Cogent Social Sciences

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/oass20

The moderating impacts of COVID-19 fear on hotel service quality and tourist satisfaction: Evidence from a developing country

Md. Abu Issa Gazi, Md. Aminul Islam, Abdullah Al Masud, Abdul Rahman bin S. Senathirajah, Sukanta Biswas & Razuan Ahmed Shuvro

To cite this article: Md. Abu Issa Gazi, Md. Aminul Islam, Abdullah Al Masud, Abdul Rahman bin S. Senathirajah, Sukanta Biswas & Razuan Ahmed Shuvro (2024) The moderating impacts of COVID-19 fear on hotel service quality and tourist satisfaction: Evidence from a developing country, Cogent Social Sciences, 10:1, 2331079, DOI: 10.1080/23311886.2024.2331079

To link to this article: https://doi.org/10.1080/23311886.2024.2331079

Published online: 27 Mar 2024.

COGENT SOCIAL SCIENCES
2024, VOL. 10, NO. 1, 2331079
https://doi.org/10.1080/23311886.2024.2331079

LEISURE & TOURISM | RESEARCH ARTICLE

OPEN ACCESS Check for updates

The moderating impacts of COVID-19 fear on hotel service quality and tourist satisfaction: Evidence from a developing country

Md. Abu Issa Gazi[a,b], Md. Aminul Islam[c,d,e], Abdullah Al Masud[f], Abdul Rahman bin S. Senathirajah[g], Sukanta Biswas[h] and Razuan Ahmed Shuvro[i]

[a]Faculty of Business and Communication, INTI International University, Persiaran Perdana BBN Putra Nilai, Nilai, Negeri Sembilan, Malaysia; [b]School of Management, Jiujiang University, Jiujiang, China; [c]Faculty of Business and Communication, Universiti Malaysia Perlis, Perlis, Malaysia; [d]Department of Business Administration, Daffodil International University, Dhaka, Bangladesh; [e]Centre of Excellence for Social Innovation & Sustainability (CoESIS), Universiti Malaysia Perlis, Perlis, Malaysia; [f]Department of Management Studies, University of Barishal, Barishal, Bangladesh; [g]Faculty of Business and Communications, INTI International University, Persiaran Perdana BBN Putra Nilai, Nilai, Negeri Sembilan, Malaysia; [h]Department of Management, Bajua Surendranath College, Bajua, Dacope-Khulna, Bangladesh; [i]Department of Human Resource Management, Jatiya kabi kazi Nazrul Islam University, Mymensingh, Trishal, Bangladesh

ABSTRACT

This study delves into the interconnectedness service quality (SQ) and tourist satisfaction (TS) within the tourism sector of a developing country such as Bangladesh. It takes into account the fluctuating levels of COVID-19 fear as a contributing factor to this dynamic. The research illuminates the critical role of COVID-19 fear in shaping guest satisfaction and how differing fear levels influence guest expectations and experiences. In this study, MGA and PLS-SEM was employed to assess 420 sets of tourist data collected from various hotels and restaurants in Bangladesh. Through this, the study identifies distinct service quality (SQ) dimensions that significantly impact tourist satisfaction (TS) across various COVID-19 fear categories. The findings underline the need for accommodation providers to tailor their services and safety measures to match guests' specific fear levels, emphasizing the importance of empathetic staff behavior and effective communication of safety measures. The framework suggested in this study holds substantial significance, and it is recommended that policymakers in Bangladesh integrate this model into their considerations when devising strategies for the tourism industry. The research provides insights that are relevant for the hospitality sector in Bangladesh, suggesting strategies to enhance guest satisfaction based on accommodation category and COVID-19 fear levels. Finally, future research directions are outlined, emphasizing the evolving dynamic of COVID-19's impact, the role of technology, and the integration of diverse service evaluation constructs to enhance explanatory models.

ARTICLE HISTORY
Received 16 November 2023
Revised 18 February 2024
Accepted 11 March 2024

KEYWORDS
COVID-19; service quality; ecotourism; tourist satisfaction; sustainable tourism

REVIEWING EDITOR
Pier Luigi Sacco, Gabriele d'Annunzio University of Chieti and Pescara, Italy

SUBJECTS
Mental Health; Cognitive Psychology; General Psychology; Marketing Communications; Hospitality Management; Hotel Management; Vocational Education; Tourism

1. Introduction

The emergence of the COVID-19 pandemic has ushered in a host of fresh obstacles across different sectors, profoundly altering the landscape of the hospitality industry (Nunkoo et al., 2020). In Bangladesh, just like its global counterparts, the hotel sector has had to adjust to the uncertainties and transformations brought about by the pandemic. Precisely, the hospitality industry faced an unparalleled challenge. Lockdowns, social distancing mandates, and limitations on travel and movement led to a considerable decrease in patronage for numerous hospitality establishments (Bartik et al., 2020; Dhali et al., 2023; Gazi et al., 2024a). Accommodation providers frequently improve their service quality (SQ) to remain competitive, retain their current tourist base, and draw in new tourists. This strategy significantly affects tourist satisfaction (TS). Scholars have demonstrated a notable interest in evaluating TS. (Kalnaovakul & Promsivapallop, 2023; Mathe et al., 2016; Nunkoo et al., 2020). TS stands as explored topic in the field of hospitality, as evident

CONTACT Md. Abu Issa Gazi maigazi@yahoo.com; Md. Aminul Islam amin@unimap.edu.my Universiti Malaysia Perlis, Malaysia; Abdullah Al Masud aamasud@bu.ac.bd University of Barishal, Bangladesh

from the systematic documentation found in various scholarly works (Gazi et al., 2024b; Lee & Whaley, 2019; Sharifi, 2019). These indices that assess TS provide comprehensive insights into the overall tourist experience. SQ plays a pivotal role in shaping TS, a fact corroborated by numerous studies (Alnawas & Hemsley-Brown, 2019; Nunkoo et al., 2017; Wang et al., 2023). It is important to note that SQ is multifaceted, and its constituent dimensions may vary from sector to industry (Al Masud et al., 2023; Nunkoo et al., 2020). Additionally, perceptions of SQ among tourists frequently differ across various categories of hotels and within distinct types of accommodations, including standalone luxury facilities and resort-based luxury establishments (Banerjee & Chua, 2016; Nunkoo et al., 2017; 2020). This study investigates a crucial aspect of this transition: the impact of COVID-19 and other diseases, such as malaria and dengue, on the relationship between hotel SQ and tourist happiness in Bangladesh. In the face of the ongoing global pandemic, comprehending the impact of fear on SQ and satisfaction becomes imperative for the hotel industry's resurgence and long-term viability. The COVID-19 pandemic has introduced unparalleled disruptions to the global hotel sector. Lockdowns, social distancing protocols, and travel constraints have profoundly reshaped hotels' modus operandi and tourist interactions. In this challenging landscape, ensuring SQ and TS is paramount for the very survival of these establishments. Although prior research has shed light on various aspects of SQ and TS, there remains a significant gap in comprehending how hotel management strategies can adapt to effectively address the moderating influence of COVID-19 fear on TS. Previous studies have focused on these variables individually, with limited attention directed towards the influential role played by COVID-19 fear, which is prevalent among travelers and can profoundly shape their anticipations and perceptions. The majority of research in this field has focused on evaluating SQ in the hotel industry, with a particular emphasis on lower and mid-range establishments (Rauch et al., 2015; Qing et al., 2023). Furthermore, hospitality and tourism are significant domains in which scholarly inquiries have delved into the significance of evaluating performance. (Patiar et al., 2017; Al Masud et al., 2023). Furthermore, there is research exploring TS concerning restaurant SQ during the COVID-19 outbreak (Zibarzani et al., 2022; Al Masud et al., 2023), investigating tourist satisfaction with local food and its impact on behavioral intentions during the COVID-19 pandemic (Rehman Khan et al., 2022), and examining SQ and TS within the context of the Bangladeshi hotel industry (Al Masud et al., 2023; Kakkar et al., 2020). Although there has been a significant amount of research conducted in this area, there is still a requirement for additional investigation to obtain a thorough comprehension of how COVID-19 or other diseases like malaria and dengue, along with fear as a moderating factor, impact the relationship between hotel SQ and TS in Bangladesh. This study specifically investigates the impact of COVID-19 fear on the relationship between SQ and satisfaction in Bangladesh's hotel business. While the literature on SQ, TS, and the ramifications of COVID-19 on various sectors continues to grow, a research gap exists on the interplay of these elements within the context of Bangladesh's hotel sector. This study endeavors to bridge this gap by scrutinizing the distinctive moderating impacts of COVID-19 fear on SQ and TS, thereby contributing to a more all-encompassing comprehension of how hotels can adapt to and cater to tourist needs amid the ongoing pandemic and beyond. Consequently, this study addresses the following fundamental research questions (RQ):

RQ*$_1$*: To what extent does COVID-19 fear moderate the relationship between hotel SQ and TS in Bangladesh?

RQ*$_2$*: What are the specific dimensions of SQ that are most affected by COVID-19 fear?

RQ*$_3$*: How can hotel management strategies be adjusted to address the moderating impacts of COVID-19 fear on TS?

This research paper examines SQ and TS levels within diverse hotels in Bangladesh while considering the moderating influence of COVID-19 fear. Employing a multi-group analysis coupled with partial least squares structural equation modeling, it presents specific managerial recommendations for elevating SQ and satisfaction. This study makes significant contributions to both academic understanding and the practical aspects of the hotel industry by shedding light on the intricate connections between SQ, TS, and COVID-19 fear. It offers valuable insights for hotel proprietors and policymakers concerning the adaptation of services and quality improvement during and after the pandemic. Additionally, it enhances our comprehension of how external factors, such as global health crises, can impact established relationships

within the service sector. The study's implications are practical strategies to fortify hotel resilience and competitiveness in Bangladesh. It underscores the significance of addressing tourist concerns and enriching satisfaction through tailored services, safety protocols, and effective communication strategies. Furthermore, it has the potential to guide government policies within the tourism and hospitality sector, thereby fostering safer and more gratifying travel experiences during periods of global health crises. The paper encompasses discussions on the conceptual framework, research model, hypotheses, and methods for data analysis, results, ramifications, constraints, and recommendations for future research directions.

2. Literature review

2.1. Service quality and hospitality industry

Service Quality (SQ) is the degree to which tourist expectations are met or exceeded, crucially impacting satisfaction, loyalty, and business success, especially in the hospitality sector (Wang et al., 2007). Understanding it involves considering tourist perspectives and leveraging insights from tourist reviews (Babu et al., 2018; Situmeang et al., 2020). The link between SQ and TS is foundational, as it aligns with the expectancy-disconfirmation theory. Nevertheless, it is more appropriate to concentrate on specific transactions when investigating how SQ contributes to TS. Numerous empirical studies consistently confirm the positive impact of SQ on TS (Ali & Raza, 2017; Alreahi et al., 2022; Nunkoo et al., 2017). Various models exist for assessing SQ. For instance, the widely used SERVQUAL model has faced criticism in the hospitality industry for not adequately covering relevant SQ dimensions (Akbaba, 2006). Consequently, specialized models like HOLSERV (Wong et al., 1999) and LODGSERV (Knutson et al., 2004) have emerged better to suit the accommodation sector's SQ aspects. For these reasons, this study follows the above model for better findings. Extending these models, Wu and Mohi (2015) introduced the Scale of SQ in Hotels, which includes staff behavior, competence, issue resolution, ambiance, room quality, facilities, design, location, sociability, value, and waiting times.

2.2. COVID-19 fears and hospitality industry

The global COVID-19 pandemic challenged businesses, especially in the hospitality sector (Gursoy & Chi, 2020; Nabi et al., 2022a). This industry, highly reliant on tourist demand, required urgent research to adapt to pandemic conditions. While the hospitality field is in gradual recovery, its reliance on face-to-face interactions necessitated significant operational changes to rebuild trust and ensure safety for all (Gursoy & Chi, 2020; Nabi et al., 2022b). The pandemic significantly influenced people's decision-making, emotions, and perceptions (Harba et al., 2021; Nabi et al., 2022a), tilting them toward a negative outlook (Li et al., 2020). This shift can be partly attributed to the stress of safeguarding loved ones' health (Harba et al., 2021) and losing personal freedom (Hossain et al., 2023a; Li et al., 2020). Scholars promptly responded to these evolving tourist behaviors (Nunkoo et al., 2017). In Bangladesh, the pandemic hit the hospitality sector hard, leading to a sharp decline in tourism due to travel restrictions and safety concerns. Many hotels faced economic challenges, some temporarily closing. Safety measures like enhanced cleaning and social distancing were introduced. The industry shifted towards domestic tourism, offering customized packages, with a rise in online bookings and contactless services. Government support was given, but the sector's recovery relies on effectively managing the virus, vaccine distribution, and international travel resumption. Adaptability is key, with persistent challenges in hospitality marketing, tourist returns, restaurant sentiment, and adjusting to the "new normal." Ongoing research is crucial for its sustainability amid ongoing pandemic discussions. We have broadened the scope of our study to investigate the apprehension associated with acquiring any transmissible illness within the hospitality industry of Bangladesh. This expansion aligns with the concept of "endemic fear" and carries wider relevance.

2.3. Tourist satisfaction and hospitality industry

The concept of tourist satisfaction (TS), as defined by Oliver (1980), emerged decades ago, focusing on the gap between tourist expectations and post-consumption evaluations. In the service industry, the

debate continues over whether it's tied to specific transactions or cumulative experiences (Hossain et al., 2023b; Johnson & Cheng, 2001). Johnson and Cheng (2001) champion the cumulative perspective, although most studies lean toward the transaction-specific view. Previous research predominantly used ratings to measure TS (Bittar, 2017; Hossain et al., 2023c). However, a substantial shift in focus has occurred towards using reviews or a combination of reviews and ratings. Recent studies have extended the traditional approach by incorporating travelers' sentiments and opinions from online reviews. For example, Rajaguru and Hassanli (2018) employed online reviews and ratings to assess hotel TS. Numerous studies have examined the sentiment conveyed in reviews as a gauge of TS (Binder et al., 2019; Hossain et al., 2023d). The hospitality sector in Bangladesh is experiencing growth fueled by tourism and economic development. TS is critical, influencing the standing and prosperity of hotels and restaurants. Key determinants encompass top-notch service, cozy lodging, staff conduct, food excellence, affordability, and online feedback. Given the ongoing COVID-19 pandemic, safety precautions have become indispensable. The government and industry player's work together to elevate service standards, uphold cleanliness, and guarantee a secure environment.

2.4. Conceptual framework

The study's conceptual model, as depicted in Figure 1, is built upon the HOLSERV (Hotel SQ) and LODGSERV (Lodging SQ) Models, considering the moderating impact of COVID-19 Fear. HOLSERV and LODGSERV are specialized models tailored to assess SQ in the hospitality industry, especially in hotels and lodging establishments. Unlike more generic models like SERVQUAL, these models provide a more focused and comprehensive evaluation of SQ, accounting for the unique aspects of this sector, including both tangible and intangible factors. Figure 1 visually illustrates the connections among these eleven crucial variables expected to influence TS.

2.5. Hypotheses development

2.5.1. The accommodation infrastructure's ties on tourist satisfaction

The standard of the accommodation facilities plays a crucial role in positively affecting tourist contentment within the hospitality sector. Within the hospitality industry, the quality of lodging facilities stands as a primary determinant (Hossain et al., 2023e; Wu & Mohi, 2015). This encompasses factors like the internal design (Wu & Weber, 2005), architectural layout and the overall atmosphere, encompassing aspects like lighting, music, ambient noise, temperature, signage, and wall colour (Bonn et al., 2007; Hossain et al., 2021). All these elements are significant in influencing TS. Hence, the quality of the accommodation facilities is a critical element directly impacting guest contentment. It involves a range of components that collectively mould the guest experience and their perceived value, ultimately resulting in enhanced TS and the triumph of the hospitality enterprise. Therefore, we posit the subsequent hypothesis:

H_1: *The Quality of the Accommodation Facilities Positively Affects TS*

2.5.2. Employee's attitude and tourist satisfaction

The second dimension pertains to the manners and conduct of employees (Wu & Mohi, 2015). Behavior encompasses traits like sociability, warmth, politeness, comportment, attentiveness, honesty, and concern demonstrated by employees (Alhelalat et al., 2017; Hossain et al., 2023). Scholars contend that comprehending how tourists assess the attitudes of service personnel can be highly advantageous for service providers (Chu et al., 2016). To summarize, employees' conduct and behavior are central to shaping the guest experience and influencing TS in the hospitality sector (Alhelalat et al., 2017). Favorable interactions, efficient issue resolution, and a dedication to delivering exceptional service collectively contribute to overall guest satisfaction and their inclination to revisit or recommend the establishment to others, leading to the following hypothesis:

H_2: *The Positive Behavior and Attitude of Employees Enhance TS*

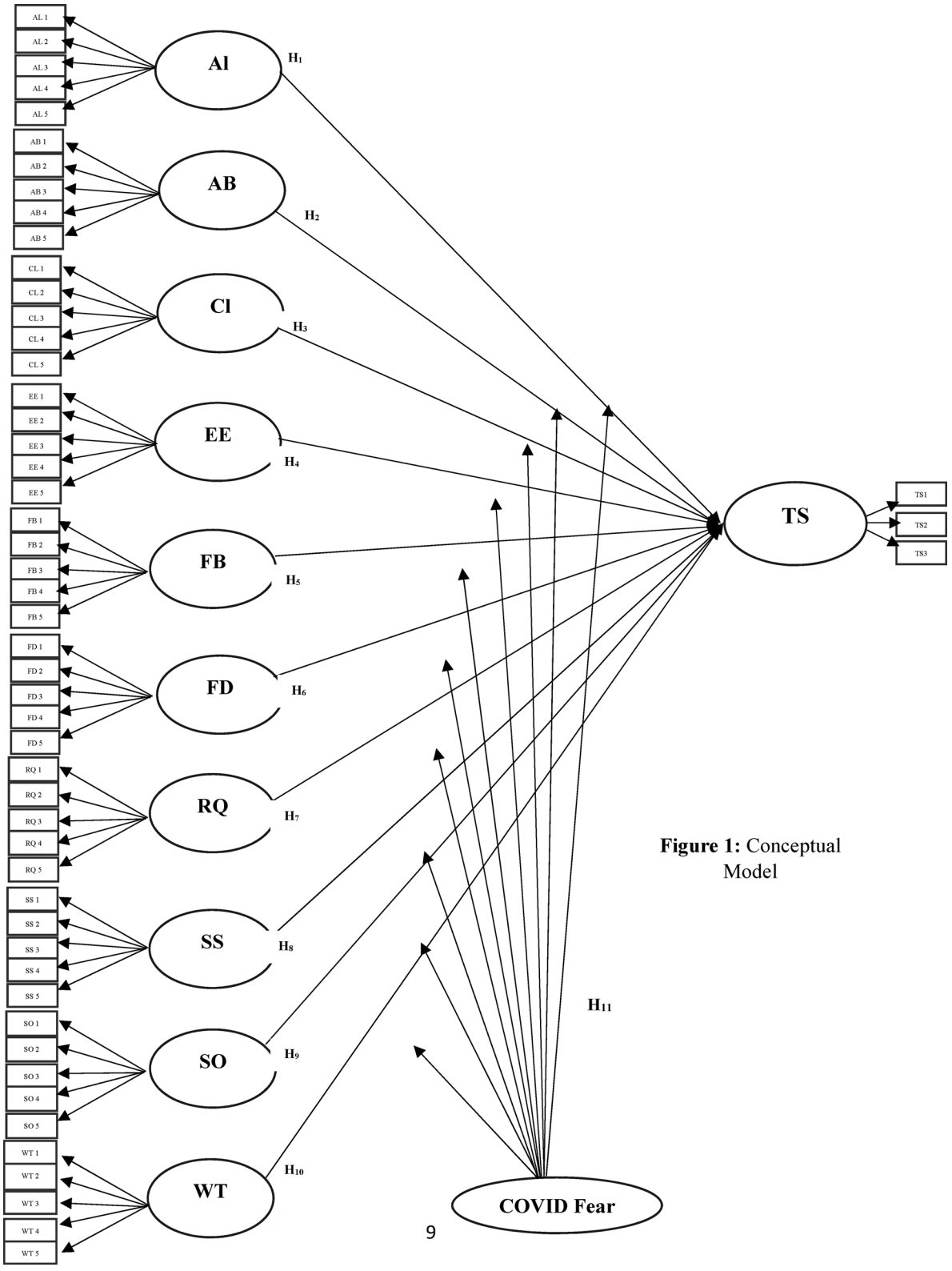

Figure 1: Conceptual Model

Figure 1. Conceptual model.

2.5.3. Tourist interactions and tourist satisfaction

The third aspect emphasizes the concept of tourist engagement (Nunkoo et al., 2020). Tourist interaction refers to how tourists personally perceive the behavior and attitudes of other tourists during service delivery (Dodd et al., 2021). It is widely acknowledged that tourist interactions play a significant role in

shaping the overall hospitality experience (Huang & Hsu, 2010; Kandampully et al., 2018). Numerous studies substantiate that tourist interaction is a vital component in how tourists evaluate SQ and a factor that influences their satisfaction (Gössling et al., 2020; Nunkoo et al., 2020; Qing et al., 2023). So Businesses that emphasize positive, personalized, and efficient interactions throughout the tourist journey increase the likelihood of fostering loyal and content tourists. These content tourists not only return for future transactions but also endorse the brand, attracting new tourists and elevating the business's overall success. Hence, we propose the subsequent hypothesis:

H_3: *Tourist Interaction Has a Positive Impact on Tourist Contentment*

2.5.4. Employee expertise and tourist satisfaction

Employee expertise indicates the fourth dimension which characterized by employees' skills and knowledge influencing interactions with tourists while performing specific tasks. Research indicates that the quality of employees' interaction with tourists is significantly determined by their expertise (Ekinci & Dawes, 2009). Moreover, empirical evidence demonstrates that employees' problem-solving abilities contribute to assessing the quality of tourist interaction with service providers (Ko & Pastore, 2005). In the context of SQ, we expect that the proficiency of employees will influence TS (Huang et al., 2018; Gazi et al., 2024b; Nunkoo et al., 2017). In essence, employee expertise positively affects TS by providing tourists with valuable information and efficient solutions and fostering a sense of trust and confidence (Al Masud et al., 2023; Tee et al., 2023). This expertise enriches the overall tourist experience and plays a pivotal role in cultivating and sustaining tourist loyalty. Thus, we propose the following hypothesis:

H_4: *Employee Expertise Positively Contributes to Enhancing TS.*

2.5.5. The food and beverage quality and tourist satisfaction

The fifth aspect pertains to the quality of food and beverages (Akbaba, 2006). TS in this regard encompasses factors like the availability of a diverse food and beverage selection, the overall quality of offerings, the cleanliness of food, and the standard of service (Akbaba, 2006). Several research investigations have consistently highlighted a strong link between TS and the quality of food and beverages (Bihamta et al., 2017; Gazi et al., 2022; Han & Hyun, 2017). In summary, the quality of food and beverages profoundly influences TS, encompassing factors such as taste, presentation, freshness, variety, and value for money. Restaurants prioritizing food and beverage quality enhance dining experiences and tourist loyalty. Consistency, safety, and customization are vital for food and beverage sector satisfaction. Therefore, we hypothesize:

H_5: *The Quality of Food and Beverages Has a Positive Influence on TS*

2.5.6. The front desk quality and tourist satisfaction

The sixth proportion pertains to the front desk's quality, which includes factors like the effectiveness of the check-in process, the management of luggage transfers, and the problem-solving skills of the front desk staff (Gazi et al., 2022; Jang et al., 2018). Empirical studies conducted by Jang et al. (2018) and provide compelling evidence that the performance of front desk employees exerts the most significant impact on tourists' overall perception of SQ and satisfaction. So, efficient check-in and check-out processes, friendly and knowledgeable staff, effective communication, proficient problem-solving, personalized service, and a solid commitment to guest safety collectively contribute to a positive guest experience and higher satisfaction levels. Therefore, we propose the following hypothesis:

H_6: *The Quality of the Front Desk Directly Enhances TS Positively*

2.5.7. The room quality directly impacts on tourist satisfaction

The room quality indicates the seventh dimension of accommodation service (Gazi et al., 2022; Jang et al., 2018; Radojevic et al., 2015). This SQ dimension encompasses room size, temperature, noise levels, and the comfort of mattresses and pillows (Ramanathan, 2011). Similar to the findings of Radojevic

et al. (2015) research has shown that the quality of a hotel's rooms strongly influences TS. Hence, room quality is vital to guest satisfaction within the hospitality sector. A well-maintained and carefully designed room guarantees guests a comfortable and enjoyable stay, ultimately resulting in increased satisfaction, the likelihood of return visits, and favorable reviews. Therefore, we hypothesize:

H_7: *Room Quality Has a Positive Impact on TS*

2.5.8. Safety and security influences tourist satisfaction

Broadly, safety and security considerations involve the protection of individuals, covering both personal safety, the safeguarding of hotel assets and guests' possessions, and the assurance of the well-being of employees and tourists (Enz & Taylor, 2002). According to Enz and Taylor (2002), security measures encompass electronic locks and surveillance cameras, while safety features include items like sprinkler systems and smoke detectors. The significance of security and safety has grown considerably for global travelers and continues to be a vital facet of SQ that directly influences overall satisfaction with hospitality services (Nunkoo et al., 2017). As a result, implementing safety and security measures is fundamental to ensuring guest satisfaction in the hospitality industry. Guests highly value hotels that prioritize their safety and security, leading to increased satisfaction, trust, and the potential for return visits and positive reviews. Hence, we put forward the following hypothesis:

H_8: *Improved Safety and Security Measures Positively Affect TS.*

2.5.9. Sociability and tourist satisfaction

Sociability is the positive social interactions derived from a sense of fulfillment while engaging with others who share in the same activity and derive enjoyment from it (Ali et al., 2017). In this context, family members, friends, and acquaintances are significant social factors concerning accommodating guests. It is essential to distinguish a social experience, an outcome post-consumption, from tourist interaction (Nunkoo et al., 2017), which happens during the provision of services (Ko & Pastore, 2005). Thus, sociability within the hospitality sector encompasses warm and friendly interactions, tailored service, and a welcoming environment that cultivates positive relationships between guests and staff. These interactions significantly contribute to guest satisfaction by fostering feelings of comfort and connection and creating memorable experiences. Accordingly, our hypothesis is as follows:

H_9: *Enhanced Sociability Positively Impacts TS in the Hospitality Industry.*

2.5.10. Waiting time and tourist satisfaction

The duration of waiting time, which refers to the period tourists spend waiting for a service, significantly impacts their satisfaction levels (Benítez et al., 2007). Tourists who engage with a service typically have certain expectations regarding an acceptable waiting duration, directly influencing their overall satisfaction. Waiting for service is often regarded as a frustrating experience by many tourists in the service industry. Nunkoo et al. (2017) conducted a study on service encounter quality and emphasized that waiting time plays a significant role in predicting the quality of the overall service outcome. They highlighted waiting time as a fundamental aspect of SQ that influences TS. However, it is vital to manage waiting times effectively, as excessive delays or poor management can lead to dissatisfaction. Hospitality businesses must strike a balance, minimizing unnecessary waits while leveraging waiting time to enhance TS. Hence, our hypothesis is as follows:

H_{10}: *The Duration of Waiting Time Positively Impacts TS*

2.5.11. Moderating effect of COVID-19 fear

COVID-19 fear acts as a lens that can magnify or alleviate the impacts of various aspects of SQ on TS (Phelps & Sperry, 2020). Recognizing and comprehending this moderating impact is crucial for businesses, particularly within the hospitality sector (Gössling et al., 2020). It allows them to customize

their offerings to address tourists' specific needs and worries during the ongoing pandemic (Gazi et al., 2024a). The fear of COVID-19 is a response aimed at adapting to potential threats (Addo et al., 2020). This fear can significantly influence tourists' purchase choices and behavioral intentions (Naeem, 2021). Addo et al. (2020) pointed out that the fear of the COVID-19 pandemic drives tourists towards purchasing personal protective equipment. In the context of accommodations like hotels, guests can be categorized into three levels of COVID-19 fear: Low Fear: Guests with minimal COVID-19 concerns who are comfortable with standard safety measures and regular interactions. Moderate Fear: Guests with reasonable problems who follow safety guidelines but still engage in various hotel services. High Fear: Guests deeply concerned about COVID-19 take extensive precautions and limit interactions. Accommodation providers should consider these fear levels to tailor services and safety measures for guest comfort and safety. In research, we can use statistical techniques like moderation analysis to understand how COVID-19 fear impacts the relationships between key variables in the hospitality industry in Bangladesh. This is crucial for hotel managers and policymakers as it helps them adapt to changing tourist preferences during and after the pandemic. Therefore, this study suggests the following:

H_{11}: *The Presence of COVID-19 Fear Acts as a Moderating Factor in the Connections between SQ Dimensions and TS*

3. Methodology

3.1. Research design

The study's primary objective is to examine how the level of fear related to COVID-19 influences hotel SQ and TS in Bangladesh. Data collection for this research spanned from April 2022 to March 2023 and involved surveying guests staying at various hotels across Bangladesh. We intentionally focused on prominent regions, including Dhaka, Chittagong, and Sylhet, as these areas host a substantial proportion of these hotels. To ensure a representative sample, we utilized Stratified Sampling, dividing it into these three major regions. Our data collection methods involved conducting face-to-face interviews and distributing survey questionnaires to the selected participants during the initial phase. Subsequently, we returned to collect the completed questionnaires from the respondents. Some lodging providers permitted our research team to directly engage with their guests for questionnaire administration, while others opted for their management to oversee the process following our delivery. In the beginning, we collected a sum of 435 questionnaires. We omitted 15 observations from our analysis due to their measurement scales having over 10% missing values, in accordance with the criteria outlined by Hair et al. (2006). Consequently, our final dataset comprised 420 cases. Additional descriptive details about our sample can be found in appendix A.

3.2. Measurement of scale

The measurements were adjusted and refined based on the theories discussed earlier. Our measurement set encompassed 56 items categorized into 12 variables. Respondents provided their responses using a five-point Likert scale, indicating their agreement or disagreement with each statement. In evaluating TS, we utilized a set of three items derived from Deng et al. (2013). These items specifically addressed the overall performance of the accommodation service provider and the alignment of services with tourist expectations. In assessing SQ, we adapted measurements from Wu and Mohi (2015) study and drew insights from various other studies on SQ (Caro & Garcia, 2008). This study employed a logical, analytical approach involving the formulation of hypotheses derived from existing literature. Subsequently, a testing procedure was applied to assess the validity of these hypotheses. Redundant items were identified and removed to ensure the questionnaire's validity and reliability. We excluded items from the analysis if they displayed dual loadings or loadings lower than 0.50. The remaining items underwent another round of factor analysis, yielding 12 distinct factors, each appropriately labeled (Table 1).

3.3. Data analysis

In our study conducted in Bangladesh, we utilized the PLS-SEM approach, employing the Smart PLS-4 software (Ringle et al., 2015). PLS-SEM is known for its flexibility and applicability to both reflective and formative measurement models. It proves especially useful for evaluating the accuracy of predictive outcomes (Sarstedt et al., 2016; 2017). Furthermore, in order to mitigate potential issues regarding Common Method Variance (CMV), we performed tests to validate the reliability of the study's results. The findings of these tests indicated that any CMV errors in the data had been adequately managed. Specifically, the first component explained 27.41% of the variance, and all other components exhibited eigenvalues exceeding one, as outlined by Podsakoff et al. (2003).

Table 1. Items reliability for pooled sample.

Items		Construct	Loadings	S.E	C.R	AVE
AI1	<---	'AI'	.905		.889	.782
AI2	<---	'AI'	.894	.041		
AI3	<---	'AI'	.897	.036		
AI4	<---	'AI'	.812	.048		
AI5	<---	'AI'	.793	.033		
AB1	<---	'AB'	.796		.856	.714
AB2	<---	'AB'	.876	.081		
AB3	<---	'AB'	.867	.045		
AB4	<---	'AB'	.898	.040		
AB5	<---	'AB'	.881	.043		
CI1	<---	'CI'	.807		.907	.803
CI2	<---	'CI'	.854	.044		
CI3	<---	'CI'	.881	.036		
CI4	<---	'CI'	.922	.039		
CI5	<---	'CI'	.862	.042		
EE1	<---	'EE'	.893		.888	.761
EE2	<---	'EE'	.882	.041		
EE3	<---	'EE'	.896	.039		
EE4	<---	'EE'	.848	.042		
EE5	<---	'EE'	.777	.043		
FB1'	<---	'FB'	.866		.941	.834
FB2'	<---	'FB'	.894	.042		
FB3'	<---	'FB'	.885	.044		
FB4'	<---	'FB'	.879	.043		
FB5'	<---	'FB'	.795	.044		
FD1'	<---	'FD'	.804		.93	.850
FD2'	<---	'FD'	.862	.060		
FD3'	<---	'FD'	.847	.054		
FD4'	<---	'FD'	.879	.025		
FD5'	<---	'FD'	.857	.049		
RQ1	<---	'RQ'	.858		.965	.871
RQ2	<---	'RQ'	.832	.054		
RQ3	<---	'RQ'	.893	.062		
RQ4	<---	'RQ'	.882	.024		
RQ5	<---	'RQ'	.896	.056		
SS1	<---	'SS'	.848		.928	.821
SS2	<---	'SS'	.921	.031		
SS3	<---	'SS'	.866	.039		
SS4	<---	'SS'	.894	.048		
SS5	<---	'SS'	.881	.048		
SO1	<---	SO	.879		.825	.701
SO2	<---	SO	.895	.065		
SO3	<---	SO	.794	.072		
SO4	<---	SO	.862	.062		
SO5	<---	SO	.847	.042		
WT1	<---	WT	.891		.883	.719
WT2	<---	WT	.841	.049		
WT3	<---	WT	.864	.071		
WT4	<---	WT	.848	.052		
WT5	<---	WT	.877	.056		
CF1	<---	CF	.966		0.938	0.835
CF2	<---	CF	.894	.045		
CF3	<---	CF	.880	.041		
TS1	<---	TS	.879		0.891	0.749
TS2	<---	TS	.814	.061		
TS3	<---	TS	.901	.039		

3.4. Ethical statement

In compliance with local law and institutional regulations, an ethical assessment and permission were not necessary and obtained from ethics committee for this study involving human subjects.

3.5. Informed consent

Written informed consent was not required from participants in accordance with national laws and institutional standards. There was no coercion used to obtain responses, and all participation was voluntary. Prior to posting or sharing the questionnaire on social media, participants were informed about the study's purpose and how it could benefit them. It was made clear that participants would not receive any monetary compensation for their participation. An open forum was provided for participants to ask questions and gain insight into the study, and they were informed that they could drop out at any time.

4. Analysis and results

4.1. Respondents profile

The breakdown of the sample profile (Appendix A) indicates that a majority of the participants were male, accounting for 235 individuals (56%). The number of single participants in the sample, at 188 individuals (44.77%), was slightly lower than the count of married respondents, which was 203 individuals (48.33%). The respondents in the table displayed a relatively high level of education, with approximately 55.25% (n = 232) holding a university degree. Most respondents were of Bangladeshi nationality (n = 255, 60.71%), followed by other Asians (n = 140, 33.33%). A significant portion of respondents visited Bangladesh for business purposes (n = 201, 47.85%). Additionally, a majority of the respondents stayed in hotels with a heightened level of COVID-19 fear (n = 207, 49.28%). Accommodation providers must adjust their services and safety protocols to align with varying levels of fear experienced by guests, ensuring their comfort and safety. In order to enable a more insightful comparison across housing providers with different levels of concern regarding COVID-19, we categorized the establishments into three groups: low-level, comprising establishments with a lower level of COVID-19 fear (n = 122); moderate-level, encompassing establishments with a medium-level of fear (n = 188); and high-level, including establishments with a higher level of fear (n = 110). We utilized G*Power software (Faul et al., 2009) to conduct a power analysis aimed at determining the minimum sample size required for Multi-Group Analysis (MGA). We confirmed that the sample size for each accommodation type related to COVID-19 fear matched the necessary conditions, which included a significance threshold of 5%, a power of 80%, and accounting for 10 predictors.

4.2. Measurement models

In the initial phase, we evaluated the outcomes of the measurement model for the combined sample, following the guidance of Hair et al. (2019). The outcomes, as displayed in Table 1, encompassed the loadings, CR, and AVE values. All of These values indicated the internal consistency of the measurement model, aligning with Hair et al. (2019) recommendations. Furthermore, the AVE and CR values also verified the convergent validity of the measurement model in accordance with the criteria set forth by Nunkoo et al. (2017). Considering the utilization of MGA theory in our research, it became imperative to ensure that any divergences observed in the results did not arise from variations in measurement, in accordance with the advice of Hair et al. (2017). In order to deal with this issue, we utilised the Measurement Invariance of Composite Models (MICOM) approach, which is recommended by Hair et al. (2017).

We evaluated the discriminant validity by employing the Heterotrait-Monotrait Ratio (HTMT) of correlations, as suggested by Hair et al. (2017) and Henseler et al. (2015). The results of this assessment may be found in Table 2. In each instance, the HTMT ratios were observed to be below the threshold of 0.85,

Table 2. Discriminant validity for the pooled sample.

	AI	AB	CI	TS	EE	FB	FD	RQ	SO	SS	WT
AI											
AB	.53										
CI	.41	.41									
TS	.53	.62	.55								
EE	.62	.68	.33	.48							
FB	.54	.63	.42	.52	.48						
FD	.81	.74	.48	.67	.75	.53					
RQ	.69	.72	.39	.71	.69	.61	.59				
SO	.31	.49	.71	.49	.39	.55	.31	.43			
SS	.44	.53	.24	.59	.54	.46	.57	.69	.37		
WT	.67	.54	.46	.62	.71	.49	.67	.64	.33	.52	

Table 3. 'Invariance test'.

	'Low vs. mid-level'			Low vs. high level'			Mid- vs. High-level'		
Variables	C = 1'	95% CI'	CIE?'	C = 1'	95% CI'	CIE?'	C = 1'	95% CI'	CIE?'
AI	.999	.998;1.000	yes	.992	.991;1.000	Yes	.999	.999;1.000	yes
AB	1.000	.999;1.000	yes	1.000	.995;1.000	Yes	.998	.985;1.000	yes
CI	.998	.990;1.000	yes	.996	.999;1.000	yes	.996	.991;1.000	yes
TS	.999	.996;1.000	yes	1.000	.998;1.000	yes	1.000	.998;1.000	yes
EE	.997	.992;1.000	yes	1.000	.992;1.000	yes	1.000	.996;1.000	yes
FB	1.000	.999;1.000	yes	1.000	.999;1.000	yes	1.000	.999;1.000	yes
FD	.998	.998;1.000	yes	.995	.996;1.000	yes	.992	.987;1.000	yes
RQ	.999	.989;1.000	yes	.999	.991;1.000	yes	.991	.985;1.000	yes
SO	.998	.995;1.000	yes	.998	.999;1.000	yes	.998	.992;1.000	yes
SS	.996	.995;1.000	yes	.999	.994;1.000	yes	.991	.999;1.000	yes
WT	1.000	.998;1.000	yes	1.000	.999;1.000	yes	1.000	.997;1.000	yes

'Notes: C = 1: correlation value = 1; CI: confidence interval; CIE: compositional invariance established?'.

Table 4. 'Mean assessment'.

	Low-end vs. mid-end'			'Low-end vs. high end'			'Mid-end vs. High-end'		
Variables	D = 0	95% CI	EMV?	D = 0	95% CI	EMV?	D = 0	95% CI	EMV?
AI	−.281	−.248; 0.203	No	−.663	−.212; 0.211	No	−.412	−.201; 0.233	No
AB	.012	−.233; 0.211	Yes	−.559	−.221; 0.226	No	−.205	−.225; 0.217	No
CI	−.287	−.239;0.256	No	−.621	−.216; 0.217	No	−.468	−.216; 0.215	No
TS	−.319	−.227; 0.225	No	−.611	−.222; 0.212	No	−.291	−.217; 0.212	No
EE	−.311	−.229; 0.231	No	−.625	−.227; 0.226	No	−.318	−.223; 0.194	No
FB	−.358	−.254; 0.219	No	−.748	−.223; 0.215	No	−.422	−.214; 0.248	No
FD	−.339	−.223; 0.225	No	−.613	−.216; 0.213	No	−.344	−.226; 0.216	No
RQ	−.550	−.223; 0.224	No	−.869	−.219; 0.158	No	−.339	−.201; 0.245	No
SO	−.596	−.231; 0.212	No	−.641	−.204; 0.215	No	.017	−.215; 0.207	Yes
SS	−.529	−.255; 0.223	No	−.509	−.229; 0.265	No	−.517	−.232; 0.212	No
WT	−.449	−.249; 0.228	No	−.584	−.214; 0.269	No	−.180	−.202; 0.225	No

'Notes: D = 0: difference in the composite's mean value (=0); CI: confidence interval; EMV: equal Mean values'.

indicating successful achievement of discriminant validity within the measurement model. We also conducted a thorough assessment of the measurement models specific to each group, ensuring their adherence to the applicable evaluation criteria (Appendices B and C).

Hence, we applied the composite models procedure for assessing measurement invariance, as suggested by Hair et al. (2017). The results obtained from the analysis of the composite model (Tables 3–5) demonstrated partial measurement invariance, allowing us to compare standardized coefficients among the three categories of COVID-19 fear levels as per accommodation providers (Hair et al., 2017).

4.2.1. Model assessment

After confirming the reliability and validity of our measurement models and verifying that the measurements were consistent across multiple groups, we turned our attention to the structural model. Path relationship results for the overall sample and three categories of accommodation providers based on COVID fear level are outlined in Table 6. Employing the PLS prediction technique, we evaluated the effectiveness of SQ dimensions in predicting TS within the complete sample and each establishment group, as detailed in Table 7. Comparing the RMSE values obtained from our PLS-SEM analysis with those

Table 5. 'Variance assessment'.

	'Low vs. mid-end'			Low vs. high end'			Mid vs. High-end'		
	R = 0	95% CI	EV?	R = 0	95% CI	EV?	R = 0	95% CI	EV?
AI	.569	−.422; .451	No	.511	−.522; .369	No	.310	−.521; .361	No
AB	.501	−.415; .467	No	.536	−.415; .315	No	.231	−.414; .316	No
CI	.311	−.314; .355	No	.425	−.388; .348	No	.512	−.388; .347	No
TS	.648	−.539; .494	No	.298	−.526; .361	No	.125	−.522; .369	Yes
EE	.636	−.445; .457	No	.458	−.456; .426	No	.008	−.454; .412	Yes
FB	.016	−.314; .336	Yes	.396	−.369; .317	No	.326	−.366; .312	No
FD	.636	−.452; .407	No	.452	−.478; .411	No	.118	−.474; .452	Yes
RQ	.591	−.469; .382	No	.502	−.433; .338	No	.325	−.434; .334	No
SS	.628	−.357; .317	No	.639	−.358; .312	No	−.208	−.350; .311	Yes
SO	−.014	−.292; .283	Yes	.369	−.298; .256	No	.552	−.299; .250	No
WT	.271	−.424; .448	No	.149	−.489; .225	No	.333	−.481; .226	No

'Notes: R = 0: logarithm of the composite's variances ratio (R = 0); CI: confidence interval; EV: equal variances'.

Table 6. Results of the path coefficients.

	Pooled sample		Low end		Mid end		High end	
Paths	β	BC-CI (95%)	β	BC-CI (95%)	β	BC-CI (95%)	β	BC-CI (95%)
AI - > TS	.23*	[0.06; 0.24]	.29*	[0.05; 0.41]	.11	[−0.04; 0.33]	.11	[−0.00; 0.24]
AB - > TS	.13*	[0.07; 0.21]	−.02	[−0.15; 0.17]	−.27	[−0.25; 0.05]	.19*	[0.04; 0.36]
CI - > TS	.08	[−0.03; .17]	.06	[−0.09; 0.29]	.03	[−0.17; 0.17]	.13	[0.04; 0.30]
EE - > TS	.33*	[0.03; 0.24]	.41*	[0.03; 0.44]	.14	[−0.01; 0.29]	−.06	[−0.21; 0.11]
FB- > TS	.05	[0.00; 0.14]	.06	[−0.09; 0.23]	.09	[−0.13; 0.17]	.17	[−0.04; 0.28]
FD- > TS	−.05	[−0.16; .05]	−.15	[−0.21; 0.01]	−.21	[−0.35; 0.03]	.09	[−0.07; 0.23]
RQ - > TS	.21*	[0.05; 0.26]	.19	[−0.01; 0.45]	.31*	[0.05; 0.33]	.00	[−0.17; 0.10]
SS - > TS	.19*	[0.06; 0.16]	.07	[−0.05; 0.18]	.27*	[0.03; 0.38]	.01	[−0.07; 0.25]
SO- > TS	.17*	[0.04; 0.13]	−.06	[−0.11; 0.19]	.21*	[0.06; 0.49]	−.07	[−0.27; 0.02]
WT- > TS	.37*	[0.07; 0.19]	.29*	[0.07; 0.33]	.11	[−0.08; 0.32]	.39*	[0.01; 0.46]
R^2	.59		.63		.44		.55	

Note. *$p < 0.05$.

Table 7. PLS-predict assessment of manifest variables.

	Pooled sample			Low end			Mid end			High end		
	RMSE	**Q^2predict**	**RMSE**	**RMSE**	**Q^2predict**	**RMSE**	**RMSE**	**Q^2predict**	**RMSE**	**RMSE**	**Q^2predict**	**RMSE**
L1	0.658	0.425	0.680	0.937	0.347	0.992	0.698	0.310	0.770	0.745	0.245	0.831
L2	0.589	0.369	0.623	0.612	0.522	0.847	0.478	0.286	0.748	0.537	0.235	0.599
L3	0.625	0.408	0.682	0.534	0.617	0.656	0.506	0.356	0.586	0.514	0.414	0.565

from the linear regression model revealed consistently lower prediction errors with PLS-SEM for all TS indicators, indicating strong predictive capacity (Shmueli et al., 2019). As depicted in Table 6, seven distinct aspects of SQ significantly influenced TS across the entire sample: infrastructure of the accommodations (β = 0.23), attitude and behavior of staff (β = 0.13), expertise of employees (β = 0.33), quality of rooms (β = 0.21), safety and security measures (β = 0.19), sociability of the establishment (β = 0.17), and waiting times (β = 0.37). Consequently, our findings offer empirical support for hypotheses 1, 2, 4, 7, 8, 9, and 10, while hypotheses 3, 5, and 6 are refuted.

4.3. Multi-group analysis

Table 8 appears to display findings from a Multi-Group Analysis (MGA), which assessed the variations in path coefficients across three tiers (low, mid, and high) of covid 19 fear concerning accommodation providers regarding their impact on TS. The association between room quality and TS displayed notable variations among all levels ($p < 0.05$). Specifically, mid-level and high-level establishments exhibited differences in how employee expertise, food and beverage quality, safety and security, waiting time, and sociability influenced TS ($p < 0.05$). However, there were no significant differences in these dimensions' effects on TS between low-level and mid-level accommodation providers ($p > 0.05$). As a result, the findings offer partial support for hypothesis 11, which suggests that COVID-19 fear acts as a moderating factor in the relationships between SQ dimensions and TS.

Table 8. MGA results.

	Low vs. mid-level			Low vs. high level			Mid vs. high level		
Path	Path coefficient difference	T value	P value	Path coefficient difference	T value	P value	Path coefficient difference	T value	P value
AI → TS	.123	1.12	.389	.110	.450	.827	.074	1.72	.077
AB →TS	.155	1.37	.209	.115	.325	.710	.051	.907	.368
CI →TS	.058	.505	.780	.088	.058	.364	.135	.321	.283
EE → TS	.079	1.76	.077	.231	4.08	.001	.191*	3.59	.002
FB→ TS	.018	.350	.727	.055	.909	.366	.211	3.88	.029
FD→ TS	.012	.109	.651	.210	2.99	.033	.065	.605	.781
RQ → TS	.26	3.55	.043	.188*	2.39	.045	.254*	4.21	.001
SS → TS	.099	1.22	.091	.001	.030	.395	.330	3.450	.043
SO→ TS	.140	.229	.389	.003	.055	.411	.286*	5.39	.001
WT→ TS	.066	.148	.208	.029	.909	.365	.440	7.25	.000

Note. *$p < .05$.

5. Discussion

The R2 value measures the amount of variance explained by endogenous variables (Shmueli & Koppius, 2011). In this study, the TS construct explained a total variance of 59% in the combined sample, and this value ranged from 44% to 63% across the three subgroups based on COVID-19 fear in accommodation establishments. These R^2 values, being relatively high in magnitude (Hair et al., 2019; Henseler et al., 2015), indicate that our structural models possessed a strong explanatory capability (Shmueli & Koppius, 2011). Moreover, the outcomes derived from PLS predict for various models indicated vital predictive significance (Shmueli et al., 2019). Collectively, these results emphasize that SQ plays a crucial role in foreseeing TS within the accommodation sector, confirming the empirical findings of previous studies (Deng et al., 2013; Francesco & Roberta, 2019). The direct impacts observed in the pooled sample regarding the seven SQ dimensions (accommodation infrastructure, attitude and behavior, employee expertise, room quality, safety and security, sociability, and waiting time) align with existing research findings. The significance of physical environmental elements, such as the general lodging infrastructure and the quality of rooms, has been extensively documented (Brady & Cronin, 2001). As supported by prior studies, employee conduct and behavior play a pivotal role in shaping the guest experience and influencing TS within the hospitality sector (Nunkoo et al., 2017). Additionally, waiting time has consistently emerged as a significant predictor of satisfaction. Finally, safety and security (Enz & Taylor, 2002) and employee expertise (Caro & Garcia, 2008; Ko & Pastore, 2005) have been shown to contribute positively to TS. Therefore, sociability within the hospitality sector encompasses warm and friendly interactions, personalized service, and a welcoming atmosphere that fosters positive relationships between guests and staff. The Multi-Group Analysis (MGA) yielded valuable insights into the factors influencing TS within different segments of COVID-19 fear among accommodation establishments. The SQ elements that significantly impacted TS varied depending on the level of COVID-19 fear. Our study revealed that COVID-19 fear was a moderating factor in the connection between SQ and TS. While the specific SQ attributes examined in various studies may differ, empirical evidence indicates that guest perceptions of SQ and their resulting satisfaction are influenced by varying levels of COVID-19 fear (Francesco & Roberta, 2019). Factors such as accommodation infrastructure, employee expertise, and waiting time played a crucial role in determining TS for low-end establishments. Even though guests with low COVID-19 fear exhibit minimal concerns about the virus and may not take extensive precautions beyond local regulations or safety measures provided by accommodations, they still expect a reasonable level of accommodation infrastructure and a certain standard of employee expertise. While accommodation providers may not allocate extensive resources or express heightened concern regarding improving their services during the COVID-19 pandemic, meeting these basic expectations remains essential. Room quality, safety and security, and sociability emerged as significant factors influencing TS in the case of mid-range establishments. Guests with moderate COVID-19 concerns exhibit a reasonable degree of apprehension regarding aspects such as room quality, safety, and security during the COVID-19 pandemic. However, they are capable of managing their concerns through sensible precautions. Accommodation providers serving this segment of guests typically adhere to safety protocols, such as mask-wearing in communal areas and implementing social distancing measures. Despite their caution, guests with moderate COVID-19 fear are not excessively anxious, allowing them to engage in various hotel services and amenities provided by these

mid-range establishments. In the context of high-end establishments, factors like attitude, behavior, and waiting time play a crucial role in shaping guest satisfaction. Guests with a heightened level of COVID-19 fear harbor deep concerns and anxieties about the virus. Accommodation providers catering to this segment of guests often implement extensive measures to minimize the risk of virus exposure. These measures include avoiding shared spaces, offering contactless services, and maintaining a rigorous disinfection routine for accommodations. Guests with high COVID-19 fear tend to restrict their interactions with staff and fellow guests and may prefer in-room dining or takeout options. The importance of minimizing waiting time to improve TS is acknowledged in existing literature, and this correlation has been confirmed through empirical validation in multiple studies across different service sectors (De Vries et al., 2018).

5.1. Implications

The findings of this study carry significant implications for both the hospitality industry and the field of TS research. Accommodation providers should recognize their guests' varying levels of COVID-19 fear. Tailoring service offerings based on this fear can help address specific concerns and enhance guest satisfaction. For instance, they provide more contactless services and stringent hygiene protocols for guests with high fear while offering more traditional services for those with low fear. High-end establishments may need to allocate resources differently to meet guests' needs with heightened COVID-19 fear. This could involve investing in advanced sanitization technologies, training staff in infection control, or enhancing digital platforms to facilitate contactless services. Accommodation providers should communicate their safety protocols and measures effectively to potential guests. Assuring guests about the implemented safety measures can alleviate fears and boost confidence in their decision to stay, especially for those with moderate or high levels of COVID-19 fear. Monitoring guests' sentiments and adapting services in real-time based on the prevailing COVID-19 situation can be critical. This adaptability ensures that accommodation providers are responsive to changing fears, preferences, and safety requirements, optimizing guest satisfaction. Accommodation providers in Bangladesh need to embrace a flexible and personalized service approach. Addressing guest concerns related to COVID-19 and ensuring a safe, comfortable stay are paramount. Clear communication of safety measures, well-trained staff, and a focus on key SQ dimensions can significantly impact guest satisfaction. Given the role of employee behavior and expertise in guest satisfaction, training programs should focus on educating staff about managing guest anxieties related to COVID-19. Empathy, clear communication, and adherence to safety protocols can significantly impact the overall guest experience. The study highlights the need for policy and regulation alignment with accommodation providers to ensure consistent safety measures across the industry. Collaboration between government bodies and the industry can establish standardized guidelines that address guest fears effectively. These implications collectively contribute to a more informed and responsive approach within the hospitality sector, ultimately leading to improved guest satisfaction and overall industry resilience in the face of the pandemic.

6. Conclusion

In Bangladesh, this study sheds light on the dynamic interplay between SQ and TS in the country's accommodation sector, particularly in the context of varying COVID-19 fear levels. The research underscores the significant role of COVID-19 fear in moderating these critical relationships. Notably, it highlights the SQ dimensions that influence TS depending on the degree of COVID-19 fear. The utilization of Multi-Group Analysis (MGA) alongside PLS-SEM proves to be a robust and insightful approach, enabling the comparison of findings across diverse accommodation categories. This approach, in turn, informs the development of tailored strategies and policies. Accommodation providers in Bangladesh should recognize the importance of customized interventions to enhance guest satisfaction. Taking into account their establishments' grading category and addressing their guests' specific COVID-19 fear levels is crucial. Essential SQ dimensions like accommodation infrastructure, employee expertise, room quality, safety and security, sociability, and waiting time play pivotal roles in shaping guest satisfaction across different COVID-19 fear levels. Accommodation providers must adopt a flexible approach, aligning services, safety measures, and staff interactions with these varying fears to amplify guest satisfaction and loyalty. Empathetic staff behavior and clear

communication of safety measures are key to easing guest concerns and fostering genuine commitment to their well-being. High-end establishments should prioritize aspects like attitude, behavior, and waiting time, while mid-range establishments should focus on room quality, safety, and sociability. Low-end establishments can enhance guest satisfaction by emphasizing accommodation infrastructure, employee expertise, and waiting time. In conclusion, this study offers valuable insights into the hospitality industry in Bangladesh. By acknowledging the spectrum of COVID-19 fear levels and understanding their impact on guest satisfaction, accommodation providers can fine-tune their services, ensuring a more personalized and gratifying experience for guests, ultimately contributing to the sector's overall growth and enhancement.

6.1. Limitation and future research direction

The study provides valuable insights into SQ and TS in accommodations concerning COVID-19 fear levels. However, it's essential to consider its limitations. The data is specific to Bangladesh, and findings may not fully apply to other countries due to diverse factors like geographic location, lifestyle, and language barriers. The sample size could also impact broader applicability, emphasizing the need for more extensive and diverse samples in future research. Additionally, the study's static data collection may not capture evolving tourist perceptions and long-term trends, suggesting the importance of longitudinal studies. Future research should include longitudinal studies to monitor the changing impact of COVID-19 on guest preferences and behaviors. Cross-country comparative analyses can elucidate how cultural and contextual factors impact the relationship between SQ, fear of COVID-19, and TS. Additionally, exploring the impact of digital solutions like contactless services and AI-driven tools on TS during COVID-19 is vital in this evolving landscape. Investigating the role of employee training in addressing guest concerns related to COVID-19 and assessing staff preparedness' impact on TS are valuable research areas. Additionally, examining how eco-friendly practices and policies in accommodations influence TS in the post-COVID-19 era is crucial, given the growing emphasis on sustainability. Integrating multiple service evaluation aspects, such as perceived value, image, cultural contact, and service experience, can boost the effectiveness of structural models. This comprehensive approach will help in crafting strategies that meet guest requirements and elevate TS in Bangladesh's ever-changing hospitality sector. We acknowledge the limitations of our study in terms of generalizability to other disorders beyond COVID-19. While our findings offer valuable insights into the specific context of the COVID-19 pandemic, they may not necessarily be applicable to different disease scenarios without further research. Moving forward, we propose future research endeavors that utilize our model to explore diverse diseases and circumstances. For instance, comparative studies could be conducted in regions with endemic diseases such as malaria or dengue fever, examining how cultural factors moderate the relationship between disease anxiety and tourist behavior. Additionally, investigations into the evolving dynamiTS of developing diseases and their impact on tourist behavior could provide valuable insights for the hospitality sector.

Author contributions

Conceptualization, Md. Abu Issa Gazi and Abdullah Al Masud; Data curation, Md. Abu Issa Gazi, Abdul Rahman S Senathirajah and Razuan Ahmed Shuvro; Formal analysis, Abdullah Al Masud and Sukanta Biswas; Funding acquisition, Md. Aminul Islam and Md. Abu Issa Gazi; Investigation, Md. Aminul Islam, Md. Abu Issa Gazi, Abdullah Al Masud, Abdul Rahman S Senathirajah and Razuan Ahmed Shuvro; Methodology, Abdullah Al Masud and Sukanta Biswas; Project administration, Md. Abu Issa Gazi; Resources, Md. Aminul Islam, Md. Abu Issa Gazi, Abdul Rahman S Senathirajah, Sukanta Biswas and Razuan Ahmed Shuvro; Supervision, Md. Aminul Islam; Validation, Md. Abu Issa Gazi, Abdul Rahman S Senathirajah, Sukanta Biswas and Razuan Ahmed Shuvro; Writing – original draft, Md. Abu Issa Gazi, Abdullah Al Masud and Sukanta Biswas; Writing – review & editing, Md. Aminul Islam, Md. Abu Issa Gazi and Abdul Rahman S Senathirajah.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This project was supported by the own funds of the authors.

ORCID

Md. Abu Issa Gazi http://orcid.org/0000-0002-1397-8855
Md. Aminul Islam http://orcid.org/0000-0001-6516-2463
Abdullah Al Masud http://orcid.org/0000-0001-9345-4703
Abdul Rahman bin S. Senathirajah http://orcid.org/0000-0001-6044-9051
Sukanta Biswas http://orcid.org/0000-0001-9886-0743

Data availability statement

Data will be provided upon request

References

Abdullah, S. I. N. W., Teoh, S. S., Bernard Lim, J. H., & Phuah, K. T. (2023). Insights on millennial's purchase intention towards green online travel products in Malaysia. *Revista Turismo & Desenvolvimento*, *41*, 1–22. https://doi.org/10.34624/rtd.v41i0.30075

Addo, P. C., Jiaming, F., Kulbo, N. B., & Liangqiang, L. (2020). COVID-19: fear appeal favoring purchase behavior towards personal protective equipment. *The Service Industries Journal*, *40*(7–8), 471–490. https://doi.org/10.1080/02642069.2020.1751823

Akbaba, A. (2006). Measuring service quality in the hotel industry: A study in a business hotel in Turkey. *International Journal of Hospitality Management*, *25*(2), 170–192. https://doi.org/10.1016/j.ijhm.2005.08.006

Al Masud, A., Nabi, M. N., & Kumar, D. (2023). Socioeconomic and psychological impacts of the COVID-19 pandemic on various occupational groups in Bangladesh. https://doi.org/10.58481/BJBE2305

Al Masud, A., Hossain, M. A., Biswas, S., Ruma, A. P., Rahman, K. S., & Tagore, S. (2023). The emergence of digital learning in higher education: a lesson from the COVID-19 pandemic. *The International Journal of Information and Learning Technology*, *40*(3), 202–224. https://doi.org/10.1108/IJILT-08-2022-0176

Alhelalat, J. A., Ma'moun, A. H., & Twaissi, N. M. (2017). The impact of personal and functional aspects of restaurant employee service behaviour on tourist satisfaction. *International Journal of Hospitality Management*, *66*, 46–53. https://doi.org/10.1016/j.ijhm.2017.07.001

Ali, A., Mahfouz, A., & Arisha, A. (2017). Analysing supply chain resilience: integrating the constructs in a concept mapping framework via a systematic literature review. *Supply Chain Management: An International Journal*, *22*(1), 16–39. https://doi.org/10.1108/SCM-06-2016-0197

Ali, M., & Raza, S. A. (2017). Service quality perception and tourist satisfaction in Islamic banks of Pakistan: the modified SERVQUAL model. *Total Quality Management & Business Excellence*, *28*(5–6), 559–577. https://doi.org/10.1080/14783363.2015.1100517

Alnawas, I., & Hemsley-Brown, J. (2019). Examining the key dimensions of tourist experience quality in the hotel industry. *Journal of Hospitality Marketing & Management*, *28*(7), 833–861. https://doi.org/10.1080/19368623.2019.1568339

Alreahi, M., Bujdosó, Z., Kabil, M., Akaak, A., Benkó, K. F., Setioningtyas, W. P., & Dávid, L. D. (2022). Green human resources management in the hotel industry: A systematic review. *Sustainability*, *15*(1), 99. https://doi.org/10.3390/su15010099

Babu, D. E., Kaur, A., & Rajendran, C. (2018). Sustainability practices in tourism supply chain: Importance performance analysis. *Benchmarking: An International Journal*, *25*(4), 1148–1170. https://doi.org/10.1108/BIJ-06-2016-0084

Banerjee, S., & Chua, A. Y. (2016). In search of patterns among travellers' hotel ratings in TripAdvisor. *Tourism Management*, *53*, 125–131. https://doi.org/10.1016/j.tourman.2015.09.020

Bartik, A. W., Bertrand, M., Cullen, Z. B., Glaeser, E. L., Luca, M., & Stanton, C. T. (2020). *How are small businesses adjusting to COVID-19? Early evidence from a survey (No. w26989)*. National Bureau of Economic Research.

Benítez, J. M., Martín, J. C., & Román, C. (2007). Using fuzzy number for measuring quality of service in the hotel industry. *Tourism Management*, *28*(2), 544–555. https://doi.org/10.1016/j.tourman.2006.04.018

Bihamta, M., Hosseini, A., Ghorbani, A., & Boroushaki, M. T. (2017). Protective effect of pomegranate seed oil against H2O2-induced oxidative stress in cardiomyocytes. *Avicenna Journal of Phytomedicine*, *7*(1), 46–53.

Binder, M., Heinrich, B., Klier, M., Obermeier, A., & Schiller, A. P. R. (2019). Explaining the stars: Aspect-based sentiment analysis of online tourist reviews. Twenty-Seventh European Conference on Information Systems (ECIS2019), Stockholm-Uppsala, Sweden.

Bittar, M. L. (2017). The effect of personal factors on the tourist rating of the quality of services of the Islamic banks operating in the Syrian coast. *International Journal of Business, EconomiTS and Management*, *4*(1), 16–25. https://doi.org/10.18488/journal.62/2017.4.1/62.1.16.25

Bonn, M. A., Joseph-Mathews, S. M., Dai, M., Hayes, S., & Cave, J. (2007). Heritage/cultural attraction atmospherics: Creating the right environment for the heritage/cultural visitor. *Journal of Travel Research*, *45*(3), 345–354. https://doi.org/10.1177/0047287506295947

Brady, M. K., & Cronin, J. J.Jr, (2001). Some new thoughts on conceptualizing perceived service quality: a hierarchical approach. *Journal of Marketing*, *65*(3), 34–49. https://doi.org/10.1509/jmkg.65.3.34.18334

Caro, L. M., & Garcia, J. A. M. (2008). Developing a multidimensional and hierarchical service quality model for the travel agency industry. *Tourism Management*, *29*(4), 706–720.

Chu, F., Beck, D. A., & Lidstrom, M. E. (2016). MxaY regulates the lanthanide-mediated methanol dehydrogenase switch in Methylomicrobium buryatense. *PeerJ*, *4*, e2435. https://doi.org/10.7717/peerj.2435

De Vries, D. A., Möller, A. M., Wieringa, M. S., Eigenraam, A. W., & Hamelink, K. (2018). Social comparison as the thief of joy: Emotional consequences of viewing strangers' Instagram posts. *Media Psychology*, *21*(2), 222–245. https://doi.org/10.1080/15213269.2016.1267647

Deng, W. J., Yeh, M. L., & Sung, M. L. (2013). A tourist satisfaction index model for international tourist hotels: Integrating consumption emotions into the American Tourist Satisfaction Index. *International Journal of Hospitality Management*, *35*, 133–140. https://doi.org/10.1016/j.ijhm.2013.05.010

Dhali, K., Al Masud, A., Hossain, M. A., Lipy, N. S., & Chaity, N. S. (2023). The effects of abusive supervision on the behaviors of employees in an organization. *Social Sciences & Humanities Open*, *8*(1), 100695. https://doi.org/10.1016/j.ssaho.2023.100695

Dodd, R. H., Dadaczynski, K., Okan, O., McCaffery, K. J., & Pickles, K. (2021). Psychological wellbeing and academic experience of university students in Australia during COVID-19. *International Journal of Environmental Research and Public Health*, *18*(3), 866. https://doi.org/10.3390/ijerph18030866

Ekinci, Y., & Dawes, P. L. (2009). Tourist perceptions of frontline service employee personality traits, interaction quality, and tourist satisfaction. *The Service Industries Journal*, *29*(4), 503–521. https://doi.org/10.1080/02642060802283113

Enz, C. A., & Taylor, M. S. (2002). The safety and security of US hotels a post-September-11 report. *The Cornell Hotel and Restaurant Administration Quarterly*, *43*(5), 119–136. https://doi.org/10.1016/S0010-8804(02)80062-3

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Francesco, G., & Roberta, G. (2019). Cross-country analysis of perception and emphasis of hotel attributes. *Tourism Management*, *74*, 24–42. https://doi.org/10.1016/j.tourman.2019.02.011

Gazi, M. A. I., Nahiduzzaman, M., Harymawan, I., Masud, A. A., & Dhar, B. K. (2022). Impact of COVID-19 on financial performance and profitability of banking sector in special reference to private commercial banks: Empirical evidence from Bangladesh. *Sustainability*, *14*(10), 6260. https://doi.org/10.3390/su14106260

Gazi, M. A. I., Rahman, M. K. H., Yusof, M. F., Masud, A. A., Islam, M. A., Senathirajah, A. R. S., & Hossain, M. A. (2024a). Mediating role of entrepreneurial intention on the relationship between entrepreneurship education and employability: A study on university students from a developing country. *Cogent Business & Management, 11*(1). https://doi.org/10.1080/23311975.2023.2294514

Gazi, M. A. I., Karim, R., Senathirajah, A. R. S., Ullah, A. K. M. M., Afrin, K. H., & Nahiduzzaman, M. (2024b). Bank-specific and macroeconomic determinants of profitability of Islamic Shariah-based banks: Evidence from new economic horizon using panel data. *Economies, 12*(3), 66. https://doi.org/10.3390/economies12030066

Gössling, S., Scott, D., & Hall, C. M. (2020). PandemiTS, tourism and global change: a rapid assessment of COVID-19. *Journal of Sustainable Tourism*, *29*(1), 1–20. https://doi.org/10.1080/09669582.2020.1758708

Gursoy, D., & Chi, C. G. (2020). Effects of COVID-19 pandemic on hospitality industry: review of the current situations and a research agenda. *Journal of Hospitality Marketing & Management*, *29*(5), 527–529. https://doi.org/10.1080/19368623.2020.1788231

Hair, E., Halle, T., Terry-Humen, E., Lavelle, B., & Calkins, J. (2006). Children's school readiness in the ECLS-K: Predictions to academic, health, and social outcomes in first grade. *Early Childhood Research Quarterly*, *21*(4), 431–454. https://doi.org/10.1016/j.ecresq.2006.09.005

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods. *Journal of the Academy of Marketing Science*, *45*(5), 616–632. https://doi.org/10.1007/s11747-017-0517-x

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Han, H., & Hyun, S. S. (2017). Impact of hotel-restaurant image and quality of physical-environment, service, and food on satisfaction and intention. *International Journal of Hospitality Management*, *63*, 82–92. https://doi.org/10.1016/j.ijhm.2017.03.006

Harba, J. N., Tigu, G., & Davidescu, A. A. (2021). Exploring tourist emotions in pre-pandemic and pandemic times. A sentiment analysis of perceptions in the fine-dining restaurant industry in Bucharest, Romania. *International Journal of Environmental Research and Public Health*, *18*(24), 13300. https://doi.org/10.3390/ijerph182413300

Hasan, M. J., Hossain, M. A., Hossain, M. S., Masud, A. A., Yesmin, M. N., & Wu, R. (2023). Investigating tourists' intentions regarding the adoption of mobile payments: An SEM-based empirical investigation. *Asian Economic and Financial Review*, *13*(9), 662–676. https://doi.org/10.55493/5002.v13i9.4846

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Hossain, M. A., Amin, R., Masud, A. A., Hossain, M. I., Hossen, M. A., & Hossain, M. K. (2023). What drives people's behavioral intention toward telemedicine? An emerging economy perspective. *SAGE Open*, *13*(3), 21582440231181394. https://doi.org/10.1177/21582440231181394

Hossain, M. D S., Hossain, M. D A., Al Masud, A., Islam, K. M. Z., Mostafa, M. D G., & Hossain, M. T. (2023). The integrated power of gastronomic experience quality and accommodation experience to build tourists' satisfaction, revisit intention, and word-of-mouth intention. *Journal of Quality Assurance in Hospitality & Tourism*, 1–27. https://doi.org/10.1080/1528008X.2023.2173710

Hossain, M. M., Islam, K. Z., Al Masud, A., Hossain, M. A., & Jahan, N. (2023). Antecedents and consequences of self-disclosure in subjective well-being: A Facebook case with a social support mediator. *SAGE Open*, *13*(2), 21582440231179925. https://doi.org/10.1177/21582440231179925

Hossain, G. M. S., Shuvo, S. K., Al Masud, A., Hasan, N., Zahan, I., & Rahman, M. S. (2023). Nexus between human resource management practice and employees' attitudes and behavior. *International Journal of Research in Business and Social Science (2147- 4478)*, *12*(2), 139–147. https://doi.org/10.20525/ijrbs.v12i2.2325

Hossain, M., Zahidul Islam, K., Masud, A., Biswas, S., & Hossain, M. (2021). Behavioral intention and continued adoption of Facebook: An exploratory study of graduate students in Bangladesh during the Covid-19 pandemic. *Management*, *25*(2), 153–186. https://doi.org/10.2478/manment-2019-0078

Huang, J., & Hsu, C. H. (2010). The impact of tourist-to-tourist interaction on cruise experience and vacation satisfaction. *Journal of Travel Research*, *49*(1), 79–92. https://doi.org/10.1177/0047287509336466

Huang, X., Liu, M. Y., Belongie, S., & Kautz, J. (2018). Multimodal unsupervised image-to-image translation. In *Proceedings of the European Conference on Computer Vision (ECCV)* (pp. 172–189).

Jang, C., Hui, S., Lu, W., Cowan, A. J., Morscher, R. J., Lee, G., Liu, W., Tesz, G. J., Birnbaum, M. J., & Rabinowitz, J. D. (2018). The small intestine converts dietary fructose into glucose and organic acids. *Cell Metabolism*, *27*(2), 351–361.e3. https://doi.org/10.1016/j.cmet.2017.12.016

Johnson, J. R., & Cheng, C. Z. (2001). Stochastic ion heating at the magnetopause due to kinetic Alfvén waves. *Geophysical Research Letters*, *28*(23), 4421–4424. https://doi.org/10.1029/2001GL013509

Kakkar, P., & Kumar, A. (2020). Impact of service quality on tourist satisfaction in Indian hotel industry during Covid-19 pandemic. *R. Jacob et al*, 352–361.

Kalnaovakul, K., & Promsivapallop, P. (2023). Hotel service quality dimensions and attributes: An analysis of online hotel tourist reviews. *Tourism and Hospitality Research*, *23*(3), 420–440. https://doi.org/10.1177/14673584221145819

Kandampully, J., Zhang, T. C., & Jaakkola, E. (2018). Tourist experience management in hospitality: A literature synthesis, new understanding and research agenda. *International Journal of Contemporary Hospitality Management*, *30*(1), 21–56. https://doi.org/10.1108/IJCHM-10-2015-0549

Knutson, J. F., DeGarmo, D. S., & Reid, J. B. (2004). Social disadvantage and neglectful parenting as precursors to the development of antisocial and aggressive child behavior: Testing a theoretical model. *Aggressive Behavior*, *30*(3), 187–205. https://doi.org/10.1002/ab.20016

Ko, Y. J., & Pastore, D. L. (2005). A hierarchial model of service quality for the recreational sport industry. *Sport Marketing Quarterly*, *14*(2), 84–97.

Lee, J., & Whaley, J. E. (2019). Determinants of dining satisfaction. *Journal of Hospitality Marketing & Management*, *28*(3), 351–378. https://doi.org/10.1080/19368623.2019.1523031

Li, S., Wang, Y., Xue, J., Zhao, N., & Zhu, T. (2020). The impact of COVID-19 epidemic declaration on psychological consequences: a study on active Weibo users. *International Journal of Environmental Research and Public Health*, *17*(6), 2032. https://doi.org/10.3390/ijerph17062032

Mathe, K., Scott-Halsell, S., & Roseman, M. (2016). The role of tourist orientation in the relationship between manager communications and tourist satisfaction. *Journal of Hospitality & Tourism Research*, *40*(2), 198–209. https://doi.org/10.1177/1096348013496278

Nabi, M. N., Al Masud, A., Shuvro, R. A., Milon, M., Islam, M. F., & Akter, M. M. (2022b). COVID-2019 disruption on foreign direct investment (FDI) of the textile and apparel industry: Evidence-based analysis. *International Journal of Information, Business and Management*, *14*(4), 1–22.

Nabi, M. N., Akter, M. M., Habib, A., Al Masud, A., & Pal, S. K. (2022a). Influence of TSR stakeholders on the textile firms performances: The mediating role of organizational legitimacy. *International Journal of Research in Business and Social Science (2147- 4478)*, *10*(8), 25–38. https://doi.org/10.20525/ijrbs.v10i8.1502

Naeem, M. (2021). Do social media platforms develop tourist panic buying during the fear of Covid-19 pandemic? *Journal of Retailing and Consumer Services*, *58*, 102226. https://doi.org/10.1016/j.jretconser.2020.102226

Nunkoo, R., Teeroovengadum, V., Ringle, C. M., & Sunnassee, V. (2020). Service quality and customer satisfaction: The moderating effects of hotel star rating. *International Journal of Hospitality Management*, *91*, 102414. https://doi.org/10.1016/j.ijhm.2019.102414

Nunkoo, R., Teeroovengadum, V., Thomas, P., & Leonard, L. (2017). Integrating service quality as a second-order factor in a tourist satisfaction and loyalty model. *International Journal of Contemporary Hospitality Management*, *29*(12), 2978–3005. https://doi.org/10.1108/IJCHM-11-2016-0610

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, *17*(4), 460–469. https://doi.org/10.1177/002224378001700405

Patiar, A., Ma, E., Kensbock, S., & Cox, R. (2017). Hospitality management students' expectation and perception of a virtual field trip web site: An Australian case study using importance–performance analysis. *Journal of Hospitality & Tourism Education*, *29*(1), 1–12. https://doi.org/10.1080/10963758.2016.1266941

Phelps, C., & Sperry, L. L. (2020). Children and the COVID-19 pandemic. *Psychological Trauma: theory, Research, Practice and Policy*, *12*(S1), S73–S75. https://doi.org/10.1037/tra0000861

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Qing, W., Amin, M. B., Gazi, M. A. I., Khan, W., Masud, A. A., & Alam, M. N. (2023). Mediation effect of technology adaptation capabilities between the relationship of service quality attributes and customer satisfaction: An investigation on young customers' perceptions toward E-commerce in China. *IEEE Access, 11*, 123904–123923. https://doi.org/10.1109/ACCESS.223.3328775

Radojevic, T., Stanisic, N., & Stanic, N. (2015). Ensuring positive feedback: Factors that influence tourist satisfaction in the contemporary hospitality industry. *Tourism Management*, *51*, 13–21. https://doi.org/10.1016/j.tourman.2015.04.002

Rajaguru, R., & Hassanli, N. (2018). The role of trip purpose and hotel star rating on tourists' satisfaction and WOM. *International Journal of Contemporary Hospitality Management*, *30*(5), 2268–2286. https://doi.org/10.1108/IJCHM-01-2017-0044

Ramanathan, R. (2011). An empirical analysis on the influence of risk on relationships between handling of product returns and tourist loyalty in E-commerce. *International Journal of Production Economics*, *130*(2), 255–261. https://doi.org/10.1016/j.ijpe.2011.01.005

Rauch, D. A., Collins, M. D., Nale, R. D., & Barr, P. B. (2015). Measuring service quality in mid-scale hotels. *International Journal of Contemporary Hospitality Management*, *27*(1), 87–106. https://doi.org/10.1108/IJCHM-06-2013-0254

Rehman Khan, S. A., Yu, Z., Sarwat, S., Godil, D. I., Amin, S., & Shujaat, S. (2022). The role of block chain technology in circular economy practices to improve organisational performance. *International Journal of Logistics Research and Applications*, *25*(4–5), 605–622. https://doi.org/10.1080/13675567.2021.1872512

Ringle, C., Da Silva, D., & Bido, D. (2015). Structural equation modeling with the SmartPLS. *Bido, D., da Silva, D., & Ringle, C.(2014). Structural Equation Modeling with the Smartpls. Brazilian Journal of Marketing*, *13*(2), 56–73.

Sarstedt, M., Hair, J. F., Ringle, C. M., Thiele, K. O., & Gudergan, S. P. (2016). Estimation issues with PLS and CBSEM: Where the bias lies!. *Journal of Business Research*, *69*(10), 3998–4010. https://doi.org/10.1016/j.jbusres.2016.06.007

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Treating unobserved heterogeneity in PLS-SEM: A multi-method approach. In H. Latan & R. Noonan (Eds.), *Partial least squares path modeling* (pp. 197–217). Cham: Springer. https://doi.org/10.1007/978-3-319-64069-3_9

Sharifi, S. (2019). Examining the impacts of positive and negative online tourist reviews on behavioral intentions: Role of need for cognitive closure and satisfaction guarantees. *Journal of Hospitality Marketing & Management*, *28*(4), 397–426. https://doi.org/10.1080/19368623.2019.1531804

Shmueli, G., & Koppius, O. R. (2011). Predictive analytiTS in information systems research. *MIS Quarterly*, *35*(3), 553–572. https://doi.org/10.2307/23042796

Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J. H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: guidelines for using PLSpredict. *European Journal of Marketing*, *53*(11), 2322–2347. https://doi.org/10.1108/EJM-02-2019-0189

Situmeang, F., de Boer, N., & Zhang, A. (2020). Looking beyond the stars: A description of text mining technique to extract latent dimensions from online product reviews. *International Journal of Market Research*, *62*(2), 195–215. https://doi.org/10.1177/1470785319863619

Tee, P. K., Vashu, D., Wong, L. C., & Ng, C. P. (2023). Tourist engagement in Instagram: The mediating role of perceived advertising value. In M. A. Al-Sharafi, M. Al-Emran, M. N. Al-Kabi, & K. Shaalan (Eds.), *Proceedings of the 2nd International Conference on emerging technologies and intelligent systems. ICETIS 2022. Lecture notes in networks and systems* (vol. *584*). Springer. https://doi.org/10.1007/978-3-031-25274-7_25

Wang, Q., Gazi, M. A. I., Sobhani, F. A., Masud, A. A., Islam, M. A., & Akter, T. (2023). Green human resources management and job pursuit intention: Mediating role of corporate social responsibility and organizational reputation. *Environmental Research Communications*, *5*(7), 075001. https://doi.org/10.1088/2515-7620/acda81

Wang, M., Wang, J., & Zhao, J. (2007). An empirical study of the effect of tourist participation on service quality. *Journal of Quality Assurance in Hospitality & Tourism*, *8*(1), 49–73. https://doi.org/10.1300/J162v08n01_03

Wong, C. Y., Cheng, R. S., Lataief, K. B., & Murch, R. D. (1999). Multiuser OFDM with adaptive subcarrier, bit, and power allocation. *IEEE Journal on Selected Areas in Communications*, *17*(10), 1747–1758. https://doi.org/10.1109/49.793310

Wu, H. C., & Mohi, Z. (2015). Assessment of service quality in the fast-food restaurant. *Journal of Foodservice Business Research*, *18*(4), 358–388. https://doi.org/10.1080/15378020.2015.1068673

Wu, A., & Weber, K. (2005). Convention center facilities, attributes and services: The delegates' perspective. *Asia Pacific Journal of Tourism Research*, *10*(4), 399–410. https://doi.org/10.1080/10941660500363736

Zibarzani, M., Abumalloh, R. A., Nilashi, M., Samad, S., Alghamdi, O. A., Nayer, F. K., Ismail, M. Y., Mohd, S., & Mohammed Akib, N. A. (2022). Tourist satisfaction with restaurants service quality during COVID-19 outbreak: A two-stage methodology. *Technology in Society*, *70*, 101977. https://doi.org/10.1016/j.techsoc.2022.101977

Appendices

Appendix A

Respondents Profile

Variables **(N = 420)**	Frequency	Percentage
Gender		
'Male'	235	56
'Female'	185	44
'Marital status'		
'Single'	188	44.77
'Married'	203	48.33
'Divorced'	15	3.57
'Widowed'	14	3.33
'Level of education'		
Below a high school level	21	5
'High school'	35	8.33
'Apprenticeship/trade certificate'	18	4.28
'College'	114	27.14
'University'	232	55.25
'Nationality'		
Bangladeshi	255	60.71
Other Asian	140	33.33
European	11	2.61
African	8	1.90
American	6	1.45
Purpose of visit		
Business	201	47.85
Visiting friends and relatives	135	32.14
Holidays	53	12.61
Others	31	7.40
Type of Covid Fear		
Low Fear	79	18.80
Moderate Fear	134	31.90
High Fear	207	49.28

Appendix B'

Measurement model for each group'

Variable	Loading Low level	CR	AVE	Loading Mid-level	CR	AVE	Loading High-level	CR	AVE
Accommodation Infrastructure		.927	.720		.932	.735		.902	.649
AI1	.855			.902			.775		
AI2	.878			.888			.759		
AI3	.898			.869			.897		
AI4	.810			.846			.812		
AI5	.799			.779			.779		
Attitude and Behavior		.934	.739		.939	.755		.920	.698
AB1	.844			.896			.869		
AB2	.874			.849			.819		
AB3	.869			.877			.921		
AB4	.878			.826			.808		
AB5	.833			.895			.752		
Tourist Interaction		.928	.722		.938	.752		.935	.742
CI1	.809			.911			.911		
CI2	.845			.926			.829		
CI3	.818			.894			.879		
CI4	.946			.819			.818		
CI5	.826			.778			.869		
Employee Expertise		.920	.698		.934	.740		.917	.689
EE1	.891			.938			.811		
EE2	.828			.919			.819		
EE3	.849			.849			.809		
EE4	.828			.817			.889		
EE5	.779			.769			.820		
Food and Beverage		.942	.768		.925	.712		.919	.696
FB1	.844			.892			.814		
FB2	.849			.811			.854		
FB3	.894			.839			.845		
FB4	.881			.846			.868		
FB5	.912			.829			.788		

Variable	Loading Low level	CR	AVE	Loading Mid-level	CR	AVE	Loading High-level	CR	AVE
Front Desk		.921	.701		.938	.752		.931	.733
FD1	.836			.927			.919		
FD2	.798			.878			.891		
FD3	.811			.828			.811		
FD4	.865			.833			.889		
FD5	.875			.869			.761		
Room Quality		.928	.720		.922	.706		.927	.719
RQ1	.817			.892			.811		
RQ2	.829			.819			.828		
RQ3	.815			.859			.822		
RQ4	.888			.866			.888		
RQ5	.893			.759			.893		
Safety and Security		.945	.776		.936	.746		.926	.715
SS1	.842			.859			.819		
SS2	.932			.866			.839		
SS3	.849			.849			.808		
SS4	.895			.916			.912		
SS5	.885			.828			.847		
Sociability								.923	.707
SO1	.871	.946	.779	.869			.870		
SO2	.893			.847			.820		
SO3	.880			.847			.877		
SO4	.921			.811			.813		
SO5	.847			.923			.823		
Waiting Time		.948	.787		.922	.704		.931	.732
WT1	.921			.869			.829		
WT2	.924			.819			.881		
WT3	.864			.879			.893		
WT4	.848			.827			.847		
WT5	.877			.799			.830		
Covid Fear		0.939	0.837		.906	.763		.901	.754
CF1	.960			.939			.961		
CF2	.899			.869			.804		
CF3	.884			.809			.833		
TS					.922	.797		.885	.721
TS1	.884	0.925	0.805	.918			.847		
TS2	.896			.879			.889		
TS3	.912			.882			.808		

Appendix C

Discriminant Validity Assessment for Lower-Level

	AI	AB	CI	TS	EE	FB	FD	RQ	SO	SS	WT
AI											
AB	.714										
CI	.564	.505									
TS	.809	.799	.469								
EE	.746	.722	.702	.693							
FB	.674	.644	.593	.735	.671						
FD	.789	.433	.454	.739	.453	.656					
RQ	.789	.405	.472	.713	.669	.773	.464				
SO	.301	.767	.394	.562	.555	.522	.549	.496			
SS	.405	.694	.716	.428	.489	.484	.639	.693	.393		
WT	.641	.613	.433	.675	.618	.637	.458	.431	.255	.579	

Discriminant Validity Assessment for Middle -level

	AI	AB	CI	TS	EE	FB	FD	RQ	SO	SS	WT
AI											
AB	.408										
CI	.664	.514									
TS	.709	.719	.569								
EE	.646	.702	.302	.593							
FB	.374	.678	.493	.335	.271						
FD	.289	.414	.654	.239	.653	.611					
RQ	.389	.413	.272	.413	.369	.708	.417				
SO	.401	.714	.694	.662	.455	.529	.546	.448			
SS	.605	.609	.416	.428	.389	.437	.669	.646	.318		
WT	.741	.614	.233	.375	.518	.618	.434	.426	.264	.577	

(*Continued*)

Appendix C - Continued

Discriminant Validity Assessment for Lower-Level											
	AI	AB	CI	TS	EE	FB	FD	RQ	SO	SS	WT
Discriminant Validity Assessment for Higher-Level											
	AI	AB	CI	TS	EE	FB	FD	RQ	SO	SS	WT
AI											
AB	.627										
CI	.678	.505									
TS	.414	.799	.469								
EE	.413	.722	.702	.693							
FB	.714	.654	.593	.735	.671						
FD	.609	.272	.454	.611	.453	.656					
RQ	.614	.694	.472	.708	.493	.773	.464				
SO	.678	.416	.394	.529	.654	.522	.549	.496			
SS	.405	.233	.716	.439	.272	.484	.639	.691	.485		
WT	.641	.654	.433	.614	.694	.637	.458	.401	.251	.485	