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Statistical Analysis of Client Experience Mediating Tourism Service Excellence

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Abstract: This paper intends to build a model to identify the direct result of service excellence on client experience and intentions in the tourist region of Taif, KSA, where customer satisfaction as a mediator. This research tool was designed based on current studies which included five service quality dimension, five customer satisfaction variables and three customer intention variables. A sample size of 574 people was selected for data collection in the Taif area. Data description was done by SPSS program, while structural equation modeling was done by AMOS program (version 23). The findings reached that the tourism service excellence quality in Taif City consists of five factors in addition to that there is a statistically significant relation regarding the tourism client experience, between the tourism client experience and the tourism client intentions. The relation between tourism service excellence and client intentions is also mediated by customer experience. The results suggested several suggestions, the main of these suggestions were: Improve service quality improvement: Improve service quality that encourages the use of the service, identify other factors that affect clients intentions, and urge Taif stakeholders to align their strategies with the national objectives of KSA Vision 2030 to achieve sustainable tourism

Keywords: Statistical analysis, structural equation modeling, client experience mediating, service quality, customer satisfaction

1 Introduction

Tourism represents an important economic component in many countries, serving as a vital engine of growth, job creation and cultural exchange. Tourism is growing in importance as a means to assort the economy and lessen the reliance on oil income in Saudi Arabia. The core of this strategic shift is the Kingdom's Vision 2030, which is aimed at improving multiple sectors such as tourism while achieving high service quality and enhanced customer experience in this respect[1]. The region of Taif with its natural scenery, historical significance, and cultural heritage, can be an attractive tourist region that can be expanded and invested on [2].

Tourism services quality is crucial in determining customer satisfaction, which in turn affects post-consumption intentions including the likelihood to revisit or refer a destination. Providing superior service quality enhances customers' emotional attachment, proclaiming commitment and passing information properly [3] . Understanding this intricate link is essential for the stake holders of tourism industry in Taif which seeks to attract local and foreign tourists [4].

The current study aims to explore the role of customer satisfaction as the mediator in the relationship between tourism services quality and customers' intentions in the Taif region. Using Structural Equation Modelling (SEM) as the main analytical method allows us to explicitly test the path between key variables providing in-depth insight into the tourism dynamics in Taif [5]. SEM allows researchers to test multiple relationships in one model which makes it an appropriatemethod to overcome the intricacies of customer behavior in tourism.

Previous research emphasizes the significance of quality service in shaping customer satisfaction and retention [6]. For example, by improving components of service excellence such as dependability, responsiveness and empathy, can derive customer satisfaction, thus in turn, positively affect their relationship towards returning to the destination [7]. Moreover,

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studies have shown that contended clients with a destination tend to display behaviors like recommending the destination to friends and family, which are vital for the success of tourism enterprisers [8].

Regarding Vision 2030, it is important for tourism stakeholder in Taif to understand such relationships to improve their service quality improve towards advancing the overall objectives of viable economic development and upgrade well-being for nationals and guests [9]. By recognizing the mediating role of customer satisfaction, this study presents a theoretical framework to facilitate and support managers' strategic decision-making. Furthermore, Taif's diverse attractions, ranging from natural parks to historical sites,require a tailored approach in managing the quality of service. Thus, this paper tries to examine the service quality, customer satisfaction between type of service, and client's content, The research will focus particularly on these dynamics to deliver insights into how service enhancements can be comprehensively incorporated when looking to achieve the scope of Vision 2030 whilst growing a healthy tourism sector in Taif.

Accordingly, this paper tries to fill the gap in the studies with respect to the service quality, customer satisfaction between type of service, client's content, and intentions in the context of Taif's tourism industry. This research contributes to academic understanding and applied knowledge for tourism practitioners by using SEM to examine mediation effects. Therefore, the findings of this study will be a major driver for the development of tourism in Taif per Kingdom of Saudi Arabia Vision 2030, and also the development of sustainable growth and competitiveness of tourism.

Understanding the factors influencing customer satisfaction and, subsequently, customer intentions is significant to achieving Vision 2030 and promoting tourism, which can be achieved by evaluating the type of services provided by the agents in Taif. The present study investigates client's satisfaction as an important mediator between type of service and client's intentions. The key question is: How to enhance tourism services to enhance client's content and meet the goals of Vision 2030?

The examination of this area can highlight which dimensions of service quality enhance customer satisfaction and consequently the likelihood of visitors returning to or recommending Taif.

Research aims to: analyze the correlation between the type of services and client satisfaction in Taif region and to assess its impact related to tourism industry. In addition to assess the significance of client's satisfaction as mediator of service quality on customers' intentions and to give practical suggestions and recommendations for tourism agents to upgrade the type of service and overall client experiences.

To explore the relationship between type of service and client satisfaction, we have to consider the following hypotheses:

- H1: Tourism services quality in Taif properly and substantially influence client's content.
- H2: The tourism services quality in the Taif area positively and significantly affect customers' intentions.
- H3: There is a positive impact of client's content s in the Taif area.
- H4: Quality of tourism industry influences the clients' intentions in Taif through customer satisfaction as a mediator.

Methodology: The population for this study is tourists coming to Taif. Data will be collected using simple random sampling with a large sample size. The survey questionnaire consists of three main parts as shown in Table 1: The first part includes items to measure the quality of tourism services adapted from Parasuraman et al [10]. The second part of the data measures customer satisfaction by using a scale to represent an overall satisfaction score. The last segment evaluates customer intentions, respondents' willingness to return and recommend Taif. Pilot testing will be conducted on a small group to determine the questionnaire's reliability. Structural Equation Modeling (SEM) will be applied to the statistical process in order to examine the relations between the factors.

Related works:

Al-zubaidy, S., & Al-zoubi, M. [11]: This study aimed to explore how various aspects of service quality—such as tangibility, reliability, responsiveness, assurance, and empathy—affect client content within the Jordanian tourism sector. By employing a structural equation model (SEM) to analyze data gathered from tourists, the researchers ascertained a meaningful effect on client content, which influenced clients' content.

Kwortnik, R. J., & Thompson, G. M. [2]: This research concentrated on the tourism industry, investigating how client content serves as a factor between service quality and tourist content. The results revealed that higher perceived service quality correlates with greater tourist comfort, which subsequently affects tourists' likelihood to return or recommend the destination.

Alshurideh, M. T., & Al-Zubi, Z. A. [12]: This research focused on the tourism sector in Saudi Arabia, examining how service quality impacts tourist comfort and behavioral intentions. The SEM analysis indicated that various dimensions of service quality significantly enhance tourist content, which then reflects their intentions to revisit Saudi Arabia.

Alghamdi, A. S. [13]: This study looks into the potential effects of Saudi Arabia's Vision 2030 on the tourism industry, particularly in terms of enhancing type of service and boosting tourist content.

Rahman, I., & Sultana, R. [14] : Utilizing a structural equation model, this study delves into the connection between service quality and customer satisfaction in the tourism sector. The findings indicated that customer satisfaction is positively affected by the quality of service provided.

Oliver, R. L. [15]: This study investigates the relationship between customer intentions and service satisfaction. The results suggest that client content has a strong influence on future expenditure.

Abaker, O. I. [16]: This paper intended to find an example to measuring the type of service of tourism in Aser region (KSA) and its connection with client content, considering tourist comfort as a variable. Data were selected from the Asir region by adopting a questionnaire, and the sample size were 420 participants. Structural equation modeling was used to build the model using AMOS 23 software. The study reached a number results, the most important is that the, clients' content does not affect the connection between the service type of tourism and the client content.

Theoretical Foundations

SEM is strongly built on the path analysis and the confirmatory factor analysis (CFA). SEM merges factor analysis and regression analysis allows for simultaneous examination of both directed indirect relationships [17]. This enables theoretical relationships between variables to be specified in models.

One ofthe most significant development in SEM is latent variable model. Unlike variables that can directly be observed,latent variables provide deeper insight into the constructs that motivate behaviors [18]

Formally, a SEM can be represented by the following system of equations:

1 - **Measurement Model (Relating observed variables to latent variables):**

The measurement model specifies how latent variables are measured by observed variables. It can be represented by the following equation: $X = \lambda\xi + \delta$, $Y = \lambda\eta + \varepsilon$, where: Y is the vector of observed variables, λ is the matrix of factor loadings, ξ is the vector of latent variables, ε,δ represents the error.

2- **Structural Model (Relating latent variables to each other):**

The structural model outlines the relationships among latent variables and is expressed by the equation: $\eta_1 = \gamma_{11}\xi_1 + \gamma_{12}\xi_2 + \zeta_1$, $\eta_2 = \beta_{21}\eta_2 + \zeta_2$. Where: η is the vector of endogenous latent variables, β is the matrix of coefficients representing the relationships among endogenous variables, γ is the matrix of coefficients for exogenous latent variables, ζ is the vector of exogenous latent variables, represents structural errors [19]. These foundational equations enhance the understanding of underlying constructs.

2 Methodological developments

Different estimation methods and criteria came out of the SEM methodology development. Maximum likelihood estimation (MLE) is a powerful mechanism for dealing with normal data [20]. Model adequacy can be quantified using goodness-of-fit indices such as the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation [21].

Generally, the criteria for a good fitting model include a system of equations such as:

$$CFI = 1 - \frac{\max[(\chi_t^2 - df_t), 0]}{\max[(\chi_t^2 - df_t), (\chi_i^2 - df_i), 0]}, \tag{1}$$

where: χ_t^2 is the test statistics of the target model, χ_i^2 is the test statistics of the independence model, df_t is the degrees of freedom of the target model, df_i is the degrees of freedom independence model in relation to chi-square test statistics.

$$RMSEA = \sqrt{[\chi^2 - df]}/[df(N-1)], \tag{2}$$

where: χ^2 = Chi-square test statistic, (df) = Degrees of freedom, (n) = Sample size.

$$TLI = \frac{\chi_i^2/v_i - \chi_t^2/v_{ti}}{\chi_i^2/v_i - 1}, \tag{3}$$

where: χ_t^2 and χ_i^2 are the chi-square test values for the null model and the target model v_t and v_i denote the values of the degrees of freedom corresponding to the chi-square test.

SEM utilization has been expanded through the combination of SEM with other methods. Multi-group SEM allows to compare different populations and to address invariance issues [22]. Moreover, Bayesian SEM offers the flexibility of modeling complex models, representing a valid alternative for traditional approaches [23].

2.1 Applications of SEM

Applications of SEM in various fields demonstrate its flexibility. In marketing SEM is effective at analyzing consumer behavior and brand loyalty. Hair et al. [24] having worked with SEM data, Wizard et al affirmed that SEM works well to illustrate the relationships between brand image, consumer satisfaction, and consumer loyalty (but do note the interconnection of consumer research).

In addition, it is essential for discovering complex relationships governing healthcare interventions. For instance, Zheng et al. [25] applied SEM-based approaches to explore relationships between social assistance, cognitive prosperity, andchronic illness management.

Additionally, from the educational research perspective, SEM is also gaining popularity to assess the impact of teaching strategies on student performance. Wang et al. [26] provided evidence that SEM can usefully broker the relationships between direct and indirect effects of instructional methods.

2.2 Challenges and considerations

This is my first attempt at buildinga narrative. Model specification is a big concern that can lead to under fitting or over fitting if it is not done well. MacCallum et al. [27] emphasizes the importance of a strong theoretical underpinning in model construction. Moreover, since SEM relies on larger sample sizes, estimates obtained from smaller samples may prove to be unreliable [28].

Even interpreting SEM results should be done with caution. If the theoretical or temporal connection is notreflected in the data, the outcome may be misinterpreted. Schumacker and Lomax suggestthat researchers should distinguish between correlation and prediction [29].

Future directions

Findings from articles published from the future of SEM were identified through thethird FOCUS session. Model development and validation can be enhanced through machine learning techniques coupled with structured equation modeling [30]. In addition, implementingopen science enhances transparency and replication in SEM research.

3 Data analysis

SPSS & AMOS are used to analyze researchdata in a complete manner. These vestments allow the users to get insights from the data through structural equation modelling by analysing the data in detail.

For a pilot study sample of 40 cases,Cronbach's alpha was greater than 0.8, (table -1). This indicates stability over time in the measurement process or instrument being employed and gains confidence that the constructs or measures which are beingevaluated are accurately measured. Please note that such a strong alpha value not only strengthens confidence in the results, but also sets thestage for use of this instrument with larger samples [31].

The structural equation model was designed by using the Amos graphs, and maximum likelihood estimates according to the central limit theorem, where the sample size is very large, and the results were obtained as in the following tables.

SEM models can be evaluated by using various indices, table No. (2). The CMIN value is 1713.8 with a p-value of 0, which suggests a important inconsistency between the model and the observed data, pointing to a poor fit. However, the CMIN/DF ratio of 3.519 is below the usual threshold of 5, indicating a good fit. It's important to use multiple fit indices for a thorough analysis [32].

Table 1: Accuracy Statistics

FACTORS	Cronbach's Alpha	N of Items
EMPATHY	0.836	4
ASSURANCE	0.909	3
TANGIBILITY	0.914	6
RESPONSIVENESS	0.927	6
RELIABILITY	0.945	7
SARVICE QUALITY	0.968	26
CUTOMER SATISFACTION	0.899	4
CUSTOMER INTENTION	0.866	3
ALL dimensions	0.974	33

Table 2: CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	107	1713.832	487	0	3.519
Saturated model	594	0	0	-	-
Independence model	66	17411.087	528	0	32.976

Table 3: aseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	-
Default model	0.902	0.893	0.928	0.921	0.927
Saturated model	1	-	1	-	1
Independence model	0	0	0	0	0

Table 4: RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.066	0.063	0.07	0
Independence model	0.236	0.233	0.239	0

As illustrated in Table 3, the SEM model-fit indices of baseline comparisons yielded strong results. The Tucker-Lewis Index (TLI) is 0.921 and the Comparative Fit Index (CFI) is 0.927; both exceed the general cut-off point of 0.90, indicating that the model fits the data reasonably well. Therefore, the model fit the data well, as Hu & Bentler noted [33].

The RMSEA value of 0.066 indicates acceptable fit for the model, as values below 0.08 show a close fit. According to Browne & Cudeck [34], this low RMSEA indicates accurate representation of the variables.

The suitability of the data points from the regression analysis shown for the tourism sector of Taif emphasizes the strong correlation between service quality,the satisfaction of customers and customer intentions. Service quality has a significant correlation with customer satisfaction $(estimate = 0.942, CR = 18.57, p = 0.000)$. There is also a significant relationship between type of service and client content. $(estimate = 0.604, p = 0.000)$ and as between customer satisfaction on client comfort $(estimate = 0.223, p = 0.000)$, this works as a significant mediator. These data are vital for underpinning Saudi Arabia'svision 2030 [35].

This table shows that service quality significantly impacts customer satisfaction with a total effect of 0.942, primarily due to direct effects. Specifically ,type of service directly influences client objectives with a value of 0.814, whereas customer satisfaction has direct effect of 0.223. Enhancing service quality leads to better satisfaction and intentions. While Service quality has indirect effect on customer intention of 0.21.

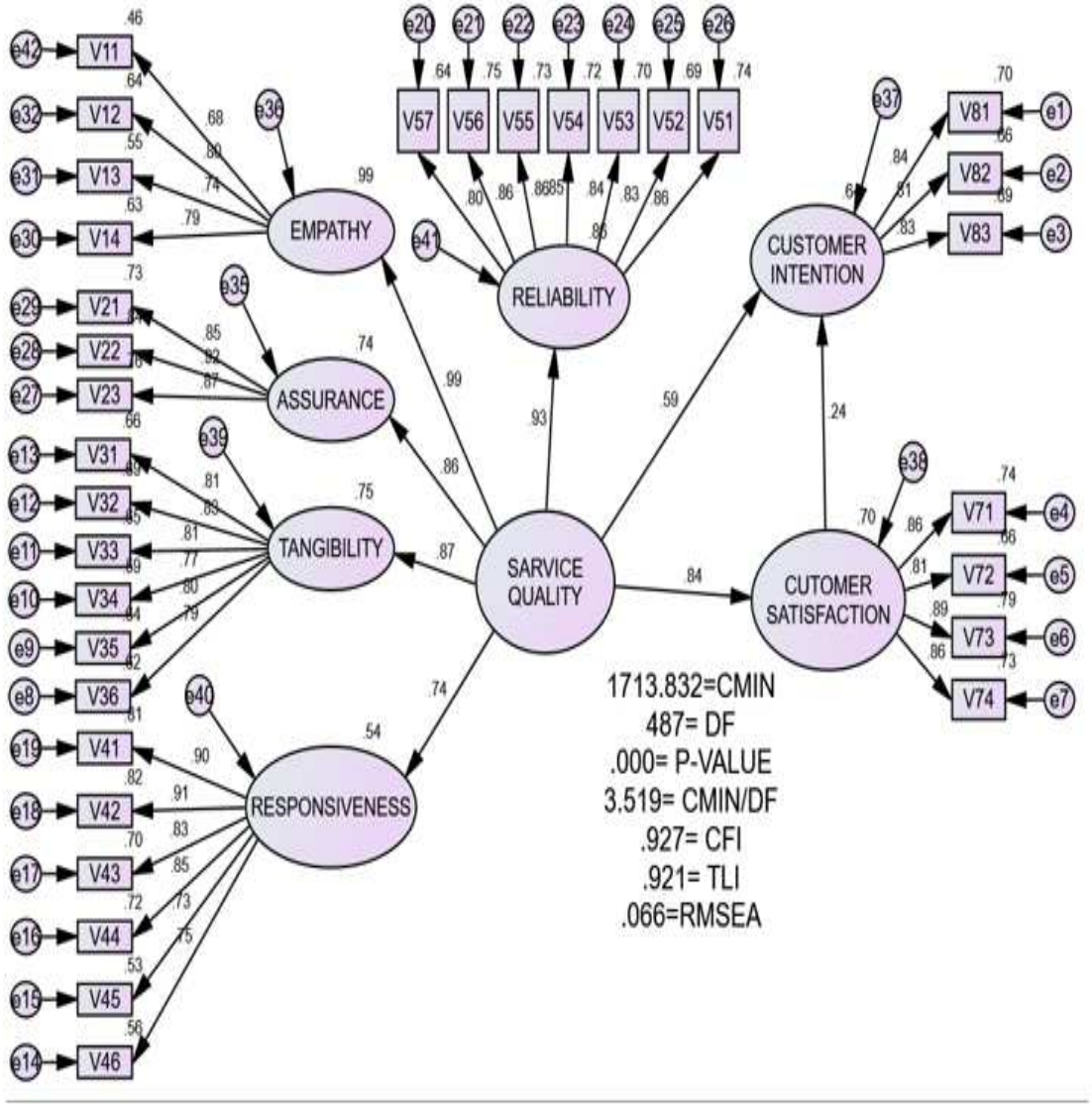

Fig. 1: AMOS graph for the SEM Mode

4 Discussion:

Hypothesis testing is a crucial component in understanding the relationships of key variables in tourism, particularly in the context of the Taif area.

H1: In Taif, the quality of tourism services offered has a direct positive statistically significant relationship on client content at level of significant of 0.05.

According to this hypothesis, with every increase in service quality, customer satisfaction also increases. The hypothesis is surely supported by higher regression partition from service quality to customer satisfaction (0.924) where the critical ratio (CR) is 18.57 and p-value=0.000. Based on these results, a better, more responsive, reliable, and holistic customer experience is supposed to yield higher customer satisfaction.

H2: In the Taif region, the quality of tourism services is directly and statistically significant associated with customers' intentions at the 0.05 level of significance.

The analysis revealed that customer intentions have a positive correlation with type of service , allowing for a reasonable estimate of 0.604 with a p value of 0.000. Hence, better service quality leads to higher customer intentions for

Table 5: Regression Weights

			Estimate	Estimate standar.	S.E.	C.R.	P
F7	<—	F6	0.942	0.838	0.051	18.574	***
F1	<—	F6	1.089	0.995	0.055	19.949	***
F2	<—	F6	1.097	0.863	0.057	19.226	***
F8	<—	F6	0.604	0.586	0.074	8.11	***
F3	<—	F6	0.907	0.865	0.052	17.58	***
F4	<—	F6	0.733	0.736	0.049	14.922	***
F5	<—	F6	1	0.928	-	-	-
F8	<—	F7	0.223	0.243	0.063	3.543	***

Table 6: The result the effects of the independent variable on the dependent variables

	Total Effects		Direct Effects		Indirect Effects
	Type of service	Client content	Type of service	Client content	Type of service
Client content	0.924	-	0.924	-	-
Client objective	0.814	0.223	0.223	0.604	0.21

revisiting the destination or recommending it. Therefore, tourism service providers should work on enhancing service quality to positively impact client relations and sincerity.

H3: Customer satisfaction positively influences customer intentions in Taif at 0.05 level of significant.

Client content and intentions appear to be statistically correlated (estimate = 0.223, p-value = 0.000), suggesting that this hypothesis have empirical support. In this regard, for sure, satisfied customers are likely to have high desire to to use the services again or recommend them.

H4: Client comfort mediates the relationship between tourism service quality and customer intentions in Taif significantly at 0.05 .

Based on the results from the hypothesis, (H1, H2, H3), to examining the mediation effect of client content between service quality and customer intentions, the analysis reveals that client comfort acts as an important factor, indicating that the effect of service quality on customer satisfaction, which in turn affects customer intentions, this result suggests that the effect of service quality on customer intentions is partly mediated through customer satisfaction. Such results are consistent with the theoretical framework established by Baron and Kenny (1986), which specifies the important factors for mediation to happen, which is the presence of statistically significant relationships between the three variables, and it strengthens the argument in favour of the mediation effect.

5 Conclusions and recommendations

In Taif, a number of results can be reached from the analysis of the hypotheses related to tourism type of service, client content, and intentions. The strong, statistically significant effect of service quality on client comfort (H1) indicates that improving tourism services directly enhances client comfort levels. Moreover, the positive impact of service quality on client contentment (H2) suggests that good service experiences can influence customers' likelihood to return to or suggest a certain destination.

Also, the significant relationship between customer satisfaction and customer intentions (H3) indicates that satisfaction may influences customer loyalty and intentions. Furthermore, the results support the hypothesis that customer satisfaction mediates the relationship between service quality and customer intentions (H4).

1. Focus on Service Quality Improvements: Taif tourism operators should invest in staff training, improved facilities, and timely and reliable service to enhance service quality. Customers' satisfaction can be significantly elevated by focusing on these points.
2. Explore Additional Factors Influencing Customer Intentions: Research should be conducted to identify additional key factors of customer intentions, such as the image of the destination, perceptions of prices, and personal experiences. Customer decision-making can be enriched by understanding these factors.

3. Adhere to Vision 2030 Goals: Vision 2030 aims to diversify Saudi Arabia's economy and promote tourism. Taif stakeholders should align their strategies with national goals by improving tourism experiences, increasing cultural participation, and promoting sustainable tourism.

4. Conduct Qualitative Research: Qualitative studies, such as interviews and focus groups with customers, can provide deeper insight into customer perceptions and behaviors, enabling businesses to tailor their services more effectively.

In conclusion, as the findings emphasize the importance of service quality for customer satisfaction and hence customer intentions, a comprehensive strategy that includes enhancing the dimensions of service quality that influence customer intentions will be essential to sustaining growth and enhancing customer loyalty in the tourism sector in the Taif area.

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