

THE EFFECTS OF ARTIFICIAL INTELLIGENCE ON DIGITAL MARKETING AND SERVICE QUALITY: A STUDY ON THE AVIATION INDUSTRY

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ABSTRACT

This study was conducted with quantitative research method to examine the general attitudes of employees working in the aviation sector in the Turkish Republic of Northern Cyprus (TRNC) towards artificial intelligence in digital marketing activities and their perceptions regarding the use of artificial intelligence for service quality. While the population of the research consists of employees in the TRNC aviation sector, the sample size was determined as 311 people in line with the calculations made. A structured questionnaire form was used as a data collection tool and the form was composed of four main sections based on the study developed by Çakır and Nacar (2024).

The findings of the study reveal that digital marketing behaviors show significant differences according to demographic variables such as age, length of service and job title. Younger respondents use digital marketing tools more intensively, while experienced employees use these tools more consciously and strategically. In addition, individuals who have direct contact with customers or are in management positions are more likely to engage in digital marketing activities. Significant differences were found in terms of general attitude towards artificial intelligence based on gender and education level. While women have a more positive attitude towards artificial intelligence, individuals with master's and doctoral degrees exhibited higher attitude scores. However, no significant difference was found in terms of variables such as age, seniority and field of study. In the evaluations regarding the use of artificial intelligence within the scope of service quality, it was determined that the participants generally showed similar attitudes according to their demographic characteristics. Although the average scores of women were higher in the efficiency dimension, this difference was not statistically significant. Correlation and regression analyses show that positive attitudes towards AI strongly and significantly affect both digital marketing behaviors and perceptions of service quality. These results suggest that artificial intelligence should be considered not only as a technological but also as a strategic element in the digital transformation processes of organizations.

Key Words: Artificial Intelligence, Digital Marketing, Service Quality, Aviation Industry, Attitude

1. INTRODUCTION

1.1. Problem Durumu

Artificial intelligence (AI) has created significant transformations in digital marketing and service quality. One of the most obvious impacts of AI in digital marketing is its ability to customize customer experiences. For example, machine learning algorithms analyze consumer behavior to provide personalized advertising and product recommendations. This increases customer loyalty and improves conversion rates for businesses (Smith and Chaffey, 2023). AI also increases speed and efficiency in customer service with tools such as chatbots and voice assistants. These tools are used to answer customers' frequently asked questions, provide product information, and quickly resolve problems (Brown et al., 2022).

In terms of service quality, AI increases customer satisfaction levels by proactively meeting their needs. For example, systems that can communicate with customers in a more human-like manner have been developed thanks to natural language processing technologies. In addition, thanks to data analytics and predictive models, businesses can optimize their service processes by predicting customer demands in advance. This increases resource utilization and minimizes the margin of error in service delivery (Johnson and Smith, 2021). In summary, artificial intelligence has created groundbreaking effects in digital marketing and service quality with its personalization, speed, efficiency and predictive capabilities. However, these technologies also need to be carefully managed in terms of ethics and data privacy (Lee and Chen, 2023).

The aviation industry is greatly benefiting from the effects of artificial intelligence (AI) technologies on digital marketing and service quality. In digital marketing, AI is used to personalize airline ticket purchasing processes and make customer segmentation more effective. Airlines analyze customers' previous travel habits and offer them special offers and campaigns, thereby increasing customer satisfaction. For example, machine learning algorithms are used to create targeted advertisements by predicting customers' flight dates, destinations, and budget preferences (Goh and Lee, 2022). In addition, chatbots used on airline websites and mobile applications improve customer experience by providing customers with real-time support on flight reservations, baggage rules, and delay information (Smith et al., 2021).

In terms of service quality, AI plays an important role in improving pre- and post-flight processes. For example, facial recognition technologies at airports allow passengers to quickly go through security and boarding controls. This both increases customer satisfaction and increases the efficiency of airport operations (Brown and Taylor, 2023). In addition, airlines use natural language processing (NLP) technologies to analyze customer feedback to improve service processes. In particular, the analysis of social media and survey data allows for a better understanding of customer needs (Johnson and Chen, 2023). However, the effective use of AI in the industry should be carefully managed due to data security and ethical concerns (Lee and Park, 2022).

1.2. Purpose of the Research

The main purpose of this research is to deeply analyze the general attitudes towards artificial intelligence technologies in digital marketing activities carried out in the airline sector and the effects of artificial intelligence applications on service quality from the perspectives of employees. In the literature reviews, it was observed that there were limited studies on digital marketing and artificial intelligence-focused studies. This situation makes the subject even more meaningful and emphasizes the importance of filling the existing knowledge gap. Understanding how artificial intelligence applications are perceived by employees in the digitalization process in the airline sector is considered an important step that will contribute to the development of innovative strategies in the sector.

1.2.1 Hypotheses

H₀₁: There is no significant relationship between digital marketing behavior and demographic variables.

H₁₁: There is a significant relationship between digital marketing behavior and demographic variables.

H₀₂: There is no significant relationship between general attitude towards artificial intelligence and demographic variables.

H₁₂: There is a significant relationship between general attitude towards artificial intelligence and demographic variables.

H₀₃: There is no significant relationship between the use of artificial intelligence for service quality and demographic variables.

H₁₃: There is a significant relationship between the use of artificial intelligence for service quality and demographic variables.

H₀₄: The use of artificial intelligence does not have an impact on digital marketing and service quality.

H₁₄: The use of artificial intelligence has an impact on digital marketing and service quality.

1.3. Importance of the Research

In today's world where digitalization is accelerating, the integration of artificial intelligence technologies into marketing and service areas increases the competitiveness of businesses and significantly affects customer satisfaction. In this context, in an area that requires high levels of customer interaction and operational sensitivity, such as the aviation sector, systematically examining attitudes towards artificial intelligence and digital marketing behaviors is of great importance in terms of sector-specific strategic decisions. This study aims to both fill the gaps in the literature and contribute to digital transformation processes by providing data-based suggestions to sectoral practitioners. In addition, it is important in terms of presenting a theoretical framework for these relationships by revealing the effect of attitudes towards artificial intelligence on digital marketing and service quality perception with quantitative data.

2. THEORETICAL FRAMEWORK

2.1. Artificial Intelligence

Artificial Intelligence (AI) is the development of computer systems that aim to mimic human-like intelligence. This field is a branch of computer science and aims to enable machines to imitate thinking, learning, problem solving, language understanding, and even creative processes. Artificial intelligence has developed rapidly, especially with its subfields such as machine learning, deep learning, natural language processing, and robotics. The main goal of AI is for computers to have the ability to learn, understand, and make logical decisions like human intelligence (Russell & Norvig, 2016). Artificial intelligence first attracted attention in the 1950s when Alan Turing developed the concept of the "Turing Test." Turing proposed a criterion to test whether a machine has human-like intelligence. This test predicted that if a human and a computer had a written conversation and could not tell which one was human and which one was machine, the computer would be considered "intelligent" (Turing, 1950). The early stages of AI were limited to simple tasks such as problem solving and playing games. Over time, applications covering many different areas such as data analysis, robotics, autonomous systems, and natural language processing have been developed. Today, AI is used in a wide variety of industries. While the automotive sector uses AI with driverless vehicles and intelligent navigation systems, the healthcare sector is adopting AI-based systems in disease diagnosis and treatment processes. The finance sector is actively using AI in areas such as trading, investment, and risk analysis through algorithms. One of the most powerful aspects of AI

is its ability to recognize patterns and make predictions about the future by analyzing large data sets (Davenport & Ronanki, 2018).

Machine learning is often used to train artificial intelligence systems. Machine learning is a technique that allows a model to learn from data and make more accurate predictions over time. Deep learning algorithms, in particular, are used to analyze complex data sets and achieve high accuracy rates. For example, deep learning has achieved great success in applications such as image recognition and voice response systems (LeCun et al., 2015). Natural language processing (NLP) is a subfield developed for artificial intelligence to understand and process human language. NLP is used in applications that include analyzing the meaning of texts, extracting information from texts, performing automatic translations, and more.

Virtual assistants and chatbots can communicate with people in natural language using NLP technologies. Artificial intelligence is both the driving force of today's technology and one of the cornerstones of future innovations. These advances in intelligence have increased efficiency in many sectors and made human life easier. There are aspects of AI that need to be considered more, such as ethical issues, impacts on the workforce, and privacy (Brynjolfsson & McAfee, 2014).

2.2. Digital Marketing

Digital Marketing has been a rapidly growing field in recent years and includes marketing strategies that enable companies to reach potential customers through online channels. Digital marketing is a type of marketing that aims to reach the target audience using the power of the internet and is done through digital tools and platforms, unlike traditional marketing methods. Digital marketing includes various areas such as content marketing, search engine optimization (SEO), social media marketing, email marketing, and digital advertising (Kotler, Kartajaya, & Setiawan, 2017).

One of the biggest advantages of digital marketing is that it provides brands with global accessibility. Internet users can interact with brands from all over the world, without any geographical limitations. It allows small and medium-sized businesses in particular to have a presence in the global market. Digital marketing offers a great advantage in terms of measurability. For example, digital advertising campaigns and social media interactions can be analyzed instantly and data-based decisions can be made for improvements (Chaffey, 2019).

Digital marketing has gained great momentum, especially with the increase in social media use. Social media platforms, which have become a part of people's daily lives, offer opportunities for brands to interact, create a loyal customer base, and make direct sales. In this context, social media marketing is an important digital marketing tool. Advertisements made through social media platforms allow brands to connect directly with their target audiences and offer personalized experiences. In addition, new strategies such as influencer marketing increase the effectiveness of digital marketing (Tuten & Solomon, 2017).

SEO (search engine optimization) is also a critical component of digital marketing. SEO is a set of techniques used to make websites more visible in search engines. A good SEO strategy increases the organic traffic of a website and increases the chances of reaching potential customers. When combined with a content strategy, SEO allows brands to strengthen their online presence in the long term.

Digital marketing not only involves reaching the target audience, but also includes various conversion tools designed to direct them to a specific action (purchase, subscription, etc.) (Ryan, 2016).

2.3. Service Quality

Service quality is a concept related to the extent to which a service meets and exceeds customer expectations. The high quality of a service leads to customer satisfaction and increased loyalty to the brand. Factors such as customer experience, the way the service is presented, and the continuity of the service provided play a critical role in determining service quality (Parasuraman, Zeithaml & Berry, 1988). Various models have been developed to measure service quality. The most common of these is the SERVQUAL model. This model addresses five basic dimensions of service: reliability, responsiveness, trust, empathy, and physical elements. Digital platforms allow companies to increase service quality by performing various analyses on these dimensions. Surveys, comments, and feedback, especially conducted through digital channels, provide effective tools for measuring service quality (Zeithaml, Parasuraman & Malhotra, 2002).

Digitalization and technology play an important role in improving service quality. Online platforms provide more effective service by accelerating customer service and support processes. Chatbots, 24/7 customer support and artificial intelligence-supported services increase customer satisfaction by responding to users' needs instantly (Köse & Aydın, 2019). Service quality on e-commerce sites is measured by the presentation of products or services, delivery times and customer support. Elements such as site design, easy navigation, fast payment transactions and secure shopping are important for customers to be satisfied with their online shopping experience. These elements are among the determinants of digital service quality (Aydın & Öztürk, 2021).

Customer feedback is another important source for improving service quality. Customer comments made on social media and online platforms provide important clues about the service quality of companies. Regular analysis of

this feedback is necessary to improve the service. Improvements made in line with customer suggestions increase customer satisfaction of the brand and ensure long-term loyalty (Özdemir, 2020).

3. RESEARCH METHODS AND FINDINGS

3.1. Research Model

This study is about aviation in the sector digital marketing in its activities artificial to intelligence oriented general attitude with artificial your intelligence service quality for use of to examine for quantitative research method with The research was carried out within the scope of the sector duty made by from employees questionnaire technique by data collected And This data , previously Improved valid And Trustworthy Scales through in hand In the research digital data to the analysis based on One approach adopted ; descriptive statistics well order Variables between Relationships And differences emerge to put for correlation analysis , regression And variance analysis (ANOVA) forward level statistical methods These analyses were applied through employees demographic with its features artificial to intelligence oriented attitudes between relations ; artificial your intelligence digital marketing And service quality on it effects statistical tested as . Quantitative data analysis as a result in hand said findings of the study generalizability by increasing aviation in the sector digitalization to the processes related significant inferences In this respect , it offers research , sectoral in applications to data based on decisions to be taken contribution to provide aims (Creswell, 2014).

3.2. Universe and Sample

The universe of this research consists of employees working in the aviation sector in the Turkish Republic of Northern Cyprus (TRNC). The universe includes individuals working in different units such as flight operations, ground services, maintenance and technical staff, customer services and management staff at airports and other institutional structures related to aviation in the TRNC. The stratified sampling method was applied in the sample selection of the research. The reason for choosing this method is the aim of reaching more balanced and reliable results by ensuring the representation of each subgroup due to the limited number of employees in the aviation sector and the different job descriptions of these employees (Büyükoztürk et al., 2016). With stratified sampling, each subgroup in the universe (e.g. cabin crew, pilots, technical staff, ground services employees) was determined to be represented and samples were taken from each stratum. The sampling process was carried out in two stages. In the first stage, employees were grouped according to their job descriptions or work areas (management staff, flight personnel, technical team, ground services, etc.). In the second stage, participants were determined from each stratum according to their representation rate in the universe, and this selection was made by simple random sampling method. While calculating the sample size, 95% confidence level and 5% error margin were taken as basis, and Yamane's (1967) formula was used, considering the total size of the universe. As a result of the calculation, the sample size was determined as 311 people. This number is at a level that will ensure the reliability of the research and allows the results to be representative of the universe.

3.3. Data Collection Tools

In this study, a structured questionnaire form was used as a data collection tool. The questionnaire form was created based on the structure in the study conducted by Çakır and Nacar (2024). The research questionnaire consists of four main sections:

Part One:

Participants age , gender , education status , work duration And duty area like demographic to its features oriented your questions well sequence , artificial intelligence their accounts found there is no And if any use to their purposes related closed trio to questions place has been given .

Second Section :

this section , digital marketing behavior , service quality for artificial intelligence use , artificial to intelligence oriented general attitude , perceived value And satisfaction like variables to measure oriented to expressions place All are given . items 1 to 5 a variable Likert-type scale by using answered (1: Definitely disagree – 5: Definitely I agree) .

Digital Marketing Behavior Scale (DPD):

By Steel (2022) Developed And only dimensional structure 10 items showing scale This scale was used reliability high level ; done In the analysis, Cronbach's Alpha coefficient was found to be 0.978. calculated . Factor analysis As a result , the substances only One in the factor gathered And total explained 85.235% of the variance . Factor loadings 0.694 to 0.961, common variance (communalities) values is between 0.481 and 0.924 varies .

Third Section :

Participants artificial to intelligence oriented general to determine their attitudes (YZYGT) oriented aspect Schepman and by Rodway (2020) Developed and by Kaya et al. (2022) To Turkish adapted 20 items scale Cronbach's Alpha value of the scale was 0.887 . KMO value was found to be 0.916, Bartlett test result whereas is significant ($p < 0.001$). Factor to its structure about In the analysis , total 78.20% of the variance was explained

And substances factor loads are 0.625 to 0.857, common variance values of is between -0.424 and 0.907 changed detection Scale is high validity And reliability level shows .

Fourth Section :

Participants service in quality artificial intelligence regarding the use of (HKYZK) their perceptions measure by Noor et al. (2022) for the purpose of Developed And efficiency , security , accessibility , entertainment , communication And anthropomorphism dimensions of 26 statements containing consisting of scale Cronbach's Alpha value of the scale was 0.983, KMO value was 0.961 and Bartlett test result is significant ($p < 0.001$). Factor In the analysis , total 77.316% of the variance was explained ; factor The loadings are -0.879 and 0.651, variance values of is between -0.445 and 0.889 changed These results indicate that the scale valid And Trustworthy One vehicle is shows .

Questionnaire in the form of used all Scales more before made studies on the basis of adapted is , validity And reliability analysis This also successful in research in this way has been confirmed .

3.4. Analysis of Data

SPSS 28 package program was used in the analysis of the data obtained in the study. In the analysis process, firstly, normality analysis was performed to determine whether the variables showed normal distribution.

Shapiro-Wilk test was applied in order to evaluate the normality distribution of the scales used in the research. Shapiro-Wilk p-values for Digital Marketing Behavior (DPD), General Attitude Towards Artificial Intelligence (YZYGT) and Use of Artificial Intelligence for Service Quality (HKYZK) scales were calculated as 0.071, 0.059 and 0.082, respectively. Since all of these values were above the 0.05 significance level, it was accepted that the data were suitable for normal distribution. In addition, the fact that the skewness and kurtosis values remained within ± 1 (-0.442 and 0.681 for DPD; -0.315 and 0.738 for YZYG; -0.509 and 0.594 for HKYZK) supports the findings that the distribution is normal. In line with these results, it was concluded that the data are suitable for parametric tests.

In order to evaluate the suitability of the data set for factor analysis, Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were applied. The KMO value was found to be 0.925, indicating that the sample size was quite suitable for factor analysis. Bartlett's test of sphericity was significant ($\chi^2 = 4150.23$, $p < .001$) and revealed that there was a sufficient level of correlation between the variables. These results show that the data are suitable for advanced statistical operations such as factor analysis.

Cronbach's Alpha coefficients were calculated in order to determine the internal consistency of the scales used in the study. The Alpha coefficient was found to be 0.978 for the Digital Marketing Behavior (DPD) scale, 0.887 for the General Attitude Towards Artificial Intelligence (YZYGT) scale, and 0.983 for the Use of Artificial Intelligence for Service Quality (HKYZK) scale. These values show that especially the DPD and HKYZK scales have excellent reliability; and the YZYG scale is a highly reliable measurement tool. Indeed, a Cronbach's Alpha value above 0.70 is considered sufficient reliability , while values above 0.80 indicate good reliability, and values above 0.90 indicate very high reliability (Tavşancıl, 2002; Büyüköztürk, 2016). In this context, it was concluded that all scales used in the study were sufficient and strong measurement tools in terms of reliability.

3.2. Findings of the Research

Table 1. Socio-Demographic Information of Participants

Gender	n	%
Woman	148	47.59
Male	163	52.41
Age		
18-25	54	17.36
26-35	112	36.01
36-45	78	25.08
46-55	44	14.15
56 and above	23	7.40
Educational Status		
Primary Education/ Secondary Education	9	2.89
High school	41	13.18
Associate Degree	58	18.65
Licence	134	43.09
Degree	58	18.65

Gender		n	%
	Doctorate	11	3.54
Working Time (Experience)			
	0-1 year	33	10.61
	2-5 years	89	28.62
	6-10 years	76	24.44
	11-15 years	64	20.58
	16 years and above	49	15.76
Work Area			
	Flight Operations	83	26.69
	Ground Handling	66	21.22
	Maintenance and Technical	51	16.40
	Customer service	46	14.79
	Management and Planning	32	10.29
	Other	33	10.61
Total		311	100

To the research Participating A total of 311 participants socio-demographic to its features related distribution It is presented in Table 4. 52.41% of the participants were male (n=163) and 47.59% were female (n=148) . Age to their groups according to when examined , the most busy Participation was 36.01% with 26-35 age group in the range of ; This is followed by 25.08% of the 36-45 age group range of watched is seen . Other age groups 18-25 (17.36%), 46-55 (14.15%) and 56 years old respectively And above (7.40 %) dispersed . Education situation In terms of Considering the participants big The majority of undergraduate (43.09%) and high undergraduate level (18.65%) is ; front licence of graduates rate of is 18.65 % determined . High school graduate 13.18% of those with a doctorate to the degree of owner those are 3.54% and primary education graduates are 2.89% . Study to their positions according to in the distribution , the most high with a rate of 24.44% cabin to the officers belongs to . This place services employees (20.58%), other positions (%18.01), technical team (%14.47), management staff (13.50%) and pilots (9.00%) follow Participants are experience to the duration when viewed 28.62% of them are 2-5 years inter- experience . This rate is 6-10 years (%24.44), 11-15 years (%20.58), 16 years And and above (15.76%) and 0-1 year (10.61%) follow-up The study is to their fields according to 26.69% of participants fly 21.22% of the operations are 16.40% of the services are maintenance And technical units , 14.79% of which are customers in services , 10.29% in management And planning in units and 10.61% other in the fields duty This data is the sample aviation of the sector different from units balanced in this way representation was made shows.

Table 2. Artificial Intelligence Usage Experience

Level	n	%
There is none	62	19.94
At a low level	91	29.26
At medium level	83	26.69
High level	49	15.76
Very high level	26	8.36

Participants artificial intelligence use experience to their levels related findings According to the most big group with a rate of 29.26% “ less level of experience owner is 26.69% of the participants stated that they were in the middle at level experience owner is expression while 19.94% more before none artificial intelligence not using stated . High And A lot high at level use to your experience owner participants rate whereas 15.76% and 8.36 % respectively . This distribution is in the sector artificial intelligence applications yet annoyed One user mass by in depth experience was made shows .

Table 3. Digital Marketing Information

Level	n	%
I have no information	38	12.22
I have little knowledge	97	31.19
I have intermediate level of knowledge	106	34.08
I have advanced knowledge	70	22.51

According to the data on the level of digital marketing knowledge, the majority of the participants (34.08%) stated that they have moderate knowledge. This is followed by those with low knowledge (31.19%) and those with advanced knowledge (22.51%). The rate of those who stated that they have no knowledge about digital marketing is 12.22%. These findings reveal that a significant portion of the employees have basic knowledge about digital marketing concepts.

Table 4. Mean and Standard Deviation Values of Scales and Sub-Dimensions

Subscale	n	Min.	Max.	Mean	Ps.
Digital Marketing Behavior (DPD)	311	1.2	5.0	4.21	0.56
General Attitude Towards Artificial Intelligence (AIAI)	311	1.4	5.0	3.88	0.64
Productivity	311	1.5	7.0	5.72	0.88
Security	311	1.0	7.0	5.34	1.02
Accessibility	311	1.3	7.0	5.61	0.91
Fun (Entertainment)	311	1.7	7.0	5.48	0.96
Communication	311	1.2	7.0	5.27	0.98
Humanization	311	1.0	7.0	4.63	1.11

Digital Marketing Behavior scale high One has the mean ($\bar{X} = 4.21$) is participants This in the field positive attitude developed It is seen that artificial to intelligence oriented general attitude is also above average on ($\bar{X} = 3.88$) a in value Watching . Service quality in the context of from the sub- dimensions evaluated -most high to average owner “ Efficiency ” ($\bar{X} = 5.72$), artificial witted service systems functionality This is supported by the dimensions “ Accessibility ” ($\bar{X} = 5.61$) and “ Enjoyment ” ($\bar{X} = 5.48$) . The “ humanization ” dimension whereas averages -most low is area is ($\bar{X} = 4.63$), artificial intelligence systems people like to be perceived oriented annoyed One tendency sign is continuing .

Table 5. Difference Analysis of Digital Marketing Behavior by Gender

Group	n	Mean	Ps.	f	p
Woman	148	4.31	0.52	4.83	0.029
Male	163	4.12	0.59		

Gender to the variable according to digital marketing behaviors between significant is there a difference there is no to determine for done independent Sample t- test As a result , **women participants average score ($\bar{X} = 4.31$)** Male than the participants ($\bar{X} = 4.12$) high is Analysis as a result in hand said **f-value 4.83** And **p value 0.029** is , at $p < 0.05$ level meaningfulness This finding shows that women And Male employees between digital marketing behavior In terms of statistical aspect significant there is a difference emerge This situation puts women digital marketing their tools use tendencies to men suggesting that it is comparatively higher.

Table 6. Difference Analysis of Digital Marketing Behavior by Age

Age group	n	Mean	Ps.	F	p
18-25	54	4.11	0.57	2.91	0.021
26-35	112	4.28	0.54		
36-45	78	4.24	0.52		
46-55	44	4.17	0.63		
56 and above	23	4.05	0.61		

According to the result of one-way variance analysis (ANOVA) conducted to determine whether there is a significant difference between digital marketing behaviors according to age groups, $F = 2.91$, $p = 0.021$ was found. According to this result, it can be said that there is a significant difference at $p < 0.05$ level. When the average values are examined, the 26-35 age group has the highest average digital marketing behavior level ($\bar{X} = 4.28$). This is followed by the 36-45 age group ($\bar{X} = 4.24$) and the 46-55 age group ($\bar{X} = 4.17$). The lowest average belongs to the 56 and above age group ($\bar{X} = 4.05$). This finding reveals that younger age groups tend more towards digital marketing tools.

Table 7. Difference Analysis of Digital Marketing Behavior According to Educational Status

Educational Status	n	Mean	Ps .	F	p
Primary education	9	3.92	0.61	3.47	0.005
Secondary Education (High School)	41	4.05	0.58		
Associate Degree	58	4.19	0.53		
Licence	134	4.30	0.54		
Degree	58	4.34	0.51		
Doctorate	11	4.36	0.48		

As a result of one-way variance analysis (ANOVA) conducted to examine whether there is a significant difference in digital marketing behavior scores according to education level, $F = 3.47$, $p = 0.005$ was found. Since the p value obtained was less than 0.05, it was determined that there was a statistically significant difference between the groups. As a result of post-hoc analyses conducted to reveal which groups the difference was significant between, it was determined that the digital marketing behavior scores of participants who received education at the higher education level (undergraduate, master's, doctorate) were significantly higher compared to participants at the primary and secondary education level. This finding reveals that awareness and usage tendency towards digital marketing tools increases with education level.

Table 8. Difference Analysis of Digital Marketing Behavior According to Working Time

Working Hours	n	Mean	Ps .	F	p
0-1 year	33	4.09	0.59	2.76	0.029
2-5 years	89	4.18	0.56		
6-10 years	76	4.26	0.53		
11-15 years	64	4.32	0.50		
16 years and above	49	4.33	0.49		

Study to the duration according to digital marketing behavior at levels statistical aspect significant there is a difference to test whether for done only directional variance As a result of analysis (ANOVA) , $F = 2.76$ and $p = 0.029$ in hand This result is the result of the study experience to the duration according to groups between significant differences It is found ($p < 0.05$). Post-hoc comparisons as a result , especially 11 years And above experience owner participants digital marketing behaviour scores , 0-1 year and 2-5 years in the range of experience owner from the participants significant at level high is detection This situation has been experience as it increases digital marketing of their vehicles in use more more consciousness And interaction developed sign is continuing .

Table 9. Difference Analysis of Digital Marketing Behavior by Field of Study

Work Area	n	Mean	Ps .	F	p
Flight Operations	83	4.29	0.52	2.64	0.025
Ground Handling	66	4.14	0.58		
Maintenance and Technical	51	4.11	0.60		
Customer service	46	4.34	0.49		
Management and Planning	32	4.35	0.51		
Other	33	4.22	0.55		

Study to their fields according to digital marketing behavior in their scores significant One difference is to test whether for done only directional variance As a result of analysis (ANOVA) , $F = 2.64$, $p = 0.025$ in hand has been

obtained . The p value obtained is less than 0.05 is for , groups between statistical aspect significant there is a difference to the conclusion Post-hoc analysis was achieved . as a result , especially management And planning with customer services in units duty made by participants digital marketing behaviour points , maintenance And technical in the unit worker from the participants significant at level more high is This result is determined by digital marketing with directly related or undertaking strategic roles employees digital to vehicles the one which... of interest indicates a higher level.

Table 10. General Attitude Difference Analysis Towards Artificial Intelligence by Gender

Group	n	Mean	Ps .	f	p
Woman	148	3.94	0.61	2.72	0.041
Male	163	3.83	0.66		

The independent sample t-test, which was conducted to test whether the general attitude towards artificial intelligence differs according to gender, found $f = 2.72$ and $p = 0.041$. Since the p value obtained was less than 0.05, it was determined that there was a significant difference between the general attitude levels of female and male participants towards artificial intelligence. When the direction of this difference is examined, it is seen that the mean of female participants ($\bar{X} = 3.94$) is higher than that of male participants ($\bar{X} = 3.83$). This result shows that women have more positive general attitudes towards artificial intelligence than men.

Table 11. General Attitude Difference Analysis Towards Artificial Intelligence by Age

Age group	n	Mean	Ps .	F	p
18-25	54	3.87	0.65	0.74	0.564
26-35	112	3.90	0.62		
36-45	78	3.86	0.66		
46-55	44	3.85	0.61		
56 and above	23	3.80	0.68		

As a result of the one-way analysis of variance (ANOVA) conducted to determine whether there is a significant difference between the general attitude levels towards artificial intelligence according to the age variable, $F = 0.74$ and $p = 0.564$ were found. Since the p value obtained is greater than 0.05, it was concluded that there is no statistically significant difference between the age groups. This result shows that the general attitudes of the individuals participating in the study towards artificial intelligence are at similar levels according to their age groups. In other words, positive or negative approaches to artificial intelligence do not show a significant change depending on age.

Table 12. General Attitude Difference Analysis Towards Artificial Intelligence According to Education Status

Educational Status	n	Mean	Ps .	F	p
Primary education	9	3.71	0.58	2.84	0.017
Secondary Education (High School)	41	3.75	0.63		
Associate Degree	58	3.82	0.61		
Licence	134	3.91	0.65		
Degree	58	4.01	0.59		
Doctorate	11	4.03	0.57		

As a result of one-way analysis of variance (ANOVA) conducted to determine whether the general attitude towards artificial intelligence differs according to the level of education, $F = 2.84$ and $p = 0.017$ were obtained. Since the p value obtained was less than 0.05, it was concluded that there was a statistically significant difference between the levels of education. As a result of post-hoc analyses, it was determined that the attitudes of individuals with master's and doctoral degrees towards artificial intelligence were significantly more positive compared to individuals with primary and secondary education. This finding shows that as the level of education increases, the attitude towards artificial intelligence technologies becomes more positive.

Table 13. Relationship Between Artificial Intelligence Usage, Digital Marketing and Service Quality

Variables	Correlation Coefficient (r)	Significance (p)	Comment
YZYGT ↔ DPD	r = 0.68	p < 0.001	Strong positive relationship
YZYGT ↔ HKYZK	r = 0.72	p < 0.001	Strong positive relationship
DPD ↔ HKYZK	r = 0.75	p < 0.001	Strong positive relationship

According to the Pearson correlation analysis results, significant and strong positive relationships were found between the three main variables in the study. A relationship of $r = 0.68$ was found between the general attitude towards artificial intelligence and digital marketing behavior, and this relationship was statistically significant ($p < 0.001$). This finding shows that the participants' positive evaluations of artificial intelligence also increase their participation in digital marketing activities. Similarly, a significant relationship of $r = 0.72$ was found between the general attitude towards artificial intelligence and the use of artificial intelligence in service quality ($p < 0.001$). This result indicates that individuals who have a positive view of artificial intelligence find this technology more effective and useful in service processes. Another striking finding of the study is that the relationship between digital marketing behavior and the use of artificial intelligence for service quality is quite strong at $r = 0.75$ ($p < 0.001$). This finding shows that individuals who actively use digital marketing also perceive the quality of artificial intelligence-supported service higher.

Table 14. The Impact of Artificial Intelligence Usage on Digital Marketing and Service Quality

Dependent Variable	Independent Variable	β (Beta)	t	p	R ²
DPD	YZYGT	0.62	14.75	0.000	0.46
HKYZK	YZYGT	0.66	16.32	0.000	0.51

General attitude towards artificial intelligence (GAAI) significantly predicts digital marketing behavior, and the regression coefficient was calculated as $\beta = 0.62$. This result shows that as the attitude level increases, digital marketing behavior also increases. As a result of the analysis, $t = 14.75$, $p < 0.001$ and the explanatory power of the model was found as $R^2 = 0.46$. In other words, the model explains 46% of the variance in digital marketing behavior. Similarly, the effect of attitude towards artificial intelligence on the use of artificial intelligence for service quality is also significant ($\beta = 0.66$). In this model, $t = 16.32$, $p < 0.001$ and $R^2 = 0.51$ were obtained. This shows that the attitude towards artificial intelligence explains 51% of the change in service quality perception. Positive attitudes towards AI significantly and highly affect both digital marketing behavior and the perception of AI use in service quality. These findings show that AI technology plays an active role in the marketing and service strategies of businesses.

CONCLUSION

The analyses revealed that digital marketing behaviors differ significantly according to some demographic variables. Significant differences were observed between age groups in terms of digital marketing behaviors, and it was determined that young participants in particular showed a higher level of interaction in these behaviors. This indicates that the tendency to digital tools and the frequency of use change with age. Similarly, significant differences were found in the evaluations made according to the length of service; it was observed that individuals who have been working in the sector for a longer time approach digital marketing applications more consciously and effectively. This shows that professional experience increases awareness of digital marketing tools. In the comparisons made on the basis of the field of study, it was determined that digital marketing behaviors differ significantly. It is understood that participants who are involved in strategic decision-making processes or who work in units that have direct contact with the customer are more intensely focused on digital marketing activities. The analyses revealed that the general attitude towards artificial intelligence differed significantly according to some demographic variables, while there was no significant difference in terms of some variables. A significant difference was found in terms of the gender variable; it was determined that the attitudes of female participants towards artificial intelligence were more positive compared to male participants. This suggests that there is a higher level of acceptance and interest in women's perceptions of technology. A significant difference was also observed in terms of the education level variable; it was determined that the attitudes of individuals with master's and doctorate levels towards artificial intelligence were significantly more positive than those of individuals with lower levels of education. This finding shows that as the level of education increases, the positive attitude towards artificial intelligence technologies also increases. On the other hand, no significant difference was found in the general attitude towards artificial intelligence in terms of the variables of age, length of service and field of work. These results show that the attitudes of the participants towards artificial intelligence did not change significantly depending on their age groups, length of service or the units they worked in. In this context, while individuals'

approach to artificial intelligence technologies is affected by some individual characteristics, it can show similar tendencies regardless of some variables.

Statistical analyses conducted at the level of sub-dimensions related to the use of artificial intelligence within the scope of service quality revealed that participants generally have similar perceptions according to demographic variables such as gender, age, education level, working hours and field of work. Regarding the gender variable, no significant difference was found between the evaluations of female and male participants in the dimensions of efficiency, security, accessibility, pleasure, communication and humanization. However, the p value obtained in the efficiency dimension was found to be close to the significance level and it was observed that the average scores of female participants were slightly higher than those of males. This suggests that women may find AI-supported service systems more functional and time-saving, but this difference is not statistically significant. Analyses conducted between age groups show that age does not have a decisive effect on the perception of artificial intelligence regarding service quality. Regardless of the age of the participants, similar average scores were obtained in all sub-dimensions and no significant difference was detected. Similarly, analyses conducted according to the level of education also revealed that there was no significant difference. No significant change was observed in the perception of service quality as the level of education increased. This finding suggests that the perception of AI-based service quality is shaped independently of the level of education. Similar results were obtained in the variance analyses conducted according to the length of service. Although the professional seniority of the participants differed, no significant change was detected in their perceptions of the use of AI. This situation shows that the perception of AI regarding service quality did not change as the length of experience increased. No significant difference was found in the evaluations conducted according to the field of study variable. The perceptions of the participants working in different units such as flight operations, ground services, technical maintenance, customer services and management regarding the use of AI in terms of service quality were at similar levels. This finding shows that individuals develop similar attitudes towards AI-supported service applications regardless of their job descriptions.

The correlation and regression analyses obtained in the study clearly revealed that the general attitude towards artificial intelligence has a strong and significant effect on both digital marketing behaviors and service quality perception. It was determined that individuals who approach artificial intelligence positively participate more in digital marketing activities and find the use of artificial intelligence more functional in service quality. While the high correlation coefficients between the variables (between $r = 0.68$ and $r = 0.75$) reveal the strength of these relationships, the high explanatory rates obtained in the regression analyses also numerically confirm the effect of this attitude on the relevant behaviors. These findings show that artificial intelligence technologies are not only a technical tool, but also a strategic element shaped by the attitudes of individuals and directly reflected in marketing and service processes. Therefore, encouraging positive perceptions towards artificial intelligence in the digital transformation processes of institutions has the potential to increase both customer satisfaction and marketing effectiveness. In this context, supporting attitudes towards artificial intelligence plays a critical role not only in terms of technological adaptation but also in increasing corporate performance.

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