

# The Role of Information and Communication Technology (ICT) in Tourism Education: A Case Study of Higher Education Students

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**Abstract:** Tourism education is introduced as a formal program of study which enhances the economic contribution of the tourism industry to both public and private sectors. The ICT is one of the success tools in tourism in the future and the way it enhances the destinations of tourist. The proposed research aims to represent the impacts of Information and Communication Technology (ICT), as a pedagogical support tool, in tourism teaching, at Eastern Mediterranean University, School of Tourism and Hospitality Management (THM). Nevertheless, ICT is still considered as a limited tool to be integrated as an instructional tool. Based on the recent research, very limited academic research has been carried out on tourism subject at universities particularly in Northern Cyprus. The aim of this study is to find the perceptions of students regarding to use technology in tourism education. The research is designed as a quantitative study. The undergraduate students are participating in this research along with tourism instructors. Data is accumulated with close-ended questions during this study. According to the result the learners' perceptions about using ICT in tourism education was quite positive. Majority of students approved that using ICT and computing devices could enhance their learning positively.

**Keywords:** Information and Communication Technologies (ICT); Tourism education; ICT in education; ICT in Tourism Education;

## **1. Introduction**

Nowadays, tourism is believed to be one of the major economic generators of developing nations and plays an important role in gaining universal recognition. In order to achieve competitive advantage in today's rapid changing market, tourism stakeholders must be aware of the changes and its implications for business and destination modeling management.

As tourism is basically works with other sectors in economy, tourism trend in the future must be taken into consideration. Industry wide benchmarking, creating destination networks and linkages, online social networking and skills strengthening are fundamental drivers for the economic growth of the tourism industry (Braun & Hollick, 2006). According to Mössenlechner (2017) tourism sector contributes to 10% of the annual GDP of the European countries.

This emphasizes the importance of using Information Communication Technology (ICT) and being in an e-business environment for tourism businesses. ICT can change customer relations and benefits as well as helping businesses to increase their digital skills in both strategic and operational level in order to meet requirements of international tourism market.

As tourism industry is international and multicultural by its nature, having knowledgeable employees who are able to use e-business applications and digital skills that can work regardless of cultural communicative differences is necessary for the success of businesses (Mössenlechner, 2017). This can be achieved through acceptance of ICT and internet. Therefore, for higher education this could indicate that students need to be trained in a way that they are able to use technologies properly during their studies since use of technology in teaching and studying can enhance employability in the tourism sector.

ICT skills learned by future tourism managers could increase innovation in this industry. Moreover, more training of tourism operators on ICTs could foster local community engagement with academia on e-Tourism related projects.

In particular, the need to develop students' practical skills during educational tourism programs is an important issue both for academia and the industry. The competitive globalized market requires more trained students, in particular in Information and Communication Technologies (ICTs) literacy (Bull et al., 2008; Sefton-Green, 2004; Selwyn, Gorard, & Furlong, 2006).

## **2. Aim of the Research**

The main aim of this research is to investigate the perceptions of tourism students regarding to use ICT in education.

### **2.1 Research questions**

The following research questions have been formulated:

1. What are the students' perceptions toward using ICT in tourism education?
2. What are the students' perceptions toward using computing devices in tourism study?
3. What are the gender differences on students' perceptions about using ICT in tourism education?

## **3. Tourism Education and ICT**

Recent advances in technologies, particularly ICT and the internet has provided an inimitable improvement in higher education globally (Davis and Wong, 2007). Thus, those countries attempt to gain economic benefits need to gain more educational technologies (Khasawneh et al., 2013). Nowadays, knowledge of informatics and information technology is essential for all tourism jobs as it is required in their profession forums. According to Ramos (2009) competitiveness and utilization of the tourism industry more and more depends on the professionals and managers potential of using ICT to enhance competitive advantages, since ICT allows adding value by facilitating the differentiation of the tourism product as well as enhancing efficiency (Ramos, 2009).

As organizations have realized the importance of ICT professional for today's competitive world, popularity of educational technology has increased and it is becoming more universal (Margavio et al., 2005). According to Davis and Wong (2007), educational technologies acceptance and development in particular ICT and internet has created an inimitable opportunity for global improvement of higher education.

In order to provide sufficient IT skills for the high demands of tourism industry, instructors persistently update curriculum content (Cheung & Law, 2000). In fact, adequate educational background and IT skills can help employees to provide higher quality services for customers compared to their competitors (Chan & Coleman, 2004). In fact, tourism

education must teach courses related to e-commerce as it is known as an important and emerging issue in hospitality and tourism.

Due to mobility of tourism sector, adaption to the changes is an important issue faced by tourism professionals (Pilar, 2007). ICT knowledge for human resources of tourism industry can provide them with the ability to adapt to the changes and enhance their flexibility and interactivity in today's competitive world (Buhalis & Law, 2008).

In fact, having a successful tourism business greatly depends on the important role of people. The way people are employed, managed, educated, encouraged, supported and rewarded are all essential in the success of tourism businesses (Fáilte, 2005, Baum, 2007).

#### **4. Related Works**

Tourism has considered as one of the world's largest industry that significantly contributes to the nations' economy and job opportunities. Also, tourism contributes to gross national product, recruitment and regional development that are highly reported. Compared to the other sectors, it is predicted to have a high growth in early future as people show higher tendency for leisure time (Tahayori and Moharrer, 2006).

High influence of technology-enabled tourism or e-tourism on the ways of conducting businesses in hospitality and tourism organizations is a considerable issue nowadays. Using up to date technologies in order to keep competitive advantages in the industry must be taken into consideration. In fact tourism graduates are extremely encouraged to improve their abilities and competencies particularly in e-tourism field. Moreover, educational programs should continuously update as new technologies spread across hospitality organizations and the globe (Elliot & Joppe, 2009).

According to Sheldon et al. (2009), educational systems need a change in the skills preparation provided to students, and the way the knowledge is transferred in formal settings to meet the challenges of the next decades. Above all, the need to develop students' practical skills during educational tourism programs is an important issue both for academia and the industry. The competitive globalized market requires more trained students, in particular in Information and Communication Technologies (ICTs) literacy (Bull et al., 2008; Sefton-Green, 2004; Selwyn, Gorard, & Furlong, 2005).

Tourism has been considered as an industry greatly depended on information. Travellers search for information in pre-travel stage in order to make decision on their

choices, and as nowadays tourists willing for individualistic trip, information can help them during trip as well.

ICT advances in recent years has changed the world in which it become one of the most important economic, social and human development determinant (Dertouzos, 1997; Khasawneh and Ibrahim, 2012).

Technological achievement and tourism have been developing equivalently for many years (Buhalis, 2008). Since 1980s, ICT have been transforming tourism globally. Advances of ICT have greatly shaped business operations and strategies plus industry structures (Porter, 2001).

Generation of the Computer Reservation Systems (CRSs) in 1970s and Global Distribution Systems (GDSs) in the late 1980s, as well as Internet advances in the late 1990s, have extremely shaped functional and strategic works of the industry (Buhalis, 2003; eBusiness W@tch, 2006).

As Fáilte stated out that “The story of successful tourism enterprises is one that is largely about people—how they are recruited, how they are managed, how they are trained and educated, how they are valued and rewarded, and how they are supported through a process of continuous learning and career development” (Fáilte, 2005).

## **5. Research Method**

The study research method is a case study and utilizes quantitative data collection tool in order to gather data. According to Stake (1995), learners are the main address in the case study due to using them as an approach in research project. Hence, a closed-ended questionnaire was developed by means of a survey. The queries of the questionnaire were adopted from the “Survey of schools: ICT and education” which developed by European scholars for grade 11 (vocational upper secondary education) and has been used in 31 countries of European Union (Singh, 2015). The collected quantitative data was analyzed by using SPSS program. The calculation was based on description analysis and independent sample t-test, in order to assess the students’ perception of using ICT in tourism education.

### **5.1 The Case**

The case of this study was undergraduate students from department of Tourism and Hospitality Managements, spring 2017, at Eastern Mediterranean University. There were 70 students who participated in this study.

Table 1: Demographic of Tourism and Hospitality Management Students

		Frequency	Percent
<b>Gender</b>	Male	38	54.2
	Female	32	45.7
<b>Age</b>	18-20	19	27.1
	21-25	18	25.7
	26-30	24	34.2
	Above 31	9	12.8

Table 1 illustrates the demographic of students. There were 38 males and 32 females from age 18 to above 31, from different countries of Tourism and Hospitality Managements department.

### 5.2 Validity and Reliability

In order to specify the reliability of the gathered data, this study used Cronbach's alpha measurement tool. Joope (2000) stated that the research reliability would be considered as reliable if the degree of the result would be stable over time as well as reproducible into other researches.

As a result, Table 2 illustrates that this study is reliable according to the result of the Cronbach's alpha coefficient, the calculation of the values is based on the sample of the research (n=70), (0.82) for all scales of this research, which indicates a high level of internal consistency.

Table 2: General Reliability

Cronbach's Alpha	N of Items
.827	30

Furthermore, Joope (2000) indicated that the validity level in quantitative research defines the accuracy of research's measurement and result; hence the validity of quantitative research can be specified by inquiring questions and examining other researchers.

## 6. Findings

In this section, quantitative data were examined and analyzed in order to get the students' perceptions of using ICT in tourism education. In the following Table 3, general averages are specified with the purpose of determining students' perceptions toward utilization of ICT for tourism study.

Table 3: Students' Perceptions towards Using ICT in Tourism Education

Questions	Mean	Std.Deviation
1. Digital books (E-book) and textbooks.	2.45	1.079
2. Exercise software, online quizzes and tests.	1.90	.968
3. Multimedia production tools (PowerPoint, video editing, digital recording).	2.72	.874
4. Computer simulations (interactive program simulating real world phenomena in which you can make changes and see the consequences).	1.86	1.017
5. Digital learning games, computer/video games.	1.81	1.083
6. Send or read email messages	2.91	1.031
7. Chat online for school work	2.05	1.146
8. Search the internet to collect information	3.00	.898
9. Download/upload/browse material from your university's website (like using Moodle platform or instructor's website).	3.05	.759
10. Post your work on the Moodle or any online platform.	2.86	.963
11. Participate in online communities or forums related to the subject you study	2.02	1.100
12. Use computers when working in groups	2.67	.998
13. Use computers to conduct experiments (collecting data and/or images, storing them, documenting observation).	3.12	.938
14. Collect information online for future Use.	2.97	.837
15. You concentrate more on what you're learning	2.90	.765
16. You try harder in what you're learning	2.74	.828
17. You feel more independent in your learning (go over work again; find out more about things you are interested in).	3.00	.772
18. You understand more easily what you're learning	2.91	.823
19. You remember more easily what you've learnt	2.84	.894
20. ICT enables you to work better with other students on tasks	2.98	.982
21. ICT improves the atmosphere in class (students are more engaged, motivated and there is less disruption)	3.16	.988

## 6.1 Students' Perceptions towards Using ICT in Tourism Education

Table 4: Students' perceptions toward using ICT in study

	<b>N</b>	<b>X</b>	<b>Std. Deviation</b>
<b>Students' Perceptions towards Using ICT in Tourism Education</b>	70	55.93	8.82

Table 4 illustrates 21 items which combined to determine the students' answers towards using ICT in tourism education. As it can be seen from this table, the majority of perceptions about using ICT tools in study are quite positive, 99.8%, as the mean reads 55.93 and Std. Deviation is 8.82. As a result, most of the tourism students showed positive attitude towards using ICT in tourism education.

## 6.2 Students' Perceptions towards Using computing devices in Tourism Education

Table 5: Students' perceptions toward using computing devices in tourism study

	<b>N</b>	<b>X</b>	<b>Std. Deviation</b>
<b>Students' Perceptions towards Using computing devices in Tourism Education</b>	70	29.14	5.45

As Table 5 demonstrates, 8 items combined in order to show the students' perceptions regarding using computing devices in education. The analysis result illustrates that the majority of students, 72.8%, are using computing devices such as mobile phone, tablet, laptop and computer for their education.

## 6.3 Gender Differences on Students' Perceptions about using ICT in Tourism Education

In order to test whether the students' perceptions about using ICT in tourism education differs significantly among male and female respondents; independent sample t-test is applied.

Table 1: Students often use digital books (E-book) and textbooks, depending on the gender

<b>Gender</b>	<b>N</b>	<b>X</b>	<b>sd</b>	<b>df</b>	<b>t</b>	<b>p</b>
<b>Male</b>	38	2.82	1.020	56	2.68	0.010
<b>Female</b>	32	2.10	1.029			



As it can be seen from Table 6, there is a considerable difference among students' perceptions,  $t(56) = 2.68$ ,  $p = 0.010 < 0.05$ . The perceptions are formed upon using digital books (E-book) and textbooks in tourism education. Therefore, the result shows that male students ( $X = 2.82$ ) are more likely to use digital books (E-book) and textbooks than female students.

Table 7: Students often use multimedia production tools, depending on the gender

<b>Gender</b>	<b>N</b>	<b>X</b>	<b>sd</b>	<b>df</b>	<b>t</b>	<b>p</b>
<b>Male</b>	38	2.21	1.067	56	2.52	0.014
<b>Female</b>	32	1.60	0.770			

As Table 7 demonstrates, the students' perceptions are formed regarding using multimedia production tools (PowerPoint, video editing, and digital recording) in tourism education. The analysis of the research is,  $t(56) = 2.21$ ,  $p = 0.014 < 0.05$ , which shows that there is a significance difference among students' perceptions, ( $X = 2.21$ ) since male students are more often use multimedia production tools than female students.

Table 8: Students often chat online for school work, depending on the gender

<b>Gender</b>	<b>N</b>	<b>X</b>	<b>sd</b>	<b>df</b>	<b>t</b>	<b>p</b>
<b>Male</b>	38	2.46	1.138	56	2.80	0.07
<b>Female</b>	32	1.67	1.028			

Table 8 displays the female and male students' perceptions toward using online chat for their education. According to the analysis, the outcome is,  $t(56) = 2.46$ ,  $p = 0.07 < 0.05$ , which shows that there is a distinction among male and female students. As a result, according to the average ( $X = 2.46$ ), it is concluded that male students are more interested to use online chat for their study than female students.

## **7. Conclusion**

Tourism education is introduced as a formal program of study which enhances the economic contribution of the tourism industry to both public and private sectors. The ICT is one of the success tools in enhancing tourists' destinations and can effectively change future of the industry. ICT skills learned by future tourism managers could increase innovation in this industry. Moreover, more training of tourism operators on ICTs could foster local community engagement with academia on e-Tourism related projects. In particular, the need

to develop students' practical skills during educational tourism programs is an important issue both for academia and the industry.

The goal of this study is to investigate the tourism students' perceptions toward using ICT in education. However, using ICT is still considered as a limited tool to be integrated as an instructional tool. Based on the recent research, very limited academic research has been carried out on tourism subject at universities particularly in Northern Cyprus. As a consequence, the analysis result shows that the learners' perception about using ICT in tourism education was quite positive. Majority of students approved that using ICT and computing devices could enhance their learning positively.

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