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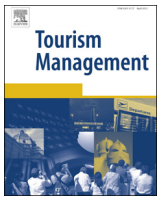

Avoiding panic during pandemics: COVID-19 and tourism-related businesses

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ABSTRACT

The COVID-19 pandemic has brought devastating impacts of an unprecedented scale to tourism-related businesses due to governments instituting mobility restrictions and business closures worldwide. In this research, we present the results of a survey involving 1212 tourism-related businesses in Jiangxi province, China, in late February 2020. The survey covered various topics, including (1) self-evaluated effects of COVID-19, (2) business responses, (3) social responsibility behavior, and (4) anticipated government policies. Findings from mixed-effects (ordered) logit models revealed that small-sized businesses appear particularly vulnerable to the pandemic. Social responsibility behavior is determined by business size, local pandemic circumstances, and local tourism dependence. Different businesses favor distinct government aid policies. Based on estimation results from our econometric models, we plotted a policy positioning matrix to identify appropriate policy measures for diverse businesses.

1. Introduction

A novel coronavirus (COVID-19) outbreak was first reported in mid-December 2019. The virus has a long latency period with symptoms similar to those of the seasonal flu, which makes the two illnesses difficult to differentiate. The rapid transmission of COVID-19 was further amplified by the Chinese Spring Festival, an event for which citizens travel nationwide to reunite with their families. All Chinese cities began to impose strict preventive measures in late January 2020, such as stay-at-home orders and the closure of non-essential businesses (Yang, Zhang, & Chen, 2020). Business and leisure travel ground to a nearly complete halt throughout China, bringing devastation to the tourism industry through suffocated demand and plummeting cashflow.

In a tourism context, the crisis management literature has explored best practices in the industry's response to various catastrophes, including financial crises, natural disasters, terrorist attacks, and infectious disease outbreaks (Jin, Qu, & Bao, 2019; Page, Yeoman, Munro, Connell, & Walker, 2006). However, considering the depth and scope of COVID-19, this pandemic has presented unforeseen challenges for tourism-related businesses, especially small- and medium-sized firms (Humphries, Neilson, & Ulyssea, 2020). In this study, we gathered data from a province-wide survey on tourism-related businesses in Jiangxi, the neighboring province of Wuhan, China. Based on these data, we adopted a mixed-effects (ordered) logit model to delineate the factors shaping businesses' self-evaluated effects, crisis response, social responsibility behavior (SRB), and anticipated government policies related to COVID-19. Hence, we have enriched the crisis management literature by presenting up-to-date insight into the pandemic's consequences from a business operations standpoint. Our results also contribute to the crisis management literature by clarifying tourism-related businesses' vulnerability during the pandemic and outlining potential best practices in terms of government policies from a policy positioning matrix. Furthermore, given that COVID-19 has swept the globe, our findings offer valuable guidance to help governments outside China allocate their resources and enact appropriate, timely policies to promote tourism industry recovery. Last but not least, we examined businesses' donation decisions (as a type of SRB) during COVID-19; our discoveries extend the literature on business-related social responsibility in tourism management.

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2. Related literature

The tourism industry is particularly susceptible to various types of crisis, especially natural disasters that impede travel. As noted in the literature, tourism firms are often unprepared for crisis situations (Okumus, Altinay, & Arasli, 2005). Okumus and Karamustafa (2005) found that, during an economic crisis, the Turkish tourism industry's approach to crisis management depends on the country's level of economic development, the availability of financial resources, and the capabilities of government officials and industry employees. In a study of an outbreak of foot-and-mouth disease, Irvine and Anderson (2004) discovered that small tourism firms in the UK suffered irrespective of the local epidemic situation; due to a lack of preparedness for the crisis, reactive and ad-hoc measures were needed to recover. One such measure is financial assistance, especially when firms have difficulty repaying debt (Okumus & Karamustafa, 2005). Therefore, during a crisis as severe as COVID-19, many businesses long for financial assistance from national and local governments, such as express loans and debt relief (Humphries et al., 2020).

Aguilera, Rupp, Williams, and Ganapathi (2007) argued that organizations engaged in three major motives for corporate social responsibility (CSR), and they are instrumental motives, relational motives, and moral motives. Under pressure for survival during the pandemic, many firms and businesses may refrain from CSR investment owing to a lack of resources (He & Harris, 2020). However, there are many reasons behind the SRB amid the pandemic. He and Harris (2020) suggested that the pandemic represents an opportunity for businesses to demonstrate their commitment to more genuine and authentic CSR. These CSR engagements are expected to be perceived as more meaningful and impactful by customers and the general public than during normal times. Filimonau, Derqui, and Matute (2020) indicated that social responsibility practices strengthen managers' perceived job security, which further improves their commitment to host organizations. In the tourism industry, the pursuit of socioemotional wealth is a key motive behind businesses' philanthropic engagement, and industry professionals are especially concerned about reputational effects within the community (Canavati, 2018). By complying with a moral obligation, social responsibility performance generally strengthens the social and economic embeddedness of small- and medium-sized tourism businesses in the community and fosters customer loyalty (Besser, 2012). However, due to a lack of resources, practicing social responsibility can prove challenging for these businesses.

In the literature of tourism crisis management, very few empirical studies examined the impact of pandemics on tourism-related business. Considering the magnitude and persistence of the COVID-19 outbreak as a global pandemic, a thorough analysis of its impact on tourism businesses' performance and operation helps better understand the best practice to mediate such impacts. In the tourism literature on business-related social responsibility, large corporations and destinations are mentioned most often, with comparatively few empirical studies pertaining to the SRB of small- and medium-sized businesses. As the majority of tourism businesses are of small- and medium-size, the analysis of their SRB motives and deterrents improves our understanding of the SRB antecedent framework as well as the social impacts of the tourism industry.

3. Research methods

Jiangxi province, in southeastern China, houses four UNESCO World Heritage sites and several top-tier red tourism attractions related to the Chinese Communist Party's evolutionary history. In 2019, domestic and inbound tourist arrivals to the province reached 79.08 million and 1.97 million, respectively, contributing 959.67 billion CNY in tourism revenue and 0.87 billion USD to the provincial economy. Data for this study were collected during the crisis resolution stage of the four-stage crisis process (Okumus et al., 2005), the point at which tourism demand and business operations begin to return to normal. The survey was distributed by Jiangxi Cultural and Tourism Department, the provincial bureau overseeing local tourism management, marketing, and planning. The purpose of this survey was to uncover firsthand data for provincial-level policymaking to assist tourism-related businesses during the COVID-19 pandemic. The questionnaire covers various questions on business characteristics (e.g., location, business types, size, and revenue) and COVID-19-related questions (e.g., perceived impact from the pandemic, operational and financial consequences of the pandemic, SRB behavior, and anticipated policies). The local cultural and tourism administration was responsible for having relevant businesses fill in the questionnaires and check the validity of the sample. In total, 1212 responses were recorded in the database; Fig. 1 illustrates the distribution of responding businesses within the province.

In our sample, each observation represents a business located in a city. Therefore, a nested structure emerges with the business level nested in the city level. To handle this nested data structure, we apply a mixed-effects (ordered) logit model to analyze the data (Mao, Yang, & Wang, 2018; Rabe-Hesketh & Skrondal, 2012). The empirical model is specified as

$$\begin{aligned} y_{ij}^{*} &= x_{ij}\beta + z_j\delta + \mu_j + \varepsilon_{ij} \\ y_{ij} &= m \text{ if } \tau_{m-1} \le y_{ij}^{*} \le \tau_m \text{ for } m = 1, .., M \end{aligned} \tag{1}$$

where i indicates the responding business, and j indicates the city where the business is located. In the model, y_{ij}^{*} is a latent measure, from which the observed measure y_{ij} is shaped by a set of cut-points τ_1 through τ_{M-1}. To make the model identifiable, we set $\tau_0 = -\infty$ and $\tau_M = +\infty$. If $M = 2$, the model can be used to estimate a dichotomous response. Furthermore, $\mathbf{x}_{ij}$ and $\mathbf{z}_j$ represent independent variables at the business level and city level, respectively. Regarding the two random terms, μ_j represents the city-specific effect that is not captured by independent variables; ε_{ij}represents the error term from a logistic distribution that is independent from μ_j. In this study, we apply this mixed-effects (ordered) logit model to develop and estimate models with nine different dependent variables.

Table 1 presents the descriptive statistics for our variables. In terms of dependent variables, most respondents (70.96%) perceived a significant impact from COVID-19 (*impact* = 2). Only 12.38% of the sample perceived little or no impact (*impact* = 1), while another 16.67% perceived fatal impacts (*impact* = 3). In the sample, 64.34% of respondents intended to postpone their reopening until March 2020 or later (*reopen_postpone* = 1); 23.55% indicated that they had laid off some employees (*layoff* = 1); 32.70% reported having made in-kind contributions or cash donations to support the local campaign against COVID-19 (SRB = 1). Regarding anticipated government policy, 24.59% of respondents advocated for rental relief (*rental_relief* = 1), making it the most popular policy across the sample. Moreover, 15.92% preferred a governmental reward from the tourism development fund (reward = 1), 15.84% favored tax relief (*tax_relief* = 1), 13.86% chose financial support (*finance* = 1), and 11.14% anticipated stronger tourism-related marketing efforts (*marketing* = 1). While other policies and programs are common

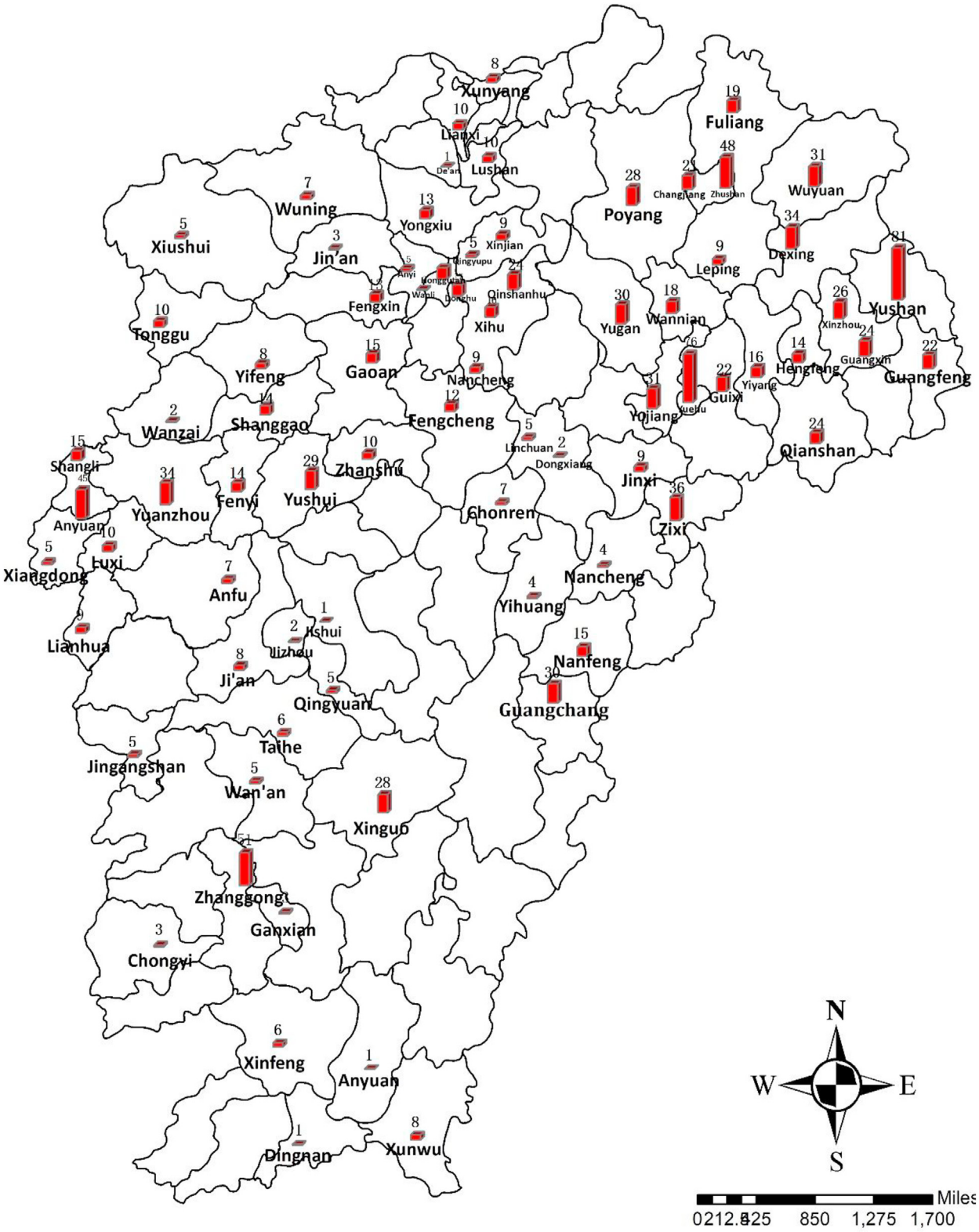

Fig. 1. Spatial pattern of responded businesses in Jiangxi.

Table 1
Descriptive statistics of data.

Variables	Obs.	Frequency	Percentage (in %)
impact = 1 (no or little impact)	1212	150	12.38
impact = 2 (significant impact)	1212	860	70.96
impact = 3 (fatal impact)	1212	202	16.67
reopen_postpone = 0 (reopen in Feb 2020)	1189	424	35.66
reopen_postpone = 1 (reopen in Mar 2020 or later)	1189	765	64.34
layoff = 0	1210	925	76.45
layoff = 1 (employee layoff)	1210	285	23.55
SRB = 0	1211	815	67.30
SRB = 1 (make in-kind contributions and cash donations)	1211	396	32.70
rental_relief = 0	1212	914	75.41
rental_relief = 1 (anticipate rental relief)	1212	298	24.59
reward = 0	1212	1019	84.08
reward = 1 (anticipate governmental reward)	1212	193	15.92
tax_relief = 0	1212	1020	84.16
tax_relief = 1 (anticipate tax relief)	1212	192	15.84
finance = 0	1212	1044	86.14
finance = 1 (anticipate financial support)	1212	168	13.86
marketing = 0	1212	1077	88.86
marketing = 1 (anticipate more marketing)	1212	135	11.14
employees = 1 (<10)	1212	413	34.08
employees = 2 (10–29)	1212	338	27.89
employees = 3 (30–49)	1212	157	12.95
employees = 4 (50–99)	1212	152	12.54
employees = 5 (100 and above)	1212	152	12.54
ave_salary = 1 (below 3000 CNY)	1212	289	23.84
ave_salary = 2 (3000–4000 CNY)	1212	558	46.04
ave_salary = 3 (4000–5000 CNY)	1212	229	18.89
ave_salary = 4 (5000–6000 CNY)	1212	72	5.94
ave_salary = 5 (6000 CNY and above)	1212	64	5.28
urban = 0	1212	696	57.43
urban = 1 (urban business locations)	1212	516	42.57
rev_drop = 1 (<10% revenue drop)	1212	65	5.36
rev_drop = 1 (10%–30% revenue drop)	1212	104	8.58
rev_drop = 1 (30%–50% revenue drop)	1212	212	17.49
rev_drop = 1 (>50% revenue drop)	1212	831	68.56
cash_flow = 1 (last less than15 days)	1212	274	22.61
cash_flow = 2 (last 15–30 days)	1212	307	25.33
cash_flow = 3 (last 1–3 months)	1212	397	32.76
cash_flow = 4 (last 3–6 months)	1212	174	14.36
cash_flow = 5 (last more than 6 months)	1212	60	4.95
staffing_issue = 0	1212	1114	91.91
staffing_issue = 1 (presence of staffing issues)	1212	98	8.09
sub_sector = 1 (attractions)	1212	296	24.42
sub_sector = 2 (travel agencies)	1212	242	19.97
sub_sector = 3 (accommodations)	1212	147	12.13
sub_sector = 4 (other tourism businesses)	1212	10	0.83
sub_sector = 5 (culture and entertainment businesses)	1212	517	42.66
		Mean	Std. Dev.
touristy	1212	18.044	9.721
case_pop	1212	0.021	0.019

elsewhere, this reward program might be unique to China. To promote local tourism growth and internalize the spillover effects from tourism to relevant industries in the local economy, governments provide rewards from the tourism development fund to businesses that draw a certain number of tourists to the area. These rewards include debt relief, government-assisted loans, and cash transfers.

4. Research results

Table 2 lists the estimation results of nine mixed-effects (ordered) logit models with separate dependent variables. Model 1 estimates the results based on respondents' self-evaluated effects of COVID-19 (*impact*). The negative and significant coefficients of *employees* and *cash_flow* indicate that the impact was higher for smaller businesses (with fewer employees) and for businesses facing a more emergent cashflow shortage. Moreover, the positive and significant coefficient of *revenue_drop* shows that a more considerable drop in sales revenue led to a higher level of impact. Therefore, business size and the current financial situation appear to primarily determine the self-evaluated impact of COVID-19. In terms of sub-sectors, the results demonstrate that accommodation businesses (*sub_sector* = 3) reported a higher level of impact than the reference group, tourist attraction businesses (*sub_sector* = 1).

Models 2 to 4 estimate the mixed-effects logit model on businesses' response to COVID-19 and SRB. In Models 2 and 3, delayed reopenings and layoffs were associated with smaller businesses (*employees*) and more severe revenue declines (*revenue_drop*). Some differences were observed between these models. While staffing issues (*staffing_issue*) and the local pandemic situation (*case_pop*) guided businesses' decisions to delay reopening, the degree of financial burden and status, such as the average employee salary (*ave_salary*) and cashflow constraints (*cash_flow*), further explained layoff decisions. Model 4 suggests that SRB seems more

Table 2
Estimation results of mixed-effects (ordered) logit models.

	Model 1 impact	Model 2 reopen_postpone	Model 3 layoff	Model 4 SRB	Model 5 rental_relief	Model 6 reward	Model 7 tax_relief	Model 8 finance	Model 9 marketing
employees	−0.209***	−0.336***	−0.193***	0.172**	−0.591***	−0.102	0.473***	0.208***	−0.130
	(0.057)	(0.093)	(0.072)	(0.070)	(0.123)	(0.093)	(0.053)	(0.076)	(0.095)
ave_salary	0.0783	0.0203	0.119**	0.103	−0.101	0.0449	−0.230	0.224***	0.000721
	(0.055)	(0.120)	(0.057)	(0.071)	(0.152)	(0.137)	(0.171)	(0.077)	(0.091)
urban	−0.101	−0.0126	−0.0797	−0.283	0.0242	0.101	0.0283	−0.335**	0.0301
	(0.199)	(0.118)	(0.245)	(0.243)	(0.228)	(0.444)	(0.267)	(0.170)	(0.468)
revenue_drop	1.342***	0.560***	0.315***	−0.0923	0.216	0.396**	−0.224**	0.0122	0.0824
	(0.161)	(0.152)	(0.112)	(0.113)	(0.147)	(0.191)	(0.098)	(0.142)	(0.087)
cash_flow	−0.504***	0.0575	−0.358***	0.00173	0.0723	−0.0916	−0.0467	−0.311***	0.343***
	(0.155)	(0.085)	(0.109)	(0.156)	(0.141)	(0.122)	(0.071)	(0.105)	(0.099)
staffing_issue	−0.133	0.463**	0.331	−0.370	0.788**	0.0938	0.0668	0.423	−0.452
	(0.144)	(0.225)	(0.363)	(0.263)	(0.346)	(0.334)	(0.179)	(0.434)	(0.679)
sub_sector = 2	0.446	0.816	0.0707	−0.717***	1.149**	−0.941**	1.787***	−0.318	−0.153
	(0.365)	(0.727)	(0.502)	(0.252)	(0.498)	(0.433)	(0.460)	(0.427)	(0.321)
sub_sector = 3	0.961***	0.142	−0.00847	−0.308	1.510**	−0.451	1.062**	−0.940***	−0.778**
	(0.236)	(0.353)	(0.323)	(0.296)	(0.764)	(0.310)	(0.468)	(0.277)	(0.318)
sub_sector = 4	0.565	−0.638	−0.797	0.721		1.263*	1.448*	−0.368	
	(0.981)	(0.738)	(0.870)	(0.443)		(0.676)	(0.861)	(1.102)	
sub_sector = 5	0.507*	−0.0839	0.0778	−0.370	2.218***	−0.570	1.010***	−1.192***	−1.501***
	(0.264)	(0.263)	(0.252)	(0.258)	(0.439)	(0.358)	(0.274)	(0.158)	(0.262)
touristy	−0.0284***	−0.0226	0.0261*	0.0320***	−0.0138	−0.0236	0.00545	0.0123	−0.0372*
	(0.008)	(0.020)	(0.014)	(0.008)	(0.011)	(0.019)	(0.010)	(0.031)	(0.019)
case_pop	−2.861	15.11***	−4.984*	15.33***	10.38**	9.624**	−4.942	1.025	−7.554
	(3.923)	(4.446)	(2.814)	(2.837)	(4.314)	(4.541)	(5.400)	(8.469)	(16.136)
impact		0.344	0.853***	0.0787	0.816***	−0.139	−0.489**	−0.256	−1.005***
		(0.351)	(0.208)	(0.175)	(0.198)	(0.210)	(0.191)	(0.281)	(0.169)
constant		−1.272*	−3.649***	−1.627**	−3.912***	−1.827*	−1.630***	−1.432	0.317
		(0.763)	(0.773)	(0.695)	(1.217)	(0.973)	(0.536)	(1.053)	(0.411)
cut1	0.157								
	(0.889)								
cut2	5.116***								
	(0.902)								
var(cons[city])	0.0594	0.254**	0.243	0.102	0.0679	0.177**	0.0779	0.660***	0.0166
	(0.094)	(0.107)	(0.387)	(0.074)	(0.110)	(0.074)	(0.054)	(0.237)	(0.150)
N	1212	1189	1210	1211	1181	1190	1190	1190	1181
AIC	1526.8	1365.0	1186.6	1430.7	1066.8	1006.3	959.4	848.0	734.5
BIC	1577.8	1415.8	1237.6	1481.7	1117.6	1057.1	1010.2	898.8	785.3
Log-likelihood	−753.4	−672.5	−583.3	−705.3	−523.4	−493.1	−469.7	−414.0	−357.3

(Notes: *** indicates significance at the 0.01 level; ** indicates significance at the 0.05 level; * indicates significance at the 0.10 level. Robust standard errors are presented in parentheses.).

likely in larger businesses (*employees*), those in more tourism-dependent areas (*touristy*), and those facing a more severe local pandemic situation (*case_pop*).

Models 5 to 9 are estimated based on preferred anticipated governmental policies. Judging by the estimated coefficient of *impact*, we classified these policies into three categories. The first policy category shows a positive and significant coefficient of *impact*, suggesting that more strongly affected businesses would prefer the policy; the rental relief policy falls into this category and can effectively reduce a business's fixed costs. According to Model 5, this policy should be welcomed by smaller businesses (*employees*), those encountering staffing issues (*staffing_issue*), those in sectors featuring higher rental costs (*sub_sector* = 5 and 3), and those in locations with more severe pandemic circumstances (*case_pop*). The second category includes policies involving governmental rewards (*reward*) and financial support (fin*ance*). The self-evaluated impact of COVID-19 did not significantly elucidate respondents' preferences for these two policies. As indicated in Model 6, tourist attractions (*sub_sector* = 1) and businesses with larger revenue drop (*revenue_drop*) preferred the reward policy. Businesses with greater financial need favored the financial policy; for instance, as displayed in Model 8, large businesses with a higher average salary and lower cashflow were more likely to prefer financial support policies. Businesses that were less affected by COVID-19 (as evidenced by a negative and significant coefficient of *impact*) generally advocated for the last policy category, namely the tax-relief policy (Model 7) and stronger marketing policy (Model 9). Both policies are useful for businesses that can operate normally (or close to normal) during COVID-19: tax relief lowers variable operating costs, while marketing stimulates demand. More specifically, Model 7 reveals that tax relief was preferred among larger businesses with a sharper revenue drop, whereas Model 9 suggests that tourist attractions with sufficient cash flow to operate desired more vigorous tourism marketing campaigns from the government.

Our results also focused on several anticipated government aid policies for different business types. In a policy positioning matrix, we plotted the five policies based on the estimation results in Table 1 (Models 5-9). Each dimension of the matrix covers three possibilities associated with the estimated coefficient of a variable: (1) negative and significant, (2) non-significant, and (3) positive and significant. Therefore, there are a total of nine (3×3) cells positioning the policies in this matrix. In Fig. 2, the vertical axis indicates the firm size (small, any, or large); the horizontal axis indicates firms' self-evaluated impact of COVID-19 (little, any, or substantial). Based on the estimated coefficients of the model for each policy in Table 1, we positioned the corresponding policy in each of these nine cells. The tax-relief policy was preferred by large businesses with minor impacts (the upper-left cell), while the rental-relief policy was favored by smaller businesses facing substantial consequences from COVID-19 (the bottom-right cell).

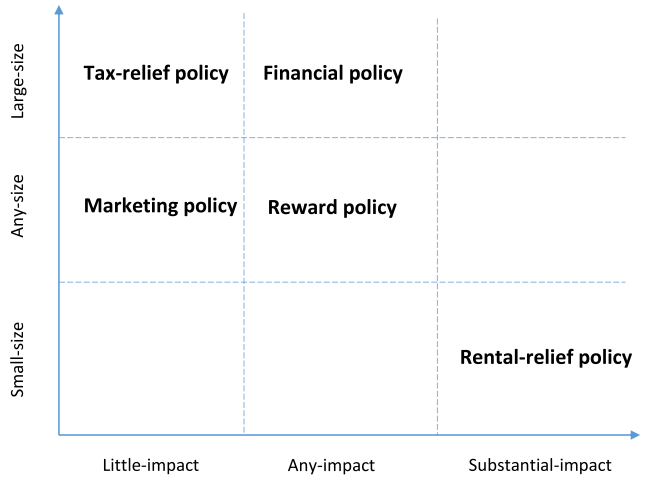

Fig. 2. Policy positioning matrix based on business size and self-evaluated pandemic impact.

Interestingly, the reward policy is located in the central cell, suggesting that this policy was proper by any firms irrespective of firm size and impact magnitude, primarily because the reward policy is more sector-dependent in terms of tourist attractions.

5. Conclusion and implications

These survey results highlight how deeply tourism-related businesses have been affected by the COVID-19 pandemic, with 87.62% of respondents reporting a significant or fatal impact of the virus on business operations. The self-evaluated impact was larger for small businesses, which needed to postpone reopening and lay off employees. Postponed reopenings were also influenced by staffing issues and local pandemic severity, while layoff decisions were largely attributable to financial circumstances. SRB was more common among larger businesses, consistent with the business ethics literature suggesting that large firms possess more resources for social responsibility practices (Lepoutre & Heene, 2006).

As one of the pioneering empirical efforts, our study contributed to the crisis management literature by providing up-to-date insights on the potential operational and financial outcome of COVID-19 pandemics on tourism-related businesses. Also, our empirical model on SRB helped better unveil motives of philanthropic disaster responses in the context of COVID-19 pandemics. Our results show that SRB is more likely to be observed in areas with more critical pandemic situations and a greater degree of tourism dependence, highlighting that instrumental utilitarianism and deontological responsibilities as major SRB motives. This result echoes the results from Manuel and Herron Terri (2020). Also, the results show that business size is positively associated with SRB, and therefore, the resource limitation can be a significant inhibitor to SRB, especially during the COVID-19 pandemics.

Our empirical results present several important policy implications for the local tourism industry. First and foremost, as demonstrated in our result discussion, the policy positioning matrix is particularly useful in identifying the policy needs for different types of tourism-related businesses. The government can formulate suitable strategies by recognizing different business needs from the matrix and avoiding a one-size-fits-all approach to policymaking. Second, as the results suggested, the anticipated policies depend on the local pandemic situation. Therefore, the provincial government should propose the policy and plans by zones in terms of the pandemic situation. Third, since the industry has long favored the government's reward policy, a comprehensive reward system can be expanded and developed to provide more financial incentives to help the industry achieve specific performance goals at different crisis recovery stages. Lastly, some demand-side policies are needed to stimulate the potential domestic tourism demand within the province. These policies are specifically designed to increase the discretional leisure time of residents (e.g., the two-and-half-day weekend policy), reduce the transport cost of travel (e.g., toll-free travel to attractions), and provide vouchers to residents so that they can spend in tourism-related businesses (Yang et al., 2020).

Impact statement

In this research, we adopted a mixed-effects (ordered) logit model to delineate the factors shaping businesses' self-evaluated effects, crisis response, social responsibility behavior (SRB), and anticipated government policies related to COVID-19. We have hence enriched the crisis management literature by presenting up-to-date insight into the pandemic's consequences from a business operations standpoint. Our results also contribute to the crisis management literature by proposing a **policy positioning matrix** and outlining potential best practices in terms of government policies to mitigate the effects of this crisis. Furthermore, given that COVID-19 has swept the globe, our findings offer valuable guidance to help governments outside China allocate their resources and enact appropriate, timely policies to promote tourism industry recovery. Last but not least, we examined businesses' donation decisions (as a type of SRB) during COVID-19; our discoveries extend the literature on business-related social responsibility in tourism management.

Author statement

Dr. Haisheng Hu, Conceptualization, Data curation, writing editing, Dr. Yang Yang, Formal analysis and writing editing, Dr. Jin Zhang, Project administration and Writing – original draft.

Declaration of competing interest

None.

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