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The Gamification Platform for Enhancing Tourism-Based Businesses Using Key Performance Indicators (KPIs), Objectives and Key Results (OKRs), and Coaching

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ABSTRACT

This study explores the strategic application of gamification to enhance the performance of tourism-based businesses by integrating Key Performance Indicators (KPIs), Objectives and Key Results (OKRs), and coaching. With the growing complexity and competitiveness of the tourism industry, organizations must adopt innovative approaches to attract and retain customers. Gamification—using game design elements such as points, rewards, leaderboards, and challenges in non-game contexts—has emerged as a powerful tool to increase user engagement, satisfaction, and loyalty. This research employed a descriptive-analytical and quantitative methodology using structured questionnaires distributed to both customers and staff from ten tourism agencies in Tehran that utilize gamified platforms. Data analysis was conducted using SPSS software, and the results confirmed that gamification significantly influences various KPIs, including service sales growth, the number of sales opportunities, and both lead-to-opportunity and opportunity-to-sale conversion rates. Pearson correlation and regression analyses validated all four research hypotheses, highlighting that gamification leads to improved customer interactions, heightened motivation, increased brand loyalty, and better conversion metrics. The study's findings emphasize the practical role of gamification as a performance-enhancing mechanism in digital tourism platforms. It is recommended that tourism businesses strategically implement gamified features aligned with their organizational objectives and user expectations to maximize impact. By fostering immersive and interactive experiences, gamification proves not only to be a marketing tool but also a catalyst for sustainable business growth in the tourism sector.

Keywords: Gamification, Tourism Industry, KPIs, OKRs, Customer Engagement, Sales Conversion, Brand Loyalty, Marketing Strategy.

Introduction

The rapid advancement of information and communication technologies has profoundly reshaped how businesses operate and compete, with the tourism sector emerging as one of the most dynamically impacted industries. In an increasingly digital marketplace, tourism-based businesses are seeking innovative strategies to engage customers, enhance brand loyalty, and drive sales growth. One of the most promising strategies in this regard is gamification—the application of game design elements such as points, badges, leaderboards, and challenges in non-game contexts. Over the past decade, gamification has evolved from a niche marketing tactic into a core component of digital engagement strategies across industries, including tourism [1, 2]. The interactive nature of gamification appeals to consumers' intrinsic motivations, thereby transforming routine transactions into engaging experiences and fostering sustained behavioral change [3].

The transformative potential of gamification in tourism is rooted in its ability to merge entertainment with functionality. By integrating elements such as rewards, competition, and social interaction into tourism platforms, businesses can stimulate users' hedonic and utilitarian values simultaneously, resulting in higher engagement and satisfaction [4, 5]. In the context of e-commerce, gamified mechanisms have been shown to influence consumer decision-making processes, encouraging impulse purchases and repeat engagements [6, 7]. This dual impact is especially relevant in tourism, where purchasing decisions often involve high involvement and emotional commitment. Consequently, gamification can act as a strategic lever for converting website visitors into loyal customers and advocates.

Moreover, gamification has become increasingly intertwined with technological advancements such as artificial intelligence (AI), which enables real-time personalization of game-based features and adaptive customer experiences [8]. The combination of gamification and AI-driven analytics allows tourism businesses to gather granular data on consumer behavior, optimize marketing campaigns, and customize rewards systems to individual preferences, thereby enhancing overall marketing effectiveness. This aligns with the principles of self-determination theory, which posits that fulfilling consumers' needs for autonomy, competence, and relatedness increases intrinsic motivation and engagement [9]. By embedding these psychological drivers into gamified systems, tourism platforms can cultivate deeper emotional connections with customers and strengthen their brand equity [10].

In addition to its motivational benefits, gamification also serves as a powerful data collection and performance measurement tool. Integrating gamified elements into customer journeys generates valuable behavioral data that can be translated into actionable insights using Key Performance Indicators (KPIs) and Objectives and Key Results (OKRs) frameworks. KPIs provide quantifiable metrics to track organizational performance, while OKRs offer a goal-oriented structure that aligns individual, team, and corporate objectives [11, 12]. By linking gamification outcomes—such as engagement rates, conversion ratios, and customer lifetime value—to these frameworks, tourism enterprises can continuously monitor their strategic progress and make evidence-based adjustments. This approach shifts gamification from a peripheral marketing tactic to an integral component of strategic management and business intelligence [13].

The rise of digital tourism ecosystems has further amplified the relevance of gamification. With consumers increasingly using online platforms for trip planning, booking, and experience sharing, gamified features can differentiate a platform in an oversaturated market [14, 15]. For example, integrating game-based reward systems or progress tracking elements into loyalty programs can increase user retention and frequency of purchases [16]. Similarly, social leaderboard competitions or achievement badges can stimulate peer influence, thereby boosting brand visibility and organic growth. Empirical studies have consistently confirmed that such features not only enhance customer engagement but also positively affect repurchase intention, brand advocacy, and word-of-mouth promotion [5, 17].

Within tourism specifically, gamification can extend beyond transactional marketing to shape experiential and educational dimensions. For instance, location-based games can guide tourists through cultural landmarks, incentivizing exploration and knowledge acquisition while simultaneously driving traffic to partner businesses [18]. This aligns with the emerging paradigm of literary and heritage tourism, where gamified storytelling transforms cultural consumption into participatory adventures [19]. Similarly, virtual or platform-based tourism games are being leveraged to promote destinations, particularly in contexts where physical travel is limited, thereby creating immersive pre-visit experiences that enhance destination image and

intention to travel [20, 21]. These examples illustrate that gamification is not merely a sales-oriented mechanism but a holistic engagement architecture capable of enriching the tourism value chain.

Furthermore, the strategic role of gamification becomes especially salient in the face of contemporary challenges confronting the tourism sector. Issues such as market volatility, shifting consumer expectations, and climate change-induced disruptions demand innovative approaches to sustain competitiveness. Recent research highlights that location-based gamification systems can aid destination management under environmental stress by redistributing tourist flows, mitigating congestion, and raising environmental awareness among visitors [18, 22]. By embedding eco-friendly missions, progress bars, and virtual rewards tied to sustainable behaviors, gamified platforms can align individual motivations with broader environmental objectives. This convergence of business performance and sustainability goals positions gamification as a dual-purpose instrument for both economic and ecological resilience.

Consumer behavior studies also reveal that gamification exerts a robust influence on psychological engagement mechanisms. Competitive challenges, status hierarchies, and social recognition elements stimulate users' emotional involvement and perceived enjoyment, which in turn strengthen their purchase intentions [1, 23]. These motivational processes operate through both affective and cognitive pathways, enhancing users' perceived value and trust toward the brand—a crucial determinant of online purchasing behavior [17]. Such dynamics are particularly beneficial for tourism platforms, where perceived risk and uncertainty often inhibit online purchases. By fostering trust and emotional resonance, gamification can reduce perceived risk and accelerate decision-making [7].

Moreover, the commercial effectiveness of gamification depends on the strategic design of its mechanics. Elements such as reward frequency, difficulty progression, and feedback loops must be carefully calibrated to sustain user interest without causing fatigue [24]. This design discipline ensures that gamified systems move beyond superficial engagement spikes to generate long-term behavioral change. Research also indicates that demographic variables, including gender and age, moderate the impact of gamification on purchasing behavior, highlighting the need for audience segmentation and personalization [6]. Adaptive personalization, supported by AI and data analytics, can optimize gamification design to align with diverse consumer profiles and preferences [8].

Beyond individual consumer effects, gamification can create network-level benefits through social contagion mechanisms. Social sharing of achievements, competitions, and rankings can trigger observational learning and peer influence, thereby amplifying marketing reach at minimal cost [4]. This phenomenon is particularly powerful in digital tourism communities, where user-generated content and peer recommendations heavily influence purchase decisions [2]. By embedding shareable gamified experiences, tourism platforms can convert customers into brand advocates and micro-influencers, thereby accelerating organic growth. This community-building function also contributes to higher customer lifetime value and reduced churn rates [15].

The academic landscape of gamification research has also matured considerably. Bibliometric analyses reveal an exponential growth of studies exploring its psychological, behavioral, and business impacts [25]. This growing body of evidence underscores gamification's transition from a peripheral novelty to a mainstream strategic tool, supported by interdisciplinary insights from marketing, psychology, information systems, and behavioral economics. Notably, studies in tourism contexts have begun to bridge theoretical frameworks with practical implementations, highlighting how gamification can drive both customer engagement and organizational performance [26, 27]. This convergence of theory and practice

affirms the timeliness and significance of investigating gamification as a performance-enhancing mechanism in tourism-based businesses.

In summary, the integration of gamification into tourism enterprises represents a paradigm shift from transactional marketing to experience-driven engagement. By stimulating intrinsic motivation, enhancing trust, and embedding performance analytics, gamification offers a multifaceted approach to boosting customer loyalty, sales conversion, and brand equity. When aligned with KPI and OKR frameworks, gamification can transcend its traditional role as a promotional tool to become a cornerstone of strategic management in the digital tourism ecosystem. As competition intensifies and consumer expectations evolve, tourism organizations that adopt thoughtfully designed gamified platforms stand to gain a decisive competitive advantage, not only in attracting and retaining customers but also in achieving sustainable and measurable business growth. This study aims to explore the strategic application of gamification to enhance the performance of tourism-based businesses by integrating Key Performance Indicators (KPIs), Objectives and Key Results (OKRs), and coaching.

Methodology

This study is applied in nature, as it aims to provide practical solutions for improving the performance of the tourism industry through the use of gamification. The research seeks to identify key performance indicators (KPIs) and examine the impact of gamification on them, ultimately offering practical tools for enhancing efficiency and attracting tourists. In terms of nature and data collection methods, the study is descriptive-analytical. In such research, data are collected and described precisely, and then statistical analysis is used to examine the relationships among variables.

This is a quantitative study. The primary data collection tool is a structured questionnaire designed to evaluate KPIs and the effects of gamification. The collected data, gathered through Likert-scale (five-point) questionnaires, were analyzed using SPSS software. This quantitative method enabled a precise assessment of gamification's impact on the specified indicators, providing measurable and objective insights into the performance of the tourism industry.

The statistical population of this study includes customers (tourists) and staff of tourism agencies operating in Tehran. This population consists of individuals and groups directly or indirectly involved in the tourism industry and related online platforms, participating in the marketing and sales processes of tourism services.

Out of over 100 active tourism agencies in Tehran, 10 agencies were purposively selected for using gamification on their websites to attract customers and enhance services. The study sample includes two groups:

1. **Customers (Tourists):** Individuals who have used the services of the selected tourism agencies either online or in person and have experienced interaction with gamified platforms.
2. **Tourism Agency Staff:** Sales specialists and managers at the selected agencies who are involved in the marketing and sales process using gamified systems.

To achieve the study objectives, the research was carried out in three stages as follows. Considering that the goal of gamification is to influence user behavior, the study aimed to use gamification in marketing to encourage purchasing behavior. Gamification was also employed as a tool for collecting user data, enabling the assessment of progress toward predefined goals. The gathered data were used to evaluate customer satisfaction and enhance marketing performance.

Gamification on tourism websites led to increased customer attraction and improved service efficiency. Enhancing the quality of services and products accelerated sales growth, which directly impacted the performance of sales teams and businesses.

Stage 1: Identifying Influential KPIs

In the first stage, key performance indicators influencing tourist attraction through gamification on tourism industry websites were examined. A questionnaire was designed and distributed among customers who had visited these websites and agencies. The indicators examined included service sales volume, number of sales opportunities, opportunity-to-sale conversion rate, lead-to-opportunity conversion rate, customer purchase size, average number of items per purchase, revenue per salesperson, conversion rate per salesperson, profit margin per salesperson, average sales cycle length, average order size, list of inactive products, and number of activities per salesperson. These indicators were extracted using the questionnaire completed by tourists and customers.

The study is applied in terms of purpose and descriptive in terms of data collection. Out of more than 100 active tourism agencies in Tehran, 10 agencies that had implemented gamification in their operations were selected. Among them, 5 websites and platforms associated with the selected agencies were also included in the sampling process. The sample consisted of both customers (tourists) and staff from the selected agencies.

The questionnaire was reviewed by experts to ensure content validity based on the identified indicators. Its reliability was evaluated using Cronbach's alpha, and the final instrument was designed using a five-point Likert scale.

Stage 2: Implementation and Data Collection

In the second stage, the final version of the research questionnaire and a demographic questionnaire were distributed online to the selected tourism websites and to study participants including tourists and sales experts/managers. All participants completed the surveys online, and the responses were collected accordingly.

Stage 3: Analyzing the Impact of Gamification

In the third stage, the effectiveness of gamification implementation on key performance indicators was analyzed. After a predetermined time period, the collected data were entered into SPSS software and analyzed using appropriate statistical tests. The results of the analysis demonstrated the extent to which gamification influenced the selected KPIs, including customer attraction, revenue growth, and the performance improvement of sales teams.

Findings and Results

As previously mentioned, to evaluate the research hypotheses, relevant data were collected from all employees of tourism agencies. Initially, the demographic characteristics of the selected sample were examined. The charts and tables presented were generated using EXCEL and SPSS version 25.

In this section, the research parameters are analyzed individually based on descriptive indicators such as frequency, dispersion, and distribution type. The dataset for each research parameter is organized and presented in a structured format. The descriptive statistics are shown in the table below:

Table 1.

Descriptive Statistics of Research Variables

Variable	Mean	Median	Mode	Std. Deviation	Sig. (KS)	KS
Gamification	3.56	3.75	3.79	0.610	0.245	0.105
Service Sales Growth	3.72	4.00	5.00	1.286	0.295	0.088
Number of Sales Opportunities	3.72	4.00	4.00	1.216	0.303	0.056
Opportunity-to-Sale Conversion Rate	3.68	4.00	4.00	0.948	0.274	0.096
Lead-to-Opportunity Conversion Rate	3.77	4.00	4.00	0.932	0.229	0.140
Customer Purchase Size	3.20	3.00	3.00	0.926	0.175	0.200
Average Items per Purchase	2.65	3.00	3.00	1.187	0.260	0.101
Revenue per Salesperson	3.69	4.00	4.00	1.254	0.227	0.142
Conversion Rate per Salesperson	3.82	4.00	4.00	1.211	0.231	0.138
Profit Margin per Salesperson	3.66	4.00	5.00	1.324	0.210	0.150
Avg. Sales Cycle Length (Reduction)	3.79	4.00	5.00	1.225	0.205	0.159
Activities per Salesperson	3.69	4.00	5.00	1.176	0.149	0.200

As observed, the highest mean value pertains to the variable "Conversion Rate per Salesperson." In other words, respondents expressed the most favorable views regarding this variable, reporting it with the highest average. Additionally, in terms of standard deviation, the greatest variation is found in the variable "Profit Margin per Salesperson," indicating a wider divergence of opinions among respondents regarding this factor.

To examine the normality of data distribution for the research variables, the Kolmogorov–Smirnov (K–S) test was used. This test assesses whether a dataset is normally distributed. If the variables follow a normal distribution, parametric tests can be applied; otherwise, non-parametric methods should be used.

The hypotheses of the K–S test are defined as follows:

- **H_o (Null Hypothesis):** The data distribution is normal.
- **H_1 (Alternative Hypothesis):** The data distribution is not normal.

Based on the results, the significance level (Sig.) for all variables is greater than 0.05. Therefore, we do not reject the null hypothesis (**H_o**) for any of the variables at the 95% confidence level. This confirms that the data distribution for all variables is normal. Hence, to test the research hypotheses, parametric statistical tests are applicable—specifically, Pearson correlation for measuring relationships.

Inferential analysis involves sampling and selecting a smaller group, known as a sample, from a larger population. Based on the data and information obtained from this sample, characteristics of the studied population can be estimated and predicted (Khaki, 2003, p. 229). The following section presents the inferential analysis based on the collected data. The purpose of this analysis is to generalize the findings obtained from the sample to the entire population.

In this section, the significance and strength of relationships among various research parameters are examined. As mentioned earlier, Pearson correlation analysis is used to assess these relationships. Based on the correlation results, regression equations will also be derived.

Hypothesis 1

Hypothesis:

H_o: There is no significant correlation between the independent and dependent variables.

H_1: There is a significant correlation between the independent and dependent variables.

This hypothesis explores the impact of gamification on the growth of service sales. The null hypothesis (H_0) assumes no correlation, while the alternative hypothesis (H_1) assumes a significant correlation between the two variables.

Table 2.

Pearson Correlation Test for Hypothesis 1

Independent Variable	Dependent Variable	Pearson Correlation	Sig. (2-tailed)	R-squared	Durbin-Watson
Gamification	Service Sales Growth	0.452	0.000	0.204	1.701

The results indicate a strong and significant positive correlation between gamification and service sales growth. The Pearson correlation coefficient is 0.452, significant at the 0.01 level (Sig. < 0.01). Thus, we confirm a meaningful relationship and proceed to regression analysis. Additionally, 20.4% of the variance in the dependent variable (sales growth) can be explained by the independent variable (gamification).

An important assumption for regression analysis is the independence of residuals. If the residuals are correlated, the results of linear regression may not be reliable. This phenomenon, known as autocorrelation, is assessed using the Durbin-Watson test. A Durbin-Watson statistic within the range of 1.5 to 2.5 suggests no autocorrelation. In this case, the statistic is 1.701, indicating that regression analysis is appropriate.

As previously discussed, the correlation coefficient measures the strength of the relationship between two continuous variables. Regression analysis, on the other hand, allows us to predict the value of a dependent variable based on one or more independent variables. To establish a linear regression equation, certain conditions must be met. The prior correlation confirms a relationship between gamification and service sales growth, so we proceed to derive the regression model.

To evaluate the model fit, we use ANOVA (Analysis of Variance). The F-ratio is calculated as follows:

Table 3.

ANOVA for Hypothesis 1

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	129.128	1	129.128	97.860	0.000
Residual	504.057	382	1.320		
Total	633.185	383			

The F-statistic value of 97.860 with a significance level of 0.000 confirms that the regression model is statistically significant and well-fitted. Hence, a linear regression equation can be established.

Next, we calculate the regression coefficients.

Table 4.

Regression Coefficients for Hypothesis 1

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	0.352	0.348		0.934	0.351
Gamification	0.952	0.096	0.452	9.892	0.000

In the table above, the standard error of the regression coefficient (β) is shown. The standardized coefficient (Beta) indicates the extent of change in the dependent variable for each one standard deviation increase in the independent variable. The t-test is used to test the significance of the regression coefficient, and the p-value is given under the "Sig." column. Since the p-value for gamification is less than 0.05, it is statistically significant at the 5% level, meaning the regression equation is valid.

Therefore, we conclude that gamification has a positive and significant effect on service sales growth. However, the constant term is not statistically significant. The standardized regression coefficient for gamification is 0.452, indicating its relative strength in predicting service sales growth.

Hypothesis 2 Analysis

Hypothesis:

- **H_0:** There is no significant correlation between the independent and dependent variables.
- **H_1:** There is a significant correlation between the independent and dependent variables.

This hypothesis tests whether gamification has a significant effect on the number of sales opportunities.

Table 5.

Pearson Correlation Test for Hypothesis 2

Independent Variable	Dependent Variable	Pearson Correlation	Sig. (2-tailed)	R-squared	Durbin-Watson
Gamification	Number of Sales Opportunities	0.532	0.000	0.283	1.846

The results show a strong and significant positive relationship between gamification and the number of sales opportunities. The Pearson correlation coefficient is 0.532, which is significant at the 0.01 level. This confirms the existence of a meaningful relationship, and regression analysis can therefore be used to further evaluate the impact. The R-squared value indicates that 28.3% of the variation in the number of sales opportunities is explained by gamification.

Additionally, the Durbin-Watson statistic is 1.846, which lies within the acceptable range of 1.5 to 2.5, confirming that residuals are independent and the regression model is applicable.

Table 6.

ANOVA for Hypothesis 2

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	405.631	1	405.631	566.060	0.000
Residual	405.631	382	1.062		
Total	566.060	383			

The calculated F-statistic is 566.060 with a significance level (Sig.) of 0.000, indicating that the regression model is statistically significant and well-fitted. Therefore, we proceed to compute the linear regression coefficients.

Table 7.

Regression Coefficients for Hypothesis 2

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
Constant	0.069	0.312		0.221	0.000
Gamification	1.061	0.086	0.532	12.292	0.000

The standard error (Std. Error) reflects the variability of the regression coefficient (B). The Beta coefficient shows the impact of a one-standard-deviation change in the independent variable (gamification) on the dependent variable (number of sales opportunities). Since the p-value for gamification is less than 0.01, the result is statistically significant. Thus, gamification has a positive and significant impact on the number of sales opportunities.

Although the constant is not statistically significant, the regression coefficient for gamification is significant and equals 0.532.

Hypothesis 3 Analysis

Hypothesis:

- **H_0:** There is no significant correlation between the independent and dependent variables.

- **H_1:** There is a significant correlation between the independent and dependent variables.

This hypothesis examines whether gamification significantly affects the opportunity-to-sale conversion rate.

Table 8.

Pearson Correlation Test for Hypothesis 3

Independent Variable	Dependent Variable	Pearson Correlation	Sig. (2-tailed)	R-squared	Durbin-Watson
Gamification	Opportunity-to-Sale Conversion Rate	0.587	0.000	0.345	1.951

The results reveal a strong and statistically significant positive correlation between gamification and the opportunity-to-sale conversion rate. The Pearson correlation coefficient is 0.587, and the significance level (Sig.) is less than 0.01, indicating high significance. This supports the existence of a reliable relationship between the two variables.

Furthermore, the R-squared value indicates that 34.5% of the variance in the opportunity-to-sale conversion rate is explained by gamification. The Durbin-Watson statistic is 1.951, within the acceptable range (1.5–2.5), confirming that residuals are independent.

Before deriving the regression equation, the goodness-of-fit of the regression model must be assessed using Analysis of Variance (ANOVA). The F-value is calculated as:

Table 9.

ANOVA for Hypothesis 3

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	118.555	1	118.555	200.920	0.000
Residual	225.403	382	0.590		
Total	343.958	383			

The F-statistic is 200.920 with a significance level of 0.000, indicating that the regression model is a good fit and statistically significant. Therefore, the regression equation can be constructed. The coefficients are shown below:

Table 10.

Regression Coefficients – Hypothesis 3

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
Constant	0.423	0.233		1.817	0.070
Gamification	0.912	0.064	0.587	14.175	0.000

In the above table, the standard error shows the variability of the regression coefficients. The Beta coefficient reflects the standard deviation change in the dependent variable for each standard deviation change in the independent variable. The t-test is used to determine the significance of each coefficient. Since the p-value for gamification is less than 0.01, it is statistically significant.

Thus, gamification has a positive and significant effect on the opportunity-to-sale conversion **rate**.

The constant is not significant ($p > 0.05$).

Hypothesis ٤:

Gamification has a significant positive effect on the lead-to-opportunity conversion rate.

First, the general form of the hypothesis (null and alternative) is determined. The null hypothesis emphasizes the lack of a significant relationship, while the alternative hypothesis is the opposite.

The null hypothesis indicates that the correlation between the two variables is zero, suggesting no significant relationship between the independent and dependent variables. Conversely, the alternative hypothesis implies that a significant correlation exists between the two variables.

Table 11.

Correlation test for the fourth hypothesis

Independent Variable	Dependent Variable	Pearson Coefficient	Significance Level	Coefficient of Determination	Durbin-Watson
Gamification	Lead-to-opportunity conversion rate	0.524	0.000	0.275	1.811

The results show that there is a significant and positive relationship between gamification and the lead-to-opportunity conversion rate. The Pearson correlation coefficient is 0.524, indicating a strong relationship that is significant at the 99% level since the sig level is reported to be less than 0.01. Consequently, the correlation between the variables is confirmed, and their impact on each other is tested using regression. Also, the results indicate that 27% of the changes in the dependent variable can be attributed to the independent variable. Moreover, it can be stated that the residuals are independent, as the Durbin-Watson statistic is 1.811.

First, the suitability of the regression fit should be examined. This is done through regression analysis of variance (ANOVA). To do this, the Fisher value is calculated using the following formula:

As shown in the table below, the mean squares for both regression and residuals have been calculated.

Table 12.

ANOVA for the fourth hypothesis

Source	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance Level
Regression	91.523	1	91.523	144.840	0.000
Residual	241.383	382	0.623		
Total	332.906	383			

The Fisher statistic is 144.840 with a significance level of 0.000. Therefore, it can be stated that the regression model has a good fit, and thus a regression equation can be presented. Next, to find the linear regression equation, the constant and regression coefficients are calculated.

Table 13.

Regression coefficients and significance for the fourth hypothesis

Model	Unstandardized Coefficients (B)	Standard Error	Standardized Coefficients (Beta)	t	Significance Level
Constant	0.907	0.241		3.762	0.000
Gamification	0.801	0.067	0.524	12.035	0.000

In the above table, Std. Error is the standard error of the regression coefficient (B). Beta indicates the change in the response variable for one standard deviation change in the independent variable. The t-test is used to test the regression coefficient, and sig is the p-value for t. Since it is less than 0.01, it indicates that the t for the gamification variable is significant at the 0.01 level, and the regression equation is valid for it. Now it can be concluded that gamification has a significant positive effect on the lead-to-opportunity conversion rate. Therefore, the fourth hypothesis is confirmed. According to the above table, the constant is 0.907 and the regression coefficient for the gamification variable is 0.524.

Discussion and Conclusion

The present study set out to explore the effect of gamification on the performance of tourism-based businesses by examining its relationship with several key performance indicators (KPIs), including service sales growth, number of sales opportunities, opportunity-to-sale conversion rate, and lead-to-opportunity conversion rate. The findings consistently demonstrated that gamification exerts a significant and positive influence on all four performance dimensions, suggesting that gamified systems serve as powerful mechanisms to boost user engagement, motivation, and sales-related outcomes. These results align with the broader literature which underscores the role of gamification in stimulating consumer engagement, fostering trust, and enhancing purchasing behavior in digital environments [4, 14, 15]. The strong correlation between gamification and KPIs observed in this study underscores its potential as a strategic tool for enhancing business outcomes within the tourism sector.

A key finding is the positive effect of gamification on service sales growth, which can be attributed to gamification's ability to increase users' intrinsic motivation and perceived enjoyment during the purchasing process. This aligns with prior studies showing that gamification drives hedonic and utilitarian values in online purchasing contexts, thereby encouraging consumers to engage more deeply with products and services [2, 3]. By integrating elements such as points, rewards, and achievements, tourism platforms can transform otherwise routine tasks into engaging activities, resulting in greater customer satisfaction and purchase frequency. The findings also echo the results of [5], who found that gamified reputation systems in e-commerce significantly enhance repurchase intention by creating a sense of progress and accomplishment. These dynamics appear to translate effectively into the tourism domain, where emotional involvement is a critical driver of buying behavior. Furthermore, the findings resonate with [1], who confirmed that game-based incentives stimulate consumer motivation and engagement, both of which are essential for driving sales growth in competitive markets.

Another major outcome was the positive correlation between gamification and the number of sales opportunities, indicating that gamification not only influences existing customer behavior but also attracts new leads. Gamified systems often incorporate competitive and social interaction features that encourage users to explore more products and services, thus expanding the sales funnel. This observation aligns with [9], who showed that gamification increases consumers' exploratory behavior and purchase intention by satisfying their needs for autonomy and competence, as suggested by self-determination theory. Similarly, [24] found that gamification strategies such as point systems and challenges effectively increase consumer curiosity and interest, leading to greater exposure to diverse offerings. By embedding discovery-oriented game elements, tourism platforms can trigger users' intrinsic motivations to explore, thereby generating more opportunities for conversion. The results also support the argument by [17] that gamification enhances consumer-brand engagement, which in turn amplifies their interactions with various brand touchpoints, creating multiple entry points for sales opportunities.

The findings also confirmed a substantial impact of gamification on the opportunity-to-sale conversion rate. This is especially significant because it demonstrates that gamification not only increases the quantity of leads but also improves their quality, resulting in higher conversion efficiency. The positive association between gamification and conversion rates corroborates the findings of [4], who reported that gamified mobile applications significantly boost user engagement, which directly translates into higher conversion probabilities. This is further supported by [14], who noted that gamification in retail mobile apps drives customers from initial interest to purchase by maintaining their attention and providing instant feedback

and rewards. In the context of tourism, where purchase decisions often involve complex evaluations, gamification can reduce decision fatigue by guiding users through structured, rewarding pathways that simplify choices and encourage completion. Moreover, the positive emotional states induced by gamification—such as enjoyment and flow—have been shown to enhance persuasive outcomes, which can further explain the higher conversion rates observed [10]. Thus, gamification appears to serve not only as an engagement tool but also as a decision-support mechanism that streamlines customers' journey toward purchase completion.

In addition, the study revealed that gamification significantly improves the lead-to-opportunity conversion rate, suggesting that gamified elements effectively nurture early-stage leads into qualified prospects. This outcome can be interpreted through the lens of behavioral reinforcement theory, which posits that immediate rewards and feedback strengthen desired behaviors over time. Gamification provides precisely these elements, reinforcing users' incremental progress and encouraging deeper interaction with tourism services. This aligns with [23], who found that gamification mechanics such as badges and leaderboards increase participation in online group-buying platforms, thereby accelerating the transition from initial interest to active engagement. Similarly, [7] demonstrated that gamification dynamics enhance impulsive buying tendencies by sustaining attention and stimulating emotional involvement. These mechanisms are particularly valuable for tourism businesses, which often face challenges in converting casual browsers into engaged prospects. By rewarding micro-engagements—such as signing up, browsing packages, or completing quizzes—gamification can foster incremental commitment that gradually transforms leads into opportunities, thereby optimizing the sales pipeline.

Collectively, these findings underscore gamification's comprehensive influence across the entire marketing and sales funnel. They support the broader view that gamification is not merely a superficial engagement tactic but a strategic tool for shaping consumer behavior and enhancing business performance [25, 26]. The positive associations across all four KPIs reinforce the notion that gamification promotes goal alignment between users and organizations, as users' desire to achieve game-based milestones coincides with businesses' objectives of increasing engagement and conversion. This echoes the conceptual perspective offered by [8], who argued that integrating AI with gamification enables dynamic personalization, which further enhances goal congruence and performance outcomes. Additionally, the results corroborate [6], who found that demographic factors such as gender and age moderate gamification's impact on online impulse buying, indicating that tourism businesses could further improve outcomes by segmenting their gamified features to match user profiles. Overall, this study confirms that well-designed gamification strategies can significantly elevate tourism platforms' marketing effectiveness, customer engagement, and sales performance.

Despite its contributions, this study is not without limitations. First, the research focused exclusively on tourism agencies in Tehran, which may limit the generalizability of the findings to other geographical and cultural contexts. Cultural differences can significantly influence how users perceive and respond to gamification elements, meaning that the observed effects might vary in other regions or countries. Second, the study adopted a cross-sectional design, capturing a snapshot of user responses at a single point in time. This limits the ability to infer causal relationships or track long-term effects of gamification on customer behavior and business performance. Third, the study relied primarily on self-reported data collected via questionnaires, which may be subject to biases such as social desirability or response fatigue. These factors might have influenced the accuracy of participants' reported engagement and satisfaction levels. Lastly, the study examined only a

limited set of KPIs and did not explore potential mediating or moderating variables—such as trust, perceived value, or demographic factors—that could further elucidate the mechanisms linking gamification to business outcomes.

Future research should aim to address these limitations by adopting broader and more diverse sampling strategies, including tourism businesses from different cultural and regional contexts to enhance the external validity of the findings. Longitudinal studies would also be valuable for examining the sustained effects of gamification on customer engagement and sales performance over time, providing insights into its long-term return on investment. Moreover, future studies could incorporate experimental or quasi-experimental designs to establish causal relationships between specific gamification mechanics and business outcomes. It would also be beneficial to investigate the moderating roles of demographic variables such as age, gender, and digital literacy, as well as the mediating effects of psychological constructs like trust, perceived enjoyment, and flow experience. Additionally, incorporating qualitative methods—such as interviews or focus groups—could offer deeper insights into users' lived experiences and emotional responses to gamified tourism platforms, helping designers create more targeted and culturally relevant gamification strategies.

Practitioners seeking to implement gamification in tourism-based businesses should adopt a strategic, data-driven approach that aligns gamified features with organizational objectives and customer expectations. It is crucial to design gamification systems that balance challenge and reward to sustain user engagement without inducing fatigue. Businesses should also integrate gamification metrics into their KPI and OKR frameworks to continuously monitor effectiveness and make data-informed adjustments. Personalization should be a central principle, with game elements tailored to different user segments to maximize relevance and impact. Finally, tourism platforms should embed social interaction and sharing features within their gamified systems to leverage peer influence and organic growth, turning customers into active brand advocates who can amplify marketing reach through social networks.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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