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Peng, Junlin; Terry

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Tourism Organizational Resilience to the Covid-19 Crisis: Evidence from Sichuan Province, China

Junlin Peng^{1,*} and Terry²

¹School of Tourism, Sichuan University, Chengdu 610064, People's Republic of China

²Chow Yei Ching School of Graduate Studies, City University of Hong Kong, Hong Kong 999077 , People's Republic of China

Abstract. Tourism is a significant contributor to economic growth in many countries, and especially in developing countries. However, the outbreak of the Covid-19 has resulted in a global economic crisis that has significantly impacted global tourism. As a result, the ability of tourism businesses to survive and recover in this turbulent business environment, that is, their resilience has attracted greater research attention. While there has been some researches on the resilience of tourism enterprises during the COVID-19 pandemic, very few empirical studies have focused on the impact of leadership on organizational resilience. Therefore, to empirically explore the influence mechanism of transformational leadership on tourism organizational resilience during the pandemic, a questionnaire was conducted on 302 tourism business owners and managers in Sichuan Province, China, in October 2022. The analysis revealed that transformational leadership positively influenced organizational resilience. The three dimensions group voice climate, organizational culture and organizational learning partially mediated the relationship between transformational leadership and organizational resilience. Perceived environmental uncertainty plays a positive moderating role in the relationship between transformational leadership, organizational culture and organizational learning. Several suggestions are given to enhance the resilience of tourism enterprises and accelerate industry recovery. **Keywords:** Covid-19, Enterprise resource management, Organizational resilience, Tourism resilience, Transformational leadership.

1 Introduction

The tourism sector is an important contributor to local, regional, and national economic growth, provides significant employment, and opens new markets [1, 2]. However, tourism is a complex system because of its economic market links and resource and people flows [3]; therefore, the impacts of crisis and shocks can spread rapidly in novel and unexpected ways. While dealing with crises is not new for the tourism industry, recent studies have suggested that there is a need for a broader integration of crisis and disaster management principles in destination management plans to enhance resilience in tourist destinations [4]. Because resilience theory explains how individuals and organisations can effectively respond to negative impacts, its application could be useful in better understanding how tourism industry enterprises could effectively respond and adapt to increasing global disturbances [5].

*e-mail: pengjunlin@stu.scu.edu.cn

In December 2022, China loosen its long-standing control measures of Covid-19 pandemic, which led to higher air fares to popular tourist cities such as Sanya, but was quickly dampened by the rapidly rising number of infected people. Based on the experience of Singapore and Japan, the tertiary industry was going to face a significant impact in the first quarter after deregulation. While it remains to be seen how this will develop in China, there is still a great deal of uncertainty for China's tourism industry at this stage. Managers of tourism enterprises need to consider how sudden policy changes will affect the tourism market, which brings great challenges and obstacles to the business activities of tourism enterprises. How to quickly adjust their business strategies to adapt to the ever-changing external environment is an important issue for enterprise managers to consider.

Although researches have focused on the resilience of tourism enterprises during the COVID-19 pandemic [6–8], very few researches have focused on the impact of leadership on organizational resilience [9]. Team leaders play a leading role in team activities and their leadership styles have an important impact on the shaping of team resilience. Among various leadership styles, transformational leadership is considered to be particularly closely related to team resilience due to its characteristics of focusing on emotional changes of subordinates, emphasizing spiritual appeal, and enabling team members to correctly understand and cope with crises through vision expression and individualized care [10].

The impact of the COVID-19 pandemic on Chinese tourism is still very apparent in 2022. Although China's industry has been recovering, China's industrial GDP figures indicate that tourism is recovering more slowly than the other sectors. Therefore, it is necessary to make an in-depth analysis of how leadership affects the resilience of tourism organization from the perspective of managers, which will not only help managers better understand their leadership style, but also help tourism organizations better adapt to the uncertain external environment. Based on a questionnaire completed by 302 tourism organizations in Sichuan Province, China, this paper explored how transformational leadership affecting the resilience of tourism organization during the COVID-19 pandemic.

2 Literature Review

2.1 Resilience Theory

Holling [11] defined resilience as the ability of a system to absorb disturbances and maintain its function, structure, feedback and other social ecology without any qualitative changes. Later, scholars in sociology, economics, management and other fields began to pay greater research attention to the study of resilience and elastic force. One view that arose was anti-risk, which defined resilience as the elastic ability of an organisation to deal with external pressure and emphasized a dynamic ability to adapt, process control, and learn from a crisis [12]. A second view was the recovery view, which saw resilience as the ability to rapidly recover basic organisational functions, efficiency, and sustainable operational ability after the major functions had been seriously affected by an unpredictable crisis and involved both returning to the original state and transforming and upgrading to a new state to adapt to new requirements and situations [13]. A third view encompassed comprehensive anti-risk and recovery resilience at the same time and emphasized a resilience to change in the external environment and a rapid recovery resilience after a crisis [14, 15]. The resilience referred to in this study was focused more on this third view.

2.2 Organizational Resilience

A resilient organisation or community can maintain and adapt its essential structure, identity, and functioning in the face of crisis and change. Adger [16] believed that organizational

resilience was the ability of an organisation to smoothly recover to its previous state after a crisis. Some scholars believe that companies do not necessarily have to return to the same state after a disaster as once in an alternative state, returning to the earlier state can be difficult or impossible [17]. Resilience is when organizations respond to crises by adjusting their business scopes, operating modes or scales. Longstaff [18] divided organizational resilience into negative and positive resilience, with negative resilience referring to a return to the original, established level, and positive resilience referring to deliberate efforts to make the organisation better able to cope with the unexpected. In this sense, positive resilience sees a crisis as an opportunity for breakthroughs or developments.

2.3 Transformational Leadership

Transformational leadership were first proposed by Burns [19]. According to his research, transformational leaders are those who can influence their followers by setting corporate goals and helping employees improve their confidence in work. Transformational leaders use clear values, ideal and belief, to stimulate employees' internal potential and motivation, establish harmonious relationship of mutual trust, so as to help employees to put all energy into work and achieve the organization's goals and expectations.

Leithwood [20] extended the use of transformational leadership to the organizational environment, and pointed out that transformational leadership can help build a bright and hopeful blueprint for subordinates, giving priority to the collective interests. Gupta et al [21] added and expanded the meaning of transformational leadership. In general, under the role of transformational leadership, the team can cope with adversity more calmly and make effective adjustments to recover from setbacks and failures as soon as possible.

3 Hypothesis Development

As a new leadership style, transformational leadership can create a vision to motivate subordinates, optimize the allocation of enterprise resources, and improve the survival and resilience of enterprises [19], which is considered to be an effective leadership method for organisations to cope with external uncertainties. For organisations in an uncertain environment, transformational leadership requires actively adapting to a rapidly changing environment and fierce competition externally and rapidly adjusting strategies internally. Therefore, the connotation and characteristics of transformational leadership provide a possible path for organisations to enhance their resilience. Specifically, the promotion of organizational resilience by leadership can be achieved through the dimensions of learning, operation, and environment of the organisation [22]. At the learning level, it can exert the subjective initiative of senior managers guide enterprises to discover changes and crises in the market, thereby enhancing resilience cognitively. At the operation level, it promotes senior management to actively identify opportunities, lead enterprises to adjust strategies in a timely and efficient manner, and enhance resilience in action. At the environment level, it can keenly perceive changes in external situations, and clarify the path for strategic planning in view of the uncertain environmental characteristics faced by start-ups. In view of this, the following hypothesis is proposed.

Hypothesis 1. There is a positive relationship between transformational leadership and group voice climate.

Hypothesis 2. There is a positive relationship between transformational leadership and organisational culture.

Hypothesis 3. There is a positive relationship between transformational leadership and

organisational learning.

Hypothesis 4a. Perceived environmental uncertainty plays a positive moderating role in the relationship between transformational leadership and group voice climate.

Hypothesis 4b. Perceived environmental uncertainty plays a positive moderating role in the relationship between transformational leadership and organisational culture.

Hypothesis 4c. Perceived environmental uncertainty plays a positive moderating role in the relationship between transformational leadership and organisational learning.

Resilience has been seen to be more related to less tangible organisational aspects, such as the culture, leadership, and vision [23]. Adaptive resilience is related to strong organisational leadership and culture as these enable an organisation to dynamically respond to any emergent situations [24], reduce the effect of large-scale crises [25], and allow for successful recovery [23]. Entrepreneurial leaders that have higher qualifications and experience can often inspire greater knowledge creation, innovation and network support, all of which can be valuable resilience resources [26]. Group voice constraints have been found to be key resilience inhibitors and Group voice availability a potential resilience enabler [27]. Based on this discussion, the following hypothesis is proposed.

Hypothesis 5. There is a positive relationship between group voice climate and organisational resilience.

Hypothesis 6. There is a positive relationship between organisational culture and organisational resilience.

Hypothesis 7. There is a positive relationship between organisational learning and organisational resilience.

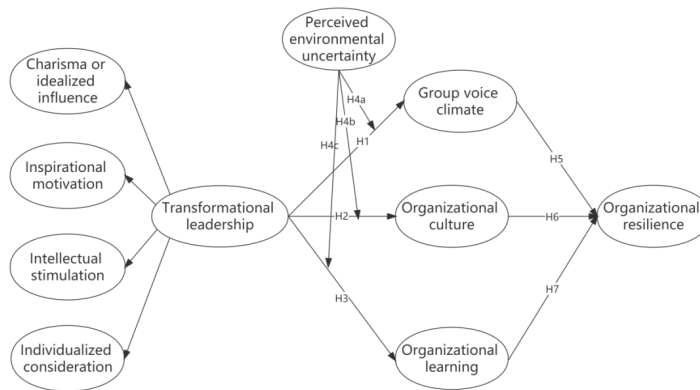


Figure 1. Hypothesis model

4 Methodology

4.1 Sample Selection and Data Collection

To confirm the study hypotheses and assess the perceived impact of the Covid-19 pandemic on tourism organisation, a survey was conducted in October 2022 on Sichuan Province-based

tourism organisations. The survey was distributed on the online platform of the General Association of Sichuan Entrepreneurs (GASE), which is a local, non-profit social organisation jointly established by domestic and foreign Sichuan entrepreneurs.

The GASE office distributed the survey by email, and the enterprises that were not members of GASE were contacted by phone. Initially, 330 questionnaires were distributed, of which 302 were deemed valid as 10 had specific outliers and 18 were not correctly completed. table 1 gives the characteristics of the sample enterprises.

Table 1. Sample Characteristics for the 302 Enterprises

Indicator	Item	Number	Proportion
Employee numbers	<5	36	11.9%
	5-50	161	53.3%
	>50	105	34.8%
Annual turnover	<5 million CNY (0.8 million US\$)	78	25.8%
	5-20 million CNY (0.8-3.1 million US\$)	141	46.7%
	>20 million CNY (>3.1million US\$)	83	27.5%
Sectors	Tourist attraction	68	22.5%
	Travel service	43	14.2%
	Hotel	109	36.1%
	Tourism transport	21	7.00%
	Other	61	20.2%

4.2 Survey Instrument

The survey instrument was designed from previous studies and it incorporated well established scales [28–32]. All the items were measured on a seven-point Likert scale (1 = Strongly Disagree and 7 = Strongly Agree). Minor changes in wording of items were made because of the Covid-19 background.

The average variance extracted (AVE) for the constructs and the factor loadings were considered the best measures for the convergent validity [33], and the AVE square root values and the correlations between the constructs were compared to check the discriminant validity. The factor loading values were > 0.70, and the AVE was > 0.5, which met the suggested requirements [34] (table 2).

Table 2. Subscales and item-scale correlations

Item	Standard loading
CII Charisma or Idealized Influence ($\alpha = 0.893$, CR = 0.919, AVE = 0.653)	
CII1: My boss is a positive person.	0.818
CII2: My boss has the best interests of the company at heart.	0.845
CII3: My boss has a lot of influence and charisma in the company.	0.753
CII4: My boss has a lot of influence and charisma in the company.	0.799
CII5: My boss stresses the importance of setting goals at work.	0.794
CII6: My boss stresses responsibility for team tasks.	0.837
IM Inspirational Motivation ($\alpha = 0.878$, CR = 0.925, AVE = 0.805)	
IM1: My boss can clearly articulate what the company wants to achieve in the future.	0.891
IM2: My boss actively encourages us to complete our tasks.	0.915
IM3: My boss presented us with an exciting vision of the future.	0.885
IS Intellectual Stimulation ($\alpha = 0.903$, CR = 0.939, AVE = 0.838)	
IS1: My boss asked us to analyze key problems that could occur.	0.899
IS2: My boss encouraged us to look for solutions from different angles.	0.930
IS3: My boss encouraged us to find new ways to solve the problems in our work.	0.917
IC Individualized Consideration ($\alpha = 0.766$, CR = 0.863, AVE = 0.677)	
IC1: My boss takes the time to coach and assist subordinates.	0.847
IC2: My boss treats each subordinate as an individual.	0.817
IC3: My boss helps his subordinates develop their strengths.	0.805
PEU Perceived environmental uncertainty ($\alpha = 0.752$, CR = 0.843, AVE = 0.575)	
PEU1: Foreseeable changes will not make our company go under.	0.718
PEU2: I am confident that things will turn out well for our company in the future.	0.662
PEU3: Our company is in a better position to adapt to changes in tourism sector than others I know.	0.824
PEU4: Our company is under control from changes in the external environment	0.817
GVC Group Voice Climate ($\alpha = 0.829$, CR = 0.898, AVE = 0.746)	
GVC1: I take the initiative to think about possible problems in the company and make my own suggestions	0.853
GVC2: I will promptly discourage other employees from influencing the company's bad behavior	0.897
GVC3: I will take the initiative to report inconsistencies in my work to my leaders.	0.840
OC Organizational Culture ($\alpha = 0.814$, CR = 0.878, AVE = 0.645)	
OC1: There is a lot of energy in the organization, and people are motivated and willing to take risks.	0.835
OC2: The management of the organization is characterized by individualism, change, freedom and uniqueness.	0.858
OC3: The cohesion of the company comes from the pursuit of innovation and development of the organization.	0.807
OC4: The organization encourages exploration and values the acquisition of new resources and new things.	0.704
OL Organizational Learning ($\alpha = 0.881$, CR = 0.919, AVE = 0.739)	
OL1: Employees often have the opportunity to discuss new ideas that will benefit the organization.	0.866
OL2: Mistakes and failures in the organization are often discussed and analyzed at all levels of the organization.	0.891
OL3: The organization has the resources to keep the knowledge going even if the employee leaves.	0.885
OL4: Employees in an organization often share new knowledge that helps the organization as a whole.	0.792
OR Organizational Resilience ($\alpha = 0.913$, CR = 0.930, AVE = 0.626)	
OR1: I don't think foreseeable changes will make our company go under.	0.873
OR2: I am confident that things will turn out well for our company in the future.	0.879
OR3: Our company is in a better position to adapt to changes in tourism sector than others I know.	0.861
OR4: I don't think foreseeable changes will make our company go under.	0.830
OR5: I am confident that things will turn out well for our company in the future.	0.702
OR6: Our company is in a better position to adapt to changes in tourism sector than others I know.	0.731
OR7: I don't think foreseeable changes will make our company go under.	0.738
OR8: I am confident that things will turn out well for our company in the future.	0.687

α = Cronbach's Alpha; CR = Composite Reliability; AVE = Average Variance Extracted
 Partial least square structural equation model (PLS-SEM) was used for data analysis. Compared with covariance base structural equation model (CB-SEM), PLS-SEM is simpler to calculate, and can fully mine the information behind the samples when the sample size is small, so as to achieve a better estimation effect with the same sample size. At the same time, it has obvious advantages over other methods in predictive, exploratory and theoretical development research and testing of complex models.

5 Findings

5.1 Exploratory Factor Analysis

Discriminant validity refers to the degree of difference between latent variables. The results showed (as shown in table 3 that the heteroplasm-elemental ratio (HTMT) of each latent

variable was lower than the discriminant standard of 0.9, indicating that the discriminant validity of the measured model was good.

Table 3. HTMT Analysis

Variable	TL	GVC	OC	OL
GVC	0.698			
OC	0.635	0.376		
OL	0.819	0.555	0.657	
OR	0.674	0.465	0.786	0.716

In the present research, the evaluation criteria of structural model mainly included redundancy, determination coefficient R^2 , goodness-of-fit (GOF) and absolute goodness-of-fit index SRMR. The results in table 4 showed that the GOF value of the model measured in this paper was 0.254, indicating that the overall prediction ability of the model was acceptable and has moderate prediction ability. SRMR, the standardized root mean square residual, was used to assess the average size of observed and expected correlation matrix differences. The SRMR of the measured model was 0.051, which is less than the criterion of 0.08. Besides, the R^2 of the final dependent variable of behavioral intention in the tested model was 0.415, indicating that 41.5% of the behavioral intention variable in the tested model could be explained by the previous latent variable. The level of 0.415 also meant that the explanatory ability of the measured model to the ultimate dependent variable behavioral intention was acceptable, reaching the discriminant standard of moderate explanatory ability ($R^2 \geq 0.33$).

Table 4. Structural model analysis

Variable		
	redundancy	R^2
TL	-	-
GVC	0.285	0.397
OC	0.203	0.327
OL	0.401	0.550
OR	0.349	0.577
COF=0.378		

5.2 Confirmatory Factor Analysis

Figure.2 shows the path model and table 5 shows the hypotheses testing and the overall fit statistics. Specifically, Transformational leadership was found to be significantly positive influence group voice climate (H1: $\beta = 0.617$, $p < 0.001$), organizational culture (H2: $\beta = 0.569$, $p < 0.001$) and organizational learning (H3: $\beta = 0.756$, $p < 0.001$). Besides, group voice climate (H5: $\beta = 0.099$, $p = 0.021$), organizational culture (H6: $\beta = 0.464$, $p < 0.001$) and organizational learning (H7: $\beta = 0.338$, $p < 0.001$) were found significantly positive organizational resilience factors.

5.3 Moderating Effect analysis

Use process to calculate the impact of perceived environmental uncertainty on transformational leadership and group voice climate, organizational culture, and organizational learning

Table 5. Path coefficient and hypothesis testing

Paths	Std.Path coeff. (β)	p-values	Hypothesis
Transformational leadership ->Group Voice Climate	0.617	0.000	H1 supported
Transformational Leadership ->Organizational Culture	0.569	0.000	H2 supported
Transformational Leadership ->Organizational Learning	0.756	0.000	H3 supported
Group Voice Climate ->Organizational Resilience	0.099	0.021	H5 supported
Organizational Culture ->Organizational Resilience	0.464	0.000	H6 supported
Organizational Learning ->Organizational Resilience	0.338	0.000	H7 supported

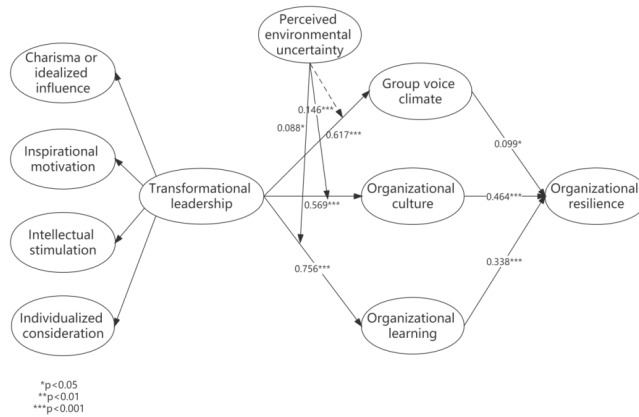


Figure 2. Path Model

relationships. The results showed that the influence of transformational leadership on organizational culture and organizational learning was positively moderated by perceived environmental uncertainty. Thus, H4a and H4b are verified. In order to visually demonstrate the moderating effect of perceived environmental uncertainty, the point extraction method was used to select the regulated variables for a simple slope test, as shown in figure. 3.

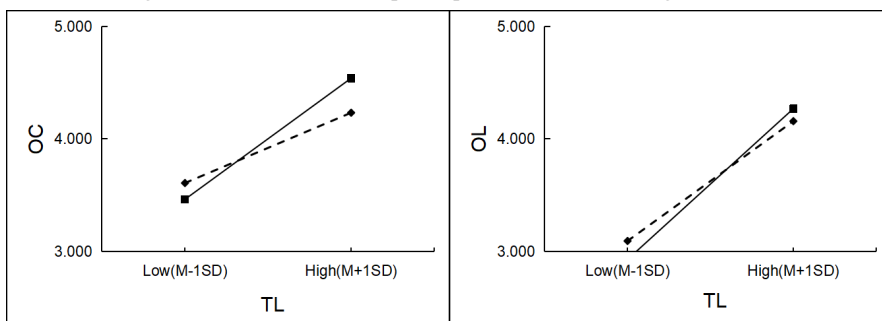


Figure 3. A simple slope test of moderating effect of perceived environmental uncertainty

6 Discussion

A survey was conducted and an integrated model (figure 1) proposed to answer this study's hypotheses. Transformational leadership was found to be significantly positive influence group voice climate, organizational culture and organizational learning, then positive influence organizational resilience. A resilient organization requires leaders to position themselves clearly, to steer the right direction in daily operations, and to solve problems through innovative approaches in times of crisis [35]. In crisis economic conditions, leadership was evaluated as the most important core factor for business innovation [36]. Due to the continuous recurrence of the pandemic, enterprises need to deal with the constantly changing risks and unexpected emergencies, and even change the market structure to cope with the industry crisis. During this process, the decision-making of leaders and the innovation ability of organizations are particularly critical.

The characteristics of transformational leaders' ability to pursue innovation, take risks, and actively respond to changes in the external environment are highly compatible with the connotation of organizational resilience. Adaptive resilience emerges during a crisis as a result of strong leadership. This enables organizations to dynamically respond to emergent situations [37]. Experienced transformational leaders are able to use their crisis management experience to respond more quickly and efficiently. When public health emergencies occur, resilient leadership and decision-making abilities of organisations decision-makers can stabilize the situation, ensure that employees remain in their positions, and create a buffer to allow for enterprise adjustments. As with other organisations, resilient transformational leadership can guarantee the survival of tourism organisations through crises.

The external environment has a non-negligible impact on the impact of transformational leadership on organizational resilience, especially in tourism. The sensitivity of tourism organizations to their environment contributes to their vulnerability to public health emergencies. As social and natural environments change, tourism organizations need to constantly innovate to adapt to the new environments [38]. When the organization faces a complex and dynamic external environment, excellent transformational leaders can not only obtain key information from change, help the organization maintain stability in an uncertain environment, but also keenly identify the direction of future recovery or further development of the enterprise, and exert the positive impact of change on the organization. Because the Covid-19 pandemic effects are expected to be felt for several more years, tourism providers need to change their operating methods to ensure that people are safe and to encourage people to travel again; therefore, the sensitivity of transformational leaders to the characteristics of the external environment affects their relationship with the organizational resilience and performance of the enterprise.

7 Conclusion

A survey of 330 tourism enterprises in Sichuan province, China, was conducted, from which 302 valid samples were analysed using PLS-SEM methods to identify the key perceived tourism organizational resilience factors during the Covid-19 pandemic. It was found that (1) transformational leadership was found to be significantly positive influence group voice climate, organizational culture and organizational learning, then positive influence organizational resilience, and (2) the influence of transformational leadership on organizational culture and organizational learning was positively moderated by perceived environmental uncertainty.

The findings indicated that tourism organization owners and managers need to pay greater attention to their leadership. A competent leader can use their experience to motivate inno-

vation in the organization to help weather the crisis. Although strong leadership is needed to maintain organizational stability, in the changing environment, leaders of travel enterprises should actively pay attention to group voice climate, organizational culture and organizational learning to improve the organization's self-repair and resilience capabilities.

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