

Tourists' Risk Perception of Smart Tourism Impact on Tourism Experience

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ABSTRACT

The following study aims at identifying all the aspects associated with smart tourism and its impact in enhancing tourists' experience. Smart tourism can be evaluated as the utilisation of innovative tools and technologies in tourism activities with a view to provide effective services to the tourists. However, some of the risk factors of smart tourism have also been identified and evaluated in this study. In order to do a critical evaluation regarding the subject matter, a primary quantitative data collection procedure has been conducted and the data set has been critically evaluated through IBM SPSS software.

Keywords: Smart tourism, Innovative technologies, Tourists' experience

1. INTRODUCTION

Smart tourism can be illustrated as the technological capabilities of a particular destination with a view to attract tourists. Many of the destination's places are now modernising in order to include the usage of smart technologies throughout their operations ranging from interactive activities to payment methods. The ultimate aim of smart tourism is thus associated with improving the efficiency of resource management, enhancing sustainability and maximising competitiveness through usage of various technological innovations and practises. Considering these aspects, there are some risk perceptions that are also encountered as one of the major adverse effects of using smart technology in the tourist destinations. In this regard, the study thus focuses on identifying and critically evaluating all these aspects associated with smart tourism.

Hypothesis

H0: Smart tourism provides adverse effects on tourist experience and increases risk factors to the tourists.

H1: Smart tourism is supportive for enhancing tourists' experience.

2. LITERATURE REVIEW

2.1 Brief Overview of Smart Tourism Concept

The concept of "smart" is exponentially correlated with the inevitably intertwined technological aspects in the contemporary global world. Regarding this aspect, with a view to become "smart", destinations, and tourism industry stakeholders focus on utilising a variety of innovative technological practises and innovations in order to improve the overall efficiency of resource management. A smart tourism destination can be significantly evaluated as the tourist spot that responds to the requirements of contemporary mobile and global elites by facilitating their access to hospitality and tourism products, experiences, spaces and services through various innovative ICT based tools and technologies [1]. On the other hand, this type of tourism requires integration of many components and factors such as well-trained human resources, effective marketing and promotion practises, high-level information and physical technology, environmental awareness and cooperation between the stakeholders. Hence, not only a healthy cultural and social environment is developed through the focus on the smart features of a city, but also the tourists can get ultimate support in enhancing their tourism experience.

Creating various augmented tourism products by collecting, processing and combining smart data has become one of the core concerns of the tourist stakeholders for ensuring efficiency and sustainability [2]. Considering the positive impact of smart tourism in providing effective services to the tourists as well as enhancing competitive advantage of the tourist spots, the prime aim of this concept is identifying smart solutions for the integral issues and thereby maximising competitiveness and sustainability in an effective manner. Investing and developing these technological resources not only provides opportunities in strengthening the city's intelligence but also supports in enhancing engagement of the visitors [3]. Therefore, considering all these aspects, it can be stated that individuals as well as businesses, both the stakeholders get optimum benefit from smart tourism in terms of service provision and more efficient infrastructure.

2.2 Impact of Smart Tourism in Enhancing Economy and Providing Effective Tourist Experiences

Tourism is one of the crucial aspects of triggering the economy of a country. In this context, smart tourism has emerged as one of the major factors for boosting revenue of a country, developing the overall technological aspects and inculcating a sense of cultural exchange between the citizens and the tourists [4]. However, usage of innovative technologies has emerged as one of the pivotal aspects for enhancing accessibility and flexibility of the destinations. Travellers can access all the information related to the tourist destination through a Google search and thereby get to select their required destination place. On this note, smart tourism serves as a platform in terms of implementation of ICTs such as Cloud computing, Internet of Things, Virtual or Artificial intelligence and associated such aspects [5]. Through these innovative technologies, tourists can get personalised information as well as enhanced services throughout their travel period.

Technology is a pivotal part of the travel and tourism industry, providing opportunities with day to day operations and improving customer experience as well. Considering these aspects, usage of digital technologies has provided support to the travellers in conducting cashless payment that is not only user-supportive but also provides more security while travelling. Besides this, increased relevance of voice search has emerged as one of the innovative trends that support the tourists with utmost effectiveness [6]. However, considering the consequences of COVID 19 pandemic, smart tourism and improved usage of technology has been grabbing attention to all the tourists where the customer expectations are shifting substantially. Besides assisting employees and the business organisations, smart technologies have been providing support in terms of

reducing costs, saving time, and accordingly creating enhanced and seamless travel experience to all the travellers. Smart technologies can support the tourist organisations to streamline their process, automate their overall services and provide user friendly services that traditionally require less human involvement. As human error decreases, tourists can get improved services without any inconvenience. Therefore, it can be stated that best solutions to complex problems are being provided to the businesses as well as the tourists by introducing smart technologies in tourism.

2.3 Innovative Technologies Used for Smart Tourism

Changed consumer behaviour and dramatic shifting towards the smart tourism concept, various innovative technologies have emerged as providing support to the travellers during their travelling.

- Voice control and voice search through AI assistants have emerged as one of the crucial factors for finding and booking tickets and providing effective customer experience as well. Along with that, besides providing support in booking and associated aspects, voice controlled devices are providing support to the tourists in controlling heating, lighting or gathering tourist information without needing to ask any member of the hotel [7].

- Robotics technology is one of the most exciting technological forms in greeting tourists in hotels, pre-screening the travellers, providing information and accordingly providing assistance in luggage handling and cleaning. In addition to this, food services and food preparation are often done by robots. All these aspects are providing more support in reducing human contact during the post COVID period.

- Contactless payment not only allows more quick payment but also enhances customer experience as customers do not have to access cash all the time.

- Virtual reality and augmented reality, tourists are getting opportunities in having virtual tours or involving in augmenting the real surroundings of a person [8]. Hence, these innovative technologies through mainstream web browsers are providing optimum support to the travellers who are reluctant to travel during this period.

- Along with that, one of the most innovative technologies of smart tourism includes cyber security measures for providing more effective customer services. In this regard, AI chat bots indulge in solving queries to the customers on a 24/7 basis.

- Recognition technology is another crucial aspect that provides support in facial recognition, fingerprint recognition, retina scanning and associated biometric identifiers [9]. In accordance with this, contactless

check-ins and check-outs through recognition technology have been providing continuous support to the smart tourism industry to grab attention to the travellers throughout the global world and thereby enhancing their competitive edge.

2.4 Adverse Impacts and Risk Perceptions of Smart Tourism

Smart tourism has been grabbing the attention of the tourists throughout the global world and thereby usage and implementation of advanced technologies have been making travel more enjoyable. In this regard, privacy concerns of tourists generated by big data available to the service providers and the destination has been emerging as a challenging factor and a significant risk factor for smart tourism [10]. Mobile technology and information technology used by the service providers and the tourists depending on their perceived preference and tourist location has been used in an effective manner in the contemporary smart tourist aspects. However, as personal information of the tourists is being available to multiple stakeholders, it has been emerging as a factor of major concern for the privacy and security issues of the users. In accordance with that, perceived privacy risk of

the tourists while using these smart technologies as well as privacy violation factors is also emerging as potential risk factors for the tourists.

3.PRIMARY QUANTITATIVE DATA COLLECTION (SURVEY METHOD)

In this study, a primary quantitative data collection procedure has been conducted in order to survey the participants for gathering their opinion regarding the subject matter. With a view to conduct this study, a total of 51 participants have been surveyed regarding identifying their opinion on smart tourism and its impact on tourist experience. As primary data collection provides support in collecting first hand data from the participants, this survey method has been supportive for identifying the opinion of 51 tourists through 10 close-ended questions including 2 demographic questions. In this section, the survey questionnaire has been evaluated with the help of IBM SPSS software in order to state the hypothesis.

4. KEY FINDINGS

4.1 Descriptive Statistics

| | N | Range | Minimum | Maximum | Mean | Std. Deviation | Variance | Skewness | | Kurtosis | |
|--|-----------|-----------|-----------|-----------|-----------|----------------|-----------|-----------|------------|-----------|------------|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| Which age category do you belong to? | 51 | 4 | 0 | 4 | 1.45 | 1.331 | 1.773 | .533 | .333 | -.865 | .656 |
| What is your gender? | 51 | 1 | 0 | 1 | .43 | .500 | .250 | .286 | .333 | -1.998 | .656 |
| Do you think the tourist experience is at risk with smart tourism concept? | 51 | 4 | 0 | 4 | 1.84 | 1.433 | 2.055 | .329 | .333 | -1.341 | .656 |
| Tourists are getting more attracted to the smart tourism concept. What is your level of agreeability? | 51 | 4 | 0 | 4 | 2.45 | 1.404 | 1.973 | -.459 | .333 | -1.167 | .656 |
| Usage of AI has been supportive for providing better experience to the tourists. Do you agree on the fact? | 51 | 4 | 0 | 4 | 2.53 | 1.461 | 2.134 | -.481 | .333 | -1.257 | .656 |

| | | | | | | | | | | | |
|---|----|---|---|---|------|-------|-------|-------|------|--------|------|
| Service quality has been enhanced as a result of smart tourism concept. Do you agree or disagree with this statement? | 51 | 4 | 0 | 4 | 2.31 | 1.288 | 1.660 | -.503 | .333 | -.967 | .656 |
| ICT technology has been providing effective tourist experience as compared to tour guides. What is your level of agreeability on this statement? | 51 | 4 | 0 | 4 | 2.18 | 1.532 | 2.348 | -.136 | .333 | -1.497 | .656 |
| Usage of AR and VR technology and web presence are becoming the core factor of attraction for visiting a specific place. What is your extent of agreeability? | 51 | 4 | 0 | 4 | 2.41 | 1.734 | 3.007 | -.456 | .333 | -1.601 | .656 |
| Developed infrastructure of the destinations has been emerging as core factor of increasing attraction of the tourists. Do you agree or disagree? | 51 | 4 | 0 | 4 | 2.67 | 1.438 | 2.067 | -.643 | .333 | -.965 | .656 |
| Unawareness of data practices has been emerging as potential challenge for the tourists. What is your extent of agreeability on this statement? | 51 | 4 | 0 | 4 | 2.43 | 1.628 | 2.650 | -.509 | .333 | -1.396 | .656 |
| Valid N (listwise) | 51 | | | | | | | | | | |

Figure 1. Descriptive statistics
(Source: IBM SPSS)

Descriptive statistics analysis helps in understanding the standard deviation, mean, median and mode value of a data set [11]. In the following research, *Tourists' experience* has been identified as the *dependent variable* whereas *Smart tourism, Usage of AI technology, Service quality, ICT based technology, AR and VR technology, Developed infrastructure, Unawareness of data practises* have been identified as *independent variables*. As identified from the mean value of the survey questions, all the mean values tend to be close to 3. Therefore, it can be stated that the mean value of the whole data set is showing results towards *agreeing* the survey questions. Along with that, the mode value of the data set shows (4) strongly agree as the most occurring

one of the survey questionnaires that illustrates that the mean and mode both value shows the participants agree or strongly agree about the statements. Additionally, the standard deviation value of the data shows if it is clustered or spread around the mean value of the data set [12]. A higher standard deviation value emphasises on clustered mean value whereas a lower standard deviation value signifies that the variables are spread. In this section, the standard deviation value near 1.5 shows that the data set is clustered around the mean value signifying that most of the participants agreed against their question set.

4.2 Correlation analysis

| | | Which age category do you belong to? | What is your gender? | Do you think the tourist experience is at risk with smart tourism concept? | Tourists are getting more attracted to the smart tourism concept. What is your level of agreeability? | Usage of AI has been supportive for providing better experience to the tourists. Do you agree on the fact? | Service quality has been enhanced as a result of smart tourism concept. Do you agree or disagree with this statement? | ICT technology has been providing effective tourist experience as compared to tour guides. What is your level of agreeability on this statement? | Usage of AR and VR technology and web presence are becoming the core factor of attraction for visiting a specific place. What is your extent of agreeability? | Developed infrastructure of the destinations has been emerging as core factor of increasing attraction of the tourists. Do you agree or disagree? | Unawareness of data practises has been emerging as potential challenge for the tourists. What is your extent of agreeability on this statement? |
|--|---------------------|--------------------------------------|----------------------|--|---|--|---|--|---|---|---|
| Which age category do you belong to? | Pearson Correlation | 1 | .873** | .939** | .884** | .872** | .872** | .911** | .854** | .843** | .868** |
| | Sig. (2-tailed) | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | N | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| What is your gender? | Pearson Correlation | .873** | 1 | .905** | .771** | .803** | .717** | .864** | .806** | .816** | .798** |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | N | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| Do you think the tourist experience is at risk with smart tourism concept? | Pearson Correlation | .939** | .905** | 1 | .870** | .881** | .839** | .932** | .839** | .867** | .861** |
| | Sig. (2-tailed) | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | N | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| Tourists are getting more attracted to the smart tourism concept. What is your level of agreeability? | Pearson Correlation | .884** | .771** | .870** | 1 | .983** | .970** | .957** | .949** | .958** | .963** |
| | Sig. (2-tailed) | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 |
| | N | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| Usage of AI has been supportive for providing better experience to the tourists. Do you agree on the fact? | Pearson Correlation | .872** | .803** | .881** | .983** | 1 | .962** | .949** | .962** | .971** | .978** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 |
| | N | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| Service quality has been enhanced as a | Pearson Correlation | .872** | .717** | .839** | .970** | .962** | 1 | .914** | .935** | .943** | .945** |

| | | | | | | | | | | | |
|---|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| result of smart tourism concept. Do you agree or disagree with this statement? | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 |
| | N | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| ICT technology has been providing effective tourist experience as compared to tour guides. What is your level of agreeability on this statement? | Pearson Correlation | .911** | .864** | .932** | .957** | .949** | .914** | 1 | .943** | .944** | .947** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 |
| | N | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| Usage of AR and VR technology and web presence are becoming the core factor of attraction for visiting a specific place. What is your extent of agreeability? | Pearson Correlation | .854** | .806** | .839** | .949** | .962** | .935** | .943** | 1 | .955** | .977** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 |
| | N | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| Developed infrastructure of the destinations has been emerging as core factor of increasing attraction of the tourists. Do you agree or disagree? | Pearson Correlation | .843** | .816** | .867** | .958** | .971** | .943** | .944** | .955** | 1 | .969** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 |
| | N | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| Unawareness of data practices has been emerging as potential challenge for the tourists. What is your extent of agreeability on this statement? | Pearson Correlation | .868** | .798** | .861** | .963** | .978** | .945** | .947** | .977** | .969** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | |
| | N | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |

Figure 2. Correlation analysis (Source: IBM SPSS)

From the correlation analysis it can be seen that the values above 0.9 indicate that there is a strong correlation between the variables of the study. Along with that, all the values signify that their relation among the variables is linear in this study. Therefore, it can be stated that the

data set is valid and the dependent variable tourists' experience is related to all the variables in an effective manner.

4.3 Regression analysis

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .955 ^a | .912 | .898 | .458 | .912 | 63.945 | 7 | 43 | .000 |

Figure 3. Model summary (Source: IBM SPSS)

The above figure illustrates the model summary of regression analysis in the study. It can be seen that the R square value is 0.912, near about equivalent to 1. Hence,

it can be stated that the regression model is ideal for the study.

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|--------|-------------------|
| 1 | Regression | 93.740 | 7 | 13.391 | 63.945 | .000 ^b |

| | | | | | |
|----------|---------|----|------|--|--|
| Residual | 9.005 | 43 | .209 | | |
| Total | 102.745 | 50 | | | |

Figure 4 ANOVA model
(Source: IBM SPSS)

From the ANOVA model it can be seen that the significance value of the data set is 0.000, which illustrates that the data collection and analysis procedure is valid and there is a minimum risk factor for the process. Hence, from the overall elaboration it can be stated that the participants show their agreeableness regarding enhanced tourist experience as a result of smart tourism. Therefore, it can be stated that the hypothesis has been established.

5.CONCLUSION

Smart tourism has emerged as one of the effective trends in the contemporary tourism aspect. The term focuses on utilising various innovative tools and technologies in order to grab the attention of the tourists. Depending on these factors, the overall analysis of the study specifically illustrates the fact that smart tourism and utilisation of innovative technologies have emerged as one of the most supportive factors of enhancing tourists’ experience in the contemporary days. Considering all these aspects, a primary quantitative data collection has been conducted and evaluated critically in order to state the hypothesis of the study. Therefore, it can be concluded that as innovative technologies have been providing effective services and benefits to the tourists, investing in these technologies for grabbing their attraction is supportive for enhancing the competitive edge of the tourism companies.

AUTHORS’ CONTRIBUTIONS

SY: conceptualization, data curation, methodology, writing. LY: data curation, visualization. YZ: review & editing.

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APPENDICE

Appendix 1: Pre-test Questionnaire

DV: Tourists’ experience

IV: Smart tourism, Usage of AI technology, Service quality, ICT based technology, AR and VR technology, Developed infrastructure, Unawareness of data practices

Demographic question:

Q1. Which age category do you belong to?

18-25; 26-35; 36-45; 46-55; 55 and above

Q2. What is your gender? Male; Female

Q3. Do you think the tourist experience is at risk with smart tourism concept?

Q4. Tourists are getting more attracted to the smart tourism concept. What is your level of agreeability?

Q5. Usage of AI has been supportive for providing better experience to the tourists. Do you agree on the fact?

Q6. Service quality has been enhanced as a result of smart tourism concept. Do you agree or disagree with this statement?

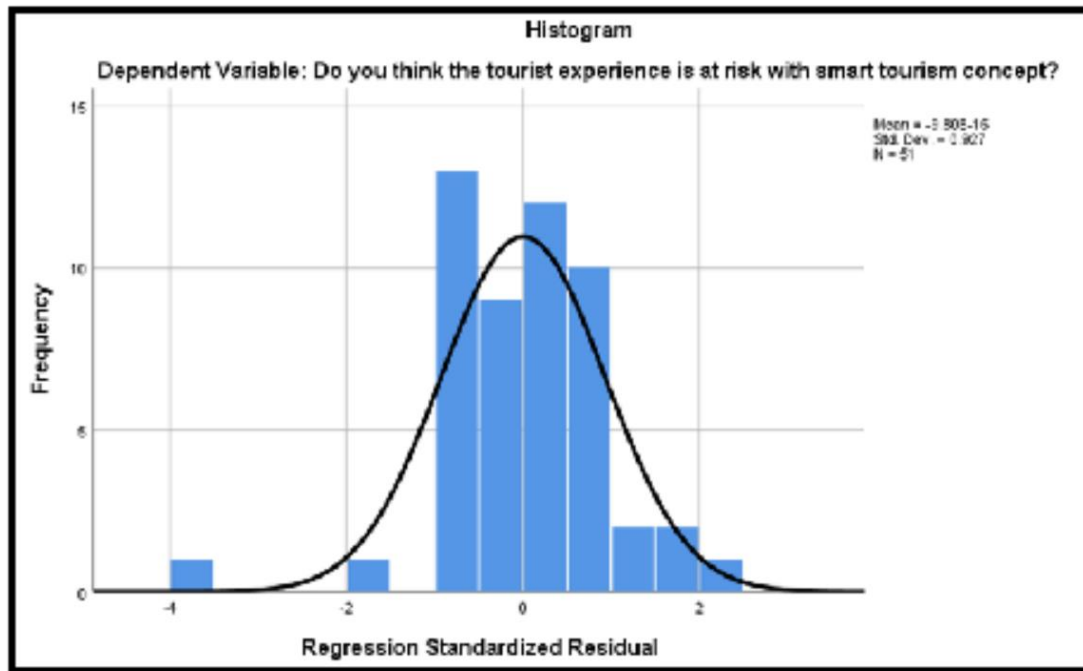
Q7. ICT technology has been providing effective tourist experience as compared to tour guides. What is your level of agreeability on this statement?

Q8. Usage of AR and VR technology and web presence are becoming the core factor of attraction for visiting a specific place. What is your extent of agreeability?

Q9. Developed infrastructure of the destinations has been emerging as core factor of increasing attraction of the tourists. Do you agree or disagree?

Q10. Unawareness of data practices has been emerging as potential challenge for the tourists. What is your extent of agreeability on this statement?

Appendix 2: Histogram



Source: IBM SPSS

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