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I J C T R

THE FUTURE OF TOURIST GUIDANCE CONCERNING THE DIGITAL TECHNOLOGY: A COMPARATIVE STUDY
Research Article

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ABSTRACT

The advancements in robotic technologies, artificial intelligence, and digital applications prepared the grounds for occupations, especially tourist guidance in the tourism industry. The study is one of the preliminary studies in its field having a comparative approach to analyze tourist guidance concerning the development of digital technology from the perspective of tourist guidance students and Turkish professional tour guides. Simple random sampling is used in the study. The first sample is 52 tourist guidance students in a foundation university. The second sample is 20 professional tour guides. A structured interview technique is used to collect data from the students and a telephone interview technique is used for the tour guides. Findings reveal that the guides do not believe that digital development will affect their jobs negatively soon but they know there is a threat of robots with artificial intelligence, the use of digital applications, and smart technologies. They highlight the key tools on their hands such as the human touch and emotions, human expression of feelings about tourist spots instead of digital voices, apps, and virtual tours. More than half of the guidance students think that they are going to lose their jobs to a robot guide. The study enlightens the field of tourist guidance for researchers and organizations.

Keywords: Tourist Guidance, Digital Technology, Robot Guide

JEL Classification Codes: Z30, Z32

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INTRODUCTION

The digital developments in all industries including the tourism industry have a tremendous impact on the way organizations carry on their businesses. More specifically, the robot guides in museums (Carjaval, 2017), the humanoid guide robots (Díaz-Boladeras et al., 2015; Boboc et al., 2014), the mobile apps in tourist guidance and the service industry (Nugraha & Alimudin, 2020; Dorcic et al., 2019; Bogicevic et al., 2017; Lai, 2015), the virtual tours (Loureiro et al., 2020; Bhatti et al., 2018), the virtual reality in tourism experience (Nisiotis et al., 2020; Bogicevic et al., 2019), the gendered tour guide robots and their effect on the behavior of users (You & Lin, 2019), the information kiosks, 3D devices, and game-based tools (Hacioglu & Tekin, 2016), and the studies related to robots understanding the mimics and gestures of humans, and responding according to their emotions (Ahn & Choi, 2012) show the transformation in tourist guidance, and the perspectives in this occupation. However, in Turkey, the use of headsets through radio frequencies, microphones, and audio-guides that serve as providing information about the destinations to tourists with several languages are some of the technological examples influencing the profession of tourist guidance.

How much the professional tour guides and the guidance students have the current understanding of digital technologies and their impact on how they perform their tasks throughout the tour programs efficiently and effectively is a crucial matter in this digital period. Therefore, adapting to the business contingencies in the tourism market, understanding the digital transformations of consumers in tourist guidance, and the factors affecting the behavior of the organizations' employees, the guides in this study, will allow analyzing the broad views of the professional tour guides and the guidance students, which is under-researched in Turkey.

The theoretical perspective of the study emphasizes the contingency approach. The views in understanding the technological contingencies in the tourism market are critical for future services and building strategies accordingly. Along with this theory, the fundamental purpose of this comparative study is to analyze tourist guidance concerning the development of digital technology from the perspective of Turkish professional tour guides and the guidance students in a foundation university, which is one of the early studies in the guidance field in Turkey and this exploratory study will fill the current gap in the literature. The depth of their comparative point of view will bring different insights to the profession of guidance. Next, the secondary purpose of the study is to increase awareness within the tourism industry that the robot tour guides exist in guidance services and these guides will influence how the tourism professionals do business, react to technology-related contingencies to satisfy the needs and wants of visitors, and interact with various types of visitors through technology.

The first section consists of the theoretical background of the study that is related to the contingency theory, tourist guidance, and its relation to technological advancements in the tourism industry. The second section is the methodology of the study and the main findings. Finally, the third section consists of the discussion, conclusion, implications, limitations, and future research in the field of tourist guidance.

THEORETICAL BACKGROUND

Contingency theory's idea is that *"There is no universal or one best way to manage an organization and the design of organizations and their subsystems must fit with the environment"* (Galbraith, 1974: 36). According to the theory, there are inside and outside factors influencing the behavior of organizations and the results. Doh et al. (2017) highlight that different business contexts, dependent on internal and external situations, affect decisions and outcomes. In literature, the theory is used in numerous tourism studies but no study uses the contingency approach to understand the relationship between tourist guidance and the digital effects on the job of tour guides. For this reason, in this study, the theory can help to understand the respondents' perspectives towards the digital formations in tourist guidance and how they are going to adapt to certain technological changes in the profession of tourist guidance that are essential for applying the necessary skills for the future.

Considering the technological improvements in tourist guidance, the contingent factors, and the changing market conditions in the tourism industry, and the progress in human-machine interaction, it is not possible to ignore the influence

of robot tour guides on tourist guidance. There is a possibility that the robot guides can replace human tour guides in most of the tourist destinations, as it started to happen in museums (Carjaval, 2017), airports (Donadio et al., 2018; Bogicevic et al., 2017), hotels (Yu, 2020; Trovato et al., 2017), restaurants (Huang & Lu, 2017), entertainment centers (Ivanov et al., 2017), and art galleries (Wynne, 2016).

Although the human touch is very important in transferring the feelings and providing services to different types of visitors and the digital guides start to appear in the tourism and hospitality industry more than before, the adaptation of the skillsets of tour guides to the technological advancements along with the agencies is a key issue to comprehend the contingent factors in the occupation of tourist guidance so that the travel agencies and tour operators can apply the necessary strategies while forming the tours that create tourist experiences.

TOURIST GUIDANCE AND DIGITAL TECHNOLOGY

The digital education in guidance programs in universities (El-Din, 2019) plays a significant role in adapting the skills to service requirements of future generations. The developments in digital technology (Prusty et al., 2020; Elgammal et al., 2020) influence almost every single job that exists on earth, and the jobs in the tourism and hospitality industry as well. The advancements in robotic technologies, software use and programming (Tussyadiah, 2020), artificial intelligence (AI), and digital applications (Zsarnoczky, 2017) prepared the grounds for occupations, especially tourist guidance in the tourism industry. Therefore, the robot receptionists, robot tour guides, robot instructors, and robot teachers are some of the terms that are not heard of two decades ago. A humane relationship between the visitors and staff is pivotal in the service industry while serving the guests with politeness, courtesy, and empathy but due to the development of digital and robotic technologies (Loureiro et al., 2020; Nisiotis et al., 2020; Yu, 2020), a human-machine relationship occurred in the service industry (Pencarelli, 2019). The current studies discuss the effects of digital transformation on guidance services (Prusty et al., 2020; Ch'ng et al., 2019; Yildiz, 2019; Burton, 2018), mobile distractions affecting the tourist

experience (Ayeh, 2018), the effects of the wearable augmented reality technology on the service industry (Tussyadiah et al., 2018), the effects of tour guide robots on the behavior of users (You & Lin, 2019) or the replacement of human guides with the robot guides (Yu, 2020; Donadio et al., 2018).

There are several attributes that the tour guides should have according to various authors (Weiler & Black, 2015; Colakoglu et al., 2010) such as being extrovert, hospitable, being responsible, having leadership attributes, having a sense of humor and being talkative, and having business ethics (Guzel, 2007), knowledge, skillset, and physical appearance (Tetik, 2006), leadership and social skills, presentation and ability to speak, and ability to understand situations, comment on issues properly, being passionate (Colakoglu et al., 2010), being highly skilled experience-brokers and consider digital technology while satisfying the needs and wants of different groups of visitors (Weiler & Black, 2015), and even being a psychologist, translator or an animator (Mancini, 2001), and surrogate parents comforting the tourists (Urry & Larsen, 2011).

How much of these valuable features are required for the robots that are providing guidance services in museums (Burton, 2018; Carjaval, 2017), open areas (Kyodo News, 2018), fairs (Stricker et al. 2012), hotels (Trovato et al. 2017), tours (Yildiz, 2019), exhibitions (Rzayev et al., 2019; Trahanias et al., 2005), art galleries (Wynne, 2016), and airports through self-service tech (Bogicevic et al., 2017) or how the technological advancements in tourist guidance affect the way tour guides do their jobs is an essential matter to discuss. Due to this reason, learning the perspectives of professional tour guides on technological developments concerning their job and their possible impacts on tourist guidance are critical. Whether they are willing to adapt to the contingencies in the tourism market and how they respond to the technological changes are key points to consider as well.

METHODOLOGY

Purpose of the study

The study is one of the preliminary studies in its field having a comparative approach to analyze tourist guidance concerning the development of digital technology from the perspective of tourist guidance students and Turkish professional tour

guides. The depth of their comparative perspectives about the improvements in digital technology will bring various insights into the profession of tourist guidance. The second purpose of the study is to raise awareness that the robot guides exist in several guidance services and these type of guides will affect how the professionals do business in tourism and react to technological contingencies to satisfy the needs of visitors.

Method and Sample

Simple random sampling is used in the study. The first sample group consists of 52 respondents who study tourist guidance in a foundation university in Izmir among a list of registered students. A total of nine questions is asked and six of them are open-ended questions. It took approximately 30 minutes for each of the respondents to answer the questions briefly in empty classrooms where there is no distraction, through a structured-interview technique starting from the beginning of March 2019 until the end of April 2019. The second sample group consists of 20 professional tour guides who work in the tourism industry for a very long time. The reason for contacting 20 tour guides but not more is that the researchers recognized that the collected information is being repeated after 20. The same situation is valid for the number of guidance students. A total of ten questions is asked and six of them are open-ended questions. It took 15 minutes for each of the professional tour guides to respond to the questions in a short time, through a telephone interview technique starting from the beginning of May 2019 until the mid of June 2019. We reached these randomly selected professional guides' contact information from The Turkish Union of Tour Guides and contacted with these tour guides in the day time, except the weekends due to the possibility of their very busy work schedules. The fundamental reason for preferring a qualitative technique in this study is to explore and compare the perspectives of two different sample groups through face-to-face communication with the guidance students and a telephone interview with the professional tour guides in a time limit. Along with the content analysis, data are evaluated by frequencies and percentage distributions. Based on the findings, the results and implications are presented.

The study questions are organized and based on the inspiration from the following studies mainly (Yildiz, 2019; Boboc et al., 2014; Trahanias et al., 2005). These studies mainly discuss robotics technology and its effects on the tourism industry and tourist guidance. Besides the open-ended questions, the demographic features are presented in terms of gender, age, work experience, and length of being a professional tour guide. The first question is adapted for the tour guides stating that "As a professional tour guide, what difficulties do you see in performing your job while competing in the international market?" The open-ended questions along with the inspirational studies are as follows. (1) As a potential future tour guide, what difficulties do you see in performing your job while competing in the international market? (Yildiz, 2019; Boboc et al., 2014). (2) What will be the digital trends that will affect the jobs of professional guides in the next 15 years? (Ch'ng et al., 2019). (3) What will be the biggest digital impact on the job of tour guides? Consider digital technology, robots, AI, services, social media, and smart technology in your answer. (Bogicevic et al., 2019; Trahanias et al., 2005). (4) As a consumer, what should we expect from the agencies in terms of providing digital services for the future? (Ivanov et al., 2017). (5) Is there a possibility that a professional tourist guide might lose his/her job to a robot in the future and why? (Yildiz, 2019). (6) Which one do you prefer as a tour guide? A robot guide (look like a human, well-equipped), or a human (have the knowledge, skills, qualifications, and physical appearance)? Why? (Boboc et al., 2014).

FINDINGS

The comparative findings reveal the key perspectives of professional tour guides and tourism guidance students under six topics. These topics are the difficulties in performing the job (Table 2), the technological changes that can affect the jobs of guides in the next 15 years (Table 3), the biggest digital effect on the jobs of guides (Table 4), the expectations of consumers in terms of digital services of agencies for the future (Table 5), the possibility of losing the job of a tour guide to a robot, and the preference of a robot or a human as a tour guide (Table 6). Table 1 presents the demographic characteristics of this study in detail.

Table 1: Demographics of tourist guidance students and professional tour guides

Guidance students (N= 52)	Average	%	Tour guides (N= 20)	Average	%
Gender		100			100
Female		38.5			25
Male		61.5			75
Age		100		40.3	100
Female	22.8	38.5		40.6	25
Male	23.1	61.5		40.2	75
Work experience (months)		100	**Work experience (years)**	16.4	100
Female	2.1	38.5		15.8	25
Male	13.6	61.5		14.7	75
Study Field			**Being a tour guide**	12.2 years	100
Tourism Guidance		100	Female	15.6	25
			Male	11.7	75

Hassles in Performing the Job

Table 2 presents the difficulties while performing the job according to the responses of professional tour guides and the students who are studying tourism guidance in a foundation university. One-fourth of the guides stated the problems they face with the agencies such as providing missing information, misleading tour schedules, and lack of professionalism. On the other hand, 19.2 percent of the tourist guidance students mentioned the difficulties in understanding unique personalities and dealing with cultural conflicts, adapting to different types of tourists, nationalities, and various age-groups.

Table 2: Hassles in performing the job

Professional tour guides (N= 20)	Frequency	Percentage
Problems with the travel agencies (providing missing information, missing schedules, irresponsibility, and lacking professionalism)	5	25
Traffic, transportation problem, night travel	4	20
Bus drivers' lack of training	2	10
There is no seat for the guides because it is sold to the tourists	2	10
Lack of qualification for some guides	2	10
The apathy of some tourists acting like they already know everything	2	10
Long working hours	1	5
Lack of arrangement of more free times for the tourists	1	5
Difficulty in following the tour program in a short period	1	5

Tourist guidance students (*N= 52*)

Difficulty in understanding the personalities and dealing with cultural conflicts, adapting to various types of tourists, nationalities, and ages	10	19.2
The necessity of physical strength, too much stress in the service industry	8	15.3
Lack of tourism planning, lack of archeological protective mindset	6	11.5
Difficulty in managing and organizing people	6	11.5
Struggling with different needs and wants	4	7.69
Worrying about losing jobs to robots	4	7.69
Difficult conditions of woman employees	4	7.69
People should not see guides as people who must do whatever is asked	2	3.84
Political and economic stability is necessary for the country	2	3.84
No social life due to extensive working hours	2	3.84
Over-demanding and irresponsible tourists	2	3.84
Nowadays tourists prefer personal tours rather than travel agencies	2	3.84

Technological Changes That Can Affect the Jobs of Guides in the Next 15 Years

Table 3 presents the technological changes that can influence the jobs of tour guides in the next 15 years. The guides mainly pointed out the digital guidance, mobile applications, and audio systems. On the other hand, the tourist guidance students mostly stressed the existence of robot guides, virtual reality, and high-tech devices.

Table 3: Technological changes that can affect the guides' jobs in the next 15 years

Professional tour guides (*N= 20*)	**Frequency**	**Percentage**
Digital guidance	5	25
Mobile applications	4	20
Audio systems	3	15
Individual guidance services via online	2	10
Online sites presenting the destination via voice	2	10
Presentation technologies, translation software	2	10
No need for a tour guide	2	10
Tourist guidance students (*N= 52*)		
Existence of robot guides	14	26.9
Virtual reality	10	19.2
Advanced technological devices (digital translations in every language, holograms, buses equipped with high technology)	8	15.3
Phone applications	8	15.3
Artificial intelligence	6	11.5
Online digital tours	4	7.69
Technology use in the entrance to landmarks, public transportation, accommodation, and entertainment venues can speed up the work of guides	2	3.84

Biggest Digital Effect on the Jobs of Guides

Table 4 shows the biggest effect on the jobs of tour guides based on the responses. The top four responses of the professional tour guides are smart technologies, robots, artificial intelligence, social media, and mobile applications respectively. The tourist guidance students mainly mentioned digital applications, robot technology, artificial intelligence, virtual reality, and other smart technologies.

Table 4: Biggest digital effect on the jobs of guides

Professional tour guides (*N= 20*)	Frequency	Percentage
Smart technologies	7	35
Robots	5	25
Artificial intelligence	4	20
Social media and mobile applications	2	10
Digital guides	1	5
Voice guide services downloaded to cell phones	1	5
Tourist guidance students (*N=52*)		
Digital applications	12	23.0
Robot technology	8	15.3
Artificial intelligence	6	11.5
Virtual reality	6	11.5
Smart technology	6	11.5
Digital translation	6	11.5
Social media	4	7.69
Collecting information online during trip	4	7.69

Expectations of Consumers In Terms Of Digital Services of Agencies for the Future

Table 5 expresses the expectations of consumers in terms of digital services of agencies for the future. The top two responses of the guides are the reduction in ticket prices due to the advancements in technology and better digital advertisements and better information about the products via the internet. The tourist guidance students' main emphasis is on the virtual tours before buying a tour package, access to information through apps, online agency services, the accompaniment of robots in tours, and virtual guides instead of human tour guides.

Table 5: Expectations of consumers in terms of digital services of agencies

Professional tour guides (*N= 20*)	Frequency	Percentage
Reduction in ticket prices due to the advancements in technology	4	20
Better digital ads and better information about the products via the internet	4	20
Increase in quality through technology	3	15
Presentation of tours digitally with videos before the sales	2	10
Digital platforms should declare the importance of having a licensed guide	2	10
Presentation of a tourist guide correctly, what a licensed guide does in a tour	1	5
Presentation of contracts and other files in a digital platform	1	5
More satisfactory information about the purchased product and services	1	5
Much easier reservation	1	5
Music and internet in the bus	1	5

Tourist guidance students (*N= 52*)		
Virtual tours before buying a tour package	6	11.5
Access to information through apps	6	11.5
Online agency services	6	11.5
Accompaniment of robots in tours	6	11.5
Virtual guides instead of human guides	6	11.5
Easiness of mobile transactions in extra tours	4	7.69
Digital tours without going on a vacation	4	7.69
Digital screens showing the places on the bus	4	7.69
Arranging your tour without the need of an agency	4	7.69
Personalized and complex tours with many combined-services	4	7.69
Transportation and venue connections via AI	2	3.84

Possibility of Losing the Job and the Preference of a Robot as a Tour Guide

Table 6 emphasizes the possibility of losing the job of a tour guide to a robot and the preference of a robot or a human as a tour guide. 60 percent of the professional tour guides believe that they are not going to lose their jobs to a robot shortly. However, more than half of the students are pessimistic about this matter and they believe that they are going to lose their job to a robot in the future. As a tour guide, 80 percent of the guides prefer a human guide instead of a robot guide. 76.9 percent of the tourist guidance students also prefer humans but according to the type of service, 15.4 percent of the tourist guidance students prefer both a human and a robot guide.

Table 6: Possibility of losing the job and the preferences as a tour guide

Possibility of losing the job of a tour guide to a robot		
Professional tour guides (*N= 20*)	**Frequency**	**Percentage**
Believe in not losing the job to a robot	12	60
Believe in losing the job	7	35
Partially lose to a robot	1	5
Tourist guidance students (*N= 52*)		
Believe in losing the job to a robot	28	53.8
Believe in not losing the job	24	46.2
Preference of a robot or a human as a tour guide		
Professional tour guides (*N= 20*)		
Human	16	80
Robot guide	2	10
It depends on the type of services	2	10
Tourist guidance students (*N= 52*)		
Human	40	76.9
Both the human and robot	8	15.4
Robot guide	4	7.69

DISCUSSION

The professional tour guides and the tourist guidance students have several perspectives in understanding the obstacles while performing their jobs as tour guides, the technological transformations that influence the jobs of guides in the next 15 years, the biggest digital effects on their jobs, the consumers' expectations in terms of digital services of agencies for the future, the possibility of losing their jobs to a robot, and their preferences as a tour guide.

Throughout the discussion about the hassles in performing the job, a 40-year-old female tour guide states that *"There is a difficulty in applying for the agency's tour program in a time limit. Agencies are not acting according to the legislation. Selling the bus seats to the consumers including the guide seat".* A 38-year-old male tour guide highlights that *"Traffic and transportation is a problem, especially in night travel".* The guidance students state the *"Difficulty in understanding personalities and dealing with cultural conflicts, adapting to a different type of tourists, nationalities, and ages. Physical strength is necessary. There is too much stress in the service industry".* One-fourth of the professional guides stated that they have problems with the agencies such as collecting complete information about tour schedules, and lack of professionalism. It may be time to consider using digital technology and get help from artificial intelligence technology to adapt to different situations. However, the study of Ahn and Choi (2012) discusses that the robots understand the mimics and gestures of humans, and respond according to their emotions, which can help the human tour guides understand different needs of visitors and conflicts.

In terms of technological changes that can affect the jobs of guides in the next 15 years, a 35-year-old male tour guide mentions that *"Auto guides and translation apps feed the information flow of people superficially. Social media and related apps show the undocumented guidance as if it is legal and reach to people who can speak various languages".* A 31-year-old female tour guide points out that *"Mobile applications that can bring historical and cultural destinations as a package, explain the details of these destinations, and suggest accommodations and restaurants".* A 37-year-old male tour guide strongly believes that

"People can prefer to use audio guides and guidance programs in smartphones but technology cannot take the place of a qualified guide". Concerning the use of mobile devices, the study of Ayeh (2018) draws attention to the mobile distraction that influences the individual tourist experience negatively. The top answers of guidance students are the existence of robot guides and the use of virtual reality. However, a recent study of Tussyadiah et al. (2018) also points out the wearable augmented reality technology in tourism and how the embodiment of technology influences enjoyment and increases the level of experience.

According to the responses based on the biggest digital effect on the jobs of guides, a 33-year-old male tour guide emphasizes that *"Robots and artificial intelligence are already in use in tour points. Tourists show interest in these technologies. Even though some people who want to listen live what the guides say, the technological advancements lead to the value depreciation of occupation".* A 36-year-old female tour guide states that *"The robot technology cannot affect the guidance sector soon but artificial intelligence is an important revolution. Emotion is also one of the products that the guide promotes".* The top responses of tourist guidance students are digital applications and robot technology, which will have the biggest digital influence on the jobs of guides. However, according to the study of Tussyadiah (2020), the application of intelligent automation and the use of artificial intelligence in the tourism industry will increase in the future.

Based on the expectations of consumers in terms of digital services of agencies for the future, a 29-year-old-female guide says that *"Presenting the contracts and other travel files digitally and supporting the presentations with digital technologies are important".* A 42-year-old male guide expresses that *"Consumers are informed about the touristic and archeological sites in digital platforms. But guidance information about licensed guides is limited. This should be explained clearly and professionally. Agencies should mention the importance of licensed guides".* A 28-year-old female guide mentions that *"Before the sales of tour packages, a short video can be prepared to present the destination. Thus, the destination-related problems that can occur*

between the agency, guide, and visitors can be overcome". The top responses of the guidance students are the virtual tours before buying a tour package, access to information through apps, online agency services, the accompaniment of robots in tours, and virtual guides instead of human guides.

In discussing the possibility of losing the job to a robot tour guide, for some experienced guides, it is not possible to lose the job to robots. A 50-year-old male guide states that *"It is partially possible if artificial intelligence can be integrated into robots but this process cannot happen soon. Guides communicate with senses and feelings".* However, some tour guides think the opposite. A 44-year-old male guide mentions that *"We started to see the audio services in today's technology in archaeological sites. Along with the advancements in robot technology, the touristic sites will be affected".* On the other hand, more than half of the guidance students think that they might lose their future jobs to a robot. Digital technologies and visitors' strong engagement with the technologies in museums (Ch'ng et al., 2019), robot guides identifying individuals, estimating the exhibits at which visitors are looking, and approaching them to give information, and expressing a friendlier attitude to repeat visitors (Iio et al., 2019), robot tour guides welcoming tourists (Chaudhary, 2018), robot tour guides replacing human guides (Al-Wazzan et al., 2016), the interaction between robot guides and humans (Diallo et al., 2015) show the signs that the human guide jobs are in danger. Lessons concerning technologies and their applications in tourist guidance programs should be available in curriculums (Buyuksalvarci et al., 2017) so that the guidance students can keep up with the technological transformations, adapt to the contingencies in the tourism market, and use their skills accordingly.

In preferring a robot or a human as a tour guide, a 40-year-old female tour guide stated that *"I prefer a human guide who can understand the emotions deeply and act accordingly than a robot. A robot cannot show empathy".* Other tour guides highlight that *"I select a human guide who is better than a robot in terms of managing emotions and crisis throughout the travel". "It depends on the type of travel. If it is for adventure or a sports activity, I can choose a human guide". "I prefer a robot*

guide. It can be comfortable being in the mode of explain, give information, spare more time, and wait". "Nowadays, I think that people do not give importance to gathering information very much. People can prefer robots if they are looking for different activities which humans cannot offer". However, the vast majority of the guidance students prefer human as a tour guide. They are in favor of the human touch instead of digital trends and applications.

CONCLUSION AND IMPLICATIONS

This comparative study aimed to understand and analyze the tourist guidance concerning the development of technology from the perspective of tourist guidance students of the future and Turkish professional tour guides in the tourism industry. The results fundamentally reveal that the professional guides do not believe that digital developments will influence their jobs negatively shortly but they believe that there is a threat of robots with AI, the use of digital applications, and smart technologies in their work environment. They highlight the essential ingredients on their hand that are the human touch, human expression of emotions and feelings about tourist destinations instead of digital apps, digital voices, and mobile technologies. For the professional guides, it is a challenge to deal with the travel agencies' delivery of information, traffic throughout the tour, the level of professionalism, and the arrangement of tour schedules. Making use of digital technologies and artificial intelligence is important for them to adapt to difficult conditions on the tour. Based on the thoughts of the students, more than half of the tourist guidance students think that they are going to lose their jobs to a robot guide. In this sense, the professional tour guides are more optimistic than the guidance students. Compared to other related studies in the literature about the guidance and technology use (Prusty et al., 2020; Ch'ng et al., 2019), more in-depth studies in Turkey are required to further the understanding of the technological progress and its impact on the profession of tour guidance.

Considering the recent technological developments of tourist guidance, the contingencies in the tourism market, and the progress in human-machine interaction, it is almost inevitable to ignore the influence of robot tour guides and related developments on the profession of

guidance. However, the replacement of human tour guides in most of the touristic spots started to occur in museums, airports, hotels, galleries, food, and beverage service areas, and amusement centers.

Thus, adapting to the digital changes in the tourism market, understanding the real needs of the consumers, providing solutions to those needs, and competing with the robots with their added digital attributes, and humane interaction plays an essential role to sustain the profession of tourist guidance. The recent study of Yildiz (2019) emphasizes that based on the technological improvements, the robots will show up more in open areas rather than in closed areas, where they can give information to tourists in detail in different climate and ground conditions. For these reasons, the tour guides of today should be aware of what type of digital factors will impact their profession soon and have the necessary competencies to fulfill the expectations of the visitors. The following key points are the recommendations for the tour guides and their organizations.

- As an organization, being aware of the contingent factors concerning the technological improvements and trends in the tourism industry.
- Taking continuous actions to develop the technical skills of humans that are going to be used in tourist guidance soon.
- Developing the curriculum for guidance programs considering the technology and human skillset, and increasing awareness about the use of new tools.
- Being familiar with the possible technologies that can be used soon in guidance and the digital aspects of the occupation.
- Understanding the technological needs and wants of the tourists, and paying attention to the humane factors such as empathy, sincerity, leadership, sensitivity, and speaking to the heart throughout the service are some of the key factors to sustain the profession of tourist guidance.
- As a tour guide, having the necessary qualifications for serving the tourists and responding to the needs on time.

- Understanding how guidance services and smart technologies change digitally in the tourism industry and act accordingly.
- Assessing the digital expectations of a different group of tourists with different ages and fulfill their needs and wants.

Limitations and Future Research

A limited number of tourist guidance students are contacted through a structured interview technique and a limited number of professional tour guides are contacted through a telephone technique, in a short time. Due to the time limit on the phone, it is another hassle during the data collection period. For future studies, the sample size can expand by focusing on a specific tourist destination where a lot of visitors are coming for numerous attractions. The specialized tour guides can be contacted for the touristic spots to analyze the use of technology in tour programs. In this way, the digital perspectives of professional tour guides for a specific destination can bring different outcomes. By focusing on a specific location, it can further the understanding of how the visitors accept and use technology or not willing to use that technology in their travel experience. The comparison between the perspectives of international tour guides concerning technology development can further the strategic perspective in the occupation of tourist guidance.

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