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ORGANIZATIONAL RESILIENCE AND FINANCIAL PERFORMANCE

Organization resilience has two dimensions – planned and adaptive (Lee, Vargo & Seville, 2013). Planned resilience occurs pre-disaster, whereas adaptive resilience typically emerges post-disaster and requires leadership, external linkages, internal collaboration, an ability to learn from past experiences, and staff well-being (Nilikant et al., 2014). While previous studies suggest post-disaster recovery strategies have an impact on business performance (Corey & Deitch, 2011), the influence of organizational resilience on business performance has not been examined among tourism firms. Specifically, post-disaster financial performance is influenced by many factors, including the extent of pre-disaster planning, firm size, and sector of operation (Kachali et al., 2012; Nakanishi, Black, & Matsuo, 2014). Also, subjective measures of business performance are highly correlated with objective measures (Vij & Bedi, 2016). Hence, this research investigates: what is the relationship between planned and adaptive resilience and financial performance of tourism firms? Does firm size and sector of operation influence this relationship?

Not having recovery plans can impede adaptive resilience (Alexander, 2013). Disaster planning can facilitate rebuilding the resilience of organizational infrastructure, thus contributing to planned resilience (Faulkner & Vikulov, 2001). However, research also indicates complexities in the relationship between planned and adaptive resilience. Somers (2009) found that disaster planning did not significantly affect organizational resilience. Dalziell and McManus (2004) suggest that planning only partly facilitates organizational recovery post-disaster. Organizations should, therefore, focus on building adaptive resilience rather than creating step-by-step plans (Somers, 2009).

Adapting Lee et al.'s (2013) conceptualization of organizational resilience for the tourism sector, Orchiston, Prayag and Brown (2016) found strong evidence of two

dimensions – 'collaboration and innovation' and 'planning and culture', which are different to the original planned and adaptive resilience. This is possibly due to the methodological and analytical differences between the two studies. Nevertheless, the importance of effective planning for emergent issues, problem-solving, building external linkages, and making effective decisions as a team are highlighted (Orchiston et al., 2016). These practices can favorably impact business performance (Avery & Bergsteiner, 2011).

The Canterbury region of New Zealand experienced two major earthquakes, with the February 2011 aftershock causing the most destruction and casualties. During the subsequent five years, Christchurch experienced a decline in international visitation and slow market recovery (Hall, Prayag & Amore, 2018). In 2016, a follow-up survey, based on a study of Canterbury tourism businesses in 2012 (Orchiston et al., 2016), was deployed to a sample of 251 Christchurch tourism operators via postal and email surveys, resulting in 84 useable questionnaires. The questionnaire pretested on Christchurch tourism businesses measured Lee et al.'s (2013) thirteen resilience indicators (7 items – adaptive, 6 items – planned) on a five-point Likert scale (1=Strongly disagree and 5=Strongly agree). Financial performance measures (4 items) were adapted from Kachali et al. (2012): overall business performance (1=Significantly worse off and 5=Significantly better off); overall debt (1=Very negative and 5=Very positive); profitability level and cash flow (1=Very poor and 5= Excellent). Similar to previous studies (Orchiston, 2013; Orchiston et al., 2016) firm size was measured by number of employees and business classification within the tourism sector (accommodation, visitor transport, and attraction/activities) was captured. Data were analyzed using PLS-SEM (n=5000 bootstrap samples) in mode A (i.e. a reflective measurement model). PLS-SEM can handle relatively small samples (<100) compared to CB-SEM (Hair, Hollingsworth, Randolph, & Chong, 2017). Common method bias (CMB) was assessed using Harman's single factor test showing that total variance explained by the first factor was only 42%,

indicative of CMB not being an issue. Correct measurement model specification was tested using Confirmatory Tetrad Analysis (CTA) for both Figures 1 and 2 (Hair, Sarstedt, Ringle, & Gudergan, 2017), with results confirming that all scales should be modelled reflectively.

Of the 84 tourism businesses, half were owner-operators; 58.3% were employing less than five employees (considered as micro-enterprises in New Zealand). Tourism sectors represented in this sample are accommodation (47.6%), visitor transport (17.9%) and attraction/activities (22.6%). All item loadings (Table 1) were 0.7 and above, indicative of item reliability, after deleting three items with 0.6 loading or less (Hair et al., 2017). Average variance extracted (AVE) and composite reliabilities (CR) of all constructs were above 0.5 and 0.7 respectively (Table 1), establishing their convergent validity. The constructs (Table 2) met both Fornell and Larcker's (1981) and Hensler, Ringle, and Sarstedt's (2015) Hetero-Trait-Mono-Trait (HTMT) criteria for discriminant validity.

Table 1: Factor loadings, reliability, and validity measures for each construct

Constructs	Items	Std. Loadings	Cronbach's α	CR	Rho_A	AVE
Planned Resilience	PRes1: Given how others depend on us, the way we plan for the unexpected is appropriate	0.717	0.852	0.894	0.860	0.629
	PRes2: Our organization is committed to practicing and testing its emergency plans to ensure they are effective	0.812				
	PRes3: We have a focus on being able to respond to the unexpected	0.864				
	PRes4: We have clearly defined priorities for what is important during and after a crisis	0.753				
	PRes5: We proactively monitor our industry to have an early warning of emerging issues	0.812				
Adaptive Resilience Q^2=0.456 (model 1) Q^2=0.204 (model 2)	ARes1: Our organization maintains sufficient resources to absorb some unexpected change	0.774	0.838	0.884	0.849	0.605
	ARes2: If key people were unavailable, there are always others who could fill their role	0.751				
	ARes3: There would be good leadership from within our organization if we were struck by a crisis	0.820				
	ARes4: We are known for our ability to use knowledge in novel ways	0.770				
	Ares 5: We can make tough decisions quickly	0.766				
Financial Performance Q^2=0.046	FP1: Overall performance of the organization after the earthquakes of 2010/2011	0.826	0.863	0.907	0.882	0.710
	FP2: Level of debt since the 2010/2011	0.738				

Constructs	Items	Std. Loadings	Cronbach's α	CR	Rho_A	AVE
(model 1)	earthquakes					
Q^2=0.059	FP3: Organization's cash flow since the 2010/2011 earthquakes	0.927				
(model 2)	FP4: Organization's level of profitability since the 2010/2011 earthquakes	0.868				

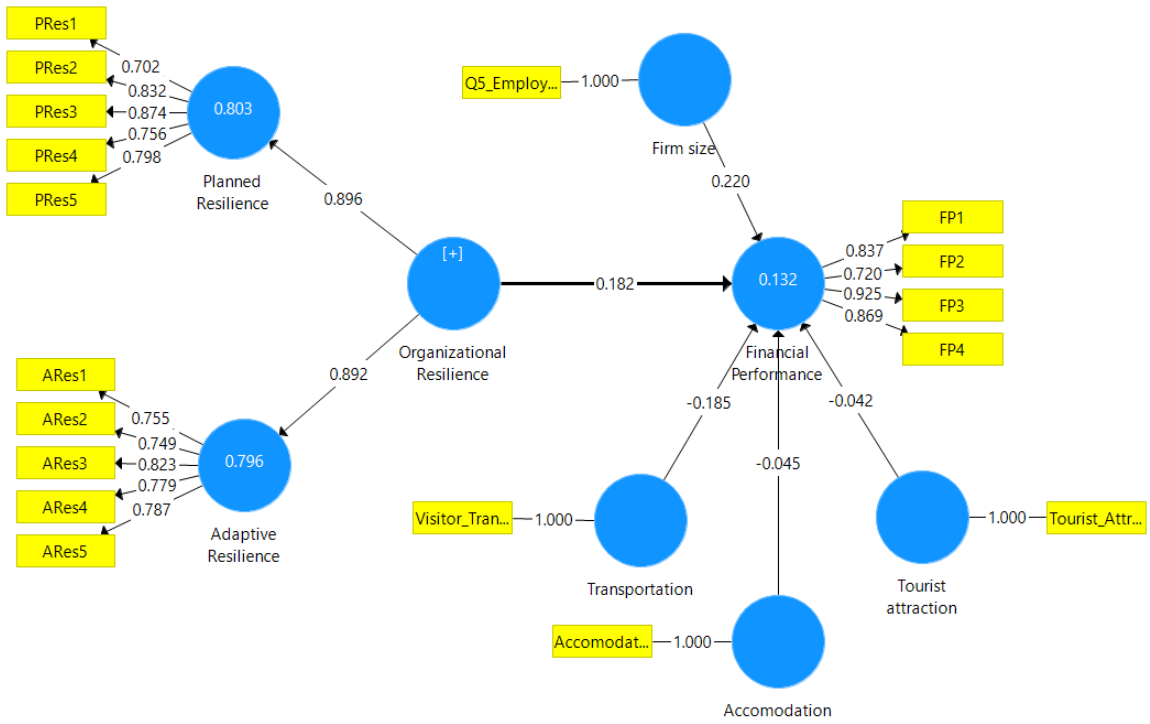
Table 2: Fornell and Larcker criterion and HTMT criterion for discriminant validity

Latent Constructs	Planned Resilience	Adaptive Resilience	Financial Performance
Planned Resilience	**0.793**		
Adaptive Resilience	0.619 [0.698]	**0.778**	
Financial Performance	0.154 [0.181]	0.282 [0.319]	**0.842**

Note: square root of AVE is shown in bold in the diagonal; all construct correlations are less than AVEs. The values in [] shows the HTMT ratio and all of them are less than 0.9.

We examined a second-order construct of organizational resilience (Figure 1) based on the conceptualization of planned and adaptive resilience as first-order dimensions (Lee et al., 2013). A second-order construct validity can be assessed using the repeated measures approach (Hair et al., 2017), which suggests first-order dimensions should be significant and the R^2 of each dimension above 0.5 (Hair et al., 2017). This was confirmed based on the results ($R^2_{\text{planned resilience}}$=0.803, p<0.001 and $R^2_{\text{adaptive resilience}}$= 0.796, p<0.001). Controlling for firm size and tourism sector, the structural path between organizational resilience and financial performance was insignificant. Firm size had a statistically significant effect on financial performance (p=0.023) but not tourism sub-sector. These results lead us to investigate the role of planned and adaptive resilience separately on performance.

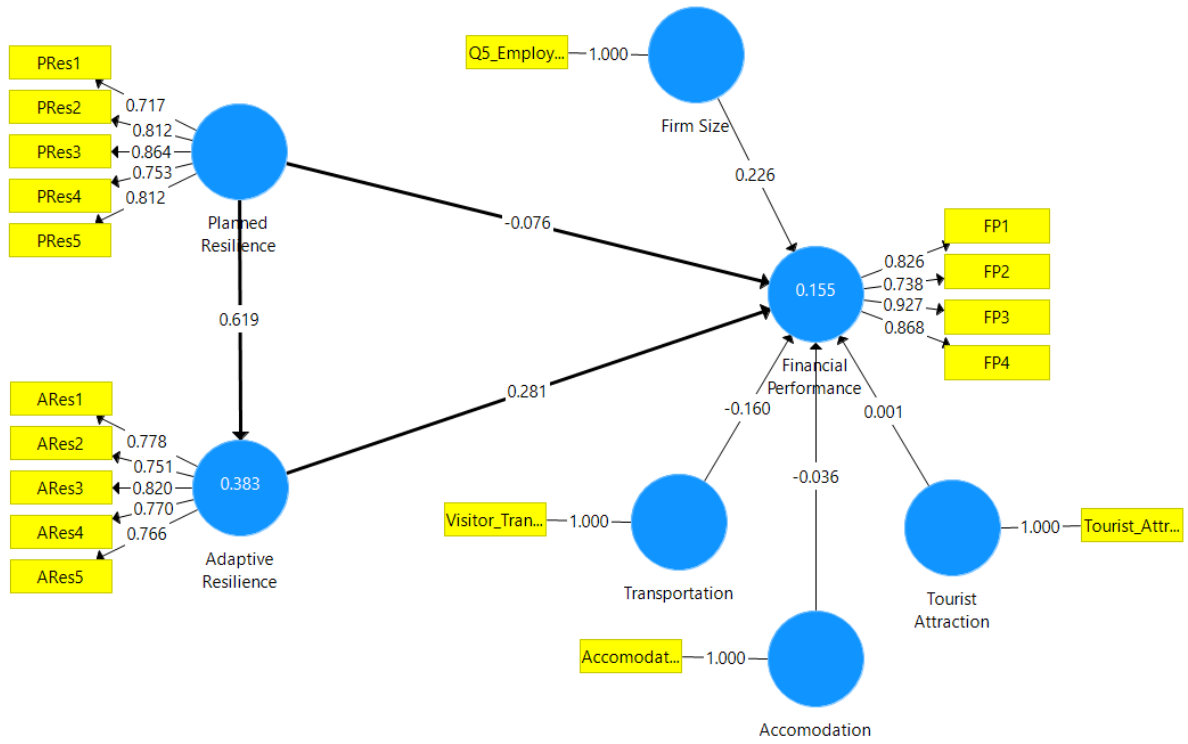
Figure 1: Organizational resilience as a second-order construct



Note: values in the circle show the R^2 value. Model fit: SRMR = 0.13

The results (bootstrapped) showed planned resilience had a significant and positive influence on adaptive resilience (β=0.619, p<0.001), explaining 38.3% of the variance in the latter (Figure 2). Using the same controlling variables as before, the relationship between planned/adaptive resilience and financial performance was estimated. Planned resilience had no statistically significant influence on financial performance but, despite the small effect (f^2=0.055), adaptive resilience had a positive and significant influence on financial performance (β=0.281, p=0.022). Only firm size had a significant influence on financial performance (p=0.014).

Figure 2: Planned/adaptive resilience and financial performance



Note: values in the circle show the R^2 value. Model fit: SRMR = 0.086

This study examined the relationship between organizational resilience and financial performance of tourism firms. Q^2 values larger than zero for both models (Table 1) supported organizational resilience as a significant predictor of financial performance. The influence of adaptive resilience on financial performance is masked when modelling organizational resilience as a second-order construct with two first-order dimensions (planned and adaptive). Modelling planned and adaptive resilience separately offers a better understanding of the relationship between organizational resilience and financial performance (Figure 2) but also a better model fit (SRMR=0.086). We extend the study of Nilikant et al. (2014) by providing empirical evidence of the importance of adaptive resilience for improving financial performance. We emphasize strong leadership, using knowledge in novel ways, the ability of employees to fill multiple roles, and the organization having sufficient resources to absorb unexpected change as critical to sustain financial performance. With a large proportion of micro-enterprises, firm size influences financial performance. Micro-enterprises tend to be

agile and highly adaptive (Sullivan-Taylor & Branicki, 2011), thus explaining the identified relationship.

Contrary to Lee et al. (2013), we suggest pre-disaster planning activities have an influence on adaptive resilience, but in themselves are insufficient to positively impact financial performance. Unlike Orchiston et al. (2016), the two dimensions of organizational resilience identified in this study conform to the original conceptualization of Lee et al. (2013). This is possibly due to organizations having a better understanding of how to build resilience five years on from the disaster. The findings also have implications for tourism managers and owner-operators on investment strategies to prepare for and recover from disasters.

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Figure 1

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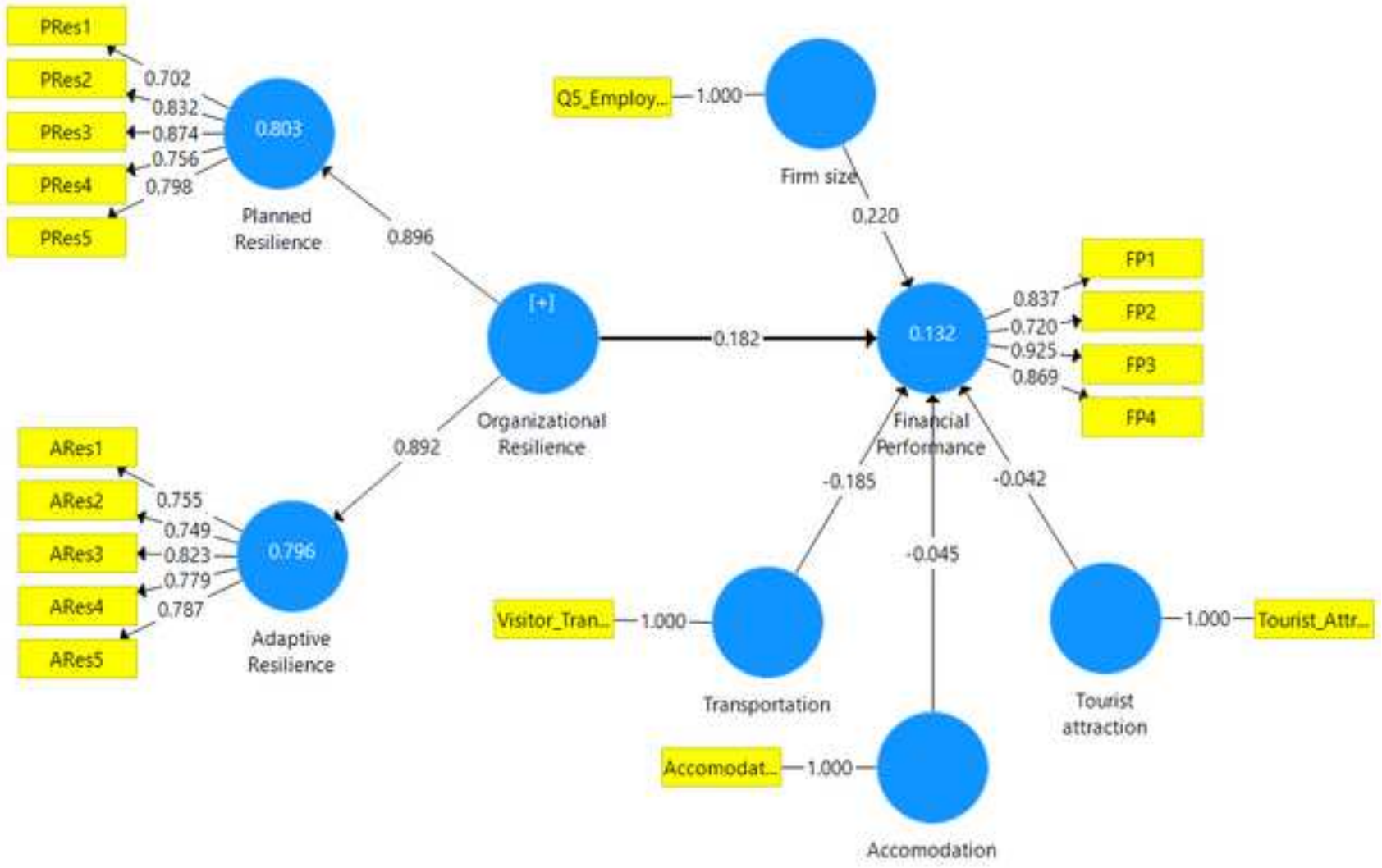

Figure 2

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