Journal of Sustainable Tourism

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rsus20

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To cite this article: Gyan P. Nyaupane , Girish Prayag , Josephine Godwyll & Dave White (2020): Toward a resilient organization: analysis of employee skills and organization adaptive traits, Journal of Sustainable Tourism, DOI: 10.1080/09669582.2020.1822368

To link to this article: https://doi.org/10.1080/09669582.2020.1822368

Published online: 18 Sep 2020.

JOURNAL OF SUSTAINABLE TOURISM
https://doi.org/10.1080/09669582.2020.1822368

Toward a resilient organization: analysis of employee skills and organization adaptive traits

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ABSTRACT

The concept of resilience is complex, and research on what contributes to public sector organizational resilience outcomes and how to effectively model resilient organization is still in its infancy. The purpose of this study is to apply the Employee–Organization Relationship (E-O-R) framework to understand the relationship between employees' skillsets, organizational traits and organizational resilience. Data for this study was obtained from a survey of 312 employees of the Bureau of Land Management (BLM), the largest public land management agency in the US that plays a critical role in serving millions of tourists. The findings indicate that although employees perceived themselves as having skills that are adaptive, they had very low confidence in the organization's ability to adapt, thus perceiving the organization to have low resilience. Findings suggest that organizational traits such as safe/secure working environment, thinking beyond the status quo, including the right people in decisions, and effective long-term planning are perceived by employees as critical for organizational resilience. The findings also suggest that employees' perceived organizational resilience differs by generational cohorts. Theoretical and practical implications in building resilient public land/protected area management organizations are discussed.

ARTICLE HISTORY
Received 26 April 2020
Accepted 1 September 2020

KEYWORDS
Organizational resilience; employee skills; organizational traits; adaptability; vulnerability; uncertainty; human resource; protected areas

Introduction

In a dynamic and ever-changing world, it is imperative for organizations to develop the ability to cope with both continuous and unexpected changes. The concept of organizational resilience describes this capacity (Annarelli & Nonino, 2016; Coutu, 2002; Jamrog et al., 2006; Rudolph & Repenning, 2002; Vogus & Sutcliffe, 2007). Factors affecting organizational resilience identified in the literature include strong networks and operational linkages within an organization (Duit et al., 2010). Equally important are the inter-organizational collaborations, which strengthen organizational capacity (Capaldo, 2007; Gray, 1985; Powell, 2003). Another critical factor that influences the preparedness of an organization for unfavourable or changing times is the nature

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Supplemental data for this article is available online at https://doi.org/10.1080/09669582.2020.1822368.

of exchanges that take place in employee-organization relationships (Noe et al., 2006). Thus, human capital plays a significant role in building organizational resilience and has been defined as the skill-set and capacity of individuals to respond and adapt to change (Biggs et al., 2015).

Employees and human capital, in general, play a major role in determining whether an organization can adapt to change in uncertain and dynamic environments (Biggs, 2011; Kotter & Cohen, 2012; Tonkin et al., 2018). The skillsets and capacities employees bring to the table, coupled with existing management structures interact to determine the vulnerability or preparedness of an organization (Colbert, 2004; Lengnick-Hall et al., 2011). Despite the recognition that employees contribute to the resilience of organizations (Hall et al., 2018; McManus et al., 2008; Prayag et al., 2020; Tonkin et al., 2018), there are limited studies focusing on how employees' confidence in their skillsets and their perceptions of organizational traits contribute to an organization's ability to adapt and respond to changes. In fact, several studies call for an examination of how different components of human capital contribute to the ability of organizations to deal with disturbance and change, thus affecting organizational resilience (Biggs, 2011; Biggs et al., 2012).

The Employee-Organization Relationship (E-O-R) framework aims to explain the relationships between employees and organizations (Kuvaas, 2007; Shaw et al., 2009 Shore et al., 2004; Tsui et al., 1997). This framework highlights the human-like characteristics employees attribute to organizations, often referred to as anthropomorphic expectations. The framework also examine how employment conditions and organizational relationships govern the interactions between organizational leaders and employees (Coyle-Shapiro & Shore, 2007). The characteristics which govern the exchanges between employees and organizational agents, captured in the E-O-R framework have implications on productivity, trust and engagement (Gillis, 2017). By applying this framework, the relationships between employees' skillsets, organizational support required to develop such skills and the related implications on organizational resilience can be ascertained. In existing studies, there is a lack of consensus on organizational strategies and employee skillsets which effectively build resilient organizational outcomes (Annarelli & Nonino, 2016; Avey et al., 2009), and also whether these skillsets are valuable for the resilience of natural resource management organizations in particular remain to be ascertained. Thus, by examining organizational traits and employees' skillsets, there is an opportunity to identify the importance of human capital within an organization and how this affects resilience.

The purpose of this study, therefore, is to examine, from the employees' perspective, whether organizational resilience is related to their confidence in their skillsets and organizational traits that allow the organization to adapt to changes, within the E-O-R framework. The study further evaluates how employee characteristics affect these relationships, with particular reference to different employee generational cohorts. In line with the E-O-R framework, we argue that Baby-Boomers, Generation X and Millennials will, first, assign different levels of importance to different skillsets and organizational traits, and second, these cohort based differences will affect the perceived resilience of the organization. To accomplish these objectives, we conducted a study in collaboration with the Bureau of Land Management (BLM), a public sector natural resource management organization in the US that plays a critical role in managing national conservation areas and other recreation areas and serves over 60 million tourists every year. Like many natural resource organizations, BLM has a substantial tourism role to manage resources critical for nature-based tourism.

The study contributes to the resilience literature in three ways. First, given the importance attributed to employees and human capital in building resilient public sector organizations (Annarelli & Nonino, 2016; Biggs, 2011; Biggs et al., 2015), this study clarifies which skillsets are perceived by employees as contributing to an organization's ability to adapt to changes, thereby extending the organizational resilience literature in public sector (Dahles & Susilowati, 2015; Orchiston et al., 2016; Prayag et al., 2018). Second, studies on employee resilience (Tonkin et al., 2018; Prayag et al., 2018) and organizational resilience (Lee et al., 2013; McManus et al., 2008)

have not examined organizational traits and resilience of public sector tourism organizations, such as natural resource management organizations. Resilience of public agencies in particular have implications not only for destination planning, policy and governance, but also for overall destination resilience (Amore & Hall, 2016; Hall, 2016). The primary goal of natural resource management organizations is to balance between the protection and sustainable use of resources. Since the success of a tourism destination depends on natural resources, such as lakes, mountains, rivers, forests, and biodiversity, natural resource management is an integral part of building a resilient and sustainable tourism destination. Third, despite many studies examining generational cohort differences in employee skillsets (Blanco-Mazagatos et al., 2018; Naim & Lenka, 2018), these studies neither link those skillsets to traits that allow organizations to adapt nor their effect on organizational resilience. Thus, beyond building resilience, this study has implications for competency development of employees in the face of adversity and change.

Literature review

Resilience and organizational resilience

The term resilience has its roots in mathematics, engineering and material science, where the concept is often referred to as engineering resilience, which explains the ability of a material to rebound or recoil after stress (Bodin & Wiman, 2004; Cheer & Lew, 2018; Manyena, 2006). Since then, the term has been applied in various fields, including ecology, social and behavioural sciences, and childhood and human development fields using concepts such as ecological resilience, socio-ecological system resilience, and human adaptation (Cheer & Lew, 2018; Hall et al., 2018; Masten et al., 1990). At the heart of these concepts is the stability of a system after an unexpected event (Gunderson, 2000).

In the tourism field, the resilience of the tourism system in the face of adversity has been studied (Cheer & Lew, 2018; Espiner & Becken, 2014; Jamaliah & Powell, 2018), primarily from a socio-ecological system (SES) perspective. Vulnerability and resilience are conceptually linked but high levels of vulnerability do not necessarily imply low levels of resiliency (Espiner & Becken, 2014), unlike the suggestions from studies on organizational resilience (Biggs et al., 2012; Jia et al., 2020). SES are inherently complex, dynamic and interactive (Strickland-Munro et al., 2010), with changes in one part altering the stability of the whole system (Hall et al., 2018; Nyaupane et al., 2018). The system's ability to cope with changes requires an understanding of concepts such as vulnerability, uncertainty, resilience, stability and adaptive capacity (Cheer & Lew, 2018; Espiner et al., 2017; Espiner & Becken, 2014; Hall et al., 2018). Resilience requires adaptive capacity (Chowdhury et al., 2019; Strickland-Munro et al., 2010) and can be considered an attribute that can mitigate uncertainty by changing social and business practices (Espiner et al., 2017). Several authors (Biggs, 2011; Cheer & Lew, 2018; Espiner et al., 2017; Hall et al., 2018; Lew, 2014) have called for a SES perspective in developing more resilient tourism businesses and destinations.

In management and organizational behaviour literature, terms 'business' and 'organization' resilience has been used interchangeably to describe the capacity of an organization to adapt to disturbances and seize opportunities emerging from the changing environment (Hall et al., 2018; Prayag et al., 2018; Smit & Wandel, 2006). In some cases the term has been defined as the ability of organizations to survive hostile circumstances and remain operational despite unsympathetic environments (Rudolph & Repenning, 2002; Vogus & Sutcliffe, 2007) and also applied to define organizations that are considered to have the ability to remain dynamic, vibrant and relevant despite changing times (Coutu, 2002; Jamrog et al., 2006). A review of existing definitions can be seen in the recent study by Jia et al. (2020), highlighting reactive or proactive components in the conceptualization of organizational resilience. This is akin to the passive and active forms of resilience that have emerged in the management literature. A proactive engagement and adjustment of a system to change is referred to as active resilience while the ability to withstand or

absorb disturbances has been labelled as passive resilience. The latter emphasizing resistance to impacts and developing robustness within system elements (Burnard & Bhamra, 2019; Jia et al., 2020).

Nonetheless, research on the resilience of tourism organizations is nascent (Biggs et al., 2012; Dahles & Susilowati, 2015; Hall et al., 2018; Orchiston et al., 2016; Prayag et al., 2018). Within the context of public agencies such as BLM, natural resource management organizations or protected area employees (e.g. park rangers), not only manage iconic tourism destinations, but also serve visitors by providing various services, such as interpretation and emergency response (National Travel & Tourism Strategy, 2012), so their role in building a resilient tourism system is critical. However, the role and contribution of employees in building the resilience of public sector tourism/natural resource management organizations remains a significant omission in the literature.

Organizational resilience in public institutions

Organizations respond to uncertainty in various ways, including centralizing internal control, learning, being creative, and improving staff skills (Lee et al., 2013). The need for public institutions to develop the capability to be robust, flexible and adaptive has been emphasized (Hall et al., 2018). In particular, the role played by public institutions for better environmental management of resources in order to promote adaptive capacity of SES in face of environmental and extreme events has been noted ((Agrawal, 2008; Zafra-Calvo et al., 2017). Adaptive capacity refers to the ability of a system to respond to changes through learning, risk and impact management, the accumulation of knowledge and the development of effective management plans (Henly-Shepard et al., 2015; Moreno & Becken, 2009). The concept has relevance for SES from the perspective of risk and vulnerability to hazards, (Moreno & Becken, 2009). Thus, public institutions such as BLM have role in shaping the resilience of tourism destinations but also their own resilience (Amore & Hall, 2016). However, unlike private organizations, organizational strategies and operations in public institutions are more influenced by political and government structures, stringent and often bureaucratic (Peters & Pierre, 2003), which impacts resilience building.

Nonetheless, anticipatory planning and preparedness for emergencies in public institutions are critical for their resilience (Amenta & Ramsey, 2010). In particular, organizational resilience can be developed by prioritizing the training of the workforce in certain skills (Ito & Brotheridge, 2005) and adapting strategic planning decisions to sustain organizational efforts (Bryson, 2018). Previous studies have emphasized employee's adaptability traits and skills, as well as proactive management and operational structures (Burnard & Bhamra, 2011; Ito & Brotheridge, 2005) as enablers of organizational resilience. In public agencies, collective action, strategic processes and worker's traits are critical in determining the ability of an organization to anticipate or circumvent negative conditions (Mallak, 1998; Somers, 2009).

The E-O-R framework and organizational resilience

The E-O-R framework is rooted in exchange theories, where characteristics of exchanges between entities are valuable for understanding different social processes (Emerson et al., 1976; Tsui, 1997). The framework focuses on the employee-organization relationship, highlighting the importance of employer-employee relationship for achieving desired organizational outcomes. The framework rests on four pillars, namely: expectations, relationships, exchange and induced actions (Coyle-Shapiro & Shore, 2007). These pillars allow the identification of different relationship approaches employers can pursue to maximize employee commitment in achieving positive organizational outcomes (Tsui et al., 1997). Resilience as a positive organizational outcome requires that organizations have supportive environments and resilience building initiatives

focusing on employees to facilitate organizational change (Malik & Garg, 2020; Teng-Calleja et al., 2020; Tonkin et al., 2018).

According to the E-O-R framework, employees assign human like characteristics to organizations, expressed through anthropomorphic expectations. These expectations have financial, legal and moral tangents (Eisenberger et al., 1986). Employees' perceptions of anthropomorphic expectations related to organizational support, procedural justice, and communication processes, and their asserted influence on human resource management efforts have been explored in previous studies (Kuvaas, 2007). However, the framework has not been applied to understand how employee skills and organizational traits can contribute to building resilient organizations. Also, the exchange between the support workers expect to receive from an organization and skillsets they expect to reciprocate creates a complex relationship that has related outcomes. In organizational resilience studies, the variations in anthropomorphic expectations workers assign to organizations and skillsets they expect to reciprocate is yet to be extensively explored.

Employees' skills and organizational resilience

The skills and competencies required by employees working in the tourism and hospitality industry have been a topical area of research for decades (see Baum, 2002; Otoo & Mishra, 2018). Several competencies or skillsets emerge as being important not only for employees to do their job effectively, but also for organizational performance (Elbaz et al., 2018; Otoo & Mishra, 2018) and survival in times of adversity (Lengnick-Hall et al., 2011). Elbaz et al. (2018) identify several competencies that affect employee performance. These include employees confidence in their team related competence (e.g., collaboration and teamwork), self-competence (e.g., occupation specific skills), change related competence (e.g., organizational change and training opportunities following change), communication and cross-cultural competencies (e.g., cultural understanding). Baum (2002) identified communication, teamwork, information technology, and positive attitude toward on-going learning as critical skills for success in the hospitality industry. Studies on organizational change and resilience have shown that creativity and innovative thinking (Lee et al., 2013 Mallak, 1998; Robles, 2012; Smith and Sterling, 2010) are desirable skills in employees beyond generic skills such as critical thinking and problem solving. Ethical competence skills (e.g., work ethic, professionalism) are also deemed critical for employees to deal with organizational change (Otoo & Mishra, 2018). Therefore, evidence suggests that skills that allow employees to adapt positively to organizational change contribute to building resilient organizations (Lee et al., 2013; Lengnick-Hall et al., 2011). Thus, we propose:

H_1: Employees' adaptive skills will have a positive influence on organizational resilience

Organizational traits and organizational resilience

An organization's resilience is dependent on the presence of organizational processes, practices and procedures that enable it to overcome challenges (Lengnick-Hall et al., 2011). In particular, resilience is largely contingent on the resources that organizations can provide employees (Näswall et al., 2019). Previous studies show that resilient organizations that display adaptive capacity post-disturbance have traits such as ability to change quickly, shared sense of purpose, flexible business practices, thinking beyond status quo and effective at long term planning and thinking (Lee et al., 2013; McManus et al., 2008; Seville, 2018). This is complemented by human resource management practices that include the right people in decisions, equip employees with the right skills, value diversity, and encourage employees to experiment (Bardoel et al., 2014; Lengnick-Hall et al., 2011; Teng-Calleja et al., 2020; Tonkin et al., 2018). In fact, organizations with higher human capital as evidenced by better managerial skills and with a greater age and

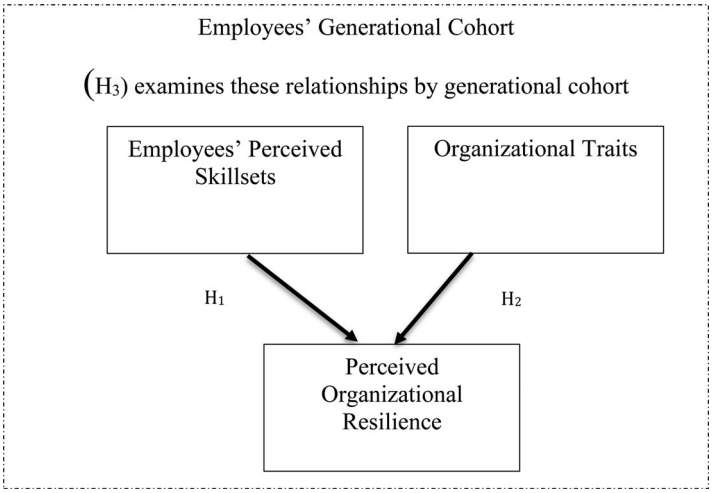

Figure 1. Conceptual model for the study.

experience are more likely to have the skills to cope with future crises (Hall & Williams, 2019), and adaptive human capital is a characteristic strongly associated with resilience of different types of organizations (Biggs, 2011; Biggs et al., 2015). Both organizational traits and human resources practices described earlier have been found to contribute to resilient tourism organizations (Chowdhury et al., 2019; Orchiston et al., 2016; Prayag et al., 2018). Therefore, it can be expected that organizations that have resources and skills (traits) that contribute to enhance their adaptive capacity are more likely to be resilient. Thus, we propose that:

H_2: Organization traits (skills and resources) that show adaptive capacity will have a positive influence on organizational resilience.

Generational cohorts, employee skills, organizational traits and organizational resilience

Employees' assessments of their skills and expectations they have in terms of organizational support in the face of change are functions of different individual and organizational factors. An individual factor that influences these perceptions is the generational cohort of employees (Twenge & Campbell, 2008). The term 'cohort' is used to refer to a group that shares common years of birth and key life events (Kupperschmidt, 2000). Though there are variations in the way generations are grouped, there is a consensus on the four major generation cohorts which are namely: Veterans (1925–1944), Baby Boomers (1946–1964), Gen X (1965–1981) and Gen Y or Millennials (1982–2000) (Howe & Strauss, 2000).

Studies examining the resilience of organizations recognise employees as a critical resource (Lee et al., 2013; McManus et al., 2008) but fail to identify whether different generational cohort of employees evaluate their skills and organizational traits differently (Blanco-Mazagatos et al., 2018; Naim & Lenka, 2018).

Contradictory evidence exists on workplace behaviours of different generational cohorts. For example, several studies suggest that personality and motivation levels of Baby Boomers, Gen X, and Gen Y or Millenials do not account for much differences in workplace behaviours (Macky et al., 2008; Wong et al., 2008). Contrary to this, Westerman and Yamamura (2007) examine the levels of work satisfaction and turnover rates among different generations of accountants and assert that there is a significant difference among different groups.

Other studies suggest that different generational cohorts assess their skillsets differently. For example, on assessments of information technology skills, younger generations give themselves

higher ratings on creativity and computer-related confidence (Harrison & Rainer, 1992). Studies (Dwyer & Azevedo, 2016; Lyons et al., 2012) suggest that generational differences exist with respect to workplace attitudes, values and preferences regarding leadership, human resources practices and organizational change initiatives. Yet, whether generational differences account for how employees perceive adaptive traits of organizations and their subsequent evaluations of organizational resilience remain to be ascertained. Thus, we propose:

H_3: There are differences between generational cohorts on predictors (skills and organizational traits) of organizational resilience.

Figure 1 summarises the three hypotheses of this study.

Methods

Study context

The Bureau of Land Management (BLM) is the largest public land management agency within the Department of Interior, which administers over 245 million acres (about one eighth of total landmass) in the US. The agency manages these public land resources for a variety of uses, including energy development, mining, livestock grazing, timber harvesting, and tourism and recreation, while protecting a wide array of natural, cultural, and historical resources, many of which are found in the BLM's 27 million-acre National Landscape Conservation System (BLM. , 2018). The conservation system alone manages 221 Wilderness Areas and 16 National Monuments, so the BLM's role in managing recreation and tourism resources is critical. BLM provided more than US$2.7 billion in revenue to the private sector and a total of US$7 billion in direct and indirect revenue to the US economy through tourism (BLM., 2013). Tourism resources BLM manages offer valuable community amenities, attract businesses, protect sensitive resources, and helps diversify and stabilize the economies of the surrounding communities, which consequently helps rural economy (BLM. , 2020). Tourism also provides an opportunity for tourists to learn about public lands and promote conservation stewardship.

Most of the lands BLM manages are located in 12 western states, including Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. BLM Arizona administers 12.2 million acres of public lands, along with another 17.5 million subsurface acres within the state (BLM Arizona, 2018). In Arizona, BLM protects and manages desert landscapes and lush riparian areas within 47 wilderness areas, five scenic areas, five national monuments, three national conservation areas, two national historic trails, and two wilderness study areas (BLM Arizona, 2018), all critically important tourism resources for the state. The American West, where the majority of US public lands are located, is rapidly changing, in terms of climate change, demographics, workforce, technology, the value of public lands, urbanization, and recreation and tourism use. An increase in recreation and tourism is also placing enormous pressure on limited natural resources.

Sampling and data collection

The population for the study included all Bureau of Land Management (BLM) employees working in Arizona, including state and field offices. The sampling frame was a list of 483 names and email addresses of all BLM Arizona employees. A Web-based survey system, Survey Monkey, was used to collect the data because it is more efficient and effective compared to mail surveys when e-mail addresses are readily available (Schleyer & Forrest, 2000). A very brief introductory text and link to the survey, along with an introductory video, was sent to each respondent, which helps increase response rates for web-based surveys (Kaplowitz et al., 2004). The video and text included the background and objectives of the study, anonymity and confidentiality

statements, and the useful of the research for the BLM. The survey was operational for three weeks, and five follow up reminders were sent to each respondent to encourage participation, resulting in 312 employees completing the survey. This represents an approximately 64% response rate.

Survey instrument

The survey instrument included two sets of questions related to individual skillsets and organizational traits. The first set measured employees' skills using eleven items (Cronbach's $\alpha = 0.85$) on a five-point Likert-type scale ranging from "I have lot to learn" to "I have expert skills and lots of practice". The skills measured included those related to employee occupation, technical, communication, and critical thinking skills, among others, adapted from prior published studies (see Avey et al., 2009; Gilley et al., 2008; Mallak, 1998; Robles, 2012; Smith & Stirling, 2010). The second set of questions measured fourteen organizational traits (Cronbach's $\alpha = 0.93$), such as working environment, flexibility, and shared sense of purpose and mission, among others, adapted from previous studies (see Lee et al., 2013; Lengnick-Hall et al., 2011). These were measured on a five-point Likert-scale ranging from "we are doing poorly" to "excellent." The instrument also included an item to measure organizational resilience that assessed employees' confidence in the organization's ability to adapt to change, measured on five-point scale (1 = Not at all confident and 5 = Highly confident). This single item adapted from Biggs (2011) represents "overall resilience", which is the metaphoric view of resilience (Hillmann, 2020). This view complements the resources/capabilities view that informs the use of multiple indicators to measure resilience (Hillmann, 2020). The survey also contained a few demographic questions, including cohort, years of experience, the level of organization they work for, and management level. This study was part of a collaborative research project between the BLM and Arizona State University. The research team developed the questions by drawing from the literature, which were further tailored to fit with the context of BLM Arizona. The instrument was pre-tested with a cross-section of users. Their feedback was used to clarify questions and reduce the questions to achieve an average response time of 20 minutes.

Data analysis

All completed online surveys were coded and entered in databases using the Statistical Package of the Social Sciences (SPSS) version 22. The data was analysed in several stages. First, one-way Analysis of Variance (ANOVA) tests were conducted to compare if cohorts responded to their perceived skillsets and organizational traits differently. Second, hierarchical regression analysis was used to predict organization resilience on the basis of employees' demographics, skillsets and perceived organizational traits. Finally, cohort specific hierarchical regression models were developed to identify whether the predictors or organizational resilience are different for the various generational cohorts. Hierarchical regression is particularly useful for evaluating additional variance explained in an outcome variable (organizational resilience) by different sets of predictors (employees' demographics, skillsets and organizational traits) based on theory and past research (Field, 2013).

Findings

Sample profile of employees

The majority of employees surveyed were long-term employees of federal government with 38.5% having worked for more than 20 years and 17.8% between 6 to 10 years. Only 3% of employees had been working for less than one year (Table 1). Two fifth of the sample (40.6%)

Table 1. Profile of employees surveyed.

	Percentage	Generation	Percentage
Years working for the federal government			
<1 year	3.0	Baby Boomer (born 1946-1964)	40.1
1-5 years	8.9	Gen X (born 1965-1984)	47.9
6-10 years	17.8	Gen Y/Millennials (born 1982-2004)	12.0
11-20 years	31.9		
20+ years	38.5		
Level within the organization		**Management Level**	
Field office	40.6	Supervisor / Manager	19.8
District office	29.9	Other	80.2
State office	29.5		
		Area (District Office)	
		Arizona	22.0
		Colorado River	22.0
		Gila	32.3
		Phoenix	23.7

was working in the field office while one third (29.9%) was working in the district office. Less than a fifth (19.8%) of the sample was employed in a supervisory or managerial position within the organization. The majority of employees either worked in Gila (32.3%) or Phoenix (23.7%) district of the BLM. The sample had a majority of Generation X employees (47.9%) followed by Baby Boomers (40.1%) and Millennials (12%).

Employee skills, organizational traits and generational cohorts

Overall, employees rated themselves as above average on eight of the eleven skills. In particular, skills related to work ethic, attitude and professional ($M = 4.56$ on a 5-pt scale) and customer service orientation ($M = 4.43$) were rated higher than the others (Table 2). Using information technology and information management ($M = 3.67$) was rated the lowest among the skillsets evaluated. ANOVA, with Games-Howell post-hoc tests, due to unequal sample size for each cohort and violation of homogeneity of variance, was used to test whether differences existed between the generational cohorts on their perceived their skillsets and the organizational traits they evaluated. The results showed a significant difference ($F(2, 262) = 5.63$, $p < 0.01$) among the three cohorts on one item only (Skill 1- "using information technology and information management"). Baby Boomers, on average, rated this skillset ($M = 3.46$) lower compared to Millennials ($M = 4.16$). Millennials also rated this skillset higher compared to Generation X ($M = 3.70$).

On average, confidence levels were low on all the skills necessary for the organization to adapt to changes. The lowest score was for the item "ability to change organizational structure based on need" ($M = 2.22$) and the highest score was for the item "providing adequate, genuine opportunities for public, tribal and stakeholder input" ($M = 3.21$). There was no statistically significant difference among the three cohorts on the items measuring the adaptive skills and resources (Table 2).

Hierarchical regression model for predicting organizational resilience

To test H_1 and H_2, which evaluate which sets of skills and organizational traits have a positive influence on organizational resilience, a hierarchical regression was estimated. Prior to this, the five main assumptions of regression models (normality, multi-collinearity, linearity, homocedasticity, and independence of error terms) were tested. An examination of the skewness and kurtosis scores showed that all items had scores within ± 3 (highest skewness score, −1.47 for Skill 3; highest kurtosis score, 2.47 for Skill 4), suggesting that the assumption of normality is met (Field, 2013). All Variance Inflation Factors (VIF) values were below 10 and tolerance levels well above 0.2 (Field, 2013), thus there is no cause for concern with respect to multi-collinearity (Table 3). A plot of the standardized residuals versus the standardized predicted values of the dependent variable

Table 2. Employee skills and ANOVA results by cohort.

	Mean	Std. Dev.	ANOVA results by Cohort
Employee skills			
Skill 1: Using Information Technology and Information Management	3.67	1.07	Baby Boomers (M = 3.46) < Millennials (M = 4.16); Gen X (M = 3.70) < Millennials (M = 4.16)
Skill 2: Creative, Innovative Thinking	4.14	0.90	
Skill 3: Work Ethic, Attitude, and Professionalism	4.56	0.71	
Skill 4: Analysis, Critical Thinking, Problem Solving, and Reasoning	4.36	0.81	
Skill 5: Customer Service Orientation	4.43	0.79	
Skill 6: Broad Environmental Sciences Understanding	3.63	1.20	
Skill 7: Collaboration and Teamwork	4.39	0.77	
Skill 8: Occupation Specific Skills	4.38	0.83	
Skill 9: Communication	4.28	0.79	
Skill 10: Ongoing Learning	3.91	1.08	
Skill 11: Cultural Understanding	3.90	0.95	
Adaptive Resources and Skills (Organizational Traits)			
AdptSk1: Safe, trusting work environment	2.97	1.24	No significant differences between cohorts
AdptSk2: Thinking beyond status quo.	2.66	1.04	
AdptSk3: Desire to Change or Improve	2.80	1.11	
AdptSk4: Including the right people in decisions	2.47	1.11	
AdptSk5: Ability to change organizational structure based on need	2.22	1.03	
AdptSk6: Providing employees with adequate Skills	2.79	1.07	
AdptSk7: Effective long term planning and thinking	2.56	1.03	
AdptSk8: Ability to Experiment	2.46	1.03	
AdptSk9: Embracing a Diversity of Thought	3.08	1.16	
AdptSk10: Shared Sense of Purpose	2.74	1.12	
AdptSk11: Flexible Business Practices	2.91	1.10	
AdptSk12: Relying on science-based decision making	2.83	1.10	
AdptSk13: Generating public interest or awareness of BLM's work	2.84	1.12	
AdptSk14: Providing adequate, genuine opportunities for public, tribal and stakeholder input	3.21	1.06	

confirmed that the assumptions of linearity and homocedasticity were met. The Durbin-Watson statistic (2.03) was between 1 and 3 suggesting the independence of the error terms (Field, 2013).

In step one of the model, five control variables were entered as shown in Table 3. These variables only explained 6.7% of the variance in the dependent variable. In step 2, employees' skills were entered in the model and this boosted explained variance of the model to 12.3%. In the last stage of the model, the organizational traits were added. The final model was statistically significant ($F(26, 255)=14.55$, $p < 0.001$) and explained 59.7% of the total variance, highlighting the importance of organizational traits in predicting organizational resilience rather than employees' skills. None of the employees' skills could explain the variance in organizational resilience, thus rejecting H_1. Confidence levels in four organizational traits could significantly predict organizational resilience, thus supporting H_2. Table 3 shows that the higher the confidence level of employees in a "safe, trusting work environment", the more resilient the organization was ($\beta = 0.14$, $p = 0.02$). The higher employees' confidence were in "thinking beyond the status quo" ($\beta = 0.22$, $p < 0.001$), "including the right people in decisions" ($\beta = 0.18$, $p < 0.001$) and "effective long term planning and thinking" ($\beta = 0.21$, $p < 0.001$), the more resilient the organization was. As suggested in the literature, these items pertain more to the planned resilience of a business (Lee et al., 2013; Orchiston et al., 2016).

Hierarchical regression models by cohort

To test H_3, three hierarchical regression models were estimated to organizational resilience on the basis of employees' skills and organizational traits based on different cohorts (Baby Boomers, Gen X and Millennials). The same five assumptions of regression models as before were tested

Table 3. Hierarchical regression model for overall perceived ability of the organization to adapt.

Model	Variables	Std. β	p-level	Tolerance	VIF	R^2
Step 1	Cohort	0.16	0.02	0.70	1.43	0.067
	Position in the organization	0.02	0.78	0.98	1.03	
	Area	0.04	0.49	1.00	1.01	
	Level in the organization	0.20	0.00	0.97	1.04	
	No. of years worked	−0.05	0.47	0.70	1.42	
Step 2	Cohort	0.17	0.02	0.67	1.49	ΔR^2=0.057
	Position in the organization	0.03	0.61	0.83	1.21	
	Area work in	0.05	0.42	0.97	1.03	
	Level in the organization	0.17	0.01	0.86	1.16	
	No. of years worked	−0.04	0.57	0.65	1.53	
	Skill 1	0.03	0.66	0.74	1.35	
	Skill 2	−0.08	0.33	0.48	2.06	
	Skill 3	0.08	0.30	0.54	1.86	
	Skill 4	−0.07	0.47	0.42	2.41	
	Skill 5	−0.04	0.62	0.65	1.53	
	Skill 6	−0.19	0.00	0.77	1.29	
	Skill 7	0.05	0.59	0.45	2.22	
	Skill 8	−0.01	0.91	0.59	1.69	
	Skill 9	−0.05	0.61	0.39	2.56	
	Skill 10	0.15	0.05	0.59	1.71	
	Skill 11	0.04	0.54	0.69	1.46	
Step 3	Cohort	0.09	0.07	0.63	1.59	ΔR^2=0.474
	Position in the organization	0.00	0.95	0.80	1.25	
	Area work in	0.05	0.23	0.91	1.11	
	Level in the organization	0.08	0.06	0.80	1.25	
	No. of years worked	0.01	0.85	0.62	1.61	
	Skill 1	−0.02	0.74	0.67	1.49	
	Skill 2	0.06	0.35	0.46	2.18	
	Skill 3	−0.05	0.36	0.51	1.97	
	Skill 4	0.00	0.97	0.40	2.53	
	Skill 5	0.00	0.96	0.63	1.58	
	Skill 6	−0.07	0.16	0.72	1.38	
	Skill 7	0.02	0.70	0.43	2.30	
	Skill 8	−0.03	0.53	0.57	1.75	
	Skill 9	−0.05	0.43	0.38	2.63	
	Skill 10	0.10	0.06	0.56	1.78	
	Skill 11	0.03	0.53	0.66	1.53	
	AdptSk 1	0.14	0.02*	0.50	2.00	
	AdptSk 2	0.22	0.00**	0.41	2.41	
	AdptSk 3	−0.01	0.88	0.46	2.19	
	AdptSk 4	0.18	0.00**	0.58	1.74	
	AdptSk 5	0.12	0.05	0.42	2.37	
	AdptSk 6	−0.04	0.52	0.41	2.45	
	AdptSk 7	0.21	0.00**	0.37	2.73	
	AdptSk 8	0.04	0.42	0.53	1.89	
	AdptSk 9	0.09	0.08	0.64	1.57	
	AdptSk 10	0.02	0.71	0.57	1.75	

*$p < 0.05$.
**$p < 0.001$.

for each model and the results showed that these were met. The model for each cohort was statistically significant [Baby Boomers – $F(25, 81)=5.66$, $p < 0.001$; Gen X – $F(25, 102)=10.32$, $p < 0.001$] except for Millennials [$F(6, 31)=3.15$, $p = 0.08$]. The model for Baby Boomers and Gen X explained 63.6% and 71.7% of the variance organizational resilience respectively, thus supporting H_3.

Table 4 shows that for Baby Boomers, only three of the ten adaptive skills and resources (organizational traits) have an influence on organizational resilience. Similar to the model for the whole sample, the higher confidence levels in "thinking beyond status quo" ($\beta = 0.33$, $p < 0.01$) and "effective long-term planning and thinking" ($\beta = 0.45$, $p < 0.001$) were, the more resilient Baby Boomers perceived the organization to be. In contrast to the model for the whole sample,

Table 4. Hierarchical regression models by cohort.

		Baby Boomers[a]		Gen X[a]		Millenials #	
Model	Variables	Std. β	p-level	Std. β	p-level	Std. β	p-level
Step 1	Position in the organization	0.11	0.26	−0.06	0.48	0.12	0.50
Baby Boomers (R^2=0.035)	Area work in	−0.01	0.90	0.03	0.78	0.35	0.08
Gen X (R^2=0.083)	Level in the organization	0.15	0.15	0.24	0.01	0.17	0.36
Millenials (R^2=0.178)	No. of years worked	0.03	0.76	−0.15	0.10	−0.02	0.90
	Position in the organization	0.10	0.37	0.02	0.84	0.28	0.24
Step 2	Area work in	0.01	0.91	0.08	0.37	0.59	0.06
Baby Boomers (ΔR^2=0.09)	Level in the organization	0.16	0.14	0.17	0.05	0.13	0.58
Gen X (ΔR^2=0.155)	No. of years worked	0.03	0.81	−0.12	0.16	−0.21	0.52
Millennials (ΔR^2=0.188)	Skill 1	0.01	0.91	0.05	0.63	−0.27	0.45
	Skill 2	−0.13	0.43	0.01	0.91	−0.18	0.68
	Skill 3	0.13	0.36	0.15	0.22	0.09	0.79
	Skill 4	−0.01	0.95	−0.20	0.13	0.33	0.38
	Skill 5	0.07	0.61	−0.07	0.51	0.25	0.51
	Skill 6	−0.13	0.25	−0.27	0.01	0.18	0.62
	Skill 7	0.06	0.72	−0.11	0.38	−0.41	0.29
	Skill 8	0.22	0.15	−0.09	0.39	−0.40	0.28
	Skill 9	−0.30	0.08	0.07	0.59	0.20	0.62
	Skill 10	−0.06	0.67	0.40	0.00	−0.32	0.31
	Skill 11	0.19	0.12	0.01	0.89	0.35	0.47
	Position in the organization	0.07	0.38	0.00	0.97	0.09	0.66
Step 3	Area work in	0.02	0.76	0.06	0.34	0.41	0.15
Baby Boomers (ΔR^2=0.511)	Level in the organization	0.08	0.35	0.13	0.03*	−0.06	0.77
Gen X (ΔR^2=0.479)	No. of years worked	0.04	0.59	−0.03	0.65	0.33	0.38
Millennials (ΔR^2=0.563)	Skill 1	−0.06	0.54	0.02	0.79	0.53	0.21
	Skill 2	0.05	0.67	0.05	0.49	0.15	0.65
	Skill 3	0.06	0.56	−0.06	0.51	0.40	0.16
	Skill 4	0.10	0.44	−0.12	0.17	−0.34	0.47
	Skill 5	0.02	0.87	−0.03	0.71	0.20	0.54
	Skill 6	0.11	0.25	−0.11	0.09	0.34	0.25
	Skill 7	−0.12	0.35	0.03	0.73	−0.50	0.27
	Skill 8	0.08	0.44	−0.06	0.44	−1.27	0.04
	Skill 9	−0.21	0.09	−0.05	0.56	0.09	0.82
	Skill 10	0.06	0.56	0.22	0.01*	−0.11	0.67
	Skill 11	0.11	0.24	−0.01	0.89	0.81	0.12
	AdptSk 1	0.03	0.77	0.36	0.00**	−0.48	0.15
	AdptSk 2	0.33	0.01*	0.14	0.11	1.03	0.03
	AdptSk 3	−0.18	0.11	0.06	0.46	−0.70	0.05
	AdptSk 4	−0.01	0.96	0.17	0.02*	1.06	0.02
	AdptSk 5	0.23	0.03*	0.03	0.79	−0.23	0.49
	AdptSk 6	−0.16	0.21	−0.11	0.21	−0.26	0.61
	AdptSk 7	0.45	0.00**	0.15	0.08	0.13	0.77
	AdptSk 8	0.19	0.06	0.08	0.35	−0.01	0.99
	AdptSk 9	0.05	0.55	0.18	0.02*	0.50	0.10
	AdptSk 10	0.03	0.77	−0.01	0.93	0.30	0.40

*$p < 0.05$.
**$p < 0.001$, #overall model not significant, [a]overall model significant.

Baby Boomers perceived that higher confidence levels in the "ability to change organizational structure based on need" can lead to a more resilient organization ($\beta = 0.23$, $p < 0.05$).

For Gen X, the level in the organization (field, district and state offices), with employees in state offices perceiving ($\beta = 0.13$, $p < 0.05$) the public sector organization to be more resilient than those working in field offices. Contrary to the model for Baby Boomers, the more confidence employees of Gen X had in their skill of "ongoing learning", the more resilient they perceived the organization to be ($\beta = 0.22$, $p < 0.01$). The more confident Gen X employees felt with respect to "safe, trusting work environment" ($\beta = 0.36$, $p < 0.001$), "including the right people in decisions" ($\beta = 0.17$, $p < 0.05$), and "embracing a diversity of thought" ($\beta = 0.18$, $p < 0.05$), the more resilient they perceived the organization to be. These results highlight some differences in organizational traits that influence organizational resilience for a public tourism organization when the model for Gen X employees is compared to that of Baby Boomers.

Discussion and implications

Using the E-O-R framework, this study examines the role of employees' skillsets and organizational traits in contributing to a resilient public sector organization. The ANOVA results showed that some differences exist between the generational cohorts on how they evaluate their own skills and the traits that they perceive are necessary for an organization to adapt to ongoing and future changes. Of the three hypotheses tested, support was found for H_2 and H_3. Unlike previous studies (Baum, 2002; Otoo & Mishra, 2018) suggesting that employees in the tourism and hospitality sector require skillsets such as information technology, creative and innovative thinking, critical thinking, problem-solving and reasoning, collaboration and teamwork, among others, these skills do not predict organizational resilience, thus rejecting H_1. While some of these skills have been emphasized as determinants of resilience in studies focusing on both tourism (Orchiston et al., 2016) and non-tourism organizations (Lee et al., 2013; McManus et al., 2008), employees of public natural resource management institutions such as BLM seem to have low confidence in these skills being essential for an organization to adapt to its environment. Studies on organizational change typically emphasize human resource management practices such as staff training and development, as well as the establishment of resilience building initiatives to improve staff preparedness for change (Bardoel et al., 2014; Lengnick-Hall et al., 2011; Teng-Calleja et al., 2020; Tonkin et al., 2018). The results highlight that the skills employees perceive they have are not those that they believe can contribute to organizational resilience, thus raising concerns about the level of staff training and development. The importance of investment in human capital for resilient businesses has been emphasized typically in profit-making organizations (Biggs et al., 2012; Hall et al., 2018), but in light of the results, its importance for building the resilience of public institutions is also emphasized.

Organizational traits such as safe/secure working environment, thinking beyond status quo, including the right people in decisions, and effective long-term planning were perceived by employees as facilitating an organization to develop adaptive capacity and become resilient, thus supporting H_2. This finding aligns with previous studies on organization resilience indicators (Jia et al., 2020; Lee et al., 2013; Orchiston et al., 2016), but unlike these, we demonstrate the importance of these resources and skills in a non-disaster context. However, the results of H_1 and H_2 highlight a competency/skill gap between what employees perceive their skills should be and what they believe are organizational traits that should be developed as part of resilience building. Beyond the training needs highlighted earlier, there are potentially governance issues related to structures, processes and procedures that may account for the competency/skill gap identified. This has broader implications as suggested by others (Amore & Hall, 2016; Hall, 2016) on how tourism related public institutions are governed as well as the human resource practices in such institutions. As the findings highlight, employees in this study believe they have the skillsets necessary for adapting to a changing environment but rated the organization's adaptive traits (e.g., desire to change or improve, ability to change organizational structure, and effective long-term planning- Table 2) poorly. This inflexibility in changing organizational structures that dampens the ability of an organization to respond quickly to a changing environment has been noted in previous studies (Lee et al., 2013; McManus et al., 2008).

In terms of the E-O-R framework, the findings suggest that employees have low confidence in the organization being able to adapt to future challenges. This implies that of the four pillars of expectations, relationships, exchange and induced actions (Coyle-Shapiro & Shore, 2007) as suggested by the framework, expectations in terms of future skills development will have to be managed better by the BLM. Also, according to employees, their induced actions as evidenced by their commitment to developing skills that would build organizational resilience are not aligned with current organizational traits. This suggests divergence between employee and organizational strategies to achieve positive organization outcome through the development of employee competencies.

Sustainable development has been a major focus of tourism policy makers, yet it is mostly focused on the private sector entities, and the role public sector tourism agencies in the UN Sustainable Development Goal is not fully captured (Hall, 2019). Public sector natural resource management organizations, such as BLM, whose mission is to balance between the protection and use of natural resources, play an important role to achieve the UN 2030 agenda. Guided by the multiple use approach, one of the major goals of the BLM is to manage public lands for the enjoyment of the public through tourism and recreation. However, there is a lack of connection in the literature between the UN SDGs, public lands, and tourism. The ramifications of the results of the study are related to SDG Goal 11 and 15, where communities and organizations are becoming less resilient as public institutions such as the BLM are perceived by employees as neither investing in the right skills nor developing organizational traits that will improve resilience. Therefore, such organizations reduce their probability to survive and serve the public in the long-term which may have consequences on both resilience and sustainability of conservation areas and public tourism resources in the United States and beyond.

Further, as tourism and recreation put enormous pressure on natural resources, on the one hand, environmental and natural resource institutions often view tourists as a source of problem, on the other hand neoliberals blame the institutions for regulations to push the agenda to privatize or marketize public lands for profit. However, public demand for nature-based recreation and tourism is a major driver of the establishment and protection of public lands in the US (Thomas & Reed, 2019). The importance of public lands, particularly for nature-based recreation experience, has also provided legitimacy for funding and policies to ensure the access and availability of outdoor recreation opportunities for the public. Therefore, sustainable tourism is an integral part of public lands and it needs better linkages to build more resilient natural resource management organizations through tourism, and conservation and environmental stewardship.

In terms of resilience building capacity of the organization, the results suggest that active resilience capability is poor (Burnard & Bhamra, 2019; Jia et al., 2020), given that there is limited proactive management, as perceived by employees, for the organization to adapt to system change. Resilience as a positive organizational outcome requires that organizations have supportive environments and resilience building initiatives focusing on employees to facilitate organizational change (Malik & Garg, 2020; Teng-Calleja et al., 2020; Tonkin et al., 2018). Also, there are generational differences among employees in their expectations of organizational traits required for a resilient organization. As the results suggest (H_3), Baby Boomers typically value thinking beyond the status quo, the ability to change organizational structure and effective planning as desirable facets of an organization, Gen X emphasized embracing a diversity of thought and including the right people in decisions. As this study shows, organizations are mostly headed by the older generation, but their priorities are different from the younger generation. The younger generation underscored that the organizations need to be more inclusive and embrace the diversity of ideas coming from a diverse workforce. This has particular implications on human resource practices and workforce management to account for generational differences (Blanco-Mazagatos et al., 2018; Naim & Lenka, 2018). The results provide evidence specifically on generational differences with respect to workplace attitudes in terms of skills required by employees to perform their job and change initiatives that will make the organization more resilient, thus extending previous studies (e.g., Dwyer & Azevedo, 2016; Lyons et al., 2012) that have not examined these issues in public institutions related to tourism.

In terms of managerial recommendations, based on the findings, public organizations should proactively initiate a review of employees' perceived competency gaps to better prepare for the future. A review of operational structures may be necessary as employees believe that the right people are not being included in decision-making processes. As suggested by Mallak (1998) and Somers (2009), strategic and operational processes are critical for building organizational resilience. In the case of BLM, employees seem to believe that the organization is not prepared enough to do long-term effective planning and operational processes such as a safe/secure

working environment are not a current organizational trait. Based on the Employee-Organization Relationship framework, the findings provide input into the expectations of employees, the next step would be for the public agencies to understand the relationships between the different layers of management and the types of exchanges that exist between managers and employees. Further, organizations should incorporate a strategic approach to strengthening their organizational traits. Equipped with such an understanding and strategic approach, organizations can then induce actions to better align and manage employees' expectations with the future needs of the organization.

Conclusion

While previous studies have asserted the importance of employees in building resilient organizations (Lee et al., 2013; McManus et al., 2008; Orchiston et al., 2016), these studies do not identify either the skillsets or traits that are perceived as important for a public agency related to tourism/natural resources to adapt to unexpected changes . This study contributes to the limited literature on employees' skillsets and organizational traits that can effectively contribute to organizational resilience. Further, the study established that the perceptions of organization resilience differ among generational cohorts. Organizational resilience literature is mostly focused on post-disaster resilience, which highlights the reactive aspects of resilience and does not take into account organizations also have to cope with continuous and incremental changes, and therefore must invest in active resilience capabilities. This study advanced the tourism/natural resources resilience literature by advocating for proactive, an integrated and holistic approach to resilience building that can increase an organization's adaptive capacity (Annarelli & Nonino, 2016). However, as the results suggest building this adaptive capacity will require organizational structures, processes and practices that create supportive environments for employees.

However, the study is not without limitations. First, the study was conducted on a single public-sector agency, and the relationships identified should be cautiously applied to the other organizations. Second, some of the skillsets identified are those of specific importance to achieve the BLM's mission and may not be relevant to other private, non-profit and public sectors. Third, other factors such as level of education/training, functional role in the organization and/or exposure to tourists/visitors may affect perceptions of organizational traits and confidence employees have in the organization being able to adapt to changes but these were not assessed in the study. Based on the finding and the limitations, several areas of further research can be offered. Future studies can use the concepts of planned and adaptive resilience (Orchiston et al., 2016; Prayag et al., 2018) to identify which organizational traits matter the most for predicting each of these dimensions of resilience. The notion of employee resilience (Tonkin et al., 2018) is gaining momentum in organizations studies. It would be worthwhile for future studies to examine how employee skillsets contribute to employee resilience and whether employee resilience affects organizational resilience. Organizational challenges often lie within the agency's resistance to change, adapt and innovate. Given the crisis public lands are facing with the growing demand for natural resources, public land management organizations warrant more attention, especially to revise the institutional level norms and policies to make the organization more adaptive at all levels.

Acknowledgements

Funding support for this study was provided by the Arizona Bureau of Land Management. This study was conducted as a part of the Northstar 2025 project. The author would like to thank the BLM Northstar research team, including Matt Thorburn, Adam Milnor, and Sharisse Fisher, for their support throughout the project. Any errors remain the sole responsibility of the authors.

The conceptualization and considerable writing of the paper was done during the primary author, Gyan P Nyaupane's Erskine Fellowship in the Department of Management, Marketing and Entrepreneurship at the University of Canterbury, New Zealand.

Disclosure statement

No potential conflict of interest was reported by the authors.

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