Strengthening Social Capital for Entrepreneurship in Building Costal Resilience

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ABSTRACT

Building coastal resilience in the context of rapidly increasing challenges of disturbance factors, e.g., extreme events, human impacts, and sea level rise, is becoming a necessity for coastal communities including policy makers, businesses, and researchers. In this paper, the author shows a design methodology of strengthening social capital for entrepreneurship in building coastal resilience. The methodology is grounded in the theories of social capital and community resilience, docility and entrepreneurship, distributed cognition, and input-process-output model of strategic entrepreneurship. The design is put into action to study the experiences of Louisiana in building coastal resilience responding to environmental disturbances such as Katrina, Deepwater Horizon, and Covid-19. In particular, we study how technological platforms are developed to help scale up entrepreneurship for wetland conservation.

KEYWORDS

Coastal Resilience, Distributed Cognition, Docility, Entrepreneurship, Social Capital, Wetland Conservation

INTRODUCTION

Coastal resilience is "the capacity of the socioeconomic and natural systems in the coastal environment to cope with disturbances, …, by adapting whilst maintaining their essential functions." (Masselink & Lazarus, 2019: p.2587). Building coastal resilience in the context of rapidly increasing challenges of disturbance factors is becoming a necessity for coastal communities including policy makers, businesses, and researchers. Entrepreneurship plays an important role in making coastal resilience (Hnath, 2018). For examples, entrepreneurial solutions addressing coastal disturbance factors such as extreme events (Andriani & McKelvey, 2007), human impacts (Wang & Peng, 2020), and sea level arise (Embry, Jones, & York, 2019) have been reported frequently. Technologies such as artificial intelligence (Saravi, et. al., 2019), big data (McKinley, et al., 2021), blockchain (Vannucci, Pagano, & Romagnoli, 2021), cloud computing (Han & Mozumder, 2022), digital twins (Allen, et al., 2022) and Internet of Things (Argyroudis, et al., 2022) also have been widely studied to build up the capacity for coastal resilience. However, current literature on the relationship between technologies and entrepreneurship in coastal resilience is limited.

In this paper, we enrich the literature by showing how technologies are developed to help scale up entrepreneurship for wetland conservation in building costal resilience. One of the effective ways of building the capacity for coastal resilience is to develop and manage an integrated ecosystem of

wetlands (Perillo, et al., 2018) with functioning ecological services (Keddy, 2010) for coping with disturbances such as discharge of pollutants and degradation of wetlands impacted by human activities (Craft, 2015), land losses due to rising sea levels (Morris, et al., 2002) and climate change (Day, et al., 2008), and extreme hurricane events (Costanza, et al., 2008). The integrated development and management rely on the interdisciplinary cooperations of science, landscape architecture, engineering, technology, socioeconomics (Rodriguez & Brebbia, 2015), and, most importantly, public polices (Vélez, et al., 2018). To justify the large investments of integrated coastal wetlands, comprehensive cost-benefit studies with various value-added short-term and long-term measures to the communities are necessary (Breaux, et al., 1995). One of the value-added measures commonly used is job creation (Edwards, et al., 2013). As entrepreneurship for job creation is well documented (Malchow-Møller, et al., 2011), we illustrate how a design methodology of entrepreneurship for wetland conservation, combining technologies and student entrepreneurship, can add significant value to the integrated ecosystems of coastal wetlands.

The design methodology is grounded in four sets of theories: social capital and community resilience, docility and entrepreneurship, distributed cognition, and input-process-output model of strategic entrepreneurship. Strengthening social capital is an effective way to develop community resilience which in turn greatly help build coastal resilience (Aldrich & Meyer, 2015). Docility, pioneered by Herbert Simon (1978 Nobel Laureate in Economics), is the study of altruistic behavior in helping others make major decisions and adding value to the associated communities. Docility plays a central role in the behavior theories of entrepreneurship (Dew et al., 2008). Distributed cognition (Secchi, 2010) is effectively disseminating working knowledge with altruistic value added to the docile community. Through the lens of resource-based view of the firm (Barney, 1991), the input-process-output model of strategic entrepreneurship creates value for individuals, organizations, and society in three dimensions (Hitt et al. 2011; Sirmon et al., 2011): resource inputs, resource orchestration processes, and outputs.

The design is put into action to study the experiences of Louisiana in building coastal resilience responding to environmental disturbances Katrina, Deepwater Horizon, and Covid-19. We also show how technological platforms are developed in the course of building coastal resilience to enable Louisiana people and students to develop entrepreneurial businesses for wetland conservation. The concerted efforts help scale up entrepreneurship for wetland conservation and bring local solutions abroad for global impact through the embedded international networks in Louisiana.

As a prelude to examining the paper, in the next section we show the design methodology for building coastal resilience; in the following section illustrates how the design methodology is used to analyze the Louisiana experiences of building coastal resilience while dealing with the crises of Katrina, Deepwater Horizon, and Covid-19; in the next section we use wetland conservation as an example to show the Louisiana experiences of entrepreneurship in building coastal resilience; we then show an effective way of scaling entrepreneurship for wetland conservation through accessible technological platforms; and finally we conclude the paper.

DESIGN METHODOLOGY FOR BUILDING COASTAL RESILENCE

Social Capital and Community Resilience

Community resilience plays a vital role in disaster response and emergency management (Maguire & Hagan, 2007; Mayer, 2019). Strengthening and enriching social capital is an effective way to increase community resilience (Murphy, 2007; McKnight & Linnenluecke, 2016). Practical approaches (Aldrich & Meyer, 2015; Kwok et al., 2019) to strengthening social capital to increase community resilience include (1) providing incentives for volunteers; (2) conducting focus group meetings; (3) holding social events; (4) providing community social spaces, e.g., libraries and public squares, to nurture and generate social capital; and (5) cultivating neighborhood-based social capital.

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