theory of Planned Behavior
(Ajzen, 1991, p. 182).

In the Theory of Planned Behavior, beliefs that affect behavior are treated as one-dimensional. However, considering the beliefs as one-dimensional in this way enables us to see both what the relationships are between belief structures and which of these beliefs are more effective. Hence, Taylor and Todd (1995a, 1995b) converted belief variables (attitude toward behavior, subjective norms and beliefs that affect the perceived behavioral control) in the Theory of Planned Behavior into multi-dimensional ones and have developed the Decomposed Theory of Planned Behavior. The model examines the external factors that affect the technology acceptance of the users and the relationships between these factors based on the Theory of Planned Behavior. These variables in the model and their relationships are shown in Figure 2.

(Figure 2): Decomposed Theory of Planned Behavior
(Taylor and Todd, 1995a).

Research Model and Hypotheses

The research model is shown in Figure 3. In the Decomposed Theory of Planned Behavior, the most important determinant of a person's adoption and use of any technology is whether she/he has an intention in this direction. While the purchase of some technologies (computers, videos, etc.) is enough for their acceptance, some of them (such as computer programs) need to be used constantly (Gatignon and Robertson, 1985). For acceptance of digital library services, their regular or continuous use is also needed. Therefore, the intent in this study expresses the person's intention to use digital library services permanently in the future.

According to the Decomposed Theory of Planned Behavior, attitude, subjective norm and perceived behavioral control affect intention of technology use at the first level. Ajzen and Fishbein (1980, page 6) describe attitude as positive or negative assessments of the person to fulfill the subject behavior. In this study, the attitude is defined as a person's positive or negative reviews towards using digital library services. The more positive a person's attitude towards fulfilling the behavior is, the greater the intention to fulfill the behavior will be (Ajzen, 1991). Different studies in the acceptance of information technology and adoption of technological innovations show that attitude has a significant impact on intention to use (Choi et al., 2003;

Dabholkar and Bagozzi, 2002; Karahanna, Straub and Chervany, 1999, Taylor and Todd, 1995a; Vishwanath and Goldhaber, 2003).

There are 8 hypotheses (H) (regarding Perceived Behavioral Control) as shown in Figure 3:

H1: The attitude towards using digital library services positively affects the intention to use these services.

Subjective norm in this study represents the social pressure that a person perceives on using digital library services. Basically, the attitudes and beliefs of reference groups which are important for a person have an impact on the intention of the person to perform a specific behavior. According to the Decomposed Theory of Planned Behavior, subjective norm positively affects the intention to use technology (Taylor and Todd, 1995a). Different studies have also showed that subjective norm has a positive effect on intention to use (Karahanna, et al., 1999; Venkatesh and Davis, 2000).
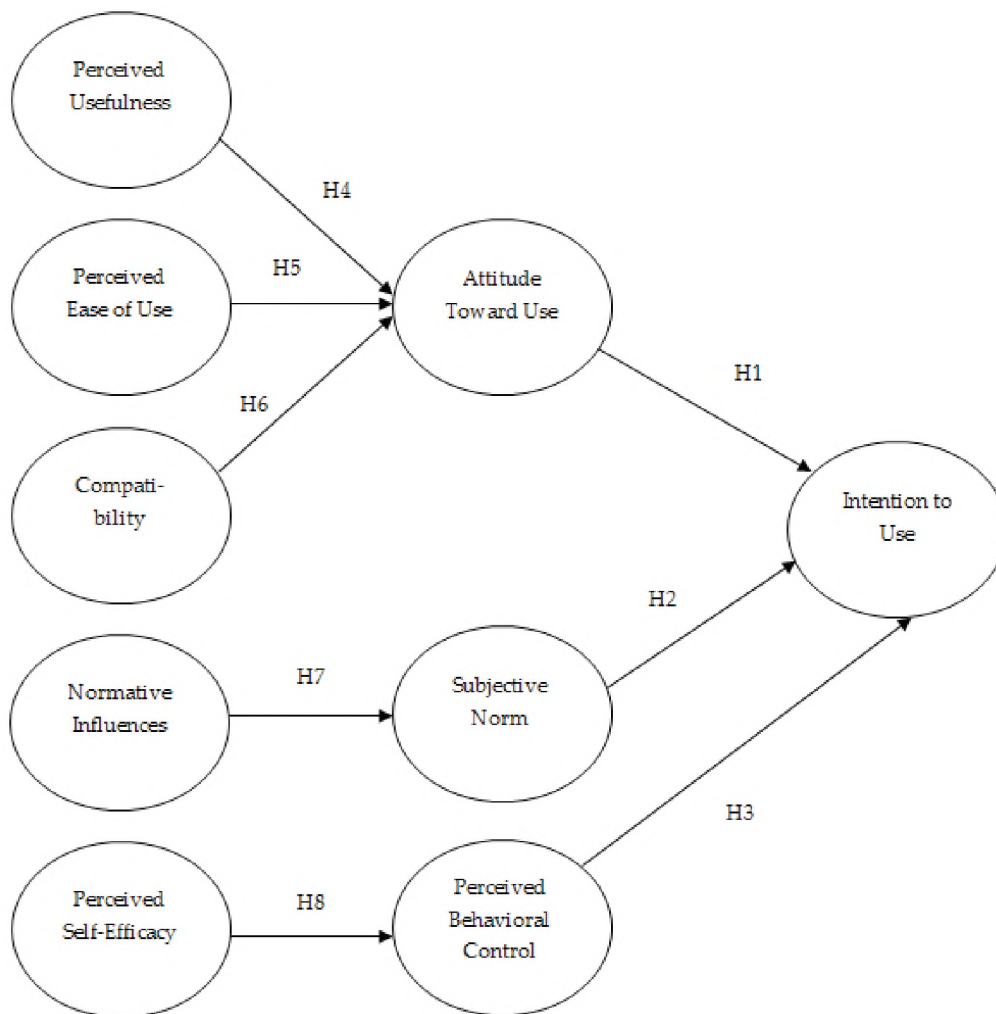
(Figure 3): Research Model
(Produced based on Taylor and Todd's model, 1995a, p. 143).

H2: Subjective norm positively affects the intention to use of digital library services.

Social norms can both accelerate and/or inhibit the spread of an innovation (Rogers, 2003). Subjective norm is a social pressure that is perceived by a person in fulfilling or not fulfilling a behavior (Ajzen and Fishbein, 1980). Perceived behavioral control is an individual's

perceived ease or difficulty of performing the particular behavior (Ajzen, 1988, p. 133). Perceived behavioral control is defined as the necessary resources, skills and other opportunities a person has in the use of digital library services. The Decomposed Theory of Planned Behavior shows that Perceived Behavioral Control positively affects the intention to use technology (Taylor and Todd, 1995b). The studies on the acceptance of technology and adoption of technological innovations also show that perceived behavioral control has a positive impact on the intention (Choi et al., 2003; Limayem, Khalifa and Frini, 2000; Mathieson, 1991; Venkatesh et al., 2003).

H3: Perceived behavioral control positively affects intention to use of digital library services.

For the purpose of determining the behaviors affecting attitudes, the Decomposed Theory of Planned Behavior uses "perceived characteristics of innovation" developed by Rogers. Instead of using all the characteristics determined by Rogers, the model uses only relative advantage, complexity and compatibility that have a more effect on attitudes and intention (Moore and Benbasat, 1991; Tornatzky and Klein, 1982). These three variables determine the attitude towards behavior. Relative advantage is the perception of an innovation as being more useful than a substitute product (Rogers, 2003, p. 590). This variable shows great similarity with the perceived usefulness construct of Technology Acceptance Model. Perceived usefulness refers to the belief that using a system will improve business performance (Davis, 1989). In this study, perceived usefulness is defined as a person's perception of whether the use of digital library services increases his/her job performance or not. In the technology acceptance literature, there are so many studies that reveal the impact of perceived usefulness on attitudes (Schepers and Wetzels, 2007).

H4: The perceived usefulness of digital library services positively affects attitude.

Complexity is the perception of the difficulty in understanding and using the innovation (Rogers, 2003). The more complex the innovation is, the less possible a person's adoption of the innovation will be. The "perceived ease of use" variable developed in the information systems literature as equivalent to this concept has been highly recognized and is a widely used construct. Ease of use refers to the notion that the use of a technological system or innovation does not require too much effort (Davis, 1989). There are so many studies that show perceived ease of use positively affects adoption/use of intention and attitude (Brown and Venkatesh, 2005; Bruner, and Kumar, 2005; Choi et al., 2003; Compeau, Meister and Higgins, 2007; Dabholkar and Bagozzi, 2002; Karahanna at al., 1999; Lee, Kozar and Larsen, 2003; Venkatesh and Davis, 1996; Venkatesh and Davis, 2000).

H5: The perception that digital library services are easy to use positively affects attitude.

Compatibility is defined as person's perceptions of an innovation compatible with their existing values, needs and past experiences (Rogers, 2003, p. 555). Compatibility enables a person to give a "meaning" to the innovation, therefore consider it more familiarly. In this study, compatibility is defined as the congruity of digital library systems with a person's job, experiences and ways of doing business. Numerous studies show that compatibility is effective on adoption/intention to use and attitude (Compeau et al., 2007; Eastlick, 1993; Holak and Lehman, 1990; Ostlund, 1974; Ram and Sheth, 1989; Wee, 2003).

H6: Compatibility of digital library services with the work of a person positively affects the attitude.

Studies which have been conducted about the adoption of technological innovations show that social influence has an important role on the adoption and use of innovations (Choi et al., 2003; Taylor and Todd, 1995a; Venkatesh and Brown, 2001). This social influence in the context of Decomposed Theory of Planned Behavior (subjective norm) is determined by normative beliefs. Normative beliefs represent the expectations and preferences of a person regarding whether he/she wants to perform a behavior or not. Taylor and Todd (1995a) state that these beliefs influencing the subjective norms should be determined in the study by looking at

the reference groups that have the potential to affect the behavior. In this study, it is expected that a person's work environment is effective in the use of digital library services. In other words, if a person thinks that people around him/her evaluate the use of digital library services positively, this belief will create a social pressure on the use the services.

H7: A person's beliefs in his/her business environment for the use of digital library services positively affect the subjective norm.

Perceived behavioral control is an individual's perceived ease or difficulty of performing the particular behavior Studies show that perception of self-efficacy has a significant impact on perceived behavioral control (Ajzen, 2002; Armitage and Conner, 1999; Higgins and Shanklin, 1992; Manstead and Van Eekelen, 1998; Sparks, Guthrie and Shepherd, 1997; Taylor and Todd, 1995a; Venkatesh and Brown, 2001). Self-efficacy is the beliefs of a person whether a he/she has enough capacity to perform a behavior or not and it is more related to the belief of a person for performing a certain task rather than his/her talents (whatever talents he/she has) (Compeau and Higgins, 1995). While using the concept of perceived self-efficacy, Bandura (1997, p. 42) addresses the issue that the variable should be dealt with taking the substitute variable into account. Therefore, in this study self efficacy is defined as a person's ability to use digital library services.

H8: The perception of self efficacy towards the use of digital library services positively affects perceived behavioral control.

Method
This study attempts to determine the factors that affect the intentions of teaching staff towards using digital library services based on the Decomposed Theory of Planned Behavior. So a survey research design was used to collect the data.

Sample

The sample was selected from 1,766 faculty members of Anadolu University, which is a medium-sized university in Turkey. A quota sampling method was used in the selection of the sample. To determining the quotas, scattering of the unit/department (faculty, colleges, vocational schools and institutes) and titles (professors, associate professors, assistant professors, research assistants, teaching assistants, instructors and experts) were used. In accordance with the specified quotas, 750 questionnaires (0,42%) were handed out and 426 of them were collected back. Analysis was carried out with the 426 (0,57 %) questionnaires.

Measures

The scale items used by Taylor and Todd (1995b) were rearranged according to the digital library systems. After the pilot study was conducted with 30 people, the scale items were finalized.

Data Collection Procedure

The data were collected by survey method. The survey was conducted through 12th October-20th November 2009. The questionnaire consists of three parts; the first part contains general information about the study, the second part contains scale items and the last part contains demographic information and usage patterns of digital library services.

Results

Instrument Validation

Confirmatory factor analysis was used to test the measurement model. In the confirmatory factor analysis, goodness of fit criteria produced by LISREL should be assessed first. The values taken by the measurement and structural model according to the goodness of fit criteria are shown in Table 1 below. The $\chi 2$ test is extremely sensitive to the number of samples (Kline, 1998, p.

128) and when the sample size is more than 200, the higher the sample size grows, the more significant the results of χ2 (Hair et al., 1998, p. 655). Therefore, other goodness of fit measures was also taken into consideration in the evaluation of the model.

The first criteria used are the ratio of χ2 to the degrees of freedom (χ2/df). This ratio (336.33/194=1, 73) shows quite a good fit. The GFI (0.94) and AGFI (0.91) values are acceptable, and the NFI (0.95), NNFI (0.97) and CFI (0.98) values have quite a good goodness of fit. Similarly, the RMSEA (0.042) and SRMR (.033) values are also lower than the value of 0, 05. When all the obtained fit criteria are collectively taken into account, it can be said that the measurement model has quite a good goodness of fit values.

(Table 1): Fit Indices for Measurement and Structural Models

Goodness of Fit Measures	Recommended Values		Measurement Model	Structural Model
	Acceptable	Very good		
χ^2	-	-	336,33	420,30
Df	-	-	194,00	211,00
χ^2/df	< 5,00	< 2,00	1,73	1,99
GFI (Goodness of Fit)	> 0,90	> 0,95	0,94	0,92
AGFI (Adjusted Goodness of Fit)	> 0,90	> 0,95	0,91	0,90
NFI (Normalized Fit Index)	> 0,90	> 0,95	0,95	0,94
NNFI (Non-Normalized Fit Index)	> 0,90	> 0,95	0,97	0,96
CFI (Comparative Fit Index)	> 0,90	> 0,95	0,98	0,97
RMSEA (Root Mean Square Error of Approximation)	< 0,08	< 0,05	0,042	0,048
RMSR (Root Mean Square Residual)	< 0,08	< 0,05	0,033	0,042

For the reliability of the constructs within the measurement model and convergent validity, Cronbach's alpha, composite reliability and explained variance values were used (These values are shown in Table 2).

(Table 2): Descriptive Statistics of Constructs

	Mean	Standard Deviation	Cronbach's Alfa	Composite Reliability	Average Variance Extracted
Perceived usefulness	4,44	0,62	0,86	0,86	0,68
Perceived ease of use	3,83	0,74	0,85	0,85	0,66
Compatibility	3,86	0,77	0,87	0,87	0,70
Normative influences	2,89	0,89	0,61	0,61	0,44
Perceived self-efficacy	3,64	0,96	0,85	0,85	0,73
Attitude toward use	4,01	0,68	0,84	0,85	0,66
Subjective norm	3,19	0,99	0,96	0,96	0,93
Perceived behavioral control	3,63	0,85	0,75	0,78	0,65
Intention to use	3,98	0,75	0,95	0,95	0,86

Although there is not a definite limit, it is suggested that structural reliability to be over 0.70 and variance to be over 0, 50 (Hair et al., 1998). As can be seen from the Table 2, the reliability values of the constructs except for that of "the effect of business environment (normative influences)" are over the desired values of 0.70 and explained variance values are

above the desired limit of 0, 50. Based on these values, it can be said that the indicators determined within the measurement model are sufficient to represent the aforementioned constructs.

(Table 3): Descriptive Statistics of Items

Items	Mean	Standard Deviation	Factor Loadings	Squared Multiple Correlations
Perceived Usefulness				
PU1	4,35	0,77	0,77	0,60
PU2	4,51	0,77	0,86	0,73
PU3	4,44	0,71	0,85	0,72
Perceived Ease of Use				
PEOU1	3,94	0,83	0,78	0,60
PEOU2	3,73	0,85	0,89	0,79
PEOU3	3,80	0,85	0,77	0,59
Compatibility				
COMP1	3,88	0,85	0,85	0,72
COMP2	3,84	0,90	0,77	0,60
COMP3	3,85	0,86	0,88	0,78
Normative Influences				
NI1	2,69	1,06	0,65	0,42
NI2	3,09	1,03	0,68	0,46
Perceived Self-Efficacy				
PSE1	3,64	0,98	0,84	0,71
PSE2	3,64	1,08	0,87	0,76
Attitude Toward Use				
ATU1	4,16	0,68	0,81	0,65
ATU2	4,00	0,79	0,89	0,80
ATU3	3,88	0,87	0,73	0,54
Subjective Norm				
SN1	3,16	1,01	0,95	0,90
SN2	3,21	1,01	0,98	0,96
Perceived Behavioral Control				
PBC1	3,71	0,92	0,94	0,89
PBC2	3,54	0,97	0,64	0,41
Intention to Use				
ITU1	4,05	0,79	0,91	0,82
ITU2	3,94	0,77	0,94	0,88
ITU3	3,95	0,78	0,94	0,89

Factor loadings are from confirmatory factor analysis.

Convergent validity on the other hand can be provided under the condition that the predicted coefficient path between each item and the structure to which it belongs is significant (Anderson and Gerbing, 1988, p. 416) and high (Kline, 1998, p. 216). Hair and others (1998, p. 612) state that path coefficients should be over 0, 50. When the measurement model is analyzed, it is seen that path coefficients between the items and structures are over the value of 0, 50 and appear to be significant at the level of $p < 0, 01$. Also, squared multiple correlations between the individual items and their a priori constructs are high (above 0, 40 in all cases). These values can be interpreted in the direction of structures having convergent validity. Squared multiple correlations between the individual items and their a priori constructs are also high (above 0, 40 in all cases). When these values are taken into account, it can be interpreted that the structures have convergent validity (See Table 3).

(Table 4): Discriminant Validity

Constructs	1	2	3	4	5	6	7	8	9
1. Perceived Usefulness	0,68								
2.Perceived Ease of Use	0,09	0,66							
3.Compatibility	0,29	0,28	0,70						
4.Normative Influences	0,04	0,07	0,11	0,44					
5.Perceived Self-Efficacy	0,03	0,22	0,17	0,00	0,73				
6.Attitude Toward Use	0,32	0,23	0,53	0,04	0,10	0,66			
7.Subjective Norm	0,06	0,00	0,09	0,49	0,00	0,09	0,93		
8.Perceived Behavioral Control	0,03	0,58	0,26	0,08	0,18	0,14	0,00	0,65	
9.Intention to Use	0,21	0,06	0,27	0,09	0,02	0,42	0,14	0,07	0,86

Diagonals represent the average variance extracted. Other entries represent the shared variance.

To examine discriminant validity, we compared the shared variances between constructs with the average variance extracted from the individual constructs (Kurulgan and Özata, 2010, p. 258). This analysis shows that the shared variance between constructs was lower than the average variance extracted from the individual constructs, confirming discriminant validity (see Table 4). In summary, the measurement model demonstrated adequate reliability, convergent validity, and discriminant validity.

Structural Model

The values of goodness of fit measures for the model are shown in the "Structural Model" column of Table 1. In the analysis, although the $\chi2$ is significant, other fit measures were also examined because $\chi2$ test is highly sensitive to sample size. The $\chi2$/df value found as 1, 99 (<2) can be determined well. It is seen that the GFI (0, 92), AGFI (0, 90) and NFI (0, 94) 0.90 values are above the acceptable limit and the NNFI (0.96) and CFI (0, 97) values are above 0, 95 which is necessary for a good model. The RMSEA (.048) and SRMR (0.042) values are below 0, 05 which is an acceptable limit. Therefore, it can be said that the structural model shows quite good fit criteria.

(Table 5): Hypotheses Testing

|	**Beta**	*t*-value	R^2
Intention to Use			
= Attitude toward use(H1)	0,59	11,35**	
+ Subjective norm (H2)	0,20	4,87**	0,45
+ Perceived behavioral control (H3)	0,02	0,50	
Attitude Toward Use			
= Perceived usefulness (H4)	0,27	5,23**	
+ Perceived ease of use (H5)	0,10	2,05*	0,60
+ Compatibility (H6)	0,53	8,47**	
Subjective Norm			
= Normative influences (H7)	0,73	12,80**	0,53
Perceived Behavioral Control			
= Perceived self-efficacy (H8)	0,09	1,87*	0,59
+ Perceived Ease of use***	0,72	13,94**	

Note: * p<0, 05; ** p<0, 01. Beta: Standardized coefficients

*** Added to the model after LISREL modifications

After evaluation of the goodness of fit measures of the model, hypotheses tests were conducted (Hair et al., 1998). Table 5 shows relationships related to t values and coefficients predicted in the model. When the t values given in Table 5 are examined, the Perceived Behavioral Control → Intention to Use relationship was not significant (p<0,05). Therefore, hypothesis H3 was rejected. In the model except for the ones between the Perceived Ease of Use → Attitude Toward Use and Perceived Self-Efficacy → Perceived Behavioral Control, all other relationships are significant (p< 0, 01). At the same time, the directions of the relationships in the model are all as expected. As a result, 7 of the 8 theoretical hypotheses (H1, H2, H4, H5, H6, H7, and H8) were accepted.

When the beta (standardized coefficients) values in Table-5 are examined;

- Attitudes (0, 59) have the largest positive effect on the intentions to use digital libraries. Subjective norm (0, 20) has a below average positive effect on the intention. Contrary to expectations, perceived behavioral control doesn't have any effect on the intention. These variables explain 45% of the intention to use.
- It has been seen that the most influential variables on attitude is compatibility (0.53) and perceived usefulness (0, 27). In contrast, it has been found that perceived ease of use has a much lower effect on the attitude (0, 10). In the model 60% of attitude towards use has been explained with these variables.
- Work environment has quite a strong effect on subjective norm (0, 73) and this variable explains subjective norm at a rate of 53%.
- It has been seen that perceived self-efficacy has very little effect on perceived behavioral control. On the other hand, although unforeseen in the theoretical model, perceived ease of use is more effective on perceived behavioral control rather than the attitude. In the model, 59% of perceived behavioral control is explained.
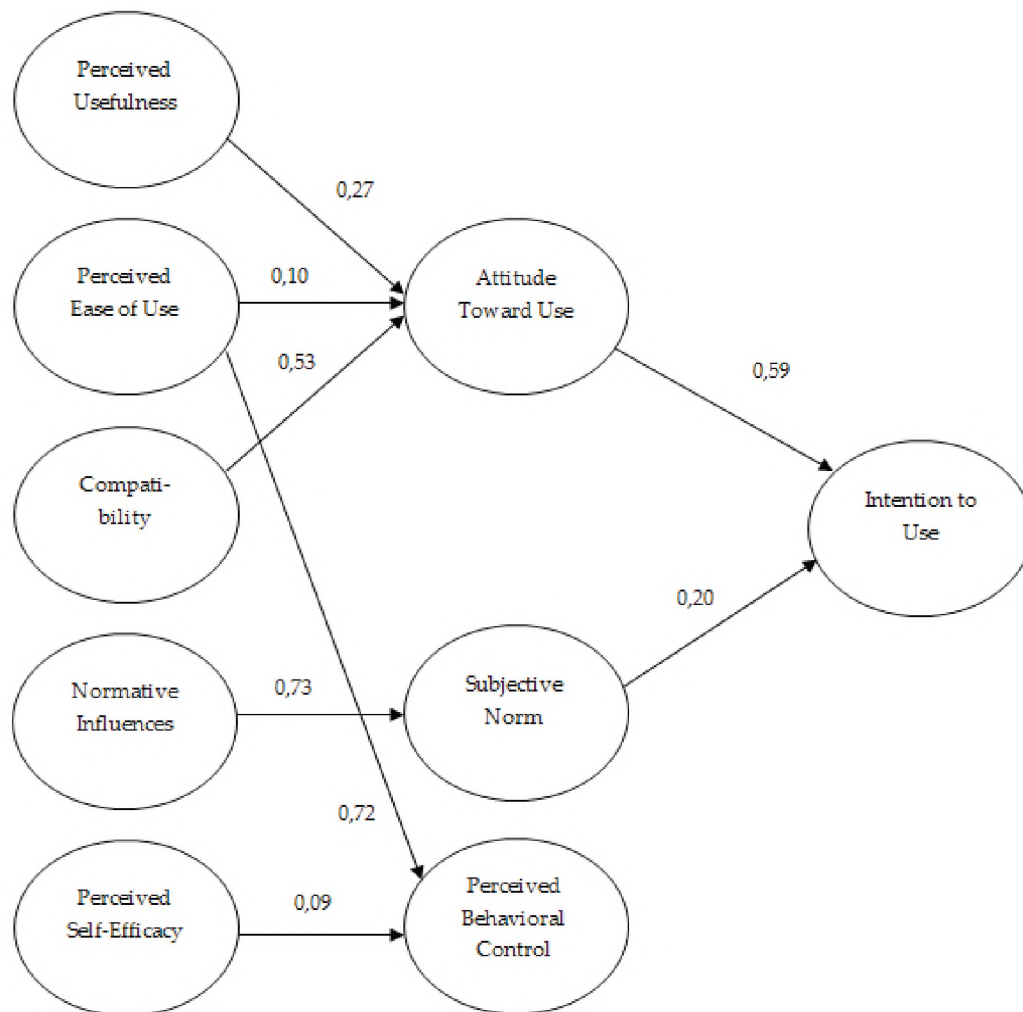
(Figure 4): The Final Model

     The final version of the model is shown in Figure 6. Of all the relationships foreseen in the model, only perceived behavioral control did not affect the intention to use; and all the other relations came true. In addition, perceived ease of use was more associated with perceived behavioral control rather than attitude.

Conclusion

In this study, the Decomposed Theory of Planned Behavior has been used as a theoretical framework and the study aimed to determine the factors affecting the acceptance of digital library services. Study results showed that there are many factors affecting the acceptance and use of digital library services. First, it is seen that the attitude toward use and subjective norm have an important positive effect on the intention to use. For a person to have a positive attitude toward the use of digital library services, it is important that he/she needs to perceive the system is useful and compatible with his/her work and past experiences. It is also seen that the system's ease of use is more related with perceived behavioral control rather than attitude. In addition, positive normative beliefs on using digital library services are also important. Especially, an individual's having positive attitudes and thoughts enables him/her to have positive normative beliefs.

The impact of attitude toward the behavior, subjective norm, and perceived behavioral control on the intention varies according to the type of behavior and situation (Ajzen, 1991). In this study, it is seen that the most influential variable on the intention is attitude toward adoption. It has long been known that there is a direct relationship between attitude and intention (Dabholkar and Bagozzi, 2002; Fishbein and Ajzen, 1975). Moreover, like in the adoption studies in which the Decomposed Theory of Planned Behavior is used, it is also seen that the attitude toward adoption has more impact than the other variables (Limayem, Khalifa and Frini, 2000; Taylor and Todd, 1995a).

Furthermore, similar to the study of Taylor and Todd (1995a), it is seen that perceived behavioral control does not have an effect on intention. The digital library services in Anadolu University have been used since 1999. In their use of the system, users have acquired the necessary resources and skills over the years. Therefore, perceived behavioral control may no longer be an effective variable in the use of digital library services in the case of Anadolu University. Instead, lecturers are more interested in how much value digital library services will provide for them.

Another interesting finding is that in contrast to the studies of Taylor and Todd (1995b), compatibility is more effective than the relative advantage. There are studies that show that compatibility is effective on perceived usefulness and as well as on attitude (Karahanna, Agarwal and Angst, 2006; Holak and Lehmann, 1990). Therefore, that the perceived usefulness and compatibility are taken into account at the same level may have reduced the effect of perceived usefulness. For that reason, a more detailed examination of the relationships between these two variables is needed.

The results of the study provide significant gains in terms of both theory and practice. It has been seen that in the literature, studies are more focused on technological features of digital library services than user-oriented approaches. Therefore, in this study the factors that affect the use of digital library services have been revealed focusing on the user's perspective with the model established. The findings show that in the process of using digital library services, creation of a user-friendly system is not enough and that there is a need to provide appropriate content which provides value for the users. For that reason, in the installation of the library systems, besides the system features, there is a need to give importance to the content required by the system users, in other words, there is a need to follow user oriented approaches for more efficiency.

This study has some limitations. There may be other factors that may affect the scope of the study besides the ones chosen in this study. For example, triability and observability which have positive effects in the adoption of innovations may also be effective in the acceptance of digital library services. In addition, when the effects of an the normative effects could also be understood better if the individual's work environment is divided into two parts as the effects of the colleagues and the effects of senior managers, In addition, the system dealt with in this study has been used for a long time. Therefore, by studying a system that will be used for the first time, factors in the model can be examined better in terms of how their effects may change.

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Summary

Along with the digital revolution in the 1970s, information and communication technologies have started to take an important place in our daily lives. These new technologies have provided access to large amounts of information much more quickly and easily than users could achieve previously. This change has also affected the universities and due to the increase in the amount of information, it has paradoxically become both much easier and more difficult for scientists to be updated in their fields. At this point, the roles and strategies of university libraries in scientific communication have been changing dramatically. A transition is taking place from paper-based to digital systems in the information services offered by libraries. Libraries are enriching their collections with digital books, journals, databases etc. and attempting to serve their users more effectively.

Using the Decomposed Theory of Planned Behavior this research aims to determine the factors that affect the intentions of teaching staff towards using digital library services. Data are collected from 426 respondents and structural equation modeling is used to analyze the responses. Study results showed that there are many factors affecting the acceptance and use of digital library services. First, it is seen that the attitude toward use and subjective norm have an important positive effect on the intention to use. For a person to have a positive attitude toward the use of digital library services, it is important that he/she needs to perceive the system is useful and compatible with his/her work and past experiences. It is also seen that the system's ease of use is more related with perceived behavioral control rather than attitude. In addition, positive normative beliefs on using digital library services are also important. Especially, an individual's having positive attitudes and thoughts enables him/her to have positive normative beliefs.

The digital library services in Anadolu University have been used since 1999. In their use of the system, users have acquired the necessary resources and skills over the years. Therefore, perceived behavioral control may no longer be an effective variable in the use of digital library services in the case of Anadolu University. Instead, lecturers are more interested in how much value digital library services will provide for them.

The results of the study provide significant gains in terms of both theory and practice. It has been seen that in the literature, studies are more focused on technological features of digital library services than user-oriented approaches. Therefore, in this study the factors that affect the use of digital library services have been revealed focusing on the user's perspective with the model established. The findings show that in the process of using digital library services, creation of a user-friendly system is not enough and that there is a need to provide appropriate content which provides value for the users. For that reason, in the installation of the library systems, besides the system features, there is a need to give importance to the content required by the system users, in other words, there is a need to follow user oriented approaches for more efficiency.

This study has some limitations. There may be other factors that may affect the scope of the study besides the ones chosen in this study. For example, triability and observability which have positive effects in the adoption of innovations may also be effective in the acceptance of digital library services. In addition, when the effects of an the normative effects could also be understood better if the individual's work environment is divided into two parts as the effects of the colleagues and the effects of senior managers, In addition, the system dealt with in this study has been used for a long time. Therefore, by studying a system that will be used for the first time, factors in the model can be examined better in terms of how their effects may change.

In summary study results showed that attitude toward use and subjective norm have an important positive effect but perceived behavioral control does not have an effect on intention. Another finding is that compatibility is more effective than relative advantage in this context and it is seen that the system's ease of use is more related with perceived behavioral control rather than attitude.