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Abdelmoety, Ziad H.; Alamoudi, Hawazen; Alharthi, Majed; Sharkasi, Nora; Agag, Gomaa

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## Article

# Ensuring a Sustainable Hospitality and Tourism Industry in the COVID-19 Era: Using an Open Market Valuation Technique

Ziad H. Abdelmoety<sup>1</sup>, Hawazen Alamoudi<sup>2</sup>, Majed Alharthi<sup>3</sup> , Nora Sharkasi<sup>4</sup>  and Gomaa Agag<sup>5,6,\*</sup> <sup>1</sup> School of Business, University of Dundee, 1–3 Perth Rd, Dundee DD1 4JW, UK<sup>2</sup> Department of Marketing, College of Business, King Abdulaziz University, Rabigh 21911, Saudi Arabia<sup>3</sup> Finance Department, College of Business, King Abdulaziz University, Rabigh 21911, Saudi Arabia<sup>4</sup> Digital Marketing and Analytics, Institute for International Strategy (IIS), Tokyo International University, Kawagoe 350-1197, Japan<sup>5</sup> Marketing, Nottingham Business School, Nottingham Trent University, Nottingham NG1 4FQ, UK<sup>6</sup> Faculty of Business Administration, School of Business, University of Sadat City, Sadat City 32897, Egypt

\* Correspondence: gomaa.agag@ntu.ac.uk

**Abstract:** Tourism has always been one of the most profitable service industries. But because of the COVID-19 pandemic, the tourism industry is facing some big problems. As a result, the tourism industry lost a lot of money. This paper aims to find and rank recovery solutions to help the tourism industry. This article investigates two key areas: firstly, how government aid can best be prioritised among the various subsectors of the hospitality and tourism industry, and secondly, whether public assessment of the measures the US government took against the pandemic is related to the outlook for recovery, including the role played by perceptions of government performance and efficacy at handling the crisis and self-efficacy in terms of avoiding infection. Two studies were conducted among US consumers, using different methods of data collection and analysis. The first study utilised an open market valuation technique to explore how governmental aid might be prioritised among the tourism and hospitality industries. The second study used AMOS/SEM to examine travellers' positive perceptions of the likelihood of hospitality and tourism industry recovery. Study 1 found that all six industry subsectors investigated (hotels, airlines, restaurants, car rentals, casinos and cruise lines) had been influenced negatively by COVID-19, with the heaviest impact felt by hotels and cruise lines. Study 2 indicated that the level of public satisfaction with the US government's performance in addressing the pandemic was positively related to expectations of hospitality and tourism industry recovery. The findings could guide policymakers in deciding how best to allocate public funds between the different subsectors of the hospitality and tourism industry.

**Keywords:** COVID-19; open market valuation technique; government bailouts; government performance; hospitality and tourism recovery; sustainable tourism



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## 1. Introduction

The rapid global spread of COVID-19 in 2020 triggered not only a severe health crisis but also a major economic downturn, with a particularly heavy impact on hospitality and tourism, including the sustainable tourism industry. To curb the exponential rise in deaths and infections, many countries adopted lockdown and social distancing measures, including the closure of or severe restrictions on international borders, entertainment venues, cultural sites and hospitality venues. These changes plunged hospitality and tourism into crisis, with the United Nations World Tourism Organization (UNWTO) (2020) forecasting a decrease of 20–30% (US\$300–450 billion) in international tourism receipts in 2020. In some countries, the restrictions on movement included internal travel, hindering domestic as well as international tourism. Given the ongoing spread of the disease, the lack of certainty about the timing and the take-up of full vaccination programmes, the hospitality and tourism industry are facing an extended period of crisis. If the recent

progress in sustainable tourism—already a complex sector—is to be maintained and further advanced, it is crucial to understand where the most severe impacts will be felt and how they can be mitigated in order to ensure its onward evolution.

Although COVID-19 remains a developing crisis, studies of previous disease outbreaks hold some clues to its likely impact. For example, severe acute respiratory syndrome (SARS) had significant negative effects on the hospitality and tourism industry in China [1] and elsewhere in Asia [2], although avian flu had a lesser impact [3–6]. The negative impacts of malaria, yellow fever, dengue fever and Ebola on tourist arrivals have also been demonstrated by [7] with the use of dummy variables; for example, the presence of malaria in a country led to the arrival of 47% fewer tourists than in a country where the disease was not endemic. In another example, foot and mouth disease led to a reduction in hospitality and tourism spending in the United Kingdom [8–10]. The effect of the COVID-19 pandemic itself has already been measured using a dynamic stochastic general equilibrium model [11,12], which showed that hospitality and tourism demand declined as health risks rose. A recent study by Karabulut et al. [13] revealed that COVID-19 had had a negative impact on the hospitality and tourism industry and that this negative influence was valid for countries with low-income economies.

The US government has taken a number of steps at the national level to help the tourism industry and related industries. Most US states have also announced that they will be putting in place economic aid packages, some of which are specifically for the tourism industry. Most of the time, these measures have two main directions: (1) financing measures, using specific tools like credit lines, government guarantees, deferring or rescheduling payments, grants given mostly to small and medium-sized enterprises (SMEs), subsidies or co-financing or salary compensation for people directly affected, or (2) stimulating and helping companies that have been hit hard by the crisis, especially small and medium-sized enterprises (SMEs), and getting rid of barriers and easing up on employment laws, helping tourism destinations that have been hurt by the pandemic by giving them budgets for promotion and consulting for the development of tourism products and services. There are also measures of a fiscal nature that are mostly aimed at moratoriums, extended deadlines, or exemptions, such as changes in the tax regime, deferrals/rescheduling/reductions of social security contributions and pensions, direct and consumption taxes (VAT), elimination of sector-specific taxes (accommodation, promotion).

The long-term impact of COVID-19 on the hospitality and tourism industry can be expected to be felt not just in terms of the restrictions on activities and movements but also through changes in demand and behaviours and in the indirect effects of economic hardship (e.g., the loss of jobs leading to lower disposable income) [13]. The UNWTO (2020) is anticipating the industry's largest decline in history, with a predicted impact seven times greater than that of 9/11: the estimates are for the loss of 120 million jobs in the sector and a reduction of US\$1.2 trillion in export revenues as international tourist arrivals plummet. This impact can be expected to feed back into a global economic downturn, since the hospitality and tourism sector is a major contributor to the gross domestic product of many countries. For example, figures from the UNWTO (2020) suggest that 10% of the world's jobs are directly related to the hospitality and tourism sector. The economic crisis triggered by the pandemic differs from previous global downturns and national recessions, and the impact on people's future travel behaviours remains unclear, given the high transmissibility of the virus [14–16]. These impacts are especially unclear for the sustainable tourism sector, since the complex factors that drive sustainable tourism behaviour may be subject to different influences from those affecting the industry as a whole: the particular impact of COVID-19 among both sustainable tourism purchasers and host communities is therefore yet to be understood.

The government's role in the recovery of these sectors is very important [4]. As the government figures out how to distribute bailout money, it might help to know how the pandemic affected the different subsectors that make up the travel sector. Our goal is not to argue about whether or not these kinds of interventions are good from an economic

efficiency point of view. We know that the question of whether or not corporate bailouts are necessary can be very controversial and has been discussed at length in academic literature. Instead, we are just looking into how the hotels, airlines, restaurants, car rental, casinos and cruise lines industries, which are all part of the general travel sector, might be affected differently by the pandemic. This is so that available bailout funds can be used in the most effective way. Even though some financial help may have already been given to companies in trouble by the time this study is made public, we expect that the severity of the crisis will require more help in the coming weeks and months to keep certain parts of the industry from going under.

Despite this uncertainty, it is already clear that there is a potential for a severe impact on employment and economic performance for whole countries as well as particular regions and communities, in both sustainable tourism and the industry as a whole. This study therefore uses an open market valuation method to evaluate the likely consequences for six specific subsectors of the overall hospitality and tourism industry: hotels, airlines, restaurants, car rentals, casinos and cruise lines. Some businesses in these subsectors have been forced to cease trading altogether, either because of restrictions or lack of demand. Recovery in the sector as a whole will depend heavily on government action [17–19], making it essential to determine the factors that could counter pessimism, shape a positive outlook and perhaps even lead to an early recovery. Our paper's first objective is therefore to examine how governmental aid might be prioritised in these six subsectors. Secondly, we investigate whether public assessment of the measures the US government took against the pandemic is related to the outlook for recovery in the hospitality and tourism sector, and the underlying psychological mechanism of this association. This research is especially valuable in demonstrating the likely impact of the pandemic on the six subsectors studied, since it may guide the most useful distribution of government bailout funds among them.

## 2. Background

### 2.1. The COVID-19 Pandemic and Sustainable Tourism

Since the 1950s, the global tourism industry has grown rapidly, contributing nearly US\$1.7 trillion in revenue (UNWTO, 2019). As a country, the United States has made a significant contribution to global tourism. The U.S. economy and labour market rely heavily on the hospitality and tourism industry. About 20 percent of the United States' GDP and about 30 percent of the United States' labour force were supplied and employed by this industry in 2017 (International Trade Administration, 2018). Service industries are particularly vulnerable to infectious diseases like COVID-19, which emerged in China in December 2019 and quickly spread throughout the rest of the world because of the high volume of human contact they involve [20]. Since there was a nationwide quarantine in place as a result of the pandemic, the number of job openings and employees across the entire United States labour market has decreased significantly [21]. Between February 15th and April 11th, the number of Americans employed in the leisure and entertainment (e.g., "small museums, miniature golf locations, dance companies, small amusement centres, historical sites etc.") and accommodation and food services (e.g., "family-owned restaurants and bars") industries fell by 56% and 33%, respectively [22]. More than 98 million jobs in the travel and tourism industry are at risk around the world, the WTTC predicts that 44–57 million jobs in the United States will be affected, with food service and lodging roles predicted to be hit particularly hard [23].

### 2.2. Government Role during the COVID-19 Pandemic

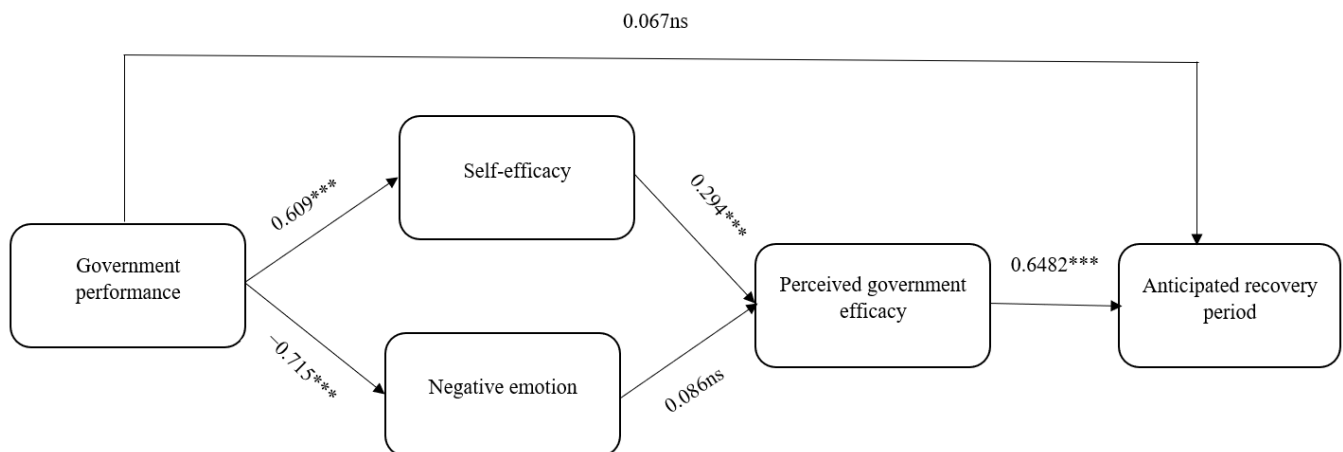
Many governments have already used financial stimuli to mitigate the effects of the pandemic, such as support for households and self-employed workers or part-payment of employees' wages. Corporations have called for government bailouts similar to those seen in the financial crisis of 2008, which were used to rescue many large financial institutions. In the present health crisis, it is the hospitality and tourism sector that is particularly vulnerable [13,24]. Since publicly funded bailout programmes will play such a critical role

in its recovery [18], understanding the most effective distribution of funds within the sector is crucial.

It is also important to understand the role that the public perception of government performance plays in assisting recovery. Governments that conduct themselves well in an epidemic promote public confidence that businesses will achieve recovery [25]. This view is in line with the theory of micro performance, which holds that the performance of a particular organisation creates a general attitude toward the government which is then extended to other businesses: for example, a successful performance by a health agency in a pandemic could create a favourable attitude toward the recovery efforts of economic and travel and tourism agencies [18]. The present study therefore also investigates whether public perception of a government's capacity to deliver recovery in the hospitality and tourism industry (government efficacy) is influenced by the way it is perceived to deal with an epidemic (government performance). Furthermore, it investigates the mechanism behind this government performance–government efficacy association in order to extend micro-performance theory.

A further area of the present study relates to emotion and cognition, which are the mental mechanisms through which stimuli and responses are connected [18]. The cognitive construct of self-efficacy, which refers to people's belief in their ability to effect change in their own lives, is critical to the development of positive anticipations of social or environmental events [26]. In the context of the spread of a disease, the performance of a government in dealing with an epidemic can alleviate emotional concern and enhance self-efficacy [27,28]. Government efficacy is important for fostering social trust [29]—which, in turn, helps develop an optimistic perception of the world [30]—and could, therefore, stimulate expectation of a quick recovery for the hospitality and tourism industry, including sustainable tourism.

Our paper proposes that the assessment of the government performance in dealing with COVID-19 pandemic (government performance) is related negatively to the estimated duration of tourism industries recoveries (“anticipated recovery period”) via high self-efficacy in preventing infections (“self-efficacy”), less negative emotion toward a pandemic (“negative emotions”) and high government efficacy in tourism recoveries (“perceived government efficacy”). Figure 1 demonstrates the study variables and hypotheses. Thus, we propose the following hypotheses:



**Figure 1.** The conceptual framework and results. Note: The asterisks represent the level of significance of the coefficient. \*\*\* 0.001.

**Hypothesis 1 (H1).** Government performance has a positive effect on the anticipated recovery period.

**Hypothesis 2 (H2).** Government performance has a positive effect on self-efficacy.

**Hypothesis 3 (H3).** Government performance has a negative effect on negative emotion.

**Hypothesis 4 (H4).** *Self-efficacy has a positive effect on perceived government efficacy.*

**Hypothesis 5 (H5).** *Negative emotion has a negative effect on perceived government efficacy.*

**Hypothesis 6 (H6).** *Perceived government efficacy has a positive effect on the anticipated recovery period.*

### 3. Methods

#### 3.1. Study 1

The main purpose of Study 1 was to assess how governmental aid might be prioritised between the six subsectors of the hospitality and tourism industry being studied (i.e., hotels, airlines, restaurants, car rentals, casinos and cruise lines). It modelled the impact of COVID-19 on these six areas by adapting market-based technique [31]. This method was chosen because the effects of the pandemic can be expected to evolve over time, rather than being a single isolated event: its severity was assumed by the authors to be a dynamic element influenced by constantly changing death and infection rates. Since the current and future effects of the shock of the pandemic have been fully captured in the market valuation of industries, Dow Jones industry-specific indexes were assumed to be representative of the six subsectors and were obtained from MarketWatch. The Dow Jones Industrial Average was used as a general market index, taking into account the possibility of lagging effects, since the daily statistics on infections and fatalities are frequently reported after the markets have closed for the day. Daily returns over 23 months (September 2018 to July 2020) were used. The market model estimation was based on Karafiath's [31] market-based technique by identifying the fatalities number ( $FN_t$ ) and infections number ( $IN_t$ ), as follows:

$$R_{it} = \alpha_i + \beta_i RM_t + \gamma_i TII_t + \xi_i InIN_t + \varepsilon_{it} \quad (1)$$

$$R_{it} = \alpha_i + \beta_i RM_t + \gamma_i TII_t + \eta_i InIN_t + \varepsilon_{it} \quad (2)$$

where  $R_{it}$  reflects the return on the Dow Jones index for each industry  $i$  ( $i =$  hotels, airlines, restaurants, car rentals, casinos and cruise lines) on day  $t$  as  $\ln(\text{Price}_t/\text{Price}_{t-1})$ ;  $RM_t$  represents the average of returns on the market portfolio on day  $t$ ;  $TII_t$  represents the hospitality and tourism industry industrial index, which controls for the assessment of the hospitality and tourism sector;  $\alpha_i$  and  $\beta_i$  represent the systematic risk and the constant,  $\gamma_i$ , represents the influence of the hospitality and tourism sector;  $\eta_i$  and  $\xi_i$  indicate the influences of the fatalities and infections numbers; and  $\varepsilon_{it}$  represents the error term.

This approach offers at least two advantages. Firstly, it affords an accurate depiction of the overall financial situation of an industry since it is rooted in neoclassical finance theory, which proposes that the prices of assets reflect all the variables influencing a company. It therefore gives a truer picture of the need for increased funding than might be obtained from industry estimates, which could potentially be inflated. Secondly, rather than using retrospective measures, such as reductions in reservations, it uses forward-looking measures. This enables fallout and the likely level of bailout requirements following a shock to be anticipated early, and as soon as funds are needed, rather than waiting for the end of the accounting period, by which point much of the damage has already been done.

#### 3.2. Study 2

The main purpose of Study 2 was to examine travellers' positive perceptions of the likelihood of hospitality and tourism industry recovery. In order to achieve the main objective of the second study, we adopted the model that has been developed by Fong et al. [18]. This study revealed that public perceptions of the performance of a government during an epidemic can alleviate emotional concerns and enhance self-efficacy. Government efficacy is important for fostering social confidence in institutions, which, in turn, helps develop an optimistic perception of the world and could, therefore, stimulate expectation of a quick

recovery for the hospitality and tourism industry. The conceptual framework and results are shown in Figure 1.

A well-known US online survey company was used to collect data from travellers who resided in different regions of the US. This marketing company had access to a panel of consumers representing around 3.2 million travellers. We emailed a random sample of 2000 travellers to invite them to take part in the survey, explaining the main purpose of the study, estimating the time input that would be required, and providing a hyperlink to the survey itself. The data was collected during July and August 2020. Of the 836 responses received, 17 with missing values were eliminated, and 9 outliers with z-scores higher than 3.42 were identified and removed.

## 4. Results

### 4.1. Results of Study 1

Several autoregressive conditional heteroskedasticity models were used to assess the market model. The threshold model was found to provide the best fit in line with the Akaike information criterion. In line with Chow breakdown tests and recommendations by Sharma and Nicolau [32], structural change in the parameter values could not be rejected for the six hospitality and tourism industry subsectors after the day the pandemic was officially announced. Thus, separate pre- and post-pandemic parameters for fatalities and infections were included. Post-pandemic parameters for the market portfolio and non-separate pre- and post-pandemic parameters for the hospitality and tourism industrial index were also included.

The results of the exploratory analysis revealed that the market portfolio was able to capture everything, and no abnormal returns for any of the six industry subsectors were observed; however, if factors relating to COVID-19 were analysed alone for the pre-pandemic period, both factors (fatalities and infections) would be significant and negative in all six. These conflicting findings indicated that the structural changes revealed by the Chow test occur and that those changes should be included in the model.

The parameter estimates for the factors of COVID-19 using pre- and post-pandemic parameters are shown in Table 1. The results obtained indicated that the pre-parameters of the factors for COVID-19 had a significant negative effect whereas the post-parameters were insignificant, demonstrating that the market portfolio had captured all the trends. Furthermore, for the hospitality and tourism industrial index, both the hotel and cruise line subsectors indicated a parameter higher than 1 ( $\gamma = 1.3804, 1.1128$ ;  $\chi^2 = 12.4389, 10.3175$ ; prob < 0.01, respectively). These were also the only two hospitality and tourism subsectors considered to have a beta parameter ( $\beta = 1.3190, 1.0147$ , respectively) that was not significantly different from 1 ( $\chi^2 = 0.084, 0.096$ ; prob < 0.6308, 0.8135, respectively). The findings of this study therefore indicate that firms in the hotel and cruise line subsectors have greater volatility than the overall hospitality and tourism industry to which they belong, and the same two subsectors have suffered the biggest impact as a result of the COVID-19 fatalities and infections ( $\chi^2 = 39.76, 58.06$ ; prob < 0.01 and  $\chi^2 = 46.03, 104.83$ ; prob < 0.01, respectively).

### 4.2. Results of Study 2

A total of 810 valid responses were available for the final analysis, of which 401 (49.5%) had been completed by men and 409 (50.5%) by women. The most heavily represented age group was 30–40 (39.5%), and the largest concentration in terms of monthly income was in the range \$1000–5000 (38.5%). Overall, 46% had a bachelor's degree.

Table 2 shows the study measurements. In conceptualising government performance, negative emotion and self-efficacy, this study utilised scales developed from Fong et al. [18]. Government efficacy and the anticipated recovery period were each operationalised by a single-item measure, adopted from Lau et al. [27] and Fong et al. [18].

**Table 1.** Pre- and post-pandemic declaration effects.

	Hotels		Airlines		Restaurants		Car rental		Casinos		Cruise line	
	Parameter	SD	Parameter	SD	Parameter	SD	Parameter	SD	Parameter	SD	Parameter	SD
Constant	−0.0001	0.0004	−0.0002	0.0005	−0.0006	0.0009	−0.0003	0.0012	−0.0005	0.001	−0.0008	0.0015
Pre-pandemic infections	−0.0024 <sup>b</sup>	0.0017	−0.0032	0.0011	−0.0035 <sup>a</sup>	0.0003	−0.0005	0.001	−0.0132 <sup>a</sup>	0.0014	−0.0003	0.0013
Post-pandemic infections	−0.0003	0.0005	−0.0004	0.0006	−0.0008	0.0009	−0.0002	0.0005	−0.0003	0.0008	−0.0001	0.0011
Post-pandemic market portfolio	0.3190 <sup>a</sup>	0.0128	0.5903 <sup>a</sup>	0.2061	0.0139 <sup>a</sup>	0.0021	0.0205 <sup>a</sup>	0.0013	1.0147 <sup>a</sup>	0.4221	0.2102 <sup>a</sup>	0.041
Tourism industrial index	0.6390 <sup>a</sup>	0.0319	0.6701 <sup>a</sup>	0.0408	0.8403 <sup>a</sup>	0.0549	0.5417 <sup>a</sup>	0.031	0.7042 <sup>a</sup>	0.0328	0.6914 <sup>a</sup>	0.0481
R-squared	0.5719		0.539		0.4182		0.6491		0.4306		0.5127	
Chow breakdown test	46.43 <sup>a</sup>		23.29 <sup>a</sup>		19.27 <sup>a</sup>		28.10 <sup>a</sup>		44.30 <sup>a</sup>		21.23 <sup>a</sup>	
Pre-pandemic fatalities	−0.0003	0.0005	−0.0004	0.0007	−0.0007	0.0008	−0.0005	0.0017	−0.0006	0.0011	−0.0009	0.0016
Post-pandemic fatalities	−0.0006	0.0009	−0.0003	0.0008	−0.0001	0.0004	−0.0003	0.0009	−0.0006	0.0008	−0.0004	0.0008
Post-pandemic market portfolio	0.4107 <sup>a</sup>	0.029	0.2190 <sup>a</sup>	0.0432	0.0241 <sup>a</sup>	0.0392	0.0532 <sup>a</sup>	0.0018	0.2951 <sup>a</sup>	0.0843	0.2917 <sup>a</sup>	0.0618
Tourism industrial index	1.3084 <sup>a</sup>	0.4903	0.5904 <sup>a</sup>	0.2163	0.5891 <sup>a</sup>	0.1274	0.5671 <sup>a</sup>	0.1082	0.8263 <sup>a</sup>	0.1074	0.5128 <sup>a</sup>	0.1052
R-squared	0.5904		0.6017		0.5103		0.6719		0.4815		0.5061	
Chow breakdown test	62.17 <sup>a</sup>		19.14 <sup>a</sup>		48.31 <sup>a</sup>		31.29 <sup>a</sup>		27.30 <sup>a</sup>		26.10 <sup>a</sup>	

a: prob < 1%; b: prob < 5%.

**Table 2.** Measurement statistics of construct scales.

Construct/Indicators	Standard Loading	CR	VIF	Cronbach’s α	AVE	Mean	SD	t-Statistic	Skewness	Kurtosis
<b>Government performance (GVP)</b>										
GVP1	0.93					2.10	0.830	24.20	−1.456	2.304
GVP2	0.95	0.95	2.124	0.92	0.630	3.35	0.844	29.35	−0.123	1.467
GVP3	0.92					4.67	0.727	31.34	−2.345	2.653
GVP4	0.96					3.03	1.060	26.38	−3.765	3.807
GVP5	0.91					2.34	0.901	19.30	−0.345	2.231
<b>Self-efficacy (SFE)</b>										
SFE1	0.93	0.94	2.019	0.93	0.608	2.39	1.34	23.20	−3.34	2.37
SFE2	0.97					3.20	0.83	29.39	−1.10	2.03
<b>Negative emotions (NGE)</b>										
NGE1	0.97	0.96	2.241	0.94	0.526	4.20	1.45	24.30	−3.23	1.49
NGE2	0.92					3.56	1.48	32.89	−3.20	1.45
NGE3	0.96					3.34	0.93	16.20	−2.73	2.67
<b>Anticipated recovery (ARP)</b>										
ARP1		0.94	1.292	0.92	0.578	4.30	1.32	32.39	−3.74	2.03
ARP2	0.92					2.56	0.90	22.30	−1.91	2.67
ARP3	0.94					4.30	1.35	26.65	−3.05	2.23
ARP4	0.95									

4.2.1. Common Method Bias

Because we received data for both independent and dependent factors from a single informant, we must consider the potential of common method bias. To begin, we utilised various procedural remedies in the questionnaire’s design to mitigate the other frequent technique bias, as suggested by Podsakoff et al. [33]. Additionally, we utilised Harman’s one-factor test to determine the existence of biases. The test findings demonstrated the lack of a single factor or a single general factor that accounted for the bulk of the covariance between the measures. Second, in accordance with Lindell and Whitney [34], a marker variable (MV) was utilised. A MV is a seemingly unrelated variable in a survey that should not have a statistically significant relationship with at least one of the study variables. If there is a connection between the MV and a research construct, those associations will be utilised to alter the correlations between the research’s factors and their significance [35]. In our research, the MV is a question on economic confidence: “How confident are you in the economy of your country today?” Although this item is not conceptually relevant to the factor studied in this study, it has previously been utilised as a marketing message in marketing review [36]. Correlation coefficients among the MV and significant factors ranged from 0.28 to 0.07, with an average of 0.02. None of the findings were statistically significant (0.05). A MV has the methodological advantage of acting as a filtering question, directing queries away from predictors and toward result factors [33]. Because this temporal separation decreases the likelihood that participants’ future answers would be influenced by their past responses, the possibility of common method variation is decreased.



#### 4.2.2. Measurement Model

A measurement model has been developed. The CFA results showed that the model matched the data quite well ( $\chi^2 = 1830.618$ ,  $df = 738$ ,  $p < 0.001$ ,  $\chi^2/df = 2.470$ ,  $RMSEA = 0.073$ ,  $CFI = 0.962$ ,  $IFI = 0.968$ ,  $TLI = 0.942$ ). All items were substantially loaded into their corresponding latent variables at the 0.01 level. Composite reliability calculations showed that all values above the minimal criterion of 0.60. As shown in Table 2, the values ranged from 0.829 to 0.971. As a result, the internal validity of the measures was demonstrated for each latent construct. Following that, the extracted average variance (AVE) value was computed. All AVEs were higher than Fornell and Larcker's [37] suggested value of 0.50, as determined by our computation. Between 0.526 and 0.632, the values seem right. Thus, convergent validity was shown for each variable. These values were then compared to the squared correlations between constructs. The AVEs were higher than the associated squared between-construct correlations, as seen in Table 3. These findings substantiated our study variables' discriminant validity. Furthermore, the heterotrait-monotrait ratio (HTMT) and its confidence intervals provided evidence for the model's discriminant validity [38]. Overall, the measurement model was shown to be reliable and convergent in its validity.

**Table 3.** Discriminant validity of the correlations between constructs.

Construct	Correlations and Square Roots of AVE				
	GVP	SFE	NGE	PGE	ARP
GVP	<b>0.793</b>				
SFE	0.386	<b>0.779</b>			
NGE	0.601	0.519	<b>0.799</b>		
PGE	0.529	0.420	0.306	<b>0.725</b>	
ARP	0.370	0.517	0.551	0.389	<b>0.760</b>

Note: GVP=Government performance; SFE= Self-efficacy; NGE= Negative emotions; PGE= Perceived government efficacy; ARP = Anticipated recovery period.

#### 4.2.3. Structural Model

Structural equation modelling/AMOS were used to analyse the data. The results showed that travellers' positive assessment of the US government's performance in dealing with the pandemic led to a high level of expectation of a quick hospitality and tourism recovery, because of a high level of perception of the government's ability to enable the industry to recover and a high level of self-efficacy beliefs in terms of avoiding infections. Furthermore, negative emotions were not found to mediate these relationships. The results supported all the study hypotheses. The results also indicated that a direct link between perceptions of government performance and anticipated recovery was not statistically significant, which reflects the critical role of mediators in this relationship. This result is inconsistent with Aliperti and Cruz's [39] study, which pointed out that when people faced high-risk conditions, they became immersed in negative emotions. The results indicated that a high level of perception of good government performance reduced travellers' negative emotions, which is consistent with the findings of Fong et al. [18], although negative emotions were not found to have an effect on government efficacy.

The quality of discernment and feeling relies on the idea of the objectives on which individuals focus. Individuals measure data through cognitive (emotion) instruments on the off chance that they have a utilitarian (hedonic) objective [18]. Objectives such as the avoidance of disease and the fast-approaching recuperation of the travel industry are utilitarian in nature.

### 5. Discussion and Implications

The COVID-19 pandemic has interrupted the functioning of the hospitality and tourism industry around the world, with severe implications for the profitability and

even survival of many organisations [40]. Sustainability in this context can therefore be taken to refer to the survival of the industry as a whole and individual businesses within it, as well as the particular context of the sustainable tourism industry. Scholars and practitioners therefore need to develop as full an understanding as possible of all the impacts of the crisis, in order to make predictions and enhance industry practices accordingly. This study marks a significant step forward in exploring and critiquing the relevant phenomena. It extends the hospitality and tourism and public administration literature by assessing how governmental aid might be prioritised between different subsectors of the hospitality and tourism industry [41]. It also investigates how perceptions of a government's epidemic response influence perceptions of hospitality and tourism recovery and extends micro-performance theory by investigating the mediating role of self-efficacy.

Travelers thought that there would be a lot of risk in purchases in the near future. Depending on what theory says, this traveler's opinion will affect what they buy. In particular, travellers expect to buy their tickets closer to the time they leave. About 35% of the people who answered said they plan to buy their tickets closer to the time they leave, and 10% said they probably won't fly at all on their next vacation. So, about one-third of customers could change how they act after the COVID-19 crisis. This change in behaviour could have a big effect on the money that tourism brings in.

The findings show that all six subsectors studied (hotels, airlines, restaurants, car rentals, casinos and cruise lines) had experienced a significant fall in valuation due to the COVID-19 pandemic, and that each fall was critical enough to warrant concern regarding the long-term sustainability of each industry, with the most serious concerns relating to the hotel and cruise line subsectors. One explanation for the particularly harsh impact on these two subsectors could be that the total number of guests and travellers is likely to fall more sharply than in the other subsectors examined. The theory that business travel may recuperate more rapidly than leisure travel can certainly be concluded from our result [42]. The cruise line subsector may be particularly vulnerable because restricted spaces provide a riskier environment for infection than outdoor or fully ventilated spaces, and individuals may have concerns about spending extended periods in indoor shared spaces. The highly publicised episodes on board the Diamond Princess and other cruise ships will have confirmed individuals' concerns in this regard.

It's important to note that out of all the questions in our survey about how to fix flight cancellations caused by the COVID-19 crisis, the one that got the most agreement was about the need for rules that force airlines to give money back to customers whose flights were cancelled. The tourism industry and its customers have both been under a lot of financial stress. Many people who bought tickets ahead of time did so more than three months before the event. We can guess that many of these customers bought tickets during this time period because prices were lower.

Overall, we therefore suggest that government support for the hospitality and tourism industry should be prioritised towards the hotel and cruise line subsectors, since these have sustained a greater impact than the other subsectors. Our findings could thus guide policymakers in deciding how best to allocate public funds between the different subsectors of the hospitality and tourism industry.

## 6. Conclusions

The part that governments play in how things go seems to be very important. Governments can do something to lower the high risk that travellers see in buying airline tickets in the next few years. By doing this, some of the change in consumer behaviour could be stopped. Given how most airlines do business now and how small their profit margins are, a change in behaviour like the one described in this research could have a big effect on their ability to stay in business. This research adds to what is already known about changes in travel behaviour after COVID-19, such as a drop in the intention to take public transportation.

Because of the pandemic, our results show that the value of each of the six industries—hotels, airlines, restaurants, cruise lines and car rentals—has dropped by a large amount. In each industry, the drop is big enough to make people worry about the long-term future of that industry. What is clear, though, is that the cruise industry is where the most serious problems lie. This may not be a big surprise. One reason could be that the ratio of business travellers to leisure travellers is probably lower in the cruise industry than in other industries we looked into. One might think that business travel might get better faster than leisure travel, and our findings support this idea. In spite of the valuable implications for practitioners and researchers presented by this study, there are still some limitations. The study sample was collected from the US and, therefore, the results might not be generalisable to other cultures. Researchers could apply our model in other cultural contexts and compare the results in order to validate our proposed model in different societies.

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