

Impact of Industry 4.0 on Sustainable Tourism

Perspectives, Challenges and Future

Edited by

Zuzana Tučková • Sandeep Kumar Dey

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INVESTOR IN PEOPLE

This book is dedicated to students, academicians, researchers, practitioners and anyone mesmerised by the wonders of the fourth industrial revolution in ushering in a more sustainable tourism industry.

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Preface

The tourism and hospitality industry is at the forefront of the climate crisis as a significant source of carbon emissions on a global scale. There is a need to disseminate opportunities and explore scientific avenues in emerging technologies associated with Industry 4.0, such as the integration of AI, virtual and augmented reality, 'extended reality' or the use of service robots, big data and machine intelligence to predict human behaviour, and forecasting future trends in the tourism industry's fight against the climate crisis.

With the onset of Industry 4.0, the *Impact of Industry 4.0 on Sustainable Tourism* investigates current and future challenges in order to translate them into pragmatic solutions. Exploring the opportunities for both academia and industry in agile and disruptive technologies and integrate unique features of these advancements like Extended Reality (XR), Machine Intelligence (MI) and Computer Vision (CV), the authors determine the trajectory of sustainable tourism development. Of interest to academics and practitioners, *Impact of Industry 4.0 on Sustainable Tourism* informs on the disruptive technologies under the gambit of Industry 4.0, revealing patterns and projections to provide a discourse on the progression of futuristic technologies in sustainable tourism research and practice.

We are thrilled to present this book on the “*Impact of Industry 4.0 on Sustainable Tourism*” as the editor. This book brings together a collection of insightful chapters from leading scholars and practitioners in the field of tourism, sustainability and technology. The Fourth Industrial Revolution, or Industry 4.0, is characterised by the integration of advanced technologies, such as AI, big data analytics and the Internet of Things, into various industries. The tourism industry is no exception to this, and it is experiencing significant changes due to the integration of these technologies. As the tourism industry grows, it also faces challenges related to sustainability. Sustainable tourism is about meeting the needs of present tourists and host regions while also protecting and enhancing opportunities for the future. In this book, we explore how Industry 4.0 can help or hinder the pursuit of sustainable tourism. The title is developed keeping in mind the needs of post-graduate students and researchers, as knowledge in the vertical remains scarce. This book covers a myriad of pertinent topics ranging from autobots to extended reality in the hospitality and tourism industry. Industry practitioners can utilise the cutting-edge concepts and notions presented herewith. Simultaneously, readers can keep themselves abreast of the major developments taking place in the space. This book also represents a geographical diversity of

contributors and contexts, analyses from both emerging and developed economies.

We would like to thank all the authors who contributed their valuable insights to this book. We are grateful to them for sharing their knowledge and expertise with us. We would also like to express our appreciation to the reviewers for their constructive feedback, which helped to improve the quality of the chapters.

We hope this book will serve as a valuable resource for researchers, students, practitioners, policymakers and anyone interested in the intersection of Industry 4.0 and sustainable tourism.

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Chapter 1

Do Travel Vloggers' Credibility Influence Tourists' Visit Intention to Eco-tourism Destination? Evidence From Bangladesh

Md. Tariqul Islam, Siti Rahayu Hussin, Wong Foong Yee and Uma Pandey

Abstract

Purpose: Innovative modern technologies are utilised in the hospitality and tourist industry to attract prospective consumers. Travel vlogs have emerged as a type of visual travel blog which includes information regarding tourist destinations, accommodation, cuisine, touristic activities, mode of accessibility, etc. The current study aims to investigate the influence of vlogger credibility on triggering the tourist intention to visit an eco-tourism destination.

Methodology: The present study is a quantitative study, and it was conducted by surveying 218 respondents. A structured, close-ended and self-administrated questionnaire was used to collect data from the respondents.

Findings: The findings indicated that vlogger trustworthiness, expertise and attractiveness significantly impact Bangladeshi tourists' intention towards visiting an eco-tourist destination.

Originality: The present study has several theoretical and practical contributions. Theoretically, the research framework illustrated how the vloggers' trustworthiness, expertise and attractiveness on Bangladeshi tourists' visit intention to eco-tourist destinations. Practically, tourism industry practitioners, particularly destination marketers, will get benefit from the present study.

Keywords: Travel vlog; vlogger credibility; vlogger trustworthiness; vlogger expertise; vlogger attractiveness; visit intention; eco-tourist destination; Bangladesh

1. Introduction

The hospitality and tourism industry is highly competitive (Ouyang et al., 2021); thus, marketers use cutting-edge and innovative technologies to attract consumers (Davronov, 2021). Due to decades of constant growth and rising diversification, tourism is one of the world's fastest-growing economic sectors (KC et al., 2021). The diversification can also be seen in the ways tourists plan their trips. Tourists seek destination information when planning their trips. People have begun posting videos on social media describing their itineraries, opinions and interests at various tourist destinations since they are always looking for new ways to learn about a location they plan to visit. These videos are quite informative and are called travel vlogs. A travel vlog is a type of video recorded by individuals based on their journey to a particular destination (Dewantara et al., 2022). Travel vlogs have been emerged as a new form and phase of travel blogs that include a wide range of tourism-related information, from activities to lodgings to cuisine to excursions. They are shared on social media platforms (Peralta, 2019). Anyone can make travel videos and share those videos online (Chung et al., 2016). A video blog, or vlog, combines the written and visual forms of the blog. Travel vloggers, or travel video bloggers, record their experiences while travelling and then upload the videos to the internet for others to see (He et al., 2022). The primary difference between a vlog and a blog is the emphasis placed on the visual display, but both contain the same content.

However, travel vlogs uploaded by popular social media influencers tend to attract more viewers (Le & Hancer, 2021). Consumers are more likely to accept information from social media influencers if they find them relatable, experienced and commercially autonomous (Audrezet et al., 2020). As the popularity of influencer marketing continues to rise, video blogging (vlog) is emerging as a powerful marketing strategy for reaching and connecting with broad audiences (Ouvrein et al., 2021; Wang & Picone, 2021). YouTube is a widely used platform for video blogging that allows users to watch, upload, share and comment on content from across the internet (Ladhari et al., 2020). Tourists are more likely to seek real travel-related experiences from authentic user-generated content like vlogs before making decisions. Making travel vlogs with valuable information sources enhances the destination's image and stimulates visitors' behaviour (Arora & Lata, 2020). It is interesting to see that so many YouTubers are exploring new destinations and sharing with the viewers through their videos (Farooq & Altintas, 2022). YouTubers discussing a new destination raises awareness among potential visitors (Arora & Lata, 2020; Kurnaz et al., 2022). Since the future tourism industry will surely be customer-driven, it is why travel vloggers will play a more crucial role in promoting the sector (Yeoman & McMahon-Beattie, 2006). This study focuses on 'travel vloggers', people who

record their trips, share them online and encourage others to do the same. With a particular emphasis on Bangladesh, this study examines whether the credibility of travel vloggers influences tourists' visit intention to eco-tourism destinations.

2. Literature Review and Hypotheses Development

2.1 Tourists' Visit Intention

Travel intention is a behavioural goal that emphasises an individual's desire to travel (Jang et al., 2009). It can be perceived as the mental process that converts desire into action (Jang et al., 2009). The impact of user-generated content on tourists' intention to visit has been the subject of several prior studies (Assaker, 2020; Latif et al., 2020). Pahlevan and Mura (2019) coined that the credibility of a message on Facebook has a significant impact on a user's perception, affecting the user's decision to travel to Iran. Blog readers are more likely to plan a trip if the blogs they read are engaging and contain new and relevant information (Chen et al., 2014). Travel vlogs and updated versions of blogs impact Tourists' Visit Intention more positively as tourists can capture the destination information with audio and video (Cheng et al., 2020; Chung et al., 2016). According to Abbasi et al. (2022), a vlogging site's informativeness, entertainment value and credibility all have favourable effects on the visit intention of tourists.

2.2 Vlogger Credibility

According to Tien et al. (2019), credibility is the likelihood that information and its source can be believed. The vlogger is the definitive authority in the case of travel vlogs. Xiao et al. (2018) stated that credible individuals are believable people and that credible information is believable. The perceived credibility of the messenger influences how consumers feel about a brand (Cheng & Jiang, 2022; Diamond & Zhou, 2022). Initially motivated by the vloggers' credibility, YouTube subscribers will visit the location featured in the vlog because they want to be like the vloggers and experience what they did (Le & Hancer, 2021; Silaban et al., 2022). Source credibility in online video streaming marketing is typically interpreted as a trifecta of attractiveness, trustworthiness and expertise (Muda & Hamzah, 2021; Todd & Melancon, 2018).

2.3 Vlogger Trustworthiness

The trust paradigm in communication refers to how much faith an audience has in a communicator and their message. The credibility of a source is the likelihood that the information a speaker provides is genuine and trustworthy (Bhattacharjee & Sanford, 2006; Zha et al., 2018). Additionally, 'positive attitude', 'acceptance', 'psychological safety' and 'felt supportive climate' are frequently cited as additional positive outcomes associated with trust. Yoon and Kim (2016) looked into how trustworthy a source was in the coffee shop advertisement. Their findings indicated that a credible communicator is more effective in changing consumer

attitudes. According to the research, people were most likely to change their attitudes and behaviour after hearing from a source they viewed as both knowledgeable and credible (Allard et al., 2020; Imhoff et al., 2018). Accordingly, when choosing an eco-tourism destination, people will stress on vlogs of trustworthy and expert YouTubers (Freund et al., 2021). Thus, the study proposes that:

H1. Vlogger trustworthiness influences Bangladeshi tourists' visit intention to eco-tourist destinations.

2.4 Vlogger Expertise

Source expertise is the degree to which an individual or organisation is trusted as an expert on persuasive communication (Jin et al., 2021). According to Muda and Hamzah (2021), 'expertise' refers to 'the authority, competence and qualification possessed by a communicator'. An individual's credibility and expertise are directly related to the degree to which an audience would follow the speaker's advice (Al-Emadi & Ben Yahia, 2020). As long as the viewers of the vlog believe the vlogger is knowledgeable about the subject matter, they consider themselves experts (Tolunay & Ekizler, 2021). It has been noted that on social media, communications derived from experts are more convincing than those derived from novices because of the greater confidence (Knight et al., 2022). Previous studies have indicated that communicators or information providers with higher expertise positively impact individuals' attitudes (AlFarraj et al., 2021; Li & Yin, 2018). While planning a visit to an eco-tourism destination, one often explores through many travel vlogs but might be more influenced by expert vloggers. Thus, the study proposes that:

H2. Vlogger expertise influences Bangladeshi tourists' visit intention to eco-tourist destinations.

2.5 Vlogger Attractiveness

The communicator's first impression is influenced by their attractiveness (Reinhard & Messner, 2009; Tsfati et al., 2010). Le and Hancer (2021) found that people continuously like more and are more influenced when attractive individuals communicate with them. An attractive communicator substantially impacts public opinion and purchasing desire (Tapanainen et al., 2021). According to Vander et al. (2020), endorsements from people who are seen as attractive are more persuasive. Previous research has also found that source attractiveness positively relates to consumer sentiment and purchase intention (Muda & Hamzah, 2021). An appealing product reviewer can influence buyers and increase their desire to purchase (Djafarova & Rushworth, 2017). Social media influencers who are attractive are more likely to attract the attention of the viewers and trigger the perception of the viewers (Kim & Kim, 2022). Thus, vloggers' attractiveness can impact visit intention to eco-tourism destinations. Therefore, the study proposes that (Fig. 1):

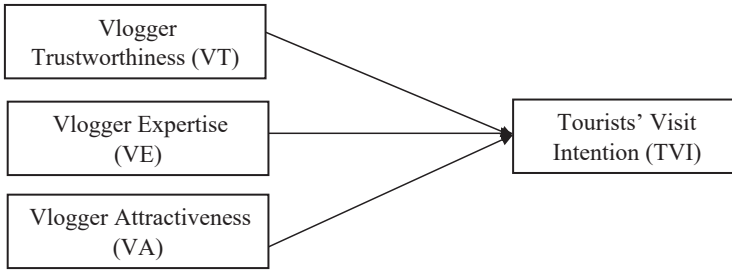


Fig. 1. Research Framework. *Source:* Author's Own.

H3. Vlogger attractiveness influences Bangladeshi tourists' visit intention to eco-tourist destinations.

3. Methodology

The present study aimed to identify the influence of vlogger trustworthiness, vlogger expertise and vlogger attractiveness on Tourists' Visit Intention to an eco-tourist destination. The objective of the study influenced the present study's design as a survey-based quantitative correlational study. Correlational research identifies the association between two or more variables, and a quantitative study is perceived as appropriate because it facilitates work with a large sample size (Chung et al., 2016; Curtis et al., 2016).

The residents of Bangladesh who are familiar with travel vlog videos and utilise those for choosing the destination were considered the population of the present study. However, no statistical data were found about the number of individuals familiar with the travel vlog videos. Numerous past researchers suggested using power analysis when the research population is unknown to determine the study's minimal sample size (Hair et al., 1998, 2019, 2021; Kline, 2015; Ringle et al., 2020; Uttley, 2019). The current study utilised the G Power analysis (Erdfelder et al., 2009) to estimate the minimum sample size, and 119 samples were estimated as the minimum number of samples for the present study with a medium effect size, 95% of confidence level, 0.5% of estimated error and three predictors (Fig. 2) (Memon et al., 2020).

Non-probability sampling techniques were adopted in the current study. Purposive sampling was employed to obtain data from respondents as it allowed the researcher to obtain data from the target research population (Audemard, 2020; Etikan, 2016). In this research, primary sources were used to obtain data, and primary data were employed to test the hypothesis and evaluate the structural model. A structured, close-ended, self-administered online questionnaire was used to obtain the data from primary sources because it facilitates the researchers to collect responses from participants without their presence (Sreejesh et al., 2014). The measurement items of the variables were adapted from the previous study

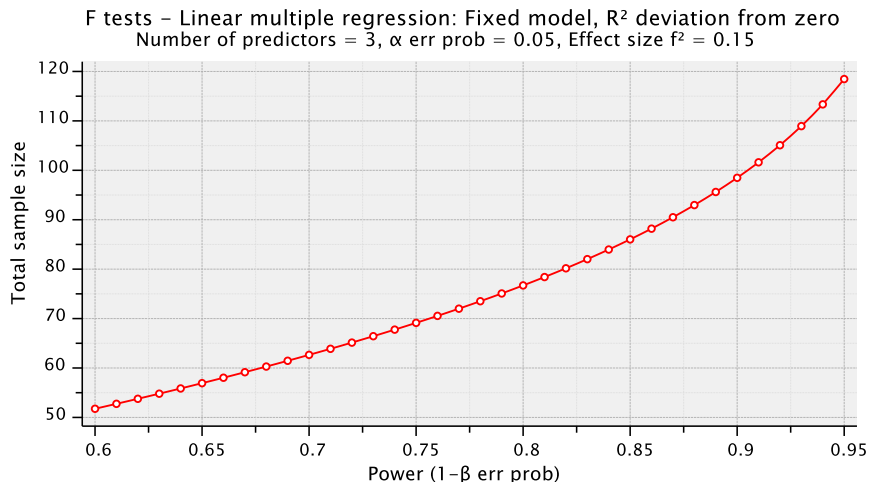


Fig. 2. Estimated Minimum Sample Size. *Source:* GPower 3.1 Output.

(Frank & Mitsumoto, 2021; Muda & Hamzah, 2021; Rahayu & Arifin, 2020; Verma & Dewani, 2021).

A 5-point Likert scale was used to measure the respondents' perception of the statements included in the questionnaire. To reduce inaccuracy and enhance the quality of the questionnaire, a pre-test was conducted with the assistance of two academicians, and pilot research was conducted by obtaining data from 30 respondents (Reynolds et al., 1993; van Teijlingen & Hundley, 2002). The final questionnaire was revised based on the pre-test and pilot study results. Online data collection proceeded between 15 August and 15 October 2022, making the current study cross-sectional. A total of 227 data were obtained, and 218 were considered appropriate for study after the screening process. The demographic profile of the respondents has been mentioned in Table 1.

Respondents' demographic data revealed that most of the respondents were male and belonged to the age group 18–24 years old. Regarding the respondents' marital status and profession, most were single, and their occupation was student. In addition, the maximum respondents' education level was under-graduate. Moreover, most respondents claimed they travelled 3–5 times a year, and their social usage frequency was 3–5 hours daily.

SPSS (v.28) and SmartPLS (ver. 3.9) (Ringle et al., 2022) software were utilised to conduct the entire data analysis procedure. SPSS (v.28) was used to conduct the respondents' demographic profile analysis and assess the common method bias (CMB). Smart PLS (ver. 3.9) was utilised to determine the constructs' reliability and validity, assess the structural equation modelling and test the hypotheses (Ringle et al., 2022). Podsakoff et al. (2003) stated that the common method bias

Table 1. Demographic Profile of the Respondents.

Variable	Category	Frequency	Percentage
Age	18–24 years	81	37.16
	25–34 years	93	42.66
	34–44 years	37	16.97
	45–54 years	05	2.29
	55 years and above	01	0.46
Gender	Female	78	35.78
	Male	140	64.22
Profession	Business	13	5.96
	Public service	26	11.93
	Private service	69	31.65
	Student	98	44.95
	Others	12	5.51
Marital status	Single	134	61.47
	Married	80	36.70
	Others	04	1.83
Level of education	School	09	4.13
	Under-graduation	138	63.30
	Post-graduation	64	29.36
	Others	07	3.21
Travel frequency in a year	Less than 2 times	53	24.31
	3–5 times	128	58.72
	6 times or above	37	16.97
Social media using frequency in a day	Less than 1 hour	36	16.51
	1–2 hours	51	23.39
	3–4 hours	98	44.95
	4–5 hours	23	10.55
	More than 5 hours	10	4.59

Source: Authors' Own Calculation.

exists in the study when the total variance extracted by a single factor is more than 50% of the overall variance. The statistical result indicated that the total variance extracted by a single factor is 38.527% which is lower than the suggested cutoff of 50%, so the common method bias does not exist in the current study.

4. Data Analysis and Results

4.1 Construct Reliability and Validity

Table 2 indicates the reliability and validity of the constructs, which have been analysed through the value of factor loading, Cronbach's Alpha ($C\alpha$), Composite Reliability (CR) and Average Variance Extracted (AVE). The statistical outcome revealed that all the factor loading values of the measurement items were above 0.7, which is in the acceptable range recommended by [Hair et al. \(2021\)](#). In addition, all the values of CA and CR were above 0.9, whereas noted that the CA and CR value above 0.9 is acceptable. Moreover, all the values of AVE were above 0.7, and an AVE value greater than 0.5 is acceptable ([Fornell & Larcker, 1981](#)). The value of construct reliability and validity found in the current study are in the acceptable range, ensuring no issue with reliability and validity.

4.2 Discriminant Validity

The discriminant validity in the current study was assessed through the Fornell and Larcker Criterion (FL criterion) and Heterotrait-Monotrait Ratio of Correlations (HTMT). [Tables 3 and 4](#) present the value of the Fornell and Larcker Criterion and HTMT. FL criterion is one of the widely utilised techniques for assessing the discriminant validity of measurement models. According to the FL

Table 2. Construct Reliability and Validity.

Constructs	Items	Factor Loading	Cronbach's Alpha (CA)	Composite Reliability (CR)	Average Variance Extracted (AVE)
TVI	TVI1	0.786	0.903	0.928	0.722
	TVI2	0.895			
	TVI3	0.873			
	TVI4	0.899			
VA	VA1	0.942	0.956	0.966	0.852
	VA2	0.914			
	VA3	0.903			
VE	VE1	0.91	0.949	0.961	0.832
	VE2	0.898			
	VE3	0.917			
VT	VT1	0.876	0.91	0.933	0.736
	VT2	0.872			
	VT3	0.828			

Source: SMARTPLS ver. 3.9.

Note: VT = Vlogger Trustworthiness, VE = Vlogger Expertise, VA = Vlogger Attractiveness, TVI = Tourists' Visit Intention.