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Research Note

Tourism and economic resilience☆

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Since Holling (1973) first introduced the concept of ecological resilience—the capacity of ecosystems to persist in the face of disturbance or change, some scholars have applied the concept of resilience to economic systems in a regional economic context (e.g., Simmie & Martin, 2010). Economic resilience (ER), an important application of resilience, is defined as the ability of an economy to respond to hazards and disturbances, including inherent capabilities that enable communities to avoid negative impacts (Rose, 2004) and adaptive capacities to withstand changes in economic conditions and maintain economic standards of living (Martin, 2012). Researchers have measured ER by the level of economic vitality (e.g., employment and homeownership rates), diversity (e.g., non-dependence on single economic sectors), and equality in compensation (e.g., gender and race/ethnicity income equality) (Cutter, Ash, & Emrich, 2014; Martin, 2012; Rose & Krausmann, 2013; Sherrieb, Norris, & Galea, 2010).

Although tourism is not included in the measurement of ER (Rose & Krausmann, 2013; Sherrieb et al., 2010), tourism has been recognized as a significant contributor to regional economies (Brida, Cortes-Jimenez, & Pulina, 2016) and the economic recovery process (Prayag, Spector, Orchiston, & Chowdhury, 2019) by stimulating economic activities and boosting other relevant industries (Lin, Yang, & Li, 2019). Prior studies have shown that regional tourism development may increase ER by reducing regional income inequality (Li, Chen, Li, & Goh, 2016), or decrease ER by enlarging the inequality (Liargovas, Giannias, & Kostandopoulos, 2007). These mixed findings can be explained by the level of tourism specialization and geographic and socio-economic circumstances (Lin et al., 2019). High level of tourism specialization or overdependence on the tourism industry is found to be detrimental for sustainable economic growth (Adamou & Clerides, 2010; Parrilla, Font, & Nadal, 2007).

In addition, geographic features and appropriate infrastructure are important in transferring tourism into economic growth (Cárdenas-García & Sánchez-Rivero, 2015; Fawaz, Rahnama, & Stout, 2014). Despite this abundant literature, no study to date has an integrative view on how tourism specialization affects ER across counties. Only one study (Cheng & Zhang, 2020) has shown that the effect of tourism development on post-earthquake ER varies across a region with different resilience levels. However, this study fails to capture different tourism industries and provide tourism policies in terms of enhancing ER.

To fill these gaps, this research note attempts to address two major questions: (1) how does the specialization of different tourism industries influence ER? and (2) does the relationship between tourism industry specialization and ER vary across counties? In this study, the dynamic economic activity of tourism businesses is recognized based on two aspects: the level of tourism specialization

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(Billings & Johnson, 2012) and variability in the tourism specialization (Crawley, Beynon, & Munday, 2013). The concept of specialization dynamics addresses how patterns of tourism specialization show either persistence or mobility that can be explained by the degree of variability over time (Redding, 2002). In addition, tourism industries can be decomposed into two components: the attraction complex and the service component (Dredge, 1999; Lee, Jang, & Kim, 2020). Hence, understanding the spatially varying relationship between tourism specialization and ER can be vital for local tourism and economic policymakers to implement location-based industry management.

To achieve this purpose, the State of Florida in the U.S. was selected as the study area because it is one of the most popular tourism destinations and is frequently impacted by meteorological hazards. The county was utilized as the unit of analysis. County-level ER and tourism data were collected from multiple sources. The growth rate of ER was calculated over the year 2010 to 2015 from the "Baseline Resilience Indicators for Communities" index (HVRI, 2019). Tourism industries were categorized according to North American Industry Classification System codes 71 (AER: Arts, Entertainment, and Recreation) as the attraction complex and 72 (AFS: Accommodation and Food Services) as the service component in 67 counties. Tourism Industry Location Quotient (LQ), as the metric of tourism specialization, was calculated by the number of employees in the industry in each county compared to the U.S. average (U.S. Census Bureau, 2015). Next, to estimate patterns of tourism specialization, the level of tourism specialization was measured by the average of six-year LQs and the degree of variability was calculated using the variance of six-year LQs from the tourism specialization. Finally, four variables—AER specialization, AER variability, AFS specialization, and AFS variability—were generated for the analysis.

Two variables—(1) total disaster exposure measured by an integrated index considering the number of disaster events and the total damage in 2010 (Lam, Reams, Li, Li, & Mata, 2015) and (2) past community resilience (i.e., 2010 BRIC index)—were controlled in the model. An ordinary least squares (OLS) regression and a geographically weighted regression (GWR) were used for the analysis.

The parameter estimates of the OLS model in Table 1 show that both AFS specialization and AFS variability were positively related to ER. However, the use of spatially referenced county dataset in a linear OLS model may lead to biased estimation results due to spatial dependence between variables. Therefore, GWR was employed to account for this issue.

The GWR results—capturing spatial heterogeneity in parameter estimates (Lee et al., 2020)—show that the parameter estimates of AFS specialization vary from −0.035 to 0.077 and those of AFS variability from 0.153 to 0.665. In Fig. 1, the dark-colored (light-colored) counties represent higher (lower) values of positive (negative) parameter estimates. Specifically, ER in the north-central counties was enhanced by a greater specialization in AER (1-a), ER in the south counties by a greater specialization in AFS (1-c), and ER in the northwest counties by a greater variability in AFS (1-d). As illustrated by the spatial distribution of local R^2 (1-f), the GWR model not only outperformed the OLS model, but also revealed that the exploratory power of the ER model was not consistent for Floridian counties.

In addition, Fig. 2 illustrates how specific counties benefit from the specialization and variability of tourism industries (i.e., the clustering of positive GWR-based local parameter estimates). For instance, the specialization of AER is associated with growth in ER in ten counties (e.g., Alachua and Baker), while the specialization of AFS corresponds to positive ER in two counties (Miami-Dade and Monroe). Interestingly, twelve counties (e.g., Bay and Calhoun) benefit from the AFS variability, meaning that positive mobility of AFS specialization leads to greater ER in these counties.

This research offers several conclusions and new questions for further research. First, although overall AFS-led specialization leads to greater ER, the relationship between AFS specialization and ER can vary across counties, which is aligned with previous studies (Adamou & Clerides, 2010; Cheng & Zhang, 2020). Further research can demonstrate what specific AFS businesses (e.g., hotels and restaurants) and their combinations need to be promoted for the ER enhancement.

Second, this research finds that the dynamic growth of service component businesses needs to be considered for improving ER in certain counties (Fig. 2). This finding is in accordance with prior studies (Li et al., 2016), which indicated that tourism development can reduce regional income inequality. A promising research avenue is the disaggregation of tourism development (into specific industries) and ER (into employment, income equality, and retail distribution) and the spatial analysis of the disaggregated tourism-ER relationships.

Finally, this study focuses on how tourism specialization affects ER across different counties ("tourism-led resilience"), which is

Table 1
Parameter estimates of ER model.

Variable	OLS regression	GWR				
		Min.	Mean	Max.	Range	Spatial variability
AER specialization	−0.007	−0.033	−0.010	0.003	0.036	
AER variability	−0.052	−0.074	−0.040	−0.018	0.130	Yes
AFS specialization	0.051*	−0.035	0.026	0.077	0.112	Yes
AFS variability	0.564*	0.153	0.430	0.665	0.512	Yes
Total disaster exposure	−0.097*	−0.048	−0.020	0.025	0.073	
Past community resilience	0.004	−0.192	0.009	0.023	0.215	Yes
Constant	0.099	−0.167	0.022	0.382	0.549	Yes
R^2	0.102	0.106	0.261	0.516	0.410	

*$p < 0.05$, **$p < 0.10$.
Note: N = 67; AER: art, entertainment, and recreation; AFS: accommodation and food services.

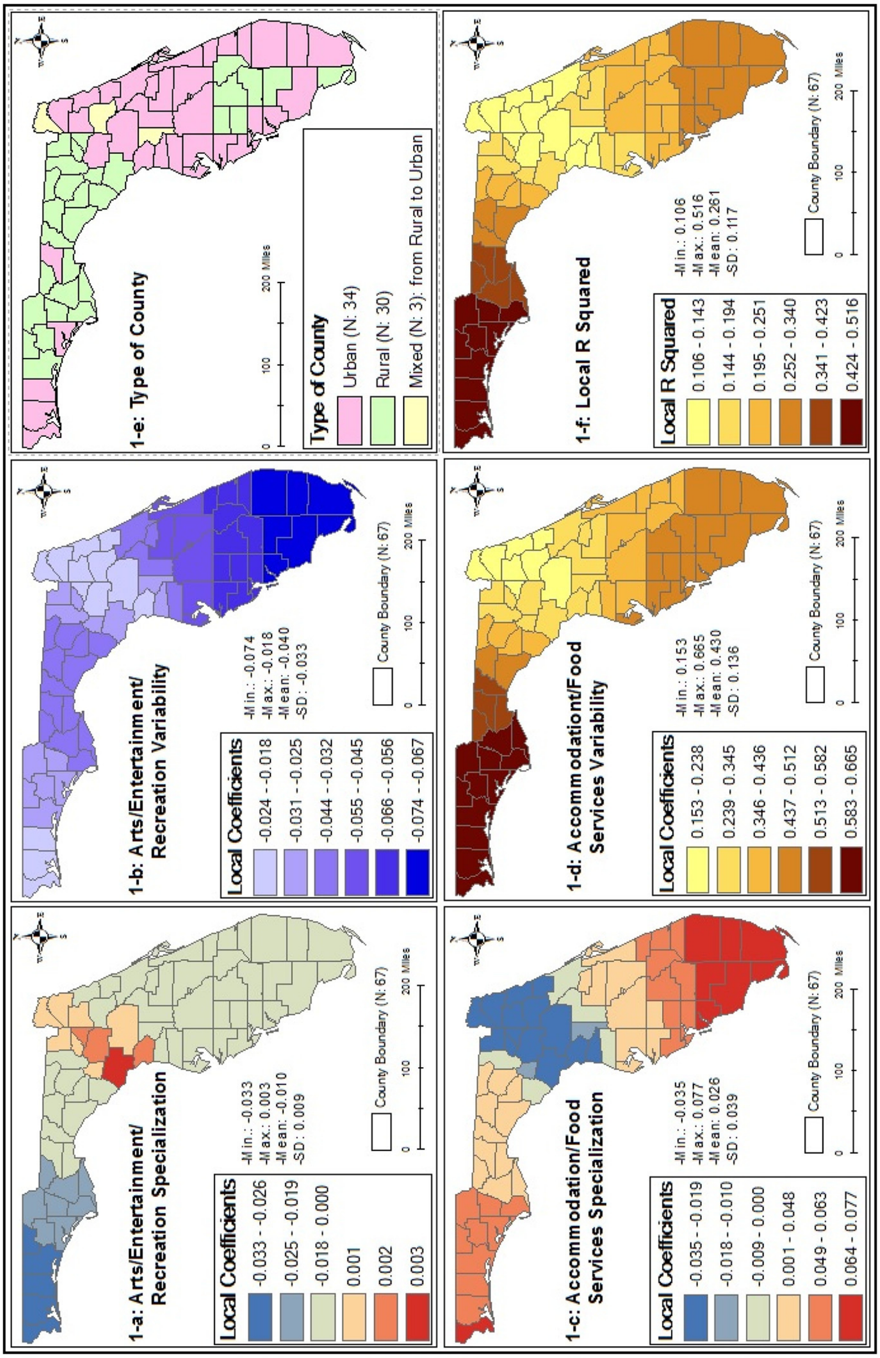

Fig. 1. Spatial distribution of local parameter estimates.

County	Area	LQ71S	LQ71V	LQ72S	LQ72V	Mobility Sign
Alachua	Urban	•				
Baker	Rural	•				
Bay	Urban				•	(+)
Bradford	Rural	•				
Calhoun	Rural				•	(+)
Citrus	Urban	•				
Clay	Urban	•				
Duval	Urban	•				
Escambia	Urban				•	(+)
Flanklin	Urban				•	(+)
Gadsden	Rural				•	(+)
Gilchrist	Rural	•				
Gulf	Rural				•	(+)
Jackson	Rural				•	(+)
Levy	Rural	•				
Liberty	Rural				•	(+)
Marion	Urban	•				
Miami-Dade	Urban			•		
Monroe	Rural			•		
Nassau	Mixed	•				
Okaloosa	Urban				•	(+)
Santa Rosa	Urban				•	(+)
Walton	Rural				•	(+)
Wakulla	Rural				•	(+)

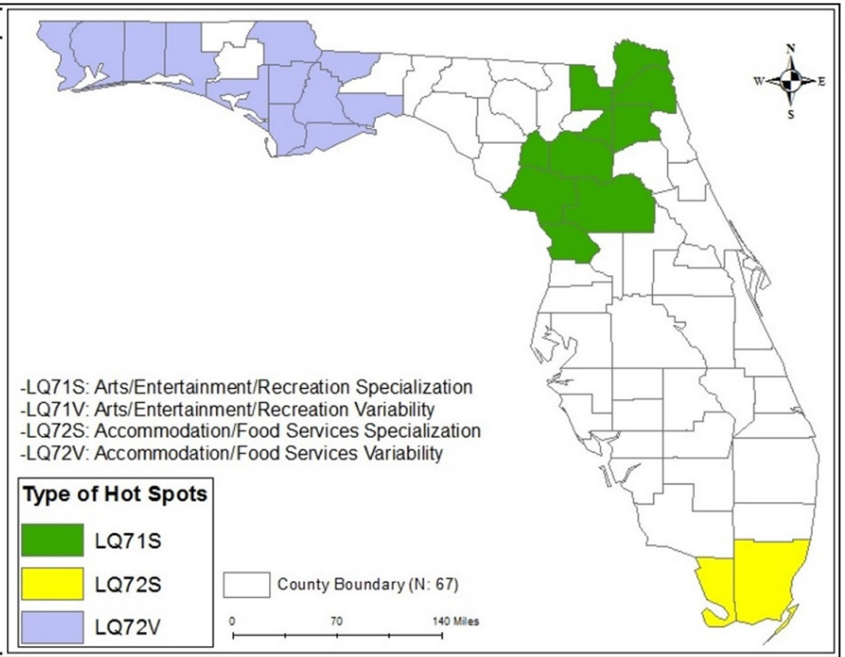

Fig. 2. Hot spot counties where ER benefits from tourism specialization and variability.

originated from the tourism-led growth hypothesis (Balaguer & Cantavella-Jordá, 2002). However, it is possible that tourism development can be affected by the different economic and ER conditions (Lin et al., 2019). Hence, future research can utilize the opportunity to investigate how counties with higher or lower ER can experience ER-driven tourism growth ("resilience-led tourism") (Ritchie & Jiang, 2019).

References

Adamou, A., & Clerides, S. (2010). Prospects and limits of tourism-led growth: The international evidence. *Review of Economic Analysis, 3*, 287–303.
Balaguer, J., & Cantavella-Jordá, M. (2002). Tourism as a long-run economic growth factor: The Spanish case. *Applied Economics, 34*(7), 877–884.
Billings, S. B., & Johnson, E. B. (2012). A non-parametric test for industrial specialization. *Journal of Urban Economics, 71*(3), 312–331.
Brida, J. G., Cortes-Jimenez, I., & Pulina, M. (2016). Has the tourism-led growth hypothesis been validated? A literature review. *Current Issues in Tourism, 19*(5), 394–430.
Cárdenas-García, P. J., & Sánchez-Rivero, M. (2015). Tourism and economic development: Analysis of geographic features and infrastructure provision. *Current Issues in Tourism, 18*(7), 609–632.
Cheng, L., & Zhang, J. (2020). Is tourism development a catalyst of economic recovery following natural disaster? An analysis of economic resilience and spatial variability. *Current Issues in Tourism,* 1–22.
Crawley, A., Beynon, M., & Munday, M. (2013). Making location quotients more relevant as a policy aid in regional spatial analysis. *Urban Studies, 50*(9), 1854–1869.
Cutter, S. L., Ash, K. D., & Emrich, C. T. (2014). The geographies of community disaster resilience. *Global Environmental Change, 29*, 65–77.
Dredge, D. (1999). Destination place planning and design. *Annals of Tourism Research, 26*(4), 772–791.
Fawaz, F., Rahnama, M., & Stout, B. (2014). An empirical refinement of the relationship between tourism and economic growth. *Anatolia, 25*(3), 352–363.
Holling, C. S. (1973). Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics, 4*(1), 1–23.
HVRI. (2019). Baseline resilience indicators for communities (BRIC). BRIC 2015 county scores. University of South Carolina, https://artsandsciences.sc.edu/geog/hvri/bric.
Lam, N. S., Reams, M., Li, K., Li, C., & Mata, L. P. (2015). Measuring community resilience to coastal hazards along the northern Gulf of Mexico. *Natural Hazards Review, 17*(1), 1–12.
Lee, Y. J. A., Jang, S., & Kim, J. (2020). Tourism clusters and peer-to-peer accommodation. *Annals of Tourism Research, 83*, 102960.
Li, H., Chen, J. L., Li, G., & Goh, C. (2016). Tourism and regional income inequality: Evidence from China. *Annals of Tourism Research, 58*, 81–99.
Liargovas, P., Giannias, D., & Kostandopoulos, C. (2007). An assessment of the community support framework (CSF) funding towards the tourist sector: The case of Greece. *Regional and Sectoral Economic Studies, 7*(1), 47–66.
Lin, V. S., Yang, Y., & Li, G. (2019). Where can tourism-led growth and economy-driven tourism growth occur? *Journal of Travel Research, 58*(5), 760–773.
Martin, R. (2012). Regional economic resilience, hysteresis and recessionary shocks. *Journal of Economic Geography, 12*(1), 1–32.
Parrilla, J. C., Font, A. R., & Nadal, J. R. (2007). Tourism and long-term growth a Spanish perspective. *Annals of Tourism Research, 34*(3), 709–726.
Prayag, G., Spector, S., Orchiston, C., & Chowdhury, M. (2019). Psychological resilience, organizational resilience and life satisfaction in tourism firms: Insights from the Canterbury earthquakes. *Current Issues in Tourism, 23*(10), 1216–1233.
Redding, S. (2002). Specialization dynamics. *Journal of International Economics, 58*(2), 299–334.
Ritchie, B. W., & Jiang, Y. (2019). A review of research on tourism risk, crisis and disaster management: Launching the annals of tourism research curated collection on tourism risk, crisis and disaster management. *Annals of Tourism Research, 79*, Article 102812.
Rose, A. (2004). Defining and measuring economic resilience to disasters. *Disaster Prevention and Management, 13*(4), 307–314.
Rose, A., & Krausmann, E. (2013). An economic framework for the development of a resilience index for business recovery. *International Journal of Disaster Risk Reduction, 5*, 73–83.
Sherrieb, K., Norris, F. H., & Galea, S. (2010). Measuring capacities for community resilience. *Social Indicators Research, 99*, 227–247.
Simmie, J., & Martin, R. (2010). The economic resilience of regions: Towards an evolutionary approach. *Cambridge Journal of Regions, Economy and Society, 3*(1), 27–43.
U.S. Census Bureau (2015). 2011-2015 American community survey 5-year estimates. https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2015.