

*Full Length Research Paper*

# Analysis of computer self-efficacy of Turkish undergraduate students in the sport management departments

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In this study computer self-efficacy of Turkish undergraduate sport management students was investigated. There were a total of 295 sport management students from three universities. Data were collected by survey which was developed by Compeau and Higgins, 1995, translated to Turkish and adapted for students by Aktağ, 2013. The results showed that there was a significant positive correlation among students' computer self-efficacy, performance outcome, personal outcome, affective outcome and a significant negative correlation between computer self-efficacy and anxiety level. Although there is no difference between males and females in terms of computer self-efficacy in the study, the high level of anxiety of female students indicates that they should be supported in technology. Students who are taking computer course received the highest computer self-efficacy than others who were not.

**Key words:** Computer self-efficacy, anxiety, sport management students, gender.

## INTRODUCTION

The incorporation of technology into the teaching and learning has become an important piece in every part of higher education (Saleh, 2008). Students' acquisition of a high level of technological skills and ability is considered a basic part of the 21<sup>st</sup> century curriculum, equivalent to importance of reading and writing (UNESCO, 2000 as cited in Giles and Kent, 2016). Computer and technology education has become a necessary part in educational institutions' curriculum (Hsu and Huang, 2006). Turkish Council of Higher Education (TCHE) recommends

universities to offer computer courses to help students become more proficient in fundamental computer skills and have knowledge about basic concepts of technology. Commission on Sport Management Accreditation (COSMA) indicated that sport management programs need to include technology and computer courses in their programs (COSMA, 2016).

According to COSMA (2016), students from sport management departments may have technological advancements such as web streaming, instant replay for

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officials, injury rehabilitation and social media in addition to use of technology in the classroom to strengthen and stimulate learning. The use of technology in the form of various computer programs is prevalent within many of these operating areas inside sport organizations (Diacin and Van Sickle, 2014).

There is a growing need for technology in the undergraduate sport management curriculum (Hjerpe, 2009). Advancements in technology help to “globalization of sport” and hence the sport management classroom must exhibit that to properly train students for entry into this business (Masteralexis et al., 2012 as cited in Hardin and Pate, 2015). Although a computer course is an effective factor in learning how to use a computer, it does not guarantee that the student will be able to use a computer in every stage of daily life (OECD, 2004 as cited in Tezci, 2011).

For a variety of reasons, there are university students who do not have fully integrated computers in their professions or daily life. Self-efficacy might be one of the reasons that influence individuals' computer usage.

Self-efficacy beliefs have been associated with the studies of Albert Bandura (1997) who defined self-efficacy as “beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments”. An individual's high level self-efficacy might lead to the accomplishing tasks that exceed his or her capabilities, while low self-efficacy might result in the underestimation of one's abilities, thus, leading to under achievement (Bandura, 1982).

Computer self-efficacy (CSE) is based on the belief in one's ability to use advanced computer skills (Compeau and Higgins, 1995). If individuals have high self-efficacy, they tend to see themselves as adequate in using computers. On the contrary, individuals who have low self-efficacy become more disappointed and distressed working with computers and hold back themselves to use computers when they face an obstacle (Karsten and Roth, 1998).

Compeau et al. (1999) developed a model related with CSE. According to this model there is a connection between cognitive factors (self-efficacy, performance and personal related outcome expectations), affective factors (affect and anxiety) and computer usage. Self-efficacy exhibits an individual's beliefs in his/her ability to engage in specific and complicated actions to use computer technology and high self-efficacy brings some expectations as an outcome. Performance related expectations such as rise in job or school performance and, personal expectations such as raises, promotions or praises. Effect and anxiety are the emotional responses of individuals for using computers. While effect characterized as positive feelings such as, enjoyment in using computer, anxiety represents negative feelings such as fear or apprehension when using computers.

According to Hsu and Huang (2006), computer use was the most critical element altering CSE, and in order to enhance students' CSE, educators should consider

increasing students' computer use. In past research, CSE has been connected as a crucial factor for computer-related ability and computer practice (Hasan, 2003). Computer experience is integrated in the amount of time an individual has spent working with computers and the different applications they have learned to use. More years of experience and more frequent computer use should give more opportunities to gather CSE information (Karsten and Schmidt, 2008). As individuals gain more experience with computers, their CSE level increases, too (Saleh, 2008; Papastergiou, 2010). In this study, students were asked if they took computer course or not and frequency of computer usage.

Computer anxiety is another reason why individuals use computers ineffectively. The more experience an individual has with computers, the lower the level of anxiety (Compeau et al., 1999; Şimşek, 2011; Korabili et al., 2010).

Gender is another factor that influences the CSE and frequency of computer usage. This issue has been investigated in many studies. Some researchers demonstrated males have more positive attitudes toward computers when compared to females (İşman and Çelikli, 2009; Cassidy and Eachus, 2002) while others reported no difference between males and females (Ünlü and Süel, 2014).

Computer courses serve as a way of ensuring that students work with computers. The relationship of this experience with CSE becomes an important part of practice. Pointed out by Compeau and Higgins (1999) as cited in Stephens (2006) that in educational environments, one of the main advantages of computer self-efficacy is that it can be used to evaluate individuals' access to and the effectiveness of computer education. According to Cassidy and Eachus (2002) in order to employ and effectively exploit computer technology, educators need to address, as a key issue, computer user self-efficacy beliefs in learners. On the basis of all those information, this current study was focused on evaluation of computer self-efficacy in sport management student.

## METHODOLOGY

### Purpose of the study

Using technology in their profession is an important part of being an innovative sport manager. That is why in order to use technology effectively, in this regard; using computers in their daily and professional life, individuals in sport management area must have high computer self-efficacy. For this reason, performance in computer courses needs to be evaluated. Therefore the purpose of this study is to determine the computer self-efficacy, performance outcome, personal outcome, affective outcome and anxiety level of students from sport management departments. And also, to determine the influence of gender, whether they take computer course, if they do the grades obtained from the course, and how often the computer is used on computer self-efficacy.

Hypothesis of this study were as follows:

1. There is a positive relationship between computer self-efficacy, performance outcome, personal outcome and affective outcome.
2. There is a negative relationship between computer self-efficacy, personal outcome, performance outcome, affective outcome and anxiety.
3. There is a difference in computer self-efficacy, personal outcome, performance outcome, affective outcome and anxiety level of students according to gender.
4. There is a difference in computer self-efficacy, personal outcome, performance outcome, affective outcome and anxiety level of students whether they took computer course before, taking the course now or have not taken the course yet.
5. There is a difference in computer self-efficacy level of students according to grades they received from computer course.

### Participants

The subjects of this study were undergraduate students in Sport Management Departments from three universities: Abant İzzet Baysal University (AIBU), Celal Bayar University (CBU) and Sakarya University (SAU). There were 96 female and 199 male with a total of 295 undergraduate students in this study. Participation was voluntary.

### Data collection instrument

In this research, originally developed by Compeau and Higgins (1995) adapted for students and translated to Turkish by Aktağ (2013) Computer Self-Efficacy Scale (CSES) was used. Validity and reliability of this scale was conducted by Işıl Aktağ in 2013. As a result of factor analysis CSES consists of 5 factors and 28 items. For reliability of the data, the Cronbach alpha was found as 0.88 for the whole scale Aktağ (2013). In current study, Cronbach alpha coefficient was determined as .88 for whole scale too.

Even though this scale is called computer self-efficacy scale, it contains 6 parts:

- 1: The computer self-efficacy (CSE) was measured by 10 items. Participants were asked to indicate their ability to perform a task on computer on a 10 point scale.
- 2 and 3: Personal outcome (PO) and the performance outcome (PFO) were measured by 9 items in 5 point scale.
- 4: The affective outcome (AFO) was measured by 5 items with a 5 point scale.
- 5: The anxiety (A) was measured by 4 items.
- 6: Computer usage was measured by asking frequency of computer usage at their daily life.

### Data collection procedure

For the data collection AIBU, CBU, and SAU sport management departments were selected because computer course was mandatory. CSES was given to all students in those universities during 2014 and 2015 spring semester. After examining the results of the CSES completed by the students, the scale which was filled incorrectly were eliminated and finally 295 forms were evaluated in the study.

### Data analysis

The data was analysed by using descriptive statistics and independent samples t-test, one-way ANOVA and Pearson correlation coefficient statistical techniques. In order to view the assumption of the data's normality, Kolmogorow-Smirnov normality

test was performed. As a result of this analysis it can be stated that the data is distributed normally. The statistical significance level was determined as 0.05.

### FINDINGS

Research findings related to the computer self-efficacy, anxiety, performance, personal and affective outcomes of the students are shown in Table 1. In the table, the arithmetic mean of participants' CSE, PFO, AFO, PO and A calculations are tabulated with their standard deviations. When Table 2 is explored, a significant positive correlation among the participants' computer self-efficacy and the performance outcome ( $r=0.39$ ,  $p=0.000<0.01$ ) can be seen. The rest are given respectively as the computer self-efficacy and the affective outcome ( $r=0.30$ ,  $p=0.000<0.01$ ), the computer self-efficacy and the personal outcome ( $r=0.27$ ,  $p=0.000<0.01$ ), the affective outcome and the performance outcome ( $r=0.42$ ,  $p=0.000<0.01$ ) and the personal outcome and the performance outcome ( $r=0.45$ ,  $p=0.000<0.01$ ). However, a negative correlation among participants' anxiety and the computer self-efficacy ( $r=-0.26$ ,  $p=0.000<0.01$ ) and the affective outcome and the computer self-efficacy ( $r=-0.28$ ,  $p=0.000<0.01$ ) were found. According to Table 2, it can be said that as CSE increases, PFO, AO and PO increase as well. On the other hand as A increases, CSE and AO scores decrease significantly.

Table 3 presents a comparison of the students' computer self-efficacy, the anxiety, the performance, the affective and the personal outcomes according to gender. It is found except anxiety there was no significant difference between male and female students' in their computer self-efficacy, performance, affective and personal outcomes. The only difference between male and female students is found in anxiety scores. Female students' anxiety mean is 8.23 while it was 7.17 for male students' ( $t(295)=2.45$ ,  $p=0.015<0.05$ ).

When Table 4 is analyzed, significant differences were found in the computer self-efficacy, the anxiety, the performance and the affective outcomes, of students whether they took computer course, taking it currently or did not take it yet. For CSE, PFO and AO, students who are taking computer course currently had the highest scores among others, respectively  $\bar{X}=77.12$ ,  $\bar{X}=15.25$ , and  $\bar{X}=20.7$ . For A, students who are taking computer course currently had the lowest anxiety score among others,  $\bar{X}=6.20$ .

The findings in Table 5 have revealed the significant differences at students' CSE scores according to the grades from the computer course. In this study grade AA represents the score from computer course is above 90, BA is between 85-89, BB is 80-84, CB is 75-79, CC is 65-74, DC is 60-64 and DD is 55-59. According to the findings, there were significant differences between students who had DD with all other grades except DC.

**Table 1.** Mean and S.D. of sport management students' computer self-efficacy, performance outcome, personal outcome, affective outcome and anxiety.

Parameter	N	$\bar{X}$	SD
Performance outcome	295	14.94	2.86
Affective outcome	295	18.79	3.61
Anxiety	295	7.51	3.53
Computer self-efficacy	295	71.81	19.29
Personal outcome	295	16.08	4.71

**Table 2.** Pearson correlation results of computer self-efficacy, performance outcome, personal outcome, affective outcome and anxiety.

Variable		Computer self-efficacy	Performance outcome	Affective outcome	Anxiety
Performance Outcome	r	0.394*			
	p	0.000			
	N	295			
Affective Outcome	r	0.302*	0.427*		
	p	0.000	0.000		
	N	295	295		
Anxiety	r	-0.269*	-0.107	-0.280*	
	p	0.000	0.065	0.000	
	N	295	295	295	
Personal Outcome	r	0.273*	0.455*	0.393*	0.098
	p	0.000	0.000	0.000	0.092
	N	295	295	295	295

p&lt;0.01.

**Table 3.** T test results of computer self-efficacy, performance outcome, personal outcome, affective outcome and anxiety due to gender.

Measurements	Gender	N	$\bar{X}$	SD	df	t	p
Computer Self-efficacy	Female	96	73.58	18.14	293	1.09	0.276
	Male	199	70.96	19.81			
Performance Outcome	Female	96	14.83	2.95	293	-0.454	0.650
	Male	199	14.99	2.82			
Affective Outcome	Female	96	18.21	3.95	293	-1.90	0.058
	Male	199	19.07	3.41			
Anxiety	Female	96	8.23	3.57	293	2.45	0.015*
	Male	199	7.17	3.47			
Personal Outcome	Female	96	16.04	4.48	293	-0.117	0.907
	Male	199	16.01	4.83			

p&lt;0.05.

When Table 6 is analyzed, no significant difference was found among students who said they use computers once a week, several times a week and every day. About half of the students use computers every day. This shows us that most students spend a lot of time with computers

in their daily life.

## DISCUSSION

In this study, students of the departments of sports

**Table 4.** One way ANOVA results of computer self-efficacy, performance outcome, personal outcome, affective outcome and anxiety due to taking computer course.

Measurements	Course	N	$\bar{X}$	SD	F	p	Post Hoc
Computer self-efficacy	Yes	186	72.81	18.45	4.98	0.007*	Yes-No; no-now
	No	69	66.04	22.13			
	Currently	40	77.12	15.59			
Performance outcome	Yes	186	15.16	2.82	3.43	0.03*	Yes-no
	No	69	14.15	2.93			
	Currently	40	15.25	2.72			
Affective outcome	Yes	186	18.69	3.68	3.85	0.02*	Yes-now; no-now
	No	69	18.24	3.41			
	Currently	40	20.17	3.34			
Anxiety	Yes	186	7.53	3.72	4.10	0.01*	No-now
	No	69	8.21	3.23			
	Currently	40	6.22	2.77			
Personal outcome	Yes	186	16.25	4.66	0.893	0.410	
	No	69	15.43	4.71			
	Currently	40	16.45	4.93			

p&lt;0.05.

**Table 5.** One way ANOVA results of computer self-efficacy due to grades from computer course.

Measurement	Grades	N	$\bar{X}$	SD	F	p	Post hoc
Computer self-efficacy	AA	51	78.98	20.14	5.91	.00	AA-DD
	BA	20	79.60	13.75			BA-DD
	BB	36	72.83	17.92			BB-DD
	CB	24	68.54	17.03			CB-DD
	CC	41	69.12	18.02			CC-DD
	DC	8	58.75	16.72			
	DD	8	45.50	11.75			
	Total	188	72.10	19.22			

p&lt;0.05.

**Table 6.** One way ANOVA results of computer self-efficacy due to frequency of computer usage.

Measurement	Computer usage	N	$\bar{X}$	SD	F	p
Computer Self-efficacy	Once a week	21	68.47	19.73	0.345	0.709
	Several times a week	117	72.23	18.43		
	Everyday	157	71.94	19.93		

p&lt;0.05.

management from three universities were taken as samples. The CSE, anxiety level, performance, affective and personal outcomes investigated in relation to their

gender, grade of the computer course and frequency of computer usage.

Pearson correlation coefficient was calculated in order

to be able to see the relationship of students' CSE, anxiety, performance, personal and affective outcomes. According to the calculations, a low positive correlation among students' CSE, performance outcome, affective outcome and personal outcome scores was found on the other hand it was found a low negative correlation between the anxiety and the CSE and the anxiety and the affective outcome. These results approve the studies of Compeau et al. (1999), the CSE and the outcome expectations are powerful and significant predictor of the affective outcome and the anxiety. Findings of this study are also supported by Şimşek (2011) and Korobili et al. (2010) that the CSE has a negative correlation with the anxiety. Namely as anxiety level decreases so too the level of computer self-efficacy and affective outcome.

The t test results indicated that there was no significant gender related difference in the CSE, the performance outcome, the affective outcome and the personal outcome of the students. The only significant difference between male and female students was found in anxiety scores. Male students had lower anxiety scores ( $\bar{X}= 7.17$ ) than female students ( $\bar{X}= 8.23$ ). Gender differences results were inconsistent. Some of the findings indicated that the male students had higher CSE than the female students. However, much of the literature indicated that there are no differences between genders. Consistently, according to Pamuk and Peker (2009), Teo (2008), Ünlü and Süel (2014) and Zorba (2011) there are no significant differences between males and females in the CSE levels. According to İşman and Çelikli (2009), Şimşek (2011), Papastergiou (2008), and Huffman et al. (2013) on the contrary, male students are more confident as compared to female students in computer usage. Although there was not any significant difference at students' CSE level related to their gender, surprisingly a significant difference was found between the female and male students' anxiety level. Because of their high anxiety level of female students while using computers they could not make any computer related career choices. This might also affect their attitudes towards computer technologies.

Results related to the students' taking computer course and their CSE, the anxiety, the performance, the affective and the personal outcomes showed that the CSE, the performance and the affective outcomes of students who declared they are taking computer course currently had significantly higher than students who declared they have not taken it yet or took it before. Besides, the anxiety scores of students who declared they are taking computer course currently had the lowest among others. In this case, the influence or effectiveness of the computer course for extended period of time needs to be questioned. For students taking computer course may not help them to convince this course is important and worthwhile in their profession and educational life thus accordingly, they have not benefited from this course. Göktaş (2012) found that CSE of students was

affected positively after they took computer course. The findings of this study supported this partially. In our case, students who took the computer course had lower anxiety scores than students who had not taken computer course yet. Simultaneously, they have higher CSE scores than the students who have not taken computer course yet. But, the influence of this experience did not last long.

In this study, the students' CSE level was analyzed according to the grades taken from the computer course. It was found that there was a significant difference between DD and the all other grades, except DC. This means that DD is the threshold grade for students to influence their CSE. In terms of students, as long as they do not fail from the course their self-efficacy was not altered. When looked at, the CSE means of the students who took AA from the course was the highest 78.98. Çolak (2013) found a positive correlation between the CSE and the computer grades similar to this work.

The results on the frequency of the computer usage by sport management students show that more than half of the students spend time with computers every day. The CSE of students who said they use computer every day and the ones who use computer several times a week is very close to each other. At this point, we need to questioned students' computer usage. They might use computers communicate with family and friends, gaming or chatting rather than through study related activities. Computer self-efficacy is associate rather to the quality of experience than to the amount of time spending with computers. These results were supported by Özçelik and Kurt (2007). According to the Compeau and Higgins (1995), as the computer usage increases, the computer self-efficacy level is supposed to increase too.

## Conclusion

It is quite important that youngsters who will be professions in the future competencies in using technological tools such as computer in the information age. Because individuals who cannot follow the innovations in technology and cannot use the technology adequately in their professional life will probably be affected negatively. Hence this study focuses on computer self efficacy which is thought to be determinative in the efficient use of computers. Although there is no difference between males and females in terms of computer self-efficacy in the study, the high level of anxiety of female students indicates that they should be encouraged in technology. The difference between DD which is the lowest grade in the search and other grades and if they have computer training or not seems as a factor effecting computer self efficacy. In conclusion it can be said that, educational environment gives opportunities for sport management students to use computers effectively. In this case computer training needs to be supported for sport management students.

## LIMITATIONS AND RECOMMENDATIONS

This study is related with computer self-efficacy of sport management students. When it was considered the rapid development in Information Technologies (IT), the topic of current study may look like noncurrent. But computer courses are provided for university students as a main course for technology training so to study about computer self-efficacy became a meaningful in the field of sport management in Turkey. Thereby, researchers' first priority was to study in this area but in future studies it is suggested that to focus usage of new technologies in sport management or for sport managers.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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