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## The Effect of Digital Business Adoption on Tourist Purchase Intention, Given the Mediating Role of Digital Trust: Evidence from Mazandaran Tourism Industry

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### ABSTRACT

The purpose of this research is to investigate the impact of digital business adoption on the purchase intention of tourists, considering the mediating role of digital trust, in the tourism industry of Mazandaran province. This is an applied research with a quantitative (comparative) approach conducted through a descriptive survey using standard questionnaires. The statistical population includes all tourists of Mazandaran province during Nowruz of 2024, numbering about 10 million people. Of this population, using Cochran's formula, a sample consisting of 385 was formed ( $n = 385$ ), the individual members of which were selected using simple random sampling. For measurement of the variables, we made use of the standard questionnaire developed by Pereylygina (2023). Validity of the questionnaire was assessed and confirmed by the academic experts. Its reliability, as measured in terms of Cronbach's alpha ( $= 0.884$ ), was high and thus, confirmed. The obtained survey data for the test of the research hypotheses were analyzed using SEM-PLS technique. The results indicate that digital business adoption has a positive and significant effect on the digital trust and purchase intention of tourists. Also, digital trust is found to have a positive and significant effect on tourist purchase intention in Mazandaran province.

**KEYWORDS:** digital business adoption; tourist purchase intention; digital trust; tourism industry

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## **1. Introduction**

The scope of business growth is wider in the service sector, including tourism, and the Internet has been able to boost it significantly in the form of new digital business processes (Alizadeh & Golkhandan, 2014). The increased competition in the 21st century on drawing the most benefit from tourists' visits has led tourist destinations to use a variety of advertisements and has made tourism managers seek various ways to attract tourists (Labanauskaitė et al, 2020). Before the Corona epidemic, tourism was considered one of the most prosperous industries in the world, so that out of every four new jobs launched in 2019, one job was related to tourism, and tourism alone accounted for 10.4% of the world's gross domestic product (GDP). But since 2020, this industry has been facing many problems to the extent that with 4700 billion dollars in losses and unemployment of 62 million people worldwide, it is among the most affected industries by this pandemic (WTTC, 2021). Under such conditions, countries and operators of the tourism industry make efforts to revive this industry and make proper use of scientific tools to create a suitable position for them in this industry and in the world that is recovering and transitioning from this pandemic. Using the capacities of the Internet and its associated social media as a new form of popular and widely used networks of communities can make a significant contribution to helping businesses prosper again in this industry (Labanauskaitė et al, 2020). Internet and social media, especially among Iranians, are considered as a place to exchange opinions, interests and personal preferences with friends and have a two-way function, on the one hand, they provide the possibility for brand owners to reach the largest number of customers (potential or actual) and on the other hand, they enable users to assume a more active part in this field by participating in electronic word-of-mouth marketing and expressing their opinions, experiences and interests and playing a significant role both in their own conscious choices and those of others. Therefore, one can operate in this competitive environment and ensure the satisfaction of tourists (Karroubi et al, 2019). Based on UNESCO criteria, Iran is one of the ten largest countries in the world in terms of having all kinds of tourist attractions. In terms of climate diversity and nature tourism, it is ranked fifth, but in terms of attracting tourists, it is ranked lowest in the world.

Also, considering the importance of information technology infrastructures for companies and entire markets (Hanseth & Modol, 2021) in recent years and with the expansion of IT applied role in marketing and the development of concepts pertaining to digital marketing, the attention of many researchers, companies and marketing practitioners has been drawn to the use of digital approaches and tools, and since these tools and approaches lead to the improvement and facilitation of the processes of commercial exchanges, sales, customer attraction and retention, etc, they create many values and opportunities for companies. Therefore, for marketers and companies, especially the companies that in entering the tourism markets are looking for agility to gain value and competitive advantage, identification of these tools and approaches is necessary. Today, the maximum use of tourism development capabilities has become a top priority of many managers and planners. However, the proper use of these capacities requires careful investigation, which is the main issue addressed in the present research. Therefore, the main question of the research is

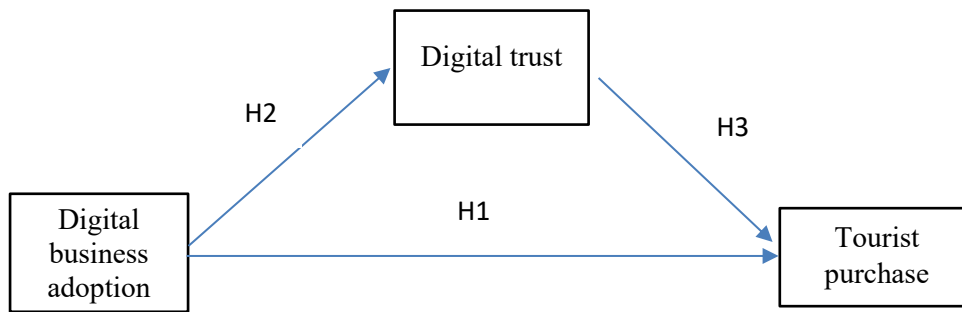
whether the acceptance of digital business has a positive and significant effect on the purchase intention of tourists, given the mediating role of digital trust in the tourism industry.

## 2. Literature review

Today, information technology has brought about unprecedented and lasting changes in the consumer and industrial markets, yet despite the pervasiveness and tremendous impact of information technology in business and marketing over the past 25 years, in the comprehensive body of marketing literature, issues related to information technology on a global scale are not considered as a key knowledge node (Chabowski & Samiee, 2020). However, in recent years, with the progress in the digital area on a global scale, the economic integration between borders and the similarity in the tastes and preferences of consumers have increased the ability of companies to enter the markets and identify the needs and demands of customers. The issues regarding the methods of entering these markets are affected by digital developments and the adoption of suitable entry strategies based on digital tools is crucial for businesses and is considered one of the requirements (Samiee, 2020). The importance of this issue is revealed in a recent review of 6,847 abstracts related to digital business studies from 1972-2021. These statistics and figures show that in recent years, due to the rapid changes in the competition paradigm and the role of information technology in the digital industry in these changes, the adoption of digital businesses is one of the most important concerns of industry owners which is reflected in their decisions for market expansion, growth and finally, survival should (Ramezani et al., 2018).

Campagnolo et al (2023) noted that companies' strategies and business model themes entail choices that create a configuration of interdependent elements that ultimately affect the company's performance. Trischler and Li-Ying (2023) observed that in times of unprecedented changes associated with continuous digital transformation of business and society, an important challenge of contemporary management is to identify and transform these changes into digital business model innovation. Mancuso et al (2023), in a research titled Digital business model innovation in metaverse, stated that in recent times, continuous developments in digital technologies launch new business models in virtual environments. Perelygina et al (2022), in a research titled Digital business models configurations in the travel industry, provided models for creating or altering digital business models which can be used as a guide for operation of current digital tourism businesses.

Tahmasebpour et al (2022), in a research titled Investigating digital marketing components from the perspective of the development of the tourism industry, suggested that tourism development is a complex process and highly dependent on the technical characteristics of digital tools, environmental factors and infrastructure. Deh Yadegari et al (2022) found that electronic advertising has an impact on electronic word-of-mouth marketing and destination image, and destination image affects the attitude. Tahmasebpour et al (2021) stated that tourism development is a complex process and is strongly influenced by the technical characteristics of digital tools, environmental factors and infrastructure. Therefore, based on the above background and drawing on the model of Perelygina et al (2022), the research conceptual model is drawn as follows:



**Figure 1.** Research conceptual model (Perelygina et al, 2022)

Hence, the following hypotheses are made:

**First hypothesis.** Digital business adoption has a positive and significant effect on tourist purchase intention.

**Second hypothesis.** Digital business adoption has a positive and significant effect on tourist digital trust.

**Third hypothesis.** Digital trust has a positive and significant effect on tourist purchase intention.

### 3. Methodology

This is an applied research with a quantitative (comparative) approach conducted through a descriptive survey using standard questionnaires. The statistical population includes all tourists of Mazandaran province during Nowruz of 2024, numbering about 10 million people. Of this population, using Cochran's formula, a sample consisting of 385 was formed ( $n = 385$ ), the individual members of which were selected using simple random sampling. For measurement of the variables, we made use of the standard questionnaire developed by Harris (2023) as detailed in table 1.

**Table 1.** Features of the research questionnaire

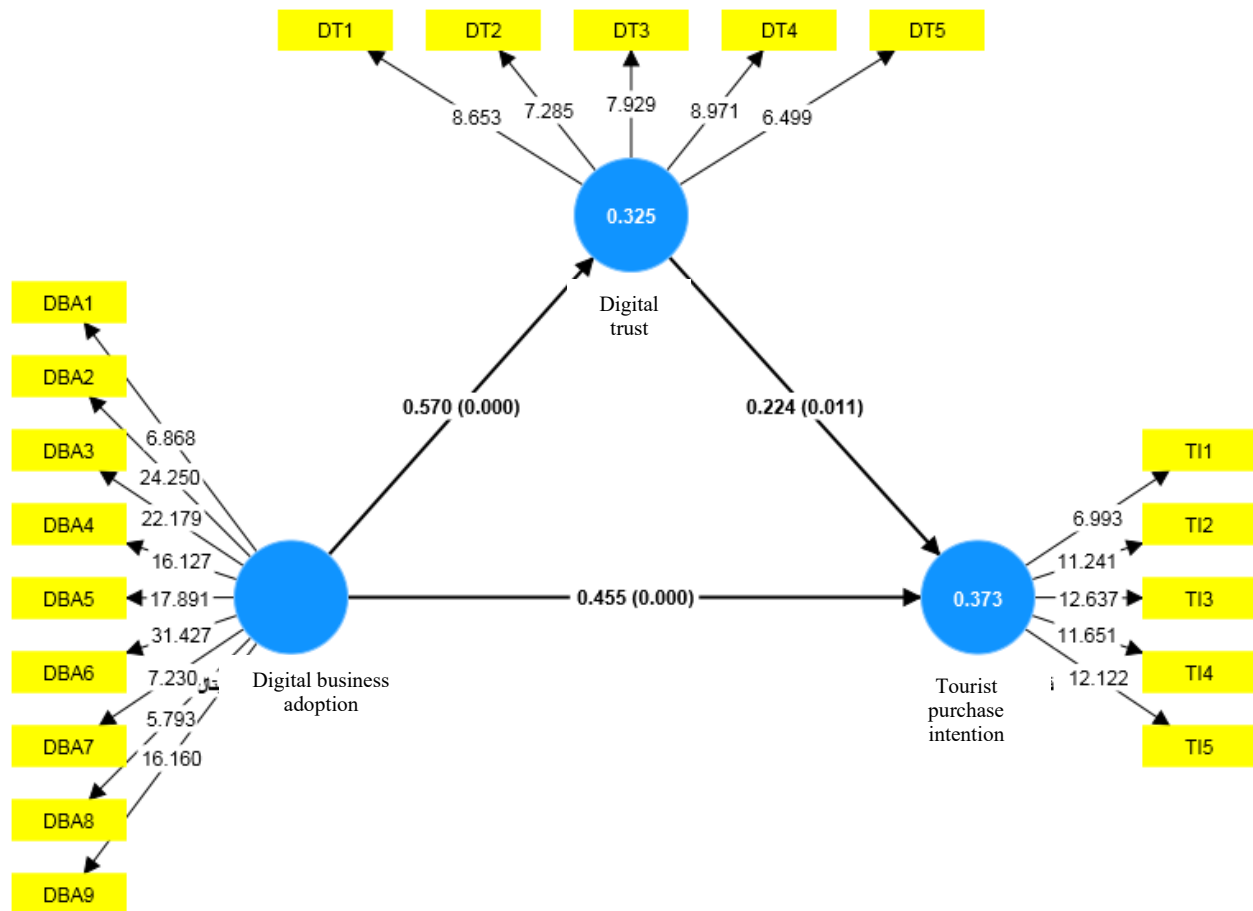
Components	Number of items
Digital business adoption	6
Digital trust	9
Tourist purchase intention	8

The questionnaire was adapted and validated consulting the supervisor and other professors with expertise and knowledge of the field.

A preliminary test of reliability was performed by distributing the questionnaire among 30 respondents, according to which the obtained Cronbach's alpha for all variables of information sharing level and the whole questionnaire was more than 0.7. Next, the obtained data from the whole sample was analyzed in SPSS and the SmartPLS4 software, using structural equation modeling (SEM) technique for PLS.

#### 4. Findings

In this section, the results of confirmatory factor analysis of each research variable by SmartPLS 4 are presented. The strength of the relationship between the latent and observable variable is given by the factor loading. Factor loading is a value between zero and one. If the factor loading is less than 0.4, the relationship is considered weak and is ignored. A factor loading between 0.4 and 0.6 is acceptable, and if it is greater than 0.6, it is very desirable (Klein, 2010). The factor loadings of the research variables were calculated separately as shown in figure 2.



**Figure 2.** Factor loadings of model components in standard state

As can be seen in the figure above and table 2, in all the model's constructs, factor loadings have values greater than 0.4. Hence, the reliability of measurement models is acceptable. Having measured the factor loadings of the questions, Cronbach's alphas and composite reliability (Dillon–Goldstein's  $\rho$ ) were computed, the results of which are reported in the table below.

**Table 2.** The results of Cronbach's alpha, composite reliability (CR), and convergent validity

Convergent validity (AVE)	Cronbach's alpha	CR	Dimension
0.564	0.865	0.840	Digital trust
0.584	0.873	0.841	Tourist purchase intention
0.549	0.877	0.846	Digital business adoption

As is seen in the above table the obtained Cronbach's alpha for all dimensions is greater than the threshold of 0.7, hence the research reliability is confirmed.

To test the composite reliability (CR) of each construct, the Dillon-Goldstein coefficient ( $\rho$ ) is used. The composite reliability reported in table 1 for each construct is greater than the threshold 0.7, hence composite reliability of the constructs are confirmed.

Another criterion in examining the measurement model fit in terms of internal consistency of the constructs is convergent validity which is measured by average variance extracted (AVE). In the table above, the obtained AVE for all constructs is greater than the minimum acceptable value 0.5, whereby the convergent validity of the model is confirmed.

We also use the measure heterotrait-monotrait ratio (HTMT) to assess discriminant validity. If the HTMT value is less than 0.90, there is discriminant validity among the constructs (Henseler et al, 2015).

**Table 3.** Discriminant validity by HTMT

Digital business adoption	Tourist purchase intention	Digital trust	HTMT
			Digital trust
		0.357	Tourist purchase intention
	0.569	0.507	Digital business adoption

### Overall model fit

Chen (1998) proposed three values of 0.19, 0.33 and 0.67 as criterion values for weak, moderate and strong  $R^2$  values, respectively, as the indicators of the structural model overall fit.

**Table 4.**  $R^2$  values

$Q^2$	Adjusted $R^2$ value	$R^2$ value	Variable
0.184	0.323	0.325	Digital trust
0.192	0.370	0.373	Tourist purchase intention

The second structural model fit index is the  $Q^2$  index. This measure indicates the predictive power of the model regarding an endogenous construct. As a rule,  $Q^2$  values of 0.02, 0.15 and 0.35 indicate weak, moderate and strong predictive power corresponding to an exogenous construct, respectively. Given the  $R^2$  and  $Q^2$  values, as reported in table 4, the structural model overall fit and predicting power is confirmed.

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According to Henseler et al (2014), a standardized root mean squared residual (SRMR) value of below 0.1, and in a conservative case, of 0.08, indicates the model adequate overall fit.

**Table 5.** The results on the overall model fit using standardized root mean squared residual (SRMR) and NFI index

Estimated model	Saturated model	Latent variables
0.088	0.088	SRMR
0.548	0.548	NFI
1.216	1.216	d ULS
1.142	1.142	d G

The NFI index, which is called the Bentler-Bonnet index, is a comparative fit index. This index assesses the model by comparing the chi-square values of the independent model and the chi-square of the saturated model. An NFI value above 0.9 is acceptable, indicating the model suitability. Bootstrap provides confidence intervals for the two values discrepancy. Values greater than 0.05 for d\_ULS measure (i.e. the Euclidean least square discrepancy) and d\_G (i.e. the geodesic discrepancy) indicate good model fit. The obtained d\_ULS and d\_G values in the above table which are more than 0.05 indicate the model good fit.

By default, PLS4 software tests relationships at the 95% confidence level, and since the t-value at this interval is equal to 1.96, any relationship with a t-value outside the range of -1.96 to +1.96 is considered statistically significant at the 95% confidence interval.

The t-statistic shows the significance of the relationship between the variables. A t-value greater than 1.96 indicates a positive and significant effect; a t-value between -1.96 and +1.96 indicates the lack a significant effect; and a t-value smaller than -1.96 indicates a negative and significant effect. Also, if the path coefficients are above 0.6, it means that there is a strong relationship between the two variables; If it is between 0.3 and 0.6, there is a moderate relationship, and if it is below 0.4, there is a weak relationship. As shown in the model, all the hypotheses of the model are confirmed as their t-value falls outside the specified range, indicating the significance of all hypotheses and relationships between variables at the 95% confidence interval. The results on the test of the research hypotheses are presented in the table below.

**Table 6.** Results on the test of the hypotheses

Test result	t-value	p-value	Path coefficient	Path	Hypothesis
Accepted	0.011	2.550	0.224	Digital trust -> Tourist purchase intention	2
Accepted	0.000	15.563	0.570	Digital business adoption -> Digital trust	3
Accepted	0.000	8.799	0.455	Digital business adoption> Tourist purchase intention	1

Given the results in the above table, all the research hypotheses are confirmed.

## 5. Discussion and conclusion

The results show that the adoption of digital business has a significant impact on digital trust and tourist purchase intention. Also, according to the results, digital trust has a significant effect on tourist purchase intention. And finally, digital trust is found to mediate the impact of digital business adoption on tourist purchase intention. According to the obtained result from the test of the first hypothesis, digital business adoption has a significant effect on the purchase intention of tourists. This finding is in line with the results documented by Perelygina et al (2022), Campagnolo et al (2023), Tahmasebpour et al (2022), and Deh Yadegari (2022) that showed positive causal relationships between different variables. Thus, it follows that the use of digital business strategy affects the purchase intention of tourists. It suggests that tourism decision makers should focus on promoting the use of digital business strategy in marketing, sales, management and internal operations of their businesses.

The obtained result from the test of the second hypothesis indicates that the digital business adoption has a significant effect on tourist digital trust, which is in line with the findings of Perelygina et al (2022), as well as with the results found by Mancuso et al (2023) and Ancillai et al (2023) who concluded that digital business adoption had a significant effect on trust in businesses. This confirms the critical role of digital transformation for the success of digital business adoption in gaining tourist trust. It suggests that even in the presence of tourist purchase intentions as a result of adoption of digital business strategy, digital trust is necessary to invest in the tourism sector.

Finally, the obtained result from the test of the third hypothesis shows that digital trust has a significant effect on tourist purchase intention. Thus, our results, among others, suggest the effect of digital trust on tourist purchase intention. This finding is in line with the results reported by Trischler and Li-Ying (2023), Perelygina et al (2022), and Saeedi et al (2022), who suggested different types of trust capabilities which can serve as the sources of transformation in business. These capabilities include technological trust, human resource trust, strategic trust, cultural trust, and structural trust (Teece et al, 1997). Hence, it can be concluded that digital trust is the most important type of capital for business performance (Tanriver, 2005).

Therefore, managers can, by creating temporary and test digital business markets, present their current services and prototypes of new services to current tourists and receive feedback and suggestions from them, which would lead to provision of better services as well. Thus, using digital business tools, they can increase tourist loyalty and satisfaction by providing digital services based on the preferences and demands of customers, which requires paying adequate attention to the dynamic aspect of business and creating appropriate digital business models in the tourism industry.

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**ETHICAL CONSIDERATION**

Authenticity of the texts, honesty and fidelity has been observed.

**CONFLICT OF INTEREST**

Author/s confirmed no conflict of interest.