



Resilience of the Hospitality Industry Under the COVID Policies in China

Shuxu Liu, Yu-Hua Xu and Chang Liu

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Abstract: The study investigates the strategies and measures taken by different types of hotels during the COVID epidemic in Hainan, China. Measures are categorized into four dimensions: human resources, marketing, finance, safety & health. The effectiveness of the measures was also examined through interviews and surveys of hoteliers. We found that government support plays a positive role in leveraging hotels out of the ebb of business. However, small lodging establishments are struggling more in maintaining their businesses. Based on the evidence from hoteliers' experience in coping with the COVID, recommendations for improvements in COVID policy and hotel management practice were raised in this study.

Keywords: the COVID, Hotel resilience, Social equity, Measures, Government, Hotel performance, Resourcefulness

1. Introduction

The COVID pandemic has heavily stroked the world. The hotel sector is an important part of the tourism industry, which contributed \$8.9 trillion to the global economy in 2019, accounting for over 10.3% of global GDP (Holladay & Powell, 2013). The hotel business is especially vulnerable to crises such as epidemics, natural disasters, or terrorist strikes (Holladay & Powell, 2013). Under the influence of the normalization of the COVID epidemic, the development of the tourism and hospitality industry has attracted much attention.

According to the UN World Organization, the number of international tourists' arrivals had dropped between 60% and 80% in 2020 (Mulder, 2020). In addition, compared with the same period in 2019, there was a loss of international tourist arrivals reaching 1 billion, and losing international tourism export revenue was 935 billion US dollars in 2020, which is over 10 times the loss caused by the global economic crisis in 2009 (Mulder, 2020). According to the China Hospitality Association, losing the Chinese hotel industry exceeded 67 billion RMB (Hao et al., 2020b). Therefore, it is critical to study the performance of the hotel industry during the epidemic and how they survive and recover, which can be the guide for dealing with the next crises. The development environment of China's tourism and accommodation industry has many characteristics. One of the prominent features is the dual regulation of the government and the market (Xinhua News Agency, 2020). Therefore, when the epidemic brought the entire industry into crisis, the government quickly introduced aid policies to help the industry tide over the difficulties (Li, 2021). While the performance of hotels has been dramatically stocked by the COVID, the received impact is much different across types and scales of hotels (Okumus & Karamousafa, 2005). According to the social equity theory, social resources are more inclined to large players in a business, who are more likely to survive and recover under the impact of crises.

The purpose of this study is to examine hotel resilience during the COVID and explore the moderating role of social equity in the hotel recovery process. This paper examined the measures taken by hotels and support received from the government in China in response to the COVID. We compared the resilience conditions among different sizes of hotels in China.

We assessed the impact of sustainable measures on the recovery of hotel performance and how the countermeasures had leveraged hotels' profitability under the "new normal" (*BSI Hong Kong, 2021*).

2. Literature Review

2.1 Resilience in the hotel sector

Disaster resilience is a dynamic state that describes the organization's ability to analyze, innovate, adapt, and overcome potential disruptions caused by catastrophes, in collaboration with its stakeholders (Brown et al., 2017). Resilience plays an important role in developing business and maintains constant performance (Fiksel, 2015). Besides, understanding resilience is critical to the sustainability of the hospitality industry with the persistent impact of the pandemic. Some forward-looking hotels will also add cleaner production to their green service marketing mix as a selling point marketing (Tiong et al., 2021). How to consider both sustainable development and resilience at the same time have become important in adapting to the future development of the hotel industry (Legrand, 2021). Studies have also confirmed the value of planning, problem-solving, establishing external connections, and decision-making in building resilience, which have a positive impact on performance (Sobaih et al., 2021b).

When exploring resilience application in different areas, it is important to figure out resilience by whom and resilience to what (Brown et al., 2017). Organizational resilience is commonly used to measure resilience in the tourism and hospitality industries (Melián-Alzola

et al., 2020). Organizational resilience can be defined in a variety of ways, including the ability to adapt to shocks and unexpected events, recover and thrive in uncertain environments, or evolve and expand (Melián-alzola et al., 2020). To explore resilience for hotels, we should develop an integrative framework (Brown et al., 2018). This paper explores the measures from human resources, marketing, finance, and safety & health perspectives taken by hotels in China in response to the multiple COVID epidemics and this article hopes to use hotel performance to reflect hotel resilience during the COVID epidemic.

2.2 Performance measurement

The competitive business climate, environmental changes, and pressure from a variety of stakeholders all compel hotels to make more efforts to cater to various consumer groups (Mitrović et al., 2016). The definition of performance plays an important role in the company's business strategies, competition position, and long-term economic viability (Pnevmatikoudi K.& Stavrinoudis T., 2015). Ruiz-Martin et al. (2018) defines *resilience as an organization's outcome*, or what a resilient organization does. Organizational resilience is rarely measured in terms of its influence on organizational outcomes or performance (Melián-Alzola et al., 2020). Ntounis et al. (2021) show an empirical link between adaptive resilience and performance. A resilient organization builds the resources and competencies needed to make better decisions in uncertain situations and consequently increase performance. As a result, resilient behavior (such as continuous improvement) benefits organizational results, i.e., hotel performance (Ntounis et al., 2021).

According to Neely et al. (2002), performance measurement is statistic and was used to quantify an action's efficiency and/or effectiveness. Hotel performance measurement is critical for hotel management and planning (Yang et al., 2017). The most commonly used measurement of hotel performance is financial indicators, such as Kantzos, (2013); Wild, Subramanyam & Halsey, (2007); Niarchos, (2004) using indicators like revenue (revenue of each department), profitability (gross profit per room), return on invested capital (ROA, ROI, ROS), hotel occupancy, costs, growth (sales growth, market share), Productivity, etc. (Pnevmatikoudi K.& Stavrinoudis T., 2015). There are measurements of non-financial indicators, such as Chen & Tzeng, (2011); Wadongo, et al. (2010) using indicators like customer satisfaction, employee satisfaction, continuous improvement (continuous launch of new products), service quality, competitive position, flexibility, organizational achievement, etc. (Pnevmatikoudi K.& Stavrinoudis T., 2015). Nowadays, we have seen the trend of combining financial and non-financial indicators to measure hotels' performance (Melián-alzola et al., 2020). As the elongated impact of the COVID has become more unpredictable, to evaluate hotel performance, we shall not only aim at short-term financial recovery but also pursue a long-term resilience of hotel business. This article uses a combination of financial indicators and non-financial indicators to measure hotel performance.

The first research question we proposed is: can hotel performance reflect hotel resilience?

2.3 Social equity in the accommodation industry

Government support

The concept of social equity emerged in the later twentieth century to solve the problem caused by imbalanced power (Guy & McCandless, 2012). Equity means distributing services or policies fairly, which includes that correct the imbalance in social and political values (Gooden, 2015). Social equity in government recognizes the importance of public officials and institutions in upholding democratic equity policies. However, affected by China's economy and system, inequity still exists in fields of education, social welfare, and other social policies (Zhou & Zhu, 2019). China has prioritized economic efficiency above social equality as a result of industrialization-related economic reasons and designs policies that benefit particular groups due to institutional considerations (Zhou & Zhu, 2019). China's socialist market economic system is an movement that aims to realize balanced allocation of social resources and equal distribution of wealth through planning and market means (Liu, 2021). One of the basic principles of China's market economic system is to insist on correctly handling the relationship between the government and the market, which means the government should emphasize scientific macro-control, and effectively make up for market failures (Liu, 2021). During the COVID pandemic, the Chinese government upholds the concept of the community of human destiny, taking the most comprehensive, stringent, and thorough preventive and control measures, thus effectively interrupting the chain of virus transmission (Song, 2020). Under the socialist market economy and strict epidemic prevention, government intervention can have a significant impact on the hospitality industry. Responding to the public health crisis caused by the COVID, governments around the world are working in different ways to mitigate the impact of the COVID on small businesses, introducing policies to help small businesses deal with short-term financial risks and long-

term business impacts (Tembo, 2020). Alongside the policies issued by the Chinese central government, local governments have announced various COVID-related assistance policies. Our study used Hainan Province as example and focuses on the policies issued for tourism enterprises at the Hainan provincial level.

Prior to the design of data collection tool, we made extensive search and analysis on the COVID-related policies that could have an impact on tourism and hospitality enterprises in Hainan. Government policies during the epidemic can be divided into two main categories: the first part is about the prevention and control of the epidemic; the second is to support Hainan tourism enterprises to tide over the difficulties together during the COVID, which includes six measures: stabilizing enterprise employment, extending the period for social security business, reduction of housing rent, reduction of operating costs, reducing tax costs, and strengthening financial support (*Hainan Provincial People's Government Website, 2020*). We found that the SMEs (Small & Medium Enterprises) got more government support in reducing operating costs and strengthening financial support. For example, measures for employment includes unemployment insurance rebate (30% for large enterprises, 60% for SMEs), postponing social insurance payment business (*Hainan Provincial People's Government Website, 2020*). In terms of reducing operating costs, SMEs can pay the housing provident fund at a discounted rate of 3% for 6 consecutive months (*Hainan Provincial People's Government Network, 2020*); as for financial support, the special re-lending policy issued by the People's Bank of China supports financial institutions to provide preferential interest rate credit (*Hainan Provincial People's Government Website, 2020*); the Hainan

Provincial Government Financing Guarantee Agency bridged SMEs with financial institutions, cancels counter-guarantee requirements, and reduces guarantee fees rate (*Hainan Provincial People's Government Website*, 2020). Moreover, the significant growth in the number of infected cases during the peak of the epidemic caused a lack of hospital beds. There was a need finding hospital extensions and treat infected individuals. Hainan government has cooperated with hotels to introduce paid quarantine rooms, and reduced the accommodation rate for compulsory quarantine guests (Hoang et al., 2021).

Given all the policies, we wonder how effective the government's interventions and policies regarding the COVID recovery impact the resilience of the hotel industry, which is the second research question.

Divergence in Resourcefulness

Society tends to have different attitudes towards different scales of businesses (Teo & Cheong, 2011). It is recognized that factors such as the type of organization and industry sector, the size of the organization its location, and the hotel's management capabilities, innovation can have significant impact on organizational resilience under disasters (Kachali et al., 2012). Therefore, it is necessary to understand the degree of recovery of hotels of different sizes during the COVID. Hotels can be divided into four categories based on their sizes: Small Hotels with 25 rooms or even less, Medium Hotels with 26 to 100 rooms, Large Hotels with 101-300 guest rooms, and Very Large hotels with more than 300 guest rooms (India Ministry of Tourism, 2017). In our study we consider Small Hotels and Medium Hotels as small-scale

hotels and Large Hotels and Very Large hotels as large-scale hotels. The hotels we studied do not include peer-to-peer accommodation (P2P accommodation).

There are limitations in SMEs' development, such as lack of funds, professional management, and new technologies may restrict the sustainable operation of hotels. In terms of funding, large hotels have easier access for loans and they tend to have comprehensive long-term plans to deal with crises (Teo & Cheong, 2011). Therefore, Large-scale hotels' measures to improve resilience tend to be more inclusive and involve more inter-industry collaboration. Meanwhile, Small-scale hotels majorly tend to publish short-term plans and allocate a large proportion of their funds to ensure survival rather than promotion and marketing (Zhu, et al., 2020). In addition, some SMEs are often assessed by banks as having high debt ratios, resulting in incomplete credit information, difficulties in passing the review of financial institutions and obtaining financial support (Teo & Cheong, 2011). Therefore, the lack of appropriate financing channels has become a major obstacle to the development of SMEs (Teo & Cheong, 2011). the outbreak of the COVID has exacerbated this difficulty. In terms of management, hotels setting up crisis management strategies can enhance their resilience (Paton & Johnston, 2021). However, due to a lack of professional management knowledge, many hotels eventually face bankruptcy (Zhu et al., 2020). It is particularly important to understand the recovery status of the accommodation industry, especially Small and Medium Hotels, as the COVID is gradually normalizing (Zhu et al., 2020). In this article, we define the hotel's ability to obtain resources as resourcefulness and we use resourcefulness to reflect social equity. We assume that hotels that have poorer access to resources are in greater

demand for financial and governmental support.

Based on the discussion, we raised our third research question: how could a hotel's resourcefulness impact its performance and resilience during and after the pandemic?

3. Methodology

3.1 Study site

The study was conducted in Hainan province of China. We sampled 10 hotels in Hainan. We choose Hainan for the study due to the following reasons. First, the tourism and hospitality industry are a major economic driver in Hainan but were heavily stuck by the COVID. Many businesses in Hainan Island, including the tourism industry, have been severely affected by the COVID epidemic, leading to economic recession (Liu et al., 2021). In January of 2020, Hainan has witnessed a period of no tourists for a quarter of the time. In mid-to-late February, the COVID epidemic was well controlled, various industries on Hainan Island began to resume work and production and tourism activities began to recover in an orderly manner (Liu et al., 2021). Second, Hainan plans to develop into an international tourist center, Free Trade Port (Liu, C., 2020). Under the premise of effective prevention and control of foreign-related security risks and hazards, Hainan has implemented a more convenient immigration management policy (Liu, Y., 2020). Hotel industry as an important support sector of tourism island and free trade port, hotel resilience is very important. Therefore, Hainan is worthwhile to be studied.

3.2 Participants

We assumed that personnel at the managers' level and above can act behalf of the hotel. We contacted 30 hotels and 10 managers from 10 different hotels participated in the project. 9 managers completed the full survey and interview. The study was approved by the Institutional Review Board in the Appendix 3. Information of the interviewed managers was shown in Table 1.

Table 1. Demographics of the Sample (n=10)

NO. Participants	Gender	Position Level	Department	Hotel Star*	Hotel Size
1	Female	Human resources manager	Human Resource	Five	Large Hotel
2	Male	Hiring Manager	Human Resource	Five	Very Large hotel
3	Female	Human resources manager	Human Resource	Five	Very Large hotel
4	Female	Human resources manager	Human Resource	Five	Large Hotel
5	Male	Executive Chef	Food & Beverage	Five	Very Large hotel
6	Female	Director of Human Resources	Human Resource	Four	Large Hotel
7	Female	Director of Human Resources	Human Resource	Five	Very Large hotel
8	Male	Human resources manager	Human Resource	Five	Very Large hotel
9	Male	General manager			Medium Hotel
10	Male	General manager			Small Hotel

* Tourist hotel stars are divided into five levels, namely, one star, two-star, three-star Four-star, and five-star (including platinum five-star) (Classification & Accreditation, 2011).

3.3 Research design

We adopted a convergent parallel design approach, which is a type of mixed methods research that combines data gathering and analysis from quantitative and qualitative studies (Creswell & Plano Clark, 2011). We employed concurrent timing in this design to execute the quantitative and qualitative strands at the same time in the research process, prioritize the approaches equally, keep the strands independent during analysis, and mix the results during the researcher's overall interpretation of the data (Creswell & Plano Clark, 2011). The content of the questionnaire and interviews were presented in Chinese. Questionnaires were distributed to obtain quantitative data of the managers' and qualitative data was collected through interviews. In the discussion part, we integrated quantitative and qualitative data and use qualitative findings to explain the problems raised above through emergent hotel managers' experiences. The independent variables are measures taken by hotels during the COVID from human resources, marketing, finance, safety & health perspectives. The moderating factor, social equity was translated into the divergent government support different sizes of hotels received and hotels' resourcefulness. The dependent variable is hotel performance of financing, hotel image & reputation, customer loyalty, and health & safety, which operationalized hotel resilience.

Questionnaire design

Our questionnaire was edited using the "Sojump" online questionnaire platform and was distributed through online social media platforms. The online survey helped to protect the privacy of the respondents and overcome time and location constraints. The questionnaire

consists of five parts. The first part explored measures taken by hotels during the COVID. Based on literature review, this research summarized measures taken by hotels during the COVID, which were categorized into four types: human resources (e.g., Hao et al., 2020a; Alonso-Almeida & Bremser, 2013), marketing (e.g., Mastrogiacomo, 2020; Kim et al., 2019), finance (e.g., Jomo & Chowdhury, 2020; Melián-alzola et al., 2020) and safety & health (e.g., Hao et al., 2020a). Individual questions were designed accordingly. The second part evaluated the effectiveness of government policy support. We listed introduced policies during the COVID relating to tourism and hospitality industry referring to the documents issued by the People's Government of Hainan Province (2020). The third part explored the resourcefulness of hotels using management and innovation these indicators (e.g., Hao et al., 2020). The fourth part assessed hotel performance. We used the combination of elastic index and inelastic index to measure hotel performance and used financing from Gearing ratio, cash flow, profitability perspectives, hotel image & reputation, customer loyalty, and health & safety these four indicators (Sobaih et al., 2021; Mastrogiacomo, 2020; Qoura et al., 2013). The fifth part explored the profiles of hotels and respondents. We conducted a preliminary survey of the questionnaire. Two hotel managers from other provinces of China and two academics revised the questionnaire. Resilient recovery is a comprehensive process and we could not cover all aspects. Therefore, this paper categorized predictors through the listed measures.

We used the Likert Scales, which were commonly used to ask respondents to rate a collection of attitude statements using scales with common categories such as strongly agree, agree,

neutral, disagree, and strongly disagree, to measure the manager's attitude towards the hotel's resilience in each part and we believed that the manager's answer represents the hotel's performance (Van Der Linden, 2010).

Interview design

In-depth interviews were conducted among hotel managers with the purpose to further understand the unexplored measures possibly taken by the surveyed hotels and its impact on the hotels. The interview questions showed in the Appendix2. Each interview session lasts about 30 minutes. The interview was divided into four parts: 1) Whether the hotel had taken measures other than those not mentioned in the questionnaire; 2) the respondents' views on the government's intervention policies during the epidemic (whether these helped hotels to operate under pressure and overcome difficulties); 3) the overall evaluation of hotel total performance during the COVID and the hotel's resourcefulness they observed; 4) discussion with interviewees about hotel's development trends and opportunities in the post-epidemic era. With the interview, we intended to understand from the demand side of government's policy preference in supporting hospitality industry and different hotels' ability to obtain resources for business recovery during the COVID.

4. Results

4.1 Quantitative

Table 2. The constructs' descriptive statistics and measurement properties.

Item	Mean	SD	Cronbach's	Pearson	Sig. (2-
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			Alpha	Correlation with DV	tailed)
Human Resource	4.4	0.74	0.631	0.446	0.197
Ordinary employees enjoy minimum living allowance leave (annual leave) / unpaid leave taken by the management class.	4.7	0.48			
Freeze recruitment and salary adjustment.	4.0	1.41			
Flexible scheduling, reducing the staff's daily working hours per week.	4.5	0.53			
Reduce the number of trainees.	4.1	0.88			
Replacing the job duties for other departments (e.g., buffet restaurant, guest relation) (If key people were unavailable, there are always others who could fill their role) .	4.7	0.48			
Grass-roots employees are on duty at the minimum to ensure the most basic operations; the management class takes more responsibilities.	4.3	0.67			
Finance	3.6	0.83	0.823	0.517	0.126
Postpone the repayment of accounts payable (for example, postpone payment to suppliers to ensure cash flow).	3.6	0.97			
Supplier or service provider fee reduction or discount.	3.8	1.03			
System service fee reduction or exemption for the hotel group.	3.8	0.92			
Postpone software system upgrades or maintenance without affecting basic operations and the safety of guests and employees.	3.6	0.84			
Reduce the maintenance of buildings and other fixed assets without affecting basic operations and the safety of guests and employees.	3.7	0.82			
Reduce borrowing costs (e.g. processing fee for loan).	3.5	0.71			
Support financial institutions to issue bonds to finance SME loans.	3.5	0.53			
Marketing	4.6	0.70	0.821	0.804	0.005
Shifting distribution to the direct channel	4.4	0.70			
New pricing strategies for rooms and dishes.	4.4	0.70			

Flexible cancellation policies.	4.5	0.71			
Improving services and safety, especially integrating the concepts of epidemic prevention and wellbeing into products.	4.7	0.67			
Launching a variety of new products and preferential series.	4.8	0.42			
Limited, gradual opening of restaurants, swimming pools and gyms or other facilities.	4.4	1.26			
Continue to pay close attention to guest opinions and keep in close contact with guests through social media, official website, and email, etc.	4.8	0.42			
Health & Safety	4.7	0.49	0.918	0.506	0.135
Promote non-contact services (such as quarantined meals, wearing masks throughout the process, and using new technology that reduces contact between guests and employees-service robots).	4.8	0.42			
Establish an epidemic crisis management team in the first place, and always maintain a high level of vigilance.	4.7	0.48			
Regularly train employees on epidemic prevention knowledge.	4.8	0.42			
The official website updates the latest news of the epidemic.	4.6	0.70			
Upgrade hotel hygiene and safety standards.	4.8	0.42			
Resourcefulness	4.6	0.70	0.782		
Our organization maintains enough resources to absorb some unexpected change.	4.5	0.85			
We can quickly respond to COVID-19	4.8	0.63			
There would be good leadership from within our organization if we were struck by COVID-19.	4.9	0.32			
We can innovate the management system in response to the COVID-19 (for example, five days of unpaid leave can be exchanged for one day of annual leave).	4.5	0.85			
We create some creative activities with the combination of festivals to make profits.	4.6	0.70			
We start to use new technology to offer better service to customers.	4.5	0.85			
Government policy	4.1	0.44	0.250		

The government's aid policy is timely.	4.9	0.32
The government's policy helped our hotel recover during the COVID-19.	4.9	0.32
The recovery of our hotel benefited from the support of government policies.	4.8	0.42
The hotel was not hindered in the process of applying for government assistance.	1.6	0.70
Performance	4.6	0.39
Asset-liability ratio since COVID-19.	2.9	1.60
Liquidity (cash flow) since COVID 19.	3.7	0.67
Organization's level of profitability since COVID 19.	4.1	0.74
Employees are keen to give a positive image of the hotel since COVID-19.	4.9	0.32
The hotel management is interested in improving hotel's image within internal customers since COVID-19.	4.8	0.42
Credibility is one of the hotel's features since COVID-19.	5.0	0.00
I upset of any negative comment directed to the hotel since COVID-19.	3.8	1.48
Previous customers wish to continue/stay at our hotel since COVID-19.	4.9	0.32
Customers would be willing to recommend that hotel to my friends since COVID-19.	4.9	0.32
Customers are satisfied with our service since COVID-19.	5.0	0.00
Customers recognize our hotel's brand since COVID-19.	5.0	0.00
Strict hygiene standards since COVID-19.	5.0	0.00
The hotel staff have professional knowledge of epidemic prevention since COVID-19.	5.0	0.00
The sanitary condition of our hotel can be well monitored since COVID-19.	5.0	0.00
The hotel has enough disinfection products since COVID-19.	5.0	0.00

Note: Dependent Variable: Hotel performance

Cronbach Alpha was used to measure data reliability. And the value was 0.851 which meant that the reliability was acceptable. Due to the small sample size, factor analysis was not

performed. Our questionnaire design and major constructs were formed based on extensive analysis on practical COVID related policies. With the Cronbach Alphas of the four dimensions were all greater than 0.6 (table 2), we calculated the summated scale for each dimension for the following multivariate analysis. Pearson correlation test was conducted to examine the associations between IVs and DV.

The independent variable has four scales: human resources, marketing, finance, and safety & health. Marketing was positively associated with hotel performance, which was also found to be the strongest predictor of hotel performance (correlation=0.804, $p < 0.05$). Unexpectedly, there was no significant relationship between hotel performance and the other three variables. While among the cases in this study, human resource (correlation=0.446, $p = 0.197$), finance (correlation=0.517, $p = 0.126$) and health and safety (correlation=0.506, $p = 0.135$) were positively associate with hotel performance. Namely, the measures of human resource, finance, and health and safety fields had positive effects on hotel resilience. The results of the analysis were presented in table 2. Additionally, we found that the marketing had correlation with health and safety from table 3 (correlation=0.717, $p = 0.020$) This meant our interviewees considered that marketing is positively related to hotel’s health and safety section.

Table 3. Correlations

		Human Resource	Financ e	Marketi ng	Health & Safety	Hotel Performan ce
Human Resource	Pearson Correlation	1	.438	.532	.357	.446
	Sig. (2-tailed)		.205	.114	.312	.197
	N	10	10	10	10	10

Finance	Pearson	.438	1	.153	-.068	.517
	Correlation					
	Sig. (2-tailed)	.205		.672	.851	.126
	N	10	10	10	10	10
Marketing	Pearson	.532	.153	1	.717*	.804**
	Correlation					
	Sig. (2-tailed)	.114	.672		.020	.005
	N	10	10	10	10	10
Health & Safety	Pearson	.357	-.068	.717*	1	.506
	Correlation					
	Sig. (2-tailed)	.312	.851	.020		.135
	N	10	10	10	10	10
Hotel Performance	Pearson	.446	.517	.804**	.506	1
	Correlation					
	Sig. (2-tailed)	.197	.126	.005	.135	
	N	10	10	10	10	10

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

4.2 Qualitative

4.2.1 Governmental support. The government's help to the hotel industry during the epidemic was mainly focused on policy, financial and material support (Tembo, 2020). According to the interview results, all hotels generally agreed that the government's help was helpful. The policies reducing hotels' labor costs, like the relief of social security tax, could help hotels increase cash flow, maintain the hotel's financial liquidity, and enhance hotel profitability and resilience (Hao et al., 2020b). 9 out of the 10 interviewed hotels agreed that the policies on social security tax reduction are quite helpful.

“For our employees, there are also some reductions and exemptions of social security. The provident fund is also a proportion of reduction which greatly help us and reduce our pressure.” ---by No.6

While for one of the interviewed hotels, due to its characteristics of self-employment and small scale, the hotel only purchased commercial insurance for employees instead of paying social security and provident funds. Therefore, the manager of the hotel did not consider that the government's policies on social security reduction, exemption, and deferred payment have an obvious effect.

“Our hotel is semi-individual, and I buy insurance for regular employees. I did not pay social security and provident funds for my employees because we are not a big company.” ----by No.10

On the other hand, the NO.10 hotel stated that the policy that the government helped hotels to speed up a series of opening procedures, which is very helpful for small-scale hotels opening in the post-epidemic era.

“The good thing is that the government will be very supportive of getting a license now. You can get a business license and start into operation first, and complete preparing the materials within a given time later, the government will check again by that time. I haven't seen this the inland before.” ----by No.10

Besides policy support, the government also provided some support on the COVID prevention instructions and materials like masks and hand sanitizer. The government also

provided training courses for hotels on health and safety (mainly for the COVID), as well as legal and marketing strategies perspectives. This greatly improved the soft skills of hotel staff and helped hotels develop sustainably.

“Some early support, for example, the government gave masks and hand sanitizer. The government also gives us regular training on how we should treat tourists coming from medium to high risk.” ----by No.9

Additionally, the duty-free policy had also played a role in helping hotels recover.

“This (duty-free policy) will increase the number of customers who come to Hainan to a certain extent, which will attract a certain degree of attraction, but it will not have a great impact on the target customer group of our hotel, because the positioning of our hotel is luxury.”----by No.2

4.2.2 Resourcefulness. From the perspective of hotel management ability, as stated by Hao et al. (2020), to increase the efficacy of disaster management skills in reacting to disasters, hotels must build a responsive and effective standard operating procedure (SOP). And as to response to the pandemic, an expert consultation mechanism ought to be built (Sun et al., 2020). In general, the respondents agreed that a professional management team is very important, and the team needed to have the ability to respond quickly in the event of a crisis.

“I think we have an excellent management team, who responded very quickly to the crisis in the early stage of the epidemic, made good emergency plans, and avoided a lot of losses.”----
by No.2

Keywords like “hotel reputation”, “hotel group” occurred quite frequently, which compared to our assumption of the relationship between hotel size and its’ resourcefulness when going through a recovery.

“Including larger hotel groups, the resources he can provide to the hotel are also more abundant, and these resources are very helpful to the hotel.” ----by No.8

“Because our hotel is a luxury hotel, guests have always trusted our brand, and they even choose to stay in the hotel for more than a month, even during the epidemic. The hotel group also gave us a lot of help during this period, reducing a lot of expenses, staff training, etc.”---
-by No.5

4.2.3 Measures taken

Safety and health. Safety and health became an important theme in all interviews. Although these measures of safety and hygiene were not new in the hotel industry, a review of the measures and projects in this part would allow them to better improve their services. The measures taken by hotels in terms of health and safety mainly included two aspects: protecting the accommodation environment of customers and providing non-contact services

through technological means to improve service safety. “Reducing safety hazards”, “temperature monitoring”, “health code check”, “offer alcohol and mask at the front desk” “safe distance between dining tables”, etc. all illustrated the hygiene measures in most hotels.

“After arriving at the store, registration, temperature measurement, and disinfection will be done. Guests are also provided with free masks.” ----by No.6

“For example, in restaurants, guests expect waiters to wear gloves and masks to serve, and to maintain a table distance between dining guests.” ----by No.5

Few guests would have higher requirements for hotel hygiene and safety during the epidemic, and some guests even complaint about the hotel’s high standard of hygiene requirements.

“On the contrary, some guests are disgusted by the strict hygiene and safety standards. For example, some guests responded: other people don’t need to wear masks in other places in Hainan, why do you still need to wear masks in hotels.”----by No.8

Human resources. High-performing personnel were regarded as a great asset to the firm during a crisis, once the disaster subsides, these employees would contribute to the company's performance recovery (Hao et al., 2020). Therefore, hotels should strive to retain staff and coordinate efforts to control costs during the pandemic, in which human resources departments played an important role. Some hotels had taken measures to adjust employee

holiday arrangements, such as allowing employees to take annual leave in advance, withdrawing compensatory leave, encouraging management to withdraw unpaid leave, etc. When the situation came to a certain stage, hotels might freeze recruitment.

“At first, we will let everyone use the holidays in the record, then the second stage is that when the vacation has been used up, we ask the employees to accrue the annual leave or withhold overtime. And then the third stage comes to some epidemic leave. This is probably a three-stage vacation for employees. And for the hotel, when it has entered the second stage like to withhold the holidays, we will freeze the recruitment and deferred entry.”----by No.7

While with the fewer employees at work, the pressure and workload might increase for each of the staff. As a result, many hotels had arranged cross-departmental support, like the backcourt staff supporting the front office, or taking the temperature measurement work.

“The phenomenon of employee turnover is more serious during the COVID-19 pandemic, then the employees in the hotel will take on more work and more responsibilities...For example, we have the backcourt department to support the front office.”----by No.3

*“Then, internal support will be launched. For example, employees from some other departments go to the security department to help with screening the QR code and so on.” ---
-by No.7*

According to the interview, most hotels didn't have a special layoff, they tended to maintain the employees.

“During this holiday period uh we still follow epidemic prevention requirements and labor laws to pay this salary. We didn't carry out this layoff. We were doing a better job in the guarantee of employees.”----by No.6

Marketing. During the pandemic, hotels had come up with a lot of innovative measures to recover, mainly focusing on marketing. And disruptive innovation, which referred to a big development that significantly transforms an industry, had become popular in the hospitality industry (Walzog, 2020). Product and service innovations, as well as modifications to operational procedures and business models, were all examples of disruptive innovation. For example, some hotels proposed marketing strategies like opening takeaway services and offering special discounts (Walzog, 2020).

“The hotel strictly abides by the relevant policies issued by the government during the epidemic period to ensure the safety of guests. We also provide free masks, disinfected items, and the staff and guests must wear masks, etc.” ----by No.2

Additionally, some hotels increased direct sales to ensure basic income, proposed new cancellation policies such as full refunds for high-risk area guests, provided souvenirs or banquets as part of bundling sales for the guests, and so on.

*“After the epidemic, due to the state's control over group tourists, we sold the packages originally sold to group guests in the form of direct sales to ensure the hotel's basic income.”-
---by No.8*

*“We also opened the takeaway service during the epidemic, and we also launched many packages, such as guest rooms cooperating with the F&B department, which sold quite well. ...we will provide full refunds for guests from medium and high-risk areas.”----by No.3
(NO.3)*

Research questions underlying this article were as following: whether hotel performance can positively reflect hotel resilience, how effective the government's intervention policies are against the COVID, and how will a hotel's resourcefulness impact its performance. According to the results, respondents who rated the hotel's overall performance with a high level indicated that the hotel had taken proactive and timely actions to improve hotel resilience and respond to the crisis. Moreover, the marketing efforts had a significant impact on hotel performance. The most significant reason for this was that most of the marketing strategies were specifically designated for some degree of innovation based on the epidemic situation, which was seen by the survey respondents as being strongly linked to good hotel performance. Respondents who operate Large Hotels and Very Large hotels indicated that the government had provided strong policy support for the hotel industry during the epidemic, especially in terms of social security reduction and exemption, and stabilization of corporate employment,

which greatly reduced the operating pressure on the hotel in the early stage of the epidemic and reduced operating costs. Small-scales hotels enjoyed less direct benefits from governmental support. The rapid recovery of the hotel could be inseparable from the hotel's efforts and its advantages such as setting up professional crisis management teams, obtaining resources from the group behind hotels, implementing innovative measures to recover. When it comes to the changes and trends in the development of the hotel industry in the post-epidemic era, the respondents put forward various predictions and ideas, such as new technology applications, digital transformation, more flexible budget, and employee workload adjustment (Dai et al., 2021). One of the answers mentioned that in the future, some tourists would like to choose more private travel areas traveling. Moreover, hotels tried to cooperate more with influencers online to promote their business.

5. Discussion

This paper aims to provide a list of measures taken by hotels in China during the COVID and examine how hotels recovered during the pandemic. We explored hotels' own ability to obtain resources and how government's policies affected the hotel's recovery during the epidemic.

The hotel industry has been faced with both opportunities and challenges under the impact of the COVID. Even if there was no large-scale outbreak in China now, outbreaks in other regions would have an impact on guests coming to Hainan. Strict government control measures have also led to difficulties in hotel operations and even closures. However, such

restrictions became part of the reason for the rapid recovery of the hotel businesses because it secured a safer environment for the domestic travelers in China (Mu, 2020). More importantly, hotels got substantial support from the government in terms of tax reduction, and medical material donations. Industrial organizations such as the Sanya Federation of Tourism Associations have provided help to hotels (e.g., offering masks). A strong willingness to adopt new technology in hotels is commonly observed among hoteliers. However, high-ended luxury hotels, prefer warm service (interact with human employees). Real "human care, communication, emotions, and sentiments" are all part of the hospitality sector (Godara, 2022). To stay successful, hotels must continue to strengthen the "human interaction", which is at the heart of hospitality. Therefore, how to strike the balance between technology application and human employees' service and guarantee the quality of service while saving costs to the greatest extent becomes important.

We figured some hotels volunteered to become quarantine sites and considered this to be an act of carrying social responsibility. Some Hotel groups encouraged franchised hotels in China, Wuhan city to offer free accommodation, meals, and transportation for the front-line medical staff at the beginning of 2020 (Hao et al., 2020a). There are benefits and drawbacks of being quarantine hotels. Considering advantages, 1) the hotel assumes a sense of social responsibility and contributes (Hao et al., 2020a). 2) A relatively stable clientele generates revenue for the hotel during the epidemic. As for disadvantages, 1) quarantined hotels can have a negative impact on brand image and consumer psychology. Some tourists are reluctant to stay in hotels that have been used as quarantine sites (Feng, 2021). 2) Conflicts between

hotels and quarantine patients are also ongoing (Feng, 2021). Quarantine individuals are randomly assigned and have different psychological expectations of hotel prices.

Small-scale hotels are more reliant on government support and assistance in times of crisis. From our study, large-scale hotels have stronger ability to obtain resources than small-scale hotels. SMEs are the driving force of China's national economy and social development (Zhu, et al., 2020). SMEs are critical to stabilize economic growth and stabilize employment (Zhu, et al., 2020). China should firmly support the development of SMEs. We believe that the government can better help hotels survive in the post-epidemic era from the following aspects: provide more liquidity support for small and medium-sized hotels. The major support from the government on the hotel industry in Hainan is that governmental policies have helped increase the hotel's cash flow and relieved the hotel's operating pressure at the early stage of the epidemic. Cash flow is important for the survival of enterprises (Hao et al., 2020a). Small-scale hotels are more vulnerable during the epidemic and should be given more liquidity support. We suggest the hotel business to strengthen their innovation ability. For example, they could reform multi-channel platforms. Some hotels opened takeaway delivery services after the COVID. Consumer tastes and spending habits have shifted as a result of the COVID. Consumers' pay more attention on hygiene and wellness. As a result, hotels must analyze client wants and provide cutting-edge solutions. For example, the new hotel offering should enable customers to maintain a healthy and balanced lifestyle, exercise casually, work efficiently, ensure social distance, and reduce close contact.

6. Limitations and Future Directions

The limitations of this study mainly lie in rarity of the samples. Our research object is the hotels in Hainan Province. We asked hotel managers to complete our research and one hotel manager represents one hotel, which made it much more difficult to obtain a sample. In future studies, the scope of the study can be expanded to find more suitable samples. Moreover, this research found that measures from marketing and health & safety perspective have significant influence on hotel performance, which can be studied in depth. Multidimensional scales also can be designed to measure resilience.

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Appendix 1:

THEMES	CODE	EXAMPLE QUOTE
Potential benefits and drawbacks (challenges)	Repeated the COVID	<p>Challenges faced by hotels under repeated the COVID:</p> <p>The COVID break out 2019 end-2020 beginning, a state of shutdown and production suspension; The COVID outbreaks in other parts of China will also affect business in Hainan hotels; The hotel business has been affected badly; No guest, revenue drop with lower pricing; Huge stress on staff labor cost; Number of customers drop, less staff with more work and how to arrange work reasonably; High turnover rate; The approval of government support for social security takes a long time;</p> <p>Hainan hotels recover more quickly than mainland hotels:</p> <p>Chinese tourists who cannot go abroad come to Sanya and the price is lower; Hainan has become the first choice to go shopping and more customers come here; More local guests, and VFR;</p>
Safety and health	Safety and health standards during the COVID	<p>Upgraded their hygiene and safety standards such as introducing a “Commitment to clean”</p> <p>Few guests ask for higher hygiene requirements; Some guests complained about strict hygiene and safety standards; Follow government policy, quarantine policies, temperature monitoring (some hotels use robots), health code check, offer alcohol and masks at the front desk; Staff wear masks and gloves; Distance between dining guests;</p>
Government	Government support including policies, material, and other support	<p>Policies against the COVID:</p> <p>Hotels got huge help from the government; Huge help, reduced tax, social security, provident fund; A big help in finance, relief social security tax, reducing labor costs; Regular care about the hotel, policies encourage consumption;</p> <p>Duty-free policy:</p> <p>The new policy of duty-free truly attracts more guests to Hainan, but has less impact on hotels positioning high-end luxury;</p> <p>Other support:</p> <p>The COVID prevention instructions, and provide masks and hand sanitizer;</p>

		<p>Training on policy, social security; Support employees' self-improvement;</p>
Resourcefulness	Advantages (including whether these advantages relate to management, innovation, hotel scale, etc.)	<p>Set up a professional crisis management team; Crisis management team quick response to the COVID; emergency plans and remodified; Hotel groups can offer more resources to hotels which can help them better recover (reduce expense, reduce training cost); The better the hotel management group, the more advanced the hotel, the bigger the hotel, having excellent employees greatly help a hotel to recover; hotel location is also important; Leadership; Hotel reputation; Better training system; Hotel employees are active to recover; Small-scale hotels were undertaken more serious hit;</p>
Innovation	Innovative measures taken during the epidemic	<p>Products package (like bundling accommodation and catering), redesign, and expand new channels to sale, e.g., sale of moon cakes, souvenirs, and banquet; Increase direct sales to ensure basic income; Takeaway and delivery service (e.g., "Rural goods entering the city"); Cancellation policies (e.g., full refunds for high-risk area guests); Robots' application can decrease labor costs; New discount (e.g., discount for frequent guests); Provide red masks to reduce tension; Renovation and upgrade of hotel interior facilities during the epidemic;</p>
Changes and trends	Changes and trends after the COVID	<p>Trend: New technology application; Some tourists prefer more private traveling living areas; Cooperate with self-media influencers and promote hotels; Retaliatory consumption when the COVID situation eases; Meetings and conventions, business trips, conferences begin to increase when the epidemic situation eases; Change: Do not be too optimistic when predicting; More flexible in budget and employee workload adjustment;</p>
Quarantine	Cooperation with the government or	<p>The epidemic situation has improved and it is no longer a quarantined hotel Due to situation, the severity of the epidemic in Hainan, fewer hotels are quarantine hotel;</p>

	quarantine areas for foreign teachers and students in schools	Normal business brings higher revenue than that of quarantine hotel; Quarantine room for school staff and students;
Human resource	Recovery measures taken by the human resource department	Annual leave, compensatory leave, unpaid leave; most staff on holiday; Use up holiday in a record; Freeze recruitment and dismissal of interns; Backcourt staffs support the front office; Decrease labor costs and operating costs; Hotels have their operating mechanism with levels; No special layoff for the COVID; The COVID caused a little impact on permanent employees;
Warm service	Preference for luxury hotel guests	Interaction with guests is important; Guests choosing high-end luxury hotels prefer human service; Larger hotels are more inclined to human service;
Other organizations support	Other organizations support	Organizations like the Sanya Federation of Tourism Associations provide help (e.g., offering masks)

*Third-round code keyword group

Appendix 2:

Interview Questions	Probing questions
Has the hotel taken any innovative measures to deal with the epidemic except measures mentioned in the questionnaire?	
The COVID-19 has made customers pay more attention to travel health and safety. Have the hotel had corresponding measures to improve service health and safety?	Have you received any requests or enquiries from guests asking about hygiene?
Do you think that the government's rescue policy in response to the epidemic has been very helpful to the hotel's recovery?	Which policy do you think will help the hotel the most?
Has your hotel been treated as an isolated hotel during the epidemic?	
Hainan Island's duty-free shopping quota has been increased to 100,000 yuan per person per year. would this policy attract more guests to Hainan for vacation and stay in hotels?	
What are the short-term economic impacts of the pandemic on your hosting activity?	
Have your hotel had a forecast of the cash flow?	
What advantages do you think your hotel has in responding to the COVID-19 epidemic?	Are these advantages related to factors such as the size and star rating of the hotel?
Do you think the hotel has a professional management team that will effectively help the hotel overcome the difficulties?	Tell me more about how the team lead hotel recover during the COVID-19?
What innovations did your hotel have in service methods during the epidemic? For example, use service robots to reduce contact between guests and employees, or is it more inclined to provide human services?	
In your opinion, how has the pandemic changed	Any long-term threats or even opportunities emerging from this situation?

Appendix 3: Institutional Review Board



EXEMPTION GRANTED

[Yu-Hua Xu](#)
[HAITC-Community Resources & Development \(CRD\)](#)

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Yu-Hua.Xu@asu.edu

Dear [Yu-Hua Xu](#):

On 12/13/2021 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	A roadmap of hotel resilience under the impact of the COVID-19 epidemic
Investigator:	Yu-Hua Xu
IRB ID:	STUDY00015022
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none">• CITI Certificate_Yu-Hua XU.pdf, Category: Other;• citi Completion Report Shuxu Liu.pdf, Category: Other;• citi Completion Report_Chang Liu.pdf, Category: Other;• Interview guide.pdf, Category: Other;• IRB Social Behavioral_.docx, Category: IRB Protocol;• List of investigators.pdf, Category: Other;• Model Short Consent.pdf, Category: Consent Form;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 12/13/2021.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

If any changes are made to the study, the IRB must be notified at research.integrity@asu.edu to determine if additional reviews/approvals are required. Changes may include but not limited to revisions to data collection, survey and/or interview questions, and vulnerable populations, etc.

REMINDER - All in-person interactions with human subjects require the completion of the ASU Daily Health Check by the ASU members prior to the interaction and the use of face coverings by researchers, research teams and research participants during the interaction. These requirements will minimize risk, protect health and support a safe research environment. These requirements apply both on- and off-campus.

The above change is effective as of July 29th 2021 until further notice and replaces all previously published guidance. Thank you for your continued commitment to ensuring a healthy and productive ASU community.

Sincerely,

IRB Administrator

cc: Shuxu Liu
Chang Liu