BACKGROUND NOTE

Entrepreneurship and Cleaner Environment: Literature Review

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Reconciling the goals of increasing economic value and environmental protection is one of the core objectives of the United Nations Sustainable Development Goals. For entrepreneurs, it is a delicate balance between their industry's business model that can generate economic returns while practicing conscientious production using clean technology, and without excessively harming the environment.

Hart and Milstein (1999) stated that it has become increasingly clear that many technologies developed during this earlier period contribute to the destruction of the ecological systems on which the global economy depends. In the absence of dramatic change, few would dispute that the world is destined to devolve toward environmental degradation, social upheaval, and mass migration. They argue that the emerging challenge of global sustainability will catalyze a new round of "creative destruction" that innovators and entrepreneurs will view as one of the biggest business opportunities in the history of commerce. Managers who treat sustainable development as an opportunity will drive the creative destruction process and build the foundation to compete in the 21st century.

Schaltegger and Wagner (2011) proposed a framework to position sustainable entrepreneurship in relation to sustainability innovation. The framework builds on a typology of sustainable entrepreneurship, develops it by including social and institutional entrepreneurship, i.e., the application of the entrepreneurial approach towards meeting societal goals and towards changing market contexts, and relates it to sustainability innovation. This provides a reference for managers to introduce sustainability innovation and to pursue sustainable entrepreneurship. The degree of environmental or social responsibility orientation in the company is assessed on the basis of environmental and social goals and policies, the organization of environmental and social management in the company and the communication of environmental and social issues. The paper finds conditions under which sustainable entrepreneurship and sustainability innovation emerge spontaneously.

Hörisch, Kollat, and Brieger (2017) did a cross-country study where they investigated the determinants of environmental orientation of entrepreneurial activity. It builds on a new institutional theory framework and uses data gathered in the course of the Global Entrepreneurship Monitor to examine the institutional impacts and individual characteristics which influence the degree of environmental orientation of entrepreneurial activity, using a multilevel analysis. They found (i) that environmental orientation is frequently used as a source for securing legitimacy of entrepreneurial ventures; (ii) lower degrees of environmental orientation among more educated entrepreneurs; and (iii) age, gender, and income differences are observed when compared to earlier findings on the determinants of social entrepreneurship.

Dean and McMullen (2007) explained how entrepreneurship can help resolve the environmental problems of global socioeconomic systems. Environmental economics concludes that environmental degradation results from the failure of markets, whereas the entrepreneurship literature argues that

opportunities are inherent in market failure. A synthesis of these literatures suggests that environmentally relevant market failures represent opportunities for achieving profitability while simultaneously reducing environmentally degrading economic behaviors. It also implies conceptualizations of sustainable and environmental entrepreneurship which detail how entrepreneurs seize the opportunities that are inherent in environmentally relevant market failures. The article also examined the ability of the proposed theoretical framework to transcend its environmental context and provide insight into expanding the domain of the study of entrepreneurship.

Potluri and Phani (2020). This study undertakes an in-depth analysis of green and traditional entrepreneurs' experiences that identify the specific drivers of ecopreneurship given the constraints and challenges faced by them. This study maps this analysis to resource-based view's theoretical construct and argues that ecopreneurs navigate and negotiate their enterprise development constraints through combinations of personal attributes and innovative mechanisms rendering tangible and intangible economic, environmental, and social gains. It further proposes a policy framework to incentivize, assist, and accelerate ecopreneurs' efforts in achieving scalability in an uncertain external ecosystem. This proposed framework would also address the conflict between monetization of innovations and environmental concerns.

Gibbs and ONeill (2014) meanwhile explore the development of green entrepreneurship and its potential role in transformative change towards a green economy. They achieve this through a study of the green building sector in England and Wales, based on qualitative empirical data from 55 semi-structured interviews with businesses in the green building sector and with support organizations, including banks, financial sources, and business advice and support. Their analysis embeds green entrepreneurs in a wider system of actors in order to explore how green entrepreneurs facilitate sustainability transitions; challenge the notion that green entrepreneurs are an unproblematic category; and discover that individuals move between "green" and "conventional" businesses, evolving over time that this is a fluid and blurred state.

York and Venkataraman (2010) based their paper upon a recent stream of research that has proposed entrepreneurship as a solution to, rather than a cause of, environmental degradation. They proposed that, under certain conditions, entrepreneurs are likely to supplement, or surpass, the efforts of governments, nongovernment organizations, and existing firms to achieve environmental sustainability. Entrepreneurs can contribute to solving environmental problems through helping extant institutions in achieving their goals and by creating new, more environmentally sustainable products, services, and institutions. They used a model that illustrated how entrepreneurs (i) address environmental uncertainty, (ii) provide innovation and (iii) engage in resource allocation to address environmental degradation.

Sun et al. (2020), in a study using a panel of 35 Sub-Saharan Africa countries by income groupings, from 2000 to 2014 with a cross-sectional dependence, found out that (i) income per capita significantly increases environmental pollution where environmental entrepreneurship decreases pollution of the environment across all panels of Sub-Saharan Africa countries, and (ii) environmental entrepreneurship could facilitate the environmental pollution reduction. Consequently, governments and policymakers should reinforce policies for the reduction of environmental pollution, more importantly green financing policies; encourage aspiring environmental entrepreneurs to set environmentally driven businesses; and promote the use of environmental products to mitigate environmental problems and achieve sustainable development.

Assessing both the research on typologies of entrepreneurs generally and recent perspectives on green entrepreneurs in particular, Walley and Taylor (2002) proposed that green entrepreneurs are best characterized by a combination of internal motivations and external (hard and soft) structural influences. The resulting typology presented in this paper produces four 'ideal types' of green entrepreneurs: innovative opportunists, visionary champions, ethical mavericks, and ad hoc enviropreneurs. Their characteristics are explored and examples provided. Recommendations are made on how the typology can contribute to further research into ways to foster green entrepreneurship and the change agent role that green entrepreneurs play in the two-way iterative relationship between firms and society.

For many developing and transition countries, entrepreneurship is seen as a main contributor to economic development. However, not all entrepreneurial activities are environment-friendly and may not get the support to do so from public institutions. The study of Silajdžić et al. (2015) that covers the countries with transition economies mentioned that these are under pressure to increase entrepreneurial activities that will enable fast growth with minimum impact on natural resources. It found out that entrepreneurs in economies in transition do not seem to be ready to respond to the challenges or to take any risks by investing in green business, but also that the government and educational institutions do not recognize their own role and fail to support the development of green entrepreneurship. For those "green oriented" businesses, the key sociological constructs are personal motivation and mission, locality, and a forward-thinking orientation in terms of sustainability. All businesses managed to achieve the economic, environmental, and social value creation without any support from the government.

The report by Chiewattanakul et al. (2021) in Southeast Asia, one of the fastest-growing regions in the world, highlights how its progress is threatened by the increasingly adverse impacts of climate change. Entrepreneurship has a leading role in developing solutions to both mitigate and adapt to climate change. The report evaluates the current support ecosystem for climate and environmental entrepreneurs in Cambodia, Indonesia, Myanmar, the Philippines, Thailand, and Viet Nam, narrowing the scope to focus on climate and environmental entrepreneurship support. Climate and environmental entrepreneurs (including, but not limited to, green entrepreneurs) are change agents who see venture creation as a way to address pressing challenges related to climate change and other critical environmental issues. In building their business, growth orientation is combined with the ambition to create a greener and more sustainable world. The report also offers insights on the set of organizations which support entrepreneurs that aim to address climate change mitigation, adaptation, and non-climate-related environmental protection challenges.

On creating green opportunities, Pacheco, Dean, and Payne (2010) discussed the influence of incentives. While entrepreneurial activity has been an important force for social and ecological sustainability, its efficacy is dependent upon the nature of market incentives, akin to prisoner's dilemma, which they term the green prison. In this prison, entrepreneurs are compelled to environmentally degrading behavior because of the divergence between individual rewards and collective goals for sustainable development. However, entrepreneurs can escape from the green prison by altering or creating the institutions—norms, property rights, and legislation—that establish the incentives of competitive games. We provide a variety of evidence of such entrepreneurial action and discuss its implications for theory and practice.

On Creating Green Opportunities: Firm

Conducting a firm level study using data from 264 Chinese firms, Jian et al. (2018) drew on dynamic capability theory and hypothesized that green entrepreneurial orientation has positive influences on two

types of firm performance. The relationship between green entrepreneurial orientation and firm performance is moderated by green technology dynamism and knowledge transfer and integration. Their results indicate that green entrepreneurial orientation has positive influences on both environmental and financial performance. In addition, green technology dynamism only negatively moderates the relationship between green entrepreneurial orientation and environmental performance, while knowledge transfer and integration positively moderates the relationships between green entrepreneurial orientation and environmental and financial performance. The study enhances the understanding on green entrepreneurial orientation, can exploit new ideas and encourage innovativeness, shows a propensity to catch potential opportunities, and takes risks in transforming the social economy into the social-ecological economy.

As for the role of existing big firms and how they react and influence small new firms on sustainable entrepreneurship, the study by Hockerts and Wustenhagen (2010) analyses the interplay between "Greening Goliaths" and "Emerging Davids", and theorizes about how it is their compounded impact that promotes the sustainable transformation of industries. They suggested that, in the early stages of an industry's sustainability transformation, new entrants ("Emerging Davids") are more likely than incumbents to pursue sustainability-related opportunities. Incumbents react to the activities of new entrants by engaging in corporate sustainable entrepreneurship activities. While these "Greening Goliaths" are often less ambitious in their environmental and social goals, they may have a broader reach because of their established market presence. This, somehow, creates a virtuous cycle in terms of sustainable entrepreneurship activities.

On the other hand, incumbents may be a deterrent to the new entrepreneurs in their pursuit for sustainable entrepreneurship. The findings of Pinkse and Groot (2015) suggest that sustainable entrepreneurs are politically active, but pursue these activities using collective action. This raises issues because they face the presence of incumbents in industry associations that seek to thwart their political influence. Similarly, Burch et al. (2016) suggest, that despite the transformative and significant potential of small and medium-sized enterprises (SMEs), since they often nimbly act to fill local or specialized niches, limited time, capital, personnel, and expertise may stymie SMEs' efforts to respond to innovate on sustainability. External organizations are instrumental in engaging SMEs on sustainability, overcoming capacity gaps, and facilitating change.

On an industry basis, energy must have been the poster example of the environmental hazards related to its operations. On this light, Malen and Marcus (2016) examined how political, social, and economic factors influence clean energy technology entrepreneurship (CETE). Government policies that support clean energy technology development and the development of markets for clean energy create opportunities for CETE. However, the extent to which such opportunities lead to the emergence of new clean energy businesses depends on a favorable external context that promote CETE. Employing novel indicators of the policy and social context of CETE, with information on clean energy technology start-up firms in the United States, provide empirical evidence that technological and market conditions supporting clean energy induce more extensive CETE under contexts where local attention to clean energy issues and successful firms commercializing clean energy technologies are more prominent. It shows that CETE is contingent upon a supportive local environment as well as technology and market opportunities.

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