

ENVISIONING AN ENTREPRENEURIAL
ECOSYSTEM AS PART OF THE SUSTAINABLE
DEVELOPMENT OF A RURAL COMMUNITY:
PAWNEE NATION OF OKLAHOMA

By

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The Gospels mention a story about a woman who broke a jar of expensive perfume pouring it at Jesus' feet, wiping it with her hair, filling the room with beautiful fragrance. Some raised the question of why this perfume was not sold and the money given to the poor, for it was worth a year's wages. "Leave her alone," Jesus replied. "It was intended that she should save this perfume for the day of my burial. You will always have the poor among you, but you will not always have me" (John 12:7-8). Just as the woman did, pouring out her treasure at the feet of Jesus, I dedicate this dissertation to my Lord and Savior Jesus Christ. He has led me in every way through this treacherous path, and rescued me from every pitfall. I shouldn't have made it this far, for I was lost, but now I am found. I came from India to Oklahoma State University in the Fall of 2015 to pursue my Ph.D. Seven years have passed, and the journey has been long to say the least. A lot of time, money, effort, and mind has gone into crafting this dissertation. It is a very expensive dissertation. No one can pay for it or know its true value. I pour it at Jesus' feet where true value is found. May the fragrance from this dissertation bear witness to its quality revealed. Thank You

I am grateful to my advisor for his continued support and encouragement. He is the best advisor I could have had – Dr. Craig Watters.

My parents have been there throughout

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Abstract: The dissertation topic was partly inspired by my interest in sustainable community development, which requires social, economic and environmental change to transform underdeveloped rural communities. The emergent concept of “entrepreneurial ecosystems” aims to create certain conditions within a specified region to attract new entrepreneurs who would eventually start new companies and encourage economic development in the region. Such incubatory conditions are created by bringing specific institutions and businesses to the chosen area to complement existing resources, structures and institutions. I envisioned the best way to do this; is to create an entrepreneurial ecosystem to foster sustainable entrepreneurs and entrepreneurship in the local community. The model SCEED - Sustainable Community Entrepreneurial Ecosystem Development, is a conceptual model I hypothesize as a potential road map for developing underdeveloped communities. This model prioritizes entrepreneurship to meet a community’s basic needs before moving on to entrepreneurial ventures that meet higher-order needs based on Maslow’s needs theory. To explore this, I look at the Pawnee Nation of Oklahoma, a Native American community that is rural and underdeveloped with poverty and unemployment levels above the United States average. Although sustainable development has been suggested for indigenous communities, an entrepreneurial ecosystems approach at the community scale has not been explored for native communities. This research inquiry uses a qualitative methodology and emergent flexible design to explore and answer research questions. The results present a final model that will be a catalyst for rural communities to foster entrepreneurship and sustainable development.

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CHAPTER I

INTRODUCTION

Humans have always been in awe and have admired nature for all it has to offer and for its numerous benefits. Humans have also looked to nature as a source of inspiration for design. Biological and nature-inspired designs are not new, as humans have been emulating nature for some time now (Goss, 2009). One example of this is Leonardo da Vinci's design of the flying machine, inspired by the flight of birds. Similarly, cocklebur seed pods inspired Velcro, and lotus leaves and sharkskin inspired the design of drag-reducing swimwear (Buck, 2017). The study of cats' eyes inspired the design of road reflectors, used to improve traveler safety. The internal structure of dolphin skin was imitated to create anti-turbulence linings for submarines (Goss, 2009). Plant leaves that captured sunlight for photosynthesis inspired the solar cell design (Mathews, 2011). These are just a few of the countless designs and models inspired by nature for human applications (Goss, 2009). Such views and constructs of nature have produced the concept of the *ecosystem* (Isenmann, 2003).

In the traditional sense “an ecosystem is a geographic area where plants, animals, and other organisms, as well as weather and landscapes, work together to form a bubble of life,” (“Ecosystem,” 2019). However, in the broader sense, an ecosystem is an assemblage of individual parts that relate to each other and the environment of their specific locality (Pickett & Cadenasso 2002). The natural ecosystem runs on sunlight, uses only the energy it needs, recycles everything, encourages diversity, rewards cooperation, relies on local resources, and removes any kind of excess and waste (Mathews, 2011). These simple laws or principles are nomothetic. Hence, the ecosystem concept has become ubiquitous in contemporary times, being applied to various disciplines as a science and a metaphor (Pickett & Cadenasso, 2002).

The Entrepreneurial Ecosystem (EE) is one such area of study that has emerged recently and is gaining traction amongst research and industry circles. This new buzzword refers to an environment conducive to entrepreneurship and growth in a region (Spigel & Harrison, 2018). Groups such as The Kauffman Foundation, World Economic Forum, and the Organization for Economic Co-operation and Development have embraced this approach as a new economic development strategy (Ács, Autio & Szerb, 2014; Alvedalen & Boschma, 2017; Auerswald, 2015; Mack & Mayer, 2016; Spigel, 2017; Stam & Spigel, 2016).

In this approach, community stakeholders, business leaders, entrepreneurs, non-governmental organizations (NGOs), and citizens come together to form an ecosystem that encapsulates the locality’s social, economic, and environmental aspects by being self-regulating, self-sustaining, and developing constantly (Stam, 2015). The aim is to grow entrepreneurial talent locally by involving the local community and various stakeholders to

form the entrepreneurial ecosystem, spawning new ventures and firms (Markley, Lyons, & Macke, 2015).

One of the first EE models, the Isenberg model, was conceived as a cost-effective strategy to stimulate economic development (Isenberg, 2011). Although there are many EE models, the Isenberg model was the first and most widely referenced. The model identifies six distinct pillars forming the ecosystem: policy, finance, culture, support, human capital, and markets (Isenberg, 2011).

Problem Statement

While the Isenberg model is a “modus operandi” for urban and larger regional areas, its application and relevance to rural and underdeveloped communities is unexplored and unarticulated. “Cohen (2006) was the first to use the concept of Entrepreneurial Ecosystem and defined it as ‘...an interconnected group of actors in a local geographic community committed to sustainable development through the support and facilitation of new sustainable ventures” (Alvedalen & Boschma, 2017, p.887; Cohen, 2006, p.3). The idea of *sustainable development*, which includes social, environmental, and economic aspects of development, is a key concept not given sufficient attention in EE literature. Only few scholars directly focus on sustainability and entrepreneurial ecosystems.

However, suppose this aspect of sustainable development is addressed and incorporated more into EE literature, it could become a conduit for helping rural and underdeveloped communities find their path toward development. In this context, the question of how EE encourages sustainable entrepreneurship that leads to sustainable development is unexplored (Volkmann, Fichter, Klofsten & Audretsch, 2019). Little is known about what constitutes sustainable entrepreneurial ecosystems and how it should be

formulated to create an environment that supports sustainable businesses (Theodoraki, Messeghem, & Rice, 2018). Raposo et al. (2021) encourage researchers to study this relationship between sustainability and EE, referring to EE's that produce sustainability startups to address sustainable development goals through innovation (Tiba, Van Rijnsoever, & Hekkert, 2021). The goal of sustainable development (SD) is to integrate social, economic, and environmental concerns in the decision-making process for the long-term development of a community (Emas, 2015).

I take SD a step further to incorporate Maslow's hierarchy to add more value to the solution. Maslow's hierarchy of needs is a motivational theory in psychology organizing human needs of deficiency and growth in the form of a pyramid (McLeod, 2007). "This follows from the argument that in the presence of relative economic security (when the basic needs of livelihood are met), people have a greater capacity to care for others and for the environment and in such communities a greater number of sustainability entrepreneurs and customers who emphasize social and environmental sustainability in their decisions is likely to exist" (Tiba, Van Rijnsoever, & Hekkert, 2021, p.3). I use this idea to address the sustainable development of a community in stages of progression.

What might an EE look like for places where there is very low economic activity and even basic needs are lacking? What is the ideal development path? These are the questions being asked in this paper. Aguilar (2021) argues that an EE will function differently for rural areas. Poverty reduction, sustainability, and rural livelihoods are some expected outcomes for an EE functioning in a rural context (Aguilar, 2021).

Research Question and Purpose Statement

To address these questions, I proposed a new model called SCEED: Sustainable Community Entrepreneurial Ecosystem Development. In this model, I combine the concepts of sustainable development and entrepreneurial ecosystems and hypothesize a potential roadmap for the development of underdeveloped communities. The model could become a catalyst for rural communities to foster entrepreneurship and move towards sustainable development. Therefore, the research question is: *How would SCEED emerge in a community, what would it look like, and how can it take shape and be realized for an underdeveloped community?*

While developing the SCEED model, I chose to study the Pawnee Nation of Oklahoma, a Native American community that is rural and underdeveloped. To discover the working principles of SCEED, I took a qualitative emergent research design approach to consider the problems related to underdevelopment in the area and to understand SCEED for emergent paths and its potential to transform the community.

At present, there are very few ventures operating within the reservation. The area is underdeveloped and has higher levels of poverty and unemployment as well as lower quality of life than the rest of the United States. Currently, the Nation is heavily dependent on federal programs and grant funding to meet many of its needs. As such, the community prefers to pursue self-determination (Pawnee Nation Annual Report, 2016). Initial conversations with the Nation's executive director and planning director, revealed that the Nation has 422 acres of contiguous land intended to develop and grow traditional Native American crops and restore the bison population through ranching to achieve food sovereignty. The Nation is

keen on developing the community and tribal land areas by adopting a sustainable economic development approach towards self-sufficiency and self-determination.

There are many ways to approach the Pawnee Nation's problem; however, I chose to present the SCEED model as a practical approach by which the community can identify inhibitors and discover liberators to enable growth and development. A bricoleur approach, inquiring the community about entrepreneurship and sustainability, was one way to begin the process. The model prioritizes entrepreneurship following Maslow's needs-based hierarchy, in which basic-essential needs are prioritized first before moving onto other needs of the community. The model builds robust foundations for encouraging sustainable entrepreneurship in the community, enabling Pawnee Nation to produce entrepreneurs who will bring about sustainable growth and development in the region.

Hypothesis

There is a need for a new model to pull together all these various spheres of study and fill the gaps found in the literature. Therefore, I propose a new model:

Bring together various fields of study in a seed format and implement them into an underdeveloped locality to create a Sustainable Community with Entrepreneurial Ecosystem Development (SCEED)-- a place that benefits the individual, the community, and the surrounding areas. The sequence of events will determine how the Sustainable Community Entrepreneurial Ecosystem Development (SCEED) will take shape and what the outcome will be.

To begin delineating SCEED, one must understand what the individual terms within the acronym mean. Therefore, the meaning of *sustainability, EE and community* shall be discussed further in the sections below.

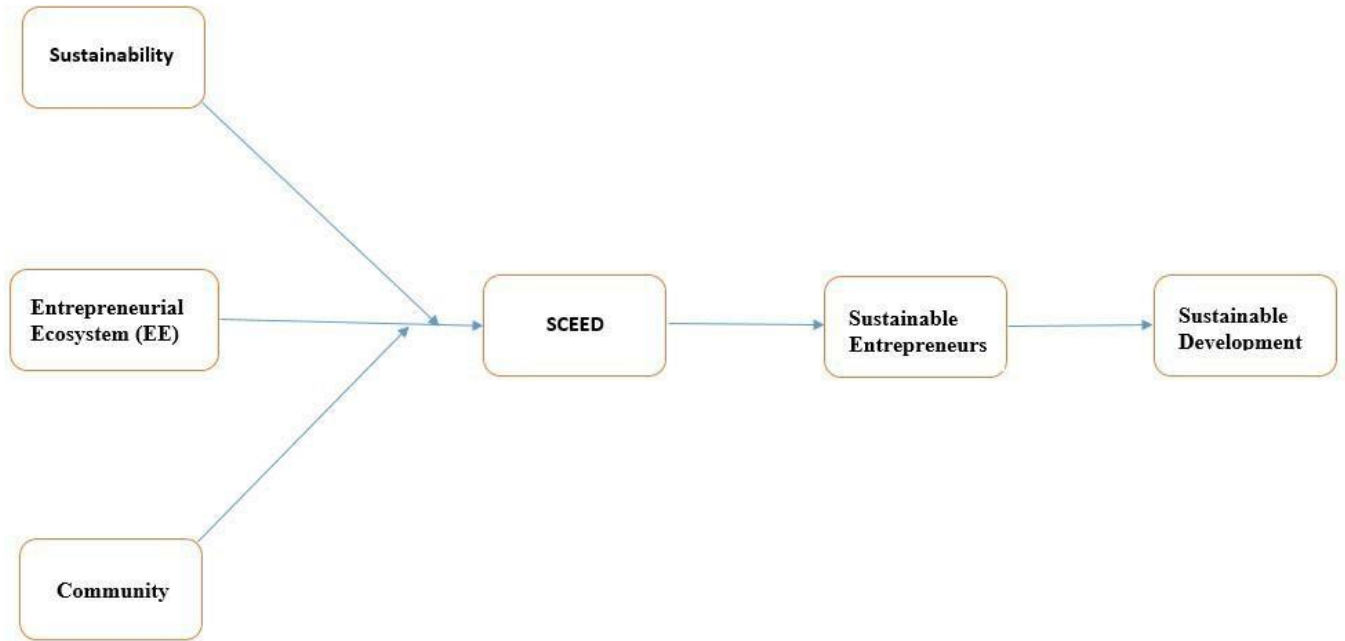


Figure 1. SCEED Scheme

Methodology Overview

I began my qualitative research inquiry into the Pawnee’s outlook, future needs, and aspirations. I gathered primary data through interviews with subject matter experts and leaders in the community. Second, I conducted a focus group interview of members from the tribe to gather additional data, building on the data from the first round of individual interviews with community leaders. The questions I asked in the interviews were open-ended, and data was gathered through recordings, then transcribed for analysis. The analysis identifies themes and patterns that emerged from an inductive reasoning standpoint. The final analysis results in theory development and the SCEED model. In addition, I used computer assisted qualitative data analysis where relevant to help optimize data value. As principal

investigator, the Institutional Review Board reviewed my application and permitted me to carry out this research.

Significance of Study

The significance of this research study is:

1. It introduces a new developmental model for rural and underdeveloped communities by combining concepts of sustainable development, entrepreneurial ecosystems, and Maslow's needs-based hierarchy.
2. It will bring clarity, insight, and perspective to the problems faced by Pawnee Nation and a potential solution for them through SCEED. It will provide a roadmap to sustainable development.
3. The results from this will help other Native American communities facing similar problems of underdevelopment.
4. The findings from this research would contribute significantly towards the growing body of literature on Entrepreneurial Ecosystems by filling the gaps in the sustainability and rural community components.
5. This research will incorporate sustainable development as a significant pillar into the Entrepreneurial Ecosystem literature and vice versa, making it a relevant approach for underdeveloped communities and nations worldwide.

Summary

Sustainable Community Entrepreneurial Ecosystem Development (SCEED) is a conceptual model I hypothesize as a potential road map for developing underdeveloped communities. It will propose a developmental pathway that prioritizes entrepreneurship in vital areas that seek to meet a community's basic needs before moving on to entrepreneurial

ventures that meet higher-order needs in Maslow's Hierarchy. Entrepreneurial ecosystems that include sustainability as a major pillar in rural communities will produce entrepreneurs who will eventually bring about sustainable development in the region. I consider the Pawnee Nation of Oklahoma as a case in study. By conducting a qualitative inquiry into the community about existing ventures, entrepreneurship, and sustainability, I hope to identify some inhibiting and liberating factors that will clarify the path for growth and development. Eventually, from gathered data and trends, I will envision an entrepreneurial ecosystem for the sustainable development of Pawnee. In the subsequent sections of this proposal, I shall review relevant literature, discuss the theoretical background, hypothesize, and give further details of the methodology and possible outcomes.

CHAPTER II

REVIEW OF LITERATURE

The propositions made in this paper mirror a theme that perhaps is too idealistic to consider as realistic. As Oscar Wilde (1950) said: “A map of the world that does not include Utopia is not worth even glancing at, for it leaves out the one country at which Humanity is always landing. Furthermore, when Humanity lands there, it looks out and, seeing a better country, sets sail. Progress is the realization of Utopias.” In 1516, Thomas More wrote *Utopia*, which envisions an ideal society and proposes a model for a better world (Ganjavie, 2012). More’s *Utopia* became a precedent for utopian thinking and models. There have been others who have proposed similar models for an ideal society. These literary works inspired countless utopian experiments and models, from the smaller Israeli Kibbutzim and ecovillages of California to the large centralized soviet societies of Russia and the liberal capitalist modern megacities of America. According to some historians, a city's current form was partially inspired by utopian ideals that represented a better quality of life and the future of society. Irrespective of the outcome, the utopian dream could bring together

different heterogeneous social aspirations to create a new form of community living for the people (Ganjavie, 2012).

Why Sustainability, EE & Community?

It is not surprising that sustainable development also seems to find its origins in utopian themes. In fact, there are traces of sustainable development found in the early 1970s UN conferences, the 18th- and 19th- century political and economic thought of Adam Smith and Karl Marx's theories of a 'golden age,' the Rousseauian desire to "return to nature," Bacon and Descartes's modernism and the idea of "manifest destiny," the early Christian utopianism of More and St. Francis, and the classical utopias such as Atlantis and the city-state depicted in Plato's works. All of these events, works, and figures address themes of community, social justice, environmental stewardship, and economic growth (Harlow, Golub, & Allenby, 2013).

The proposal is to create sustainable development in an underdeveloped community through sustainable entrepreneurship using the SCEED model. Entrepreneurship is a significant conduit for economic development and a sustainable society (Hall, Daneke, & Lenox, 2010). That being said, history has shown that economic development fueled by entrepreneurship can be extractive and destructive. Baumol (1996) calls this *destructive entrepreneurship*, and gives examples of similar systems that existed in ancient Rome, medieval China, the Middle Ages, and so on. "How the entrepreneur acts at a given time and place depends heavily on the rules of the game and the reward structure in the economy that happen to prevail" (Baumol, 1996, p.894).

Collective entrepreneurial activities follow the rules and systems created by larger players, the political arena, and those in power (Desai & Acs, 2007). During the 1400s, as

European explorers traveled to new parts of the world, the trade of Iberian silver, fur, and other items spanned continents (Wolf, 1982). All these examples are effects of macro-entrepreneurial systems shaping the world. A theoretical concept of the world as interconnected and interdependent was developed by Immanuel Wallerstein (1974) as world-systems theory (Straussfogel, 1997). This theory essentially linked the global economy, markets, and the division of labor to explain the unequal exchange of goods traded across different geographical regions of the world.

This unequal trade of goods between regions tilted the accumulation of wealth in favor of the powerful creating wealth inequality in many parts of the world (Wolf, 1982; O'Hara, 2009; Robbins, 2012). As a result, the world's resources flowed from the global south to the global north, from the hinterlands and outposts, and was channeled to the world's metropolises. These exploitative systems became known as “the development of underdevelopment” (Wolf, 1982). A classic example of this on a large scale is colonialism, where large infrastructure projects and economies of scale were designed to extract resources from regions, take them to Britain, and mass-produce products to be sold back in the same regions (Mukherjee, 2010).

Hence, systems and institutions can be designed in a way that legitimizes and institutionalizes economic-entrepreneurial activity that is primarily extractive and eventually destructive by nature or vice versa (Acuña, 2015). Therefore, setting up good institutions and systems for legitimate economic-entrepreneurial activity that is constructive and not extractive becomes important. Although entrepreneurship literature focuses on entrepreneurs as individuals, societies and communities must set up institutions to advance entrepreneurship and to see it thrive (Etzioni, 1987).

Institutional structures can be designed to foster entrepreneurial activities in a particular sphere of influence (Garud, Hardy & Maguire, 2007). Stenholm, Acs, and Wuebker (2013) found that the rate and type of entrepreneurial activity in an area can be influenced by a certain degree of variance in institutional arrangements; proper institutional arrangements foster and promote healthy entrepreneurial activity. If entrepreneurs are embedded in an institutional field, then that individual entrepreneurs' capabilities, cognition, and intentions are shaped by that institutional design (Garud, Hardy & Maguire, 2007).

In light of the above, I chose *sustainability*, *EE* and *community* to act as antecedents for an institutional framework, an embedded form of institution. More antecedents possible, but I am limiting this study to three to create optimal outcome. General systems theory (GST) explains this better and will be discussed in later sections.

Sustainability – Sustainable Development

"Sustainability is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Jennings & Zandbergen, 1995, p.1017). This definition of sustainability or sustainable development was coined by the World Commission on Environment and Development (WCED) under the Brundtland Commission in 1987 (Dunn & Steinemann, 1998). *Sustainability* is the onus to provide a better quality of life for all people in a just and equitable manner, now and into the future, without exploiting the environmental ecosystem beyond its ability to restore itself (Blay & Palmer, 2011). Sustainability is a term that has become widely and frequently used in various spheres and contexts, especially since it inspires a sense of 'goodness' and 'justness' among people.

Development traditionally referred to the transformation of “traditional” or “backward” societies into westernized “modern” societies achieved by capital-intensive building of modern infrastructure and westernized educational institutions. Developmental models of the 1960s advocated modernization theories for the transformation of underdeveloped communities by infusing market relations that linked the community with the global economic system. However, such models were ineffective and could not sustain development since they negatively impacted the local environment, culture, and society, widening gaps between the rich and the poor (Gang, 2011). As alternative developmental theories emerged, the United Nations proposed and articulated the concept of *sustainable development* in the 1980s, defined as the development that meets the needs of the present, without compromising the ability of future generations to meet their own needs (Basagio 1996). The term gained prominence at the 1987 World Commission on Environment and Development report, “Our Common Future, also referred to as the Brundtland Report” (Harlow, Golub, & Allenby 2013). Since then, sustainable development has increasingly become the modus operandi for achieving development. It is now synonymous with the kind of development that considers three major dimensions: social, economic, and environmental (Gang, 2011). These areas include factors such as costs, profits, equity, responsibility, development, human rights, material and energy flows, biodiversity, etc. These dimensions are qualitatively interdependent and are meant to be viewed not as an end-state, but as the north star for continuous economic, environmental, cultural, and industrial evolution woven into the overall development process (Korhonen, 2004).

Sustainable development is relevant when ecological and social systems come together in the modern context (i.e. the last 50 years). As the term becomes increasingly

associated with modernity, nations in the Third World are increasingly associating sustainable development with a form of modernity that incorporates economic, social, and environmental development (Jennings & Zandbergen, 1995). Sustainable development has become a regular part of development rhetoric; even when economic development is the primary goal of many projects, environmental sustainability is also considered (Bridger & Luloff, 1999). Sustainable development projects typically involve housing, health, education, agriculture, tourism, environmental protection, poverty alleviation, food security, and many other aspects (Gang, 2011). The sustainable development framework provides goals for creating an excellent human habitat where people can thrive peacefully (Jabareen, 2008). In his thesis, Marius de Geus (1999) highlights the importance of envisioning an ecologically responsible and sustainable society (Jabareen, 2008). The idea of sustainable development can inspire and bring people under a common umbrella of a shared vision. Thus, sustainable development has become the new paradigm of progress for the postmodern world moving into the 21st century.

Sustainable Development Goals (SDGs). The SDGs are a blueprint for a sustainable future, set out by the United Nations to address the global challenges faced by the world. These 17 goals are 1. No Poverty, 2. Zero Hunger, 3. Good Health and Well-being, 4. Quality Education, 5. Gender Equality, 6. Clean Water and Sanitation, 7. Affordable and Clean Energy, 8. Decent Work and Economic Growth, 9. Industry, Innovation and Infrastructure, 10. Reduced Inequalities, 11. Sustainable Cities and Communities, 12. Responsible Consumption and Production, 13. Climate Action, 14. Life Below Water, 15. Life On Land, 16. Peace Justice and Strong Institutions, and 17. Partnerships (un.org, 2020).

Entrepreneurship & Sustainability. Although the development rhetoric in most developing nations and rural communities now revolves around sustainable development, the role of entrepreneurship and its conjunction with sustainability is often not discussed (Hall, Daneke, & Lenox, 2010). While sustainable development may provide a moral compass and a guideline for development, the development engine is inevitably entrepreneurship (Sun, Pofoura, Mensah, Li & Mohsin, 2020).

Entrepreneurship brings economic development to communities as well as products and services that enhance the quality of life for its residents (Khan, 2018). Entrepreneurship is also the primary mode of wealth creation. It creates jobs builds livelihoods, fashions culture, and generates means of living. Thus, entrepreneurship can lift people out of poverty and underdevelopment, giving them a shot at a better life (Sutter, Bruton & Chen 2019). An entrepreneur is “any person who applies an entrepreneurial mindset, tools, skills, and techniques to transform an idea into an enterprise that creates value for profit and/or social good” (Markley, Lyons, & Macke, 2015, p.582).

Each entrepreneur’s skill sets, traits, and motivations are unique, influencing their ability to formulate successful strategies themselves and the people around them (Baum, Locke, & Smith, 2001). Traditionally, entrepreneurship has focused on economic development; however, sustainable entrepreneurship focuses on social, economic, and ecological development and progress (Belz & Binder, 2015).

Shepherd and Patzelt (2011) explain that “sustainable entrepreneurship is focused on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where

gain is broadly construed to include economic and non-economic gains to individuals, the economy, and society” (Shepherd & Patzelt 2011, p.137).

Social entrepreneurs aim to create social value in a society, setting economic goals only as a means to an end, while ecopreneurs look at environmental opportunities from an economic standpoint. “Sustainable entrepreneurs seem to combine the best of both worlds, that is, initiating those activities and processes that lead to the identification, evaluation, and exploitation of profitable business opportunities (i.e., entrepreneurship) while contributing to sustainable development” (Lans, Blok & Wesselink, 2014, p.37). This means a community could be transformed if sustainable entrepreneurship was encouraged. This leads to the next section of entrepreneurial ecosystems and how entrepreneurship is encouraged.

Entrepreneurial Ecosystems

“We must not concentrate solely on theories designed to explain the way the universe works. We must also concentrate on developing tools that illuminate the dynamism and the complexity of real organizations creating and adapting to change” (Stevenson & Harmeling, 1990, p. 1). In this section, I will focus on entrepreneurial ecosystems’ (EE) dynamism and complexities, and the mechanics of how organizations can adapt and cooperate with each other and the environment to grow, expand, and reproduce in a sustainable manner. The concentration and dispersion of organizations in an environment, also called *complexity*, influence performance. Usually, better growth is possible when a complex web-like indirect relationship exists between the individual, the organization, and the environment (Baum, Locke, & Smith, 2001). EEs have been the subject of growing interest in recent years (Acs et al., 2017; Alvedalen & Boschma, 2017; Isenberg, 2011).

The Kauffman Foundation, The World Economic Forum and The Organization for Economic Co-operation and Development have embraced EE as a new economic development strategy resulting in a wave of academic research focused on establishing the attributes of thriving ecosystems and exploring how they can support high growth entrepreneurship (Ács, Autio, & Szerb, 2014; Alvedalen & Boschma, 2017; Auerswald, 2015; Mack & Mayer, 2016; Spigel, 2017; Stam & Spigel, 2016).

What is EE?

EE is a conglomeration of entrepreneurial individuals, organizations, public bodies, and institutions that come together to form various networks and interdependencies at macro and micro levels to enable growth that is beneficial to the individual, the organization, the community, the region and beyond (Mason & Brown, 2014). The EE approach aims to grow entrepreneurial talent locally using a bidirectional approach that considers the local community and adds capacity. It also tries to empower the individual entrepreneurs within the community to grow themselves and their organizations, which will eventually affect the overall community and region positively (Markley, Lyons, & Macke, 2015). EE addresses the shortcomings found in market failure, and system failure approaches and instead uses an ambitious entrepreneurship agency perspective with the overall aim of fostering high-growth startups. Entrepreneurship is the outcome, but entrepreneurship and entrepreneurs are also the keys to building and sustaining the EE (Isenberg, 2011; Mason & Brown, 2014; Stam, 2015).

EE vs. Clusters. *Clusters* are geographic concentrations of specialized suppliers, service providers, affiliated companies, firms in related industries, and other associated institutions such as agencies, universities, trade associations, and so on within a specific

economic field that cooperates and competes at the same time. The reason clusters increase the competitiveness of new ventures is because when many firms in the same sector congregate in one area, they tend to attract a large pool of skilled and specialized workers. Another reason clusters' increase competitiveness is that the accumulation of knowledge and skills occurs faster in a cluster, eventually resulting in knowledge spillovers, helping new ventures access a high standard of personnel (Pitelis, 2012; Spigel & Harrison, 2018).

EE, on the other hand, is a group of entrepreneurial individuals and organizations coming together in the presence of public bodies and institutions to form an interdependent community, creating a myriad of networks at the micro and macro levels, enabling growth in a manner that is beneficial to the individual, the organization, the broader community, the region, and beyond (Mason & Brown, 2014). The entrepreneur rather than the enterprise is the focal point in EE (Kuratko, Fisher, Bloodgood & Hornsby, 2017). The aim of the EE is to coalesce all these activities within a specific geographic locality to form an entrepreneurial ecosystem that will eventually have a more significant impact than initially perceived. Furthermore, designing EE in such a way that the trajectory of the outcome is relatively predictable and reflective of the initial components that went into the design of the EE, with high growth firms as the desired outcome (Mason & Brown, 2014).

The difference between clusters and EE is that clusters tend to use a top-down approach where the local or state governments play a significant role in bringing together competing actors and installing support programs to create products and services. In an EE, the primary leaders are entrepreneurs themselves, focusing on building networks and support structures from the ground up. Clusters tend to focus on technical and specific market

knowledge that leads to industrial hubs, as opposed to an EE which emphasizes entrepreneurial knowledge and culture that would lead to the creation of diverse firms.

The key actors in clusters tend to be public agencies, large anchor firms, and universities due to their immense resources that can affect spillovers. In EE, entrepreneurs are the key actors who can identify and exploit opportunities by drawing on available resources and focusing on mentorship, deal-making, and catalyzing new ventures.

An EE's advantage over clusters is that it is resource-specific to the entrepreneurship process, startup culture, financing, and actualization of the entrepreneur's firm. The entrepreneur is embedded in a culture of mentorship that gives them the opportunity to exploit, access, and mold the resources available to them (Spigel, 2017; Spigel & Harrison, 2018). As Spigel (2017) puts it, the promise of EE as a distinct concept is that it addresses the weaknesses of cluster theory and focuses on the unique needs and trajectories of innovative, high-growth ventures rather than on all firms in a region.

EE Evolution. There have been attempts to plot the various evolutionary stages of an EE over time. The first stage in the EE is the birth phase, characterized by the birth of many new firms. The process begins by attracting entrepreneurs around existing assets such as large business firms, educational institutions, research organizations, and other ventures within a locality. Next, a few entrepreneurs begin to work in an area with little financial capital and support (Alvedalen & Boschma, 2017). The overall number of firms increases gradually as entrepreneurs begin to take risks and start new companies. At this stage, many of the core facets of EE are still underdeveloped. "Underdeveloped elements include markets for entrepreneurs because existing firms do not yet function as customers or incubators for

entrepreneurial firms” (Mack & Mayer, 2016, p.2121). Success stories are still few, and the regional culture is still relatively risk-averse and financial capital not yet expansive.

However, the EE slowly emerges as investors become more risk-oriented (Mack & Mayer, 2016). The presence of these initial entrepreneurs and their activities attract new venture capital to the area. By this stage, the growth of EE is fueled by a new generation of spin-offs from existing firms. As the networks become denser in the growth phase, a culture of entrepreneurship emerges around established entrepreneurial role models, adding more specialized support systems around them.

Then entrepreneurial recycling begins as successful entrepreneurs start investing in new ventures and begin mentoring other nascent entrepreneurs (Alvedalen & Boschma, 2017). The EE is viewed as an ongoing process of development where there is a flow of entrepreneurial resources like financial capital, human capital, know-how, market understanding, and overall cultural attitudes (Spigel & Harrison, 2018). Support infrastructure emerges as pioneering non-profit institutions, and incubators get founded.

Next, regional economic development policies become geared toward traditional cluster development and real-estate development strategies. Then comes the growth phase, where each component in the EE framework becomes more targeted and specialized toward entrepreneurship. This results in new firms as markets evolve to expand not only across the regional level but also nationally and internationally (Mack & Mayer, 2016).

Three actors determine the performance and outcome of the EE and their interactions between them: the individual, the organization, and the institution. Venture capitalists, angel investors, and banks represent the organizational actors in the EE, while the universities and

public sector agencies take up the institutional role. The individual entrepreneur is given the role of core actor and exerts a significant influence in building and sustaining the ecosystem.

In an EE, due to the defined geographical boundaries of the system where there is constant networking and interactions of people, there occurs an exchange of ideas and resources that eventually contribute towards building something new. As we know from the literature, entrepreneurs create companies and firms. The EE encourages the exchange of tacit knowledge and serendipity occurrences (Adner, 2017; Mason & Brown, 2014).

When all these actors converge in a single space, they make their skills and expertise available to each other and create opportunities that would eventually produce ‘blockbuster entrepreneurship’ (Alvedalen & Boschma, 2017).

Isenberg’s EE Model

Daniel Isenberg is one of the initial proponents of the entrepreneurial ecosystem as a novel and cost-effective strategy to stimulate economic development in a region. He holds that it either replaces, complements, or acts as a precursor to cluster strategies, innovation systems, and knowledge economies regarding national competitiveness policies (Isenberg, 2011). While there may be many EE models out there, the model proposed by Isenberg is the most widely accepted (Mason & Brown, 2014).

Therefore, it is reasonable to hold the Isenberg model as the benchmark and reference for EE in consideration of this paper. Isenberg’s model consists of twelve critical factors for a favorable EE: Leadership, Government, Financial Capital, Success Stories, Societal Norms, Nongovernmental Institutions, Support Professions, Infrastructure, Educational Institutions, Labor, Networks, and Early Customers (Mack & Mayer, 2016; Suresh & Ramraj, 2012).

Isenberg's ecosystem metaphor is taken from natural sciences to imply a self-organizing, self-sustaining, and self-regulating system that requires little or no work once the system gets going. This contrasts the farm metaphor which suggests the development of an ecosystem farm that requires a lot more input to keep it going. Perhaps the reason why policy makers and leaders rally around the entrepreneurial ecosystem terminology is because it allows for additions and subtractions applicable to the situation and conditions unique to the locality (Isenberg, 2016).

However, the key constructs of the framework are: policy, finance, culture, supports, human capital, markets, and network of entrepreneurs as in Isenberg's model shown in *Figure 2*. The presence of these elements and their interactions determine the extent of the EE, as it is not fixed or static, but dynamic and evolving, as per the participants of that particular community ecosystem (Malecki, 2018). Therefore, the Isenberg's model is more of an explanatory framework than a theory that can be used accordingly, as in this dissertation.

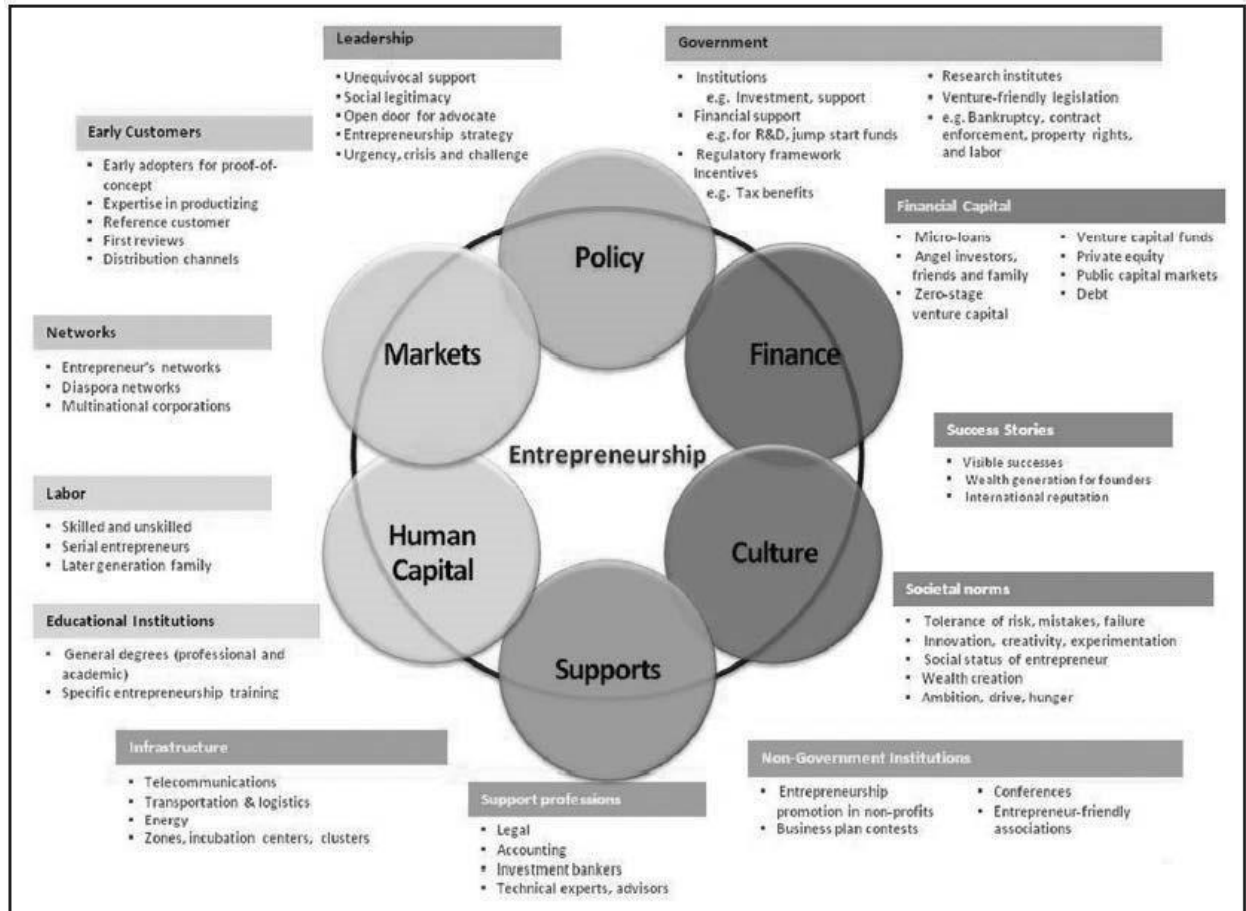


Figure 2. Domains of the entrepreneurship system (Isenberg, 2011; Mack & Mayer, 2016).

Isenberg's model has no exact formula for EE creation or replication, but following certain guidelines can help build the EE. These guidelines are: stop emulating Silicon Valley or others; shape the ecosystem around local conditions; engage the private sector from the start; stress the roots of new ventures; do not over-engineer clusters, and instead help them grow organically; emphasize ambitious entrepreneurship, and favor the high potentials; get a big win on the board; tackle cultural change head-on; and reform legal, bureaucratic, and regulatory frameworks. Using these fundamental guidelines as a north star could eventually lead to venture creation, ecosystem creation, and an overall vibrant business sector (Stam,

2015). Mason & Brown (2014) also point out that it is not advisable to replicate the same EE model used elsewhere; instead, one should play to the strengths of the location while building the EE. Locally headquartered businesses play the role of facilitator and have the best chance of stimulating the EE as opposed to multinational businesses. The presence of well-functioning, established large businesses goes a long way in helping set the base for a solid EE to emerge.

Furthermore, the EE welcomes the presence of entrepreneurial recyclers, those successful cashed-out entrepreneurs who are looking to reinvest their time, money, and expertise into new entrepreneurial ventures. A culture of inclusiveness and a “give before you get” attitude is encouraged in the community, and failure is not shunned; instead, those who have failed have opportunities to recover quickly, through teaching and mentorship.

EE & Community. Over the years, there have been several calls to pursue entrepreneur-focused economic development at the community level because certain attributes exist within communities that contribute to entrepreneurs’ competitiveness and new ventures (Spigel, 2017). Stevenson and Harmeling (1990) observe that individuals are essential initiators and vehicles of change in the long run. Individuals continue to modify and be modified by their surrounding environment. These modifications could be attributed to influences from the organizations and the societies in which they are embedded. Research has shown that the development of entrepreneurs is a place-based activity and the community in which the entrepreneur bases himself or herself plays an essential role in forming and shaping the entrepreneur (Markley et al. 2015, Lichtenstein & Lyons, 2001).

Therefore, a holistic approach to sustainable EE would focus on *agency* (that is the individual entrepreneur), and consider the *context* (the community in which the entrepreneur

is located) (Markley et al. 2015, Lichtenstein & Lyons, 2001). A systems approach bridges the business development approach (which focuses exclusively on the agency or the individual entrepreneur) and the community development approach (which focuses on the context or place). A focus on agency and context yields the best result: individual and community entrepreneurship (Markley, Lyons, & Macke, 2015).

Lichtenstein and Lyons (2001) have argued that entrepreneur-focused economic development requires creating a systemic support ecosystem that is not only focused on the needs of the entrepreneur but is also committed to transforming the entrepreneur and the community. Entrepreneurs embedded in a community are more likely to create opportunities while living and interacting with the living and nonliving things around them. A supportive institutional environment is crucial for the formation of new firms to emerge. Therefore, much is dependent on the community and surroundings the entrepreneur belongs to (Stevenson & Harmeling, 1990).

Usually, an aspiring entrepreneur or a group of entrepreneurs and leaders will choose a location for their business by considering the best possible outcome and analyzing the perceived advantages of entrepreneurs, chosen activities, and location. When entrepreneurs identify an opportunity to meet a need in the community, a trail of supporting business activities emerge. Porter (1986) explains this process in terms of a value chain: one set of activities leads to the next set of activities within a system of suppliers and buyers. The value chain of suppliers determines the firm's value chain, thereby affecting the firm's outcomes of services and products. Activities within the value chain are interdependent and must be viewed together as a well-oiled cohesive system to succeed (Walsh, 2011). For instance, there is a small sub-Arctic community in Alaska with intense entrepreneurial activity. This

did not happen in a vacuum, but rather was a result of the right mix of social and cultural forces (Roundy 2016). Out of the 64 entrepreneurs identified and interviewed in that community, most were classified as “reactive entrepreneurs,” people become entrepreneurs due to the family, government, or other environmental conditions. These entrepreneurs did not show innovation, creativity, and enthusiasm like the “opportunity entrepreneur” (Dana, 1995). Opportunity entrepreneurs are known to practice entrepreneurship by coming up with new ventures and firms that fulfill the higher-level needs of an individual, such as achievement, autonomy, self-efficacy, recognition, creativity, and so on. Entrepreneurs who get into entrepreneurship due to necessity for survival, *necessity entrepreneurs* aim to meet their basic physiological needs such as water, food, clothing, and shelter (Panthi, 2015).

Sub-Saharan African countries, such as Zambia and Nigeria exhibit some of the highest self-employment rates globally despite being low-income countries. This shows that self-employed entrepreneurship which is mostly necessity-driven is possible in rural areas, albeit low innovation (Ács, Szerb, & Autio, 2016). In the journey of a necessity entrepreneur, one’s goals for personal or business growth would probably involve exploiting opportunities for advancement that would take one beyond fulfilling one’s own basic needs allowing one space and means to fulfill higher-level needs (i.e. to self-actualize). Therefore, in an underdeveloped community with a developing entrepreneurial ecosystem, there will be necessity and opportunity entrepreneurs. When these groups of entrepreneurs and their ventures co-exist and become interdependent, fulfilling one another’s needs, they grow, and a true community entrepreneurial ecosystem takes shape.

McKague, Wong & Siddiquee (2017) identify an important fact; components of an entrepreneurial ecosystem such as infrastructure, technology, human capital, and finance are

very limited in rural areas and underdeveloped regions of the world, which creates institutional voids and barriers to entrepreneurial ecosystem development. While the pivotal role of entrepreneurs within a dynamic local entrepreneurial ecosystem is acknowledged, they also acknowledge that rural communities tend to lack the components that foster entrepreneurs. This gives rise to the age-old “chicken and egg” problem (Brown & Mason, 2017). This is why I chose Maslow’s model as a development strategy to meet the needs of an underdeveloped community, i.e. meeting basic needs of the community first through entrepreneurial ventures before higher level ventures. This logic is explained in sections below.

Maslow’s Community

People have many different types of needs. Some have physical needs of housing, employment, and necessities for day-to-day living, while others have emotional needs of belonging, acceptance, relationships, and security. Others grapple with ethereal questions of purpose, meaning, forms of enlightenment, eternity, the divine, and so on. The American psychologist Abraham Maslow identified, categorized, and documented these human needs and motivations. In his 1943 paper “A Theory of Human Motivation,” published in the *Psychological Review*, Maslow proposed that all people have physiological needs (such as food, clothing, and shelter), and the need for security of life, relationship, self-esteem, and self-actualization (FRAME, 1996). Maslow ordered his human needs-based model into different categories. The priority of the individual would be first and foremost to meet his physiological needs of food, clothing, and shelter. Once that was satisfied, the individual would look to secure themselves from any potential physical danger before eventually turning to meet social needs such as belonging and meaningful relationships.



Figure 3. Maslow's Hierarchy of Needs. (Gambrel, & Cianci, 2003).

Once part of a social system, the individual looks to attain personal recognition, power, prestige, and control. Finally, when the individual achieves all of these, they look to self-actualize, i.e. maximize one's full potential and be the best that they can be by discovering who they are and who they are meant to be in relation to the world and beyond (King-Hill, 2015; Gambrel & Cianci, 2003). Maslow used the term *eupsychia* to represent this psychological and philosophical utopia. Maslow's *eupsychia* conceived of a mature self-actualized society where there is synergy among people expressed spontaneously in altruistic action (Manuel, 1965). This sequence of needs provides a logical framework to explain human needs, wants, and aspirations.

Why Maslow's Hierarchy?

"Abraham Maslow's Hierarchy of Needs model is one of the most referenced and discussed motivation theories" (Gambrel & Cianci, 2003, p.143). It is probably one of the

most popular theories of motivation in behavioral, organizational and management literature. It has also influenced many prominent authors in various fields. When the theory was proposed, it shifted psychological discourse from focusing on the flaws in human nature to the positive aspects of being human, thereby introducing the humanistic way of thinking and postmodern thought processes (Wahba & Bridwell, 1976).

However, the model is not without its share of criticisms. The model has always been criticized for lack of scientific evidence. Maslow himself points out that needs detailed in the hierarchy are instinctive and endemic to human nature (Gibson & Teasley, 1973). One of the main criticisms and limitations of Maslow's theory is that Maslow used biographical analysis as his primary methodology to formulate his theory, based on characteristics found in self-actualized individuals. It was argued that this approach was solely based on the researchers' personal opinion and therefore was subjective and biased (Wahba & Bridwell, 1976). Empirically testing the theory in a way that causal relationships can be established is extremely difficult (McLeod, 2007). The other criticism is that Maslow's model was based on subjects studied primarily in the United States and therefore reflects individualistic western cultures and cannot be applied to other collectivist cultures. (Jelavic & Ogilvie, 2009; Wachter, 2003).

Hofstede (1984) and Nevis (1983), point out that Maslow's hierarchy of needs was based on the individualistic culture that was prevalent at the time in the United States. In countries like India, however, the culture is predominantly collectivist and a large number of people live without their basic needs being fully met but give high importance to relationships and belongingness. Also, many intellectual, creative, and spiritual people sacrifice lower level needs in order to pursue higher level needs of self-actualization. This is

evident in the lives of Rembrandt, Van Gogh, and many others who lived in poverty throughout their lifetime but yet could claim to have pursued a path of self-actualization (McLeod, 2007).

The question is do these criticisms invalidate ‘Maslow's Hierarchy?’ The theory has been able to provide a priori logical framework to explain human needs, wants, and aspirations. When it was proposed, it shifted psychological discourse from the flaws in human nature to the positive aspects of being human, thereby introducing the humanistic way of thinking and the post-modern thought processes (Wahba & Bridwell, 1976). The model has become a reference point. Prior to this, there was nothing of the kind, and even if accounting for variants and exceptions, there can be no exception if there is no reference.

Perhaps instead of seeing it as motivation, it needs to be looked at from a concern’s perspective, a person would first be concerned about basic needs and then about the rest of the needs in the hierarchy. The genius of the categorized hierarchy is perhaps in its positioning, as it is not too specific nor too broad, and therefore cannot be tested for proof or disproof. Due to its lack of specificity, it is able to encapsulate additions to or subtractions from its categories, but it is not so broad as to be disregarded completely. Its simplicity makes it easily understandable to anyone so much so that people tend to see it for its self-evident nature. It provides a reference point for generating new ideas and exploring thought around a needs- and fulfillment-based approach. Therefore, Maslow’s hierarchy provides a broad exploratory framework for my hypothesis.

SCommunity-EED to Follow Maslow’s Sequence of Needs. Although Maslow’s model represents an individual's needs, it could contextually represent families, villages, communities, tribes, and even nations when seen as individual units (Rosseau 2015). We can

also use it to paint a picture of human history. The initial hunter-gatherers were trying to meet their basic needs. Next came the age of agriculture, which helped people settle in one place, thereby reducing uncertainty and providing a certain degree of safety and security. This allowed for social cohesion, interdependence, and stable relationships, making the agricultural age the origin of society and culture. Then came the industrial age primarily characterized by efficiency, competition, invention, business acumen, and opportunity, enabling anyone, irrespective of class or caste, to make a name for oneself. In this age, the pursuit of self-esteem became prominent. In the current age of post-industrialism, or the age of self-actualization, knowledge is the prime-mover, with computers, information technology, and the internet (Nemati 2013). This progression of the ages resembles the needs-based hierarchy of Abraham Maslow.

Hence, self-actualization is an evolutionary process of finding purpose, discovering potential, and gaining knowledge. Even a community, viewed as a unit, can develop and evolve just like an individual by exploring and discovering its purpose and potential. Rosseau (2015) suggests that Abraham Maslow's hierarchy of needs helps prioritize lower needs over higher needs. He also goes on to say that; "The 'individual' whose needs are being modeled can be determined contextually, so that 'individuals' can be families, villages, communities, tribes, or nations, as well as individual Citizens, and these boundaries can shift contextually" (Rosseau 2015, p.530).

Now consider an underdeveloped rural community in the 21st century. The International Council on Systems Engineering lists engineering challenges related to human and societal needs such as food and shelter, clean water, a good environment, access to health care, information, communication, and education. Safety, security, and economic aspects are

included in that list (Rosseau, 2015). These challenges seem to resemble the needs in Maslow's hierarchy, only they are not categorized in the same way.

However, if we choose to look at things through the prism of Maslow's hierarchy of needs, we will see certain activities or businesses that revolve around the basic needs' category, the social needs, and self-actualization needs. Such an analysis will also reveal what businesses and services are lacking, but are needed in the community. Communities then search for solutions to build on existing businesses and activities to meet whatever needs they are currently lacking. Just like the needs of an individual, a community's needs include healthy food, good clothing, stable housing, utilities (water, energy, sewage, etc.), adequate medical care, and the safety and security of people living in the community.

Meeting a community's basic needs through businesses-activities operating within the community builds a strong foundation, prompting other activities and businesses to emerge to meet the social and psychological needs of the community, such as educational, recreational, tourism, entertainment, and businesses-activities. Then, the self-actualization stage begins, and the community residents start exploring avenues to engage in outreach activities to give back to the community, causing a spillover effect that goes far beyond geographical boundaries. These stages depict an accurate human ecological approach, as opposed to other approaches that identify some form of a catalyst that sets the development process in motion. From the basic-needs theoretical perspective, development puts people in a position to shift their own goals.

Hence, this argument essentially aims to satisfy the basic needs of a community so the community will naturally reach higher-level needs. This process will repeat itself in an upward cycle. This upward trajectory of development mimics a cyclical helix as the needs of

the target population continue to change at every stage in their development (Schutte, 2016). Etzioni (1998) viewed Maslow's theory in terms of consumption. He stated that consumption patterns observed in society reflected the need's hierarchy (Walsh, 2011). Consumption patterns that form around basic needs create an ecosystem of services that would naturally create conditions ripe for goods and services that fall under the next category in the hierarchy. A business ecosystem starts to emerge when individuals and organizations interact to form networks that allow the flow of goods and services to meet the needs of the members of the community (Adner, 2017). If the community development is not indigenous, then it is not real community development, and it cannot be sustainable. "It seems the basic needs theory is currently the only true and distinguishable theory that specifically addresses the issue of both sustainable environmental and social Development." (Schutte, 2016, Pg. 6).

Evolution of Path Dependent Outcomes. As a developmental pattern, each hierarchy represents a sequence of development. The sequence of events plays a significant role in how value is defined, created, and distributed. In path-dependent outcomes, time and sequence of events determine what future gets created and unveiled (Stevenson & Harmeling, 1990). To use an astronomical analogy, stars are not randomly sprinkled across the sky but exhibit clear patterns in their formation. Stars get formed in groups or clusters out of gas clouds and eventually dispersed over time (Stahler, 2012). Similarly, entrepreneurs and entrepreneurial firms are like stars formed from the surrounding atmosphere, created by the institution of SCEED (sustainability, EE, and community development pathway envisioned through Maslow's sequence). As more and more atmosphere is created, more gas clouds form just as entrepreneurs build firms, and other entrepreneurs use this material to build more material. The process is cumulative and expansive. What is eventually formed depends on what kind

of material or institutional ingredients initially go in. The first ingredient proposed in this paper is *sustainability* so that the end result aligns with the goals and ethos of Sustainable Development. This is followed by the Entrepreneurial Ecosystem strategy that adopts the sequential formula of Maslow's Hierarchy and a path-dependent approach. Finally, General Systems Theory (GST) ties all this together to highlight that everything is a part of a whole, and that by tweaking the whole, the part can be influenced and vice versa. The SCEED model could become an expansive model spawning numerous startup that eventually get dispersed, like the way star clusters are formed and dispersed (Stahler, 2012).

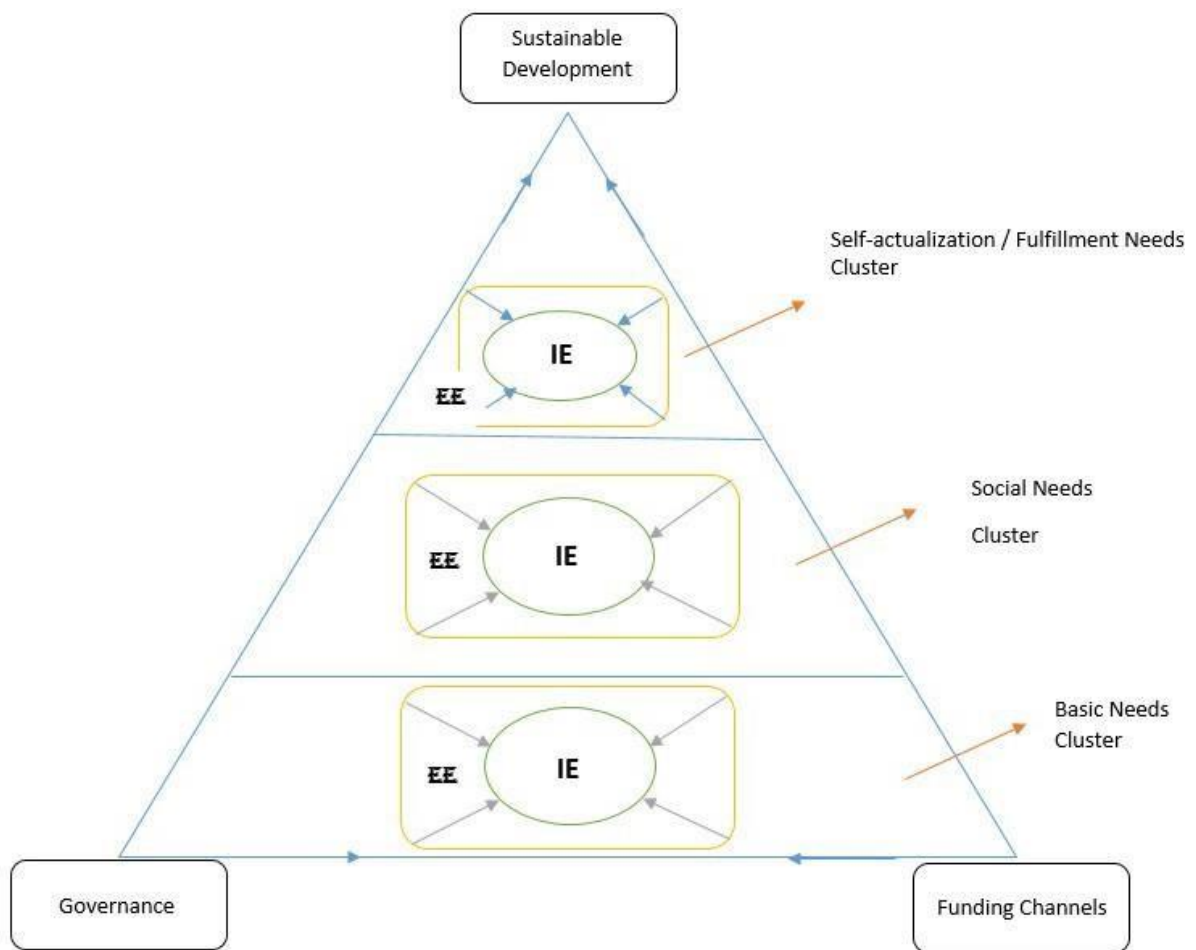


Figure 4. SCEED Hierarchy- First Sketch

A New Theoretical Framework

A brief background on General Systems Theory (GST) could serve as a setup for the hypothesis. GST was introduced and developed in the 1930s and 1940s by Von Bertalanffy. It was a new epistemological and methodological approach to science. The theory came about around the same time the word *ecosystem* was coined, and the concept originated in ecological science (Motloch & Woodfin, 1993). The initial areas of systems thinking inquiry investigated the structure and operations of living things and their relationship with the environment. These areas were further enriched by contributions from ecologists, biologists, psychologists, and sociologists (Barile, Lusch, Reynoso, Saviano & Spohrer 2016). This theory highlights that units such as the electron, the atom, the molecule, the cell, the plant, the animal or groups such as, the family, the clan, the state, the nation, the firm, the corporation and so on are each one component of something bigger. Everything consists of complex individual pieces. Atoms are an arrangement of molecules-- protons and electrons. A group of molecules make up a cell, and a group of cells makes up plants, animals, and human beings. Similarly, a group of humans together can form organizations, and a group of organizations makes up a cluster, and so on. Each of these individual components reacts to its larger environment, can influence the environment for change, and can be changed by the influence of the environment as well (Boulding, 1956).

As Rosseau (2015) says: “since the 1950s, systems researchers have developed dozens of theories centered on specific aspects of systemic behaviors and structures and hundreds of methods informed by the systems paradigm. However, these developments have fragmented the systems community into a diversity of specializations, traditions, and domains of discourse” (Rosseau, 2015 p.523). The ability to build and integrate a powerful

transdisciplinary system remained elusive. General systems theory did not seek to establish a single, self-contained theory of everything; instead, it was meant to maintain a degree of ambiguity to spawn and proliferate ideas, debates, and discussions, ultimately leading to the benefit of society.

General systems theory is an interdisciplinary approach that ties together different disciplines identifying the universality in things. “Seeing things as a whole,” “looking at the big picture,” a “holistic point of view,” a “macro view,” and “being open and dynamic” all highlight the principle of universality in GST (Motloch & Woodfin, 1993). In GST, all the components interact with each other, and work together as a group toward a common goal. And so, sustainable entrepreneurial ecosystem development as an approach is relevant only if there is an optimum level of generality and specificity in the model. The model is meant to not be too general, or too constrictive and specific. As such, the entrepreneurial ecosystem is a logical derivation of systems thinking and a precursor to SCEED.

SCEED for Pawnee

The intention of this paper is to articulate the SCEED model for rural communities to foster entrepreneurship and move towards sustainable development and to discover and articulate working principles for SCEED, its emergent paths, and its potential to transform a community. The research question is: *How would SCEED emerge in a community, what would it look like, and how can it take shape and be realized for an underdeveloped community?* To answer this, I chose to study the Pawnee Nation of Oklahoma, a Native American community that is rural and underdeveloped. I consider problems related to underdevelopment and development among Native American communities in general, and more specifically in Pawnee, outlined below.

Native American Communities

The United States of America (USA) is one of the wealthiest countries in the world, with many of its citizens enjoying a good standard of living overall. However, many communities do not experience this same quality of life. Quality of life is relative based on one's surroundings, economic conditions, social outlooks, values, aspirations, etc. Quality of life for an individual would imply that one can afford a fair amount of leisure and recreation and retain overall good health and well-being (Singer et al., 2011). Such a person is physically safe and secure; has a fair sense of belonging, self-esteem, and self-worth, and has the opportunity to self-actualize or develop into a person who can contribute to the overall well-being of his fellows in some way according to Maslow's Hierarchy of Needs (Frame, 1996).

One group of people that does not have this quality of life is Native Americans. Native people lived on these lands for centuries before the arrival of European white settlers. Since then, they have had a tumultuous and complex shared history, with the dominant white settlers often determining a path for the Native American (Colbourne, 2017). Native Americans were removed from their ancestral lands to federally designated lands as an act of appropriation or propitiation; either way, they were coerced into living on this designated land. Only on the federally designated lands would they be able to continue their way of life due to either a perceived incompatibility to coexist with the European white settler culture; incompatibility with modern trade, commerce, technology, and development; genuine concern for the preservation of culture, freedom, and survival; a desire for containment; or a combination of all these factors (Hall & Fenelon, 2004). Through treaties, the tribes' ceded their original lands in exchange for specifically reserved lands within defined territories and

promised resources for survival. One reason many tribes signed these treaties was to ensure survival through access to the food supply. The buffalo was the primary source of food supply for the Plains tribes, but it was destroyed in the 1870s and 1880s. This disrupted the Native Americans' entire way of life, making them even more dependent on the federal government for sustenance. This led to the Dawes Act, which divided reservations into 160-acre allotments for individual native families to use to farm and assimilate into white culture. However, this did not happen as envisioned, for reasons beyond this paper's scope (Barrington, 1999).

Post Relocation. The post-relocation period is characterized by dependency on the federal government. The federal government has continued to further this dependence over the years as it overhauls old and rolls out new programs periodically. A study in 1928 showed that Native Americans on reservations experienced far worse conditions of social, economic, education, and health, since relocation and allotment (Miller, 2012). Another study pointed out that Native American economic development focused mainly on seeking grants. The institutionalization of systemic dependence and bureaucracy only enlarged budgets, contributing to the lack of development on Native lands. The result is that most basic services like good roads, safe housing, clean water, sanitation, telephones, electricity, and other resources that most Americans take for granted are lacking on most reservations (Mathers, 2012).

As of 2017, approximately 4 million people self-identify as Native American, and they consist of three primary groups: Native Hawaiians, American Indians, and Alaskan Natives, out of which 1.2 million choose to reside on designated Indian reservations and Alaskan Native Villages (Colbourne, 2017). American Indians remain among the poorest

groups of people in the United States. The 2000 U.S. census revealed that the median income per capita for Native Americans was less than half the average of all U.S citizens. Poverty levels among Native Americans were twice that of the United States average. Native American communities also lack adequate infrastructure for water, sewage, and telecommunications (Mathers, 2012). Colbourne (2017) observes, “Similar to Indigenous peoples across the globe, Native Americans continue to face challenges related to poverty, marginalization, poor health outcomes, discrimination, substandard education, the loss of traditional livelihoods and restricted access to work and socioeconomic opportunities” (Colbourne, 2017, p. 49). The poverty rate on the 334 federal and state-recognized Native American reservations in 2010 was 28.4% compared to 14.3% for the United States. Some reservations in the western United States have poverty rates that exceed 40% (Singletary et al., 2016).

Poverty is not the only challenge that Native American reservations face, but it is one of the most visible. There are deeper human challenges such as anger, guilt, shame, and fear that are at play due to intergenerational trauma among native communities (Coyhis & Simonelli, 2005). Researchers working on substance use and suicide prevention among indigenous communities in North America are advocating for the development of preventive models that take a holistic approach to improve the overall health and well-being of indigenous people. New initiatives at the community level should take poverty and unemployment into consideration and look at local capacity building and resilience without, losing sight of the broader socio-economic context (Larzelere-Hinton et al., 2016). I will look at one Native American community: Pawnee Nation of Oklahoma.

Pawnee Nation of Oklahoma. The Pawnee Nation of Oklahoma referred to here as the “Nation,” is a federally recognized and protected Native American tribe, located by the City of Pawnee, about 50 miles northwest of Tulsa and 91 miles northeast of Oklahoma City (Matlock, Kersey, & Riding In, 2009). As of 2016, there are 3,481 tribal members, 2,158 of which live across Oklahoma. The other 635 members live in and around the Pawnee reservation situated in Pawnee County (Pawnee Nation Annual Report, 2016). The total population of Pawnee County is about 16,485, out of which 13.3% of the population is Native American. The Pawnee make up 9.2% of Oklahoma and 1.3% of the United States as a whole (Brian Kirk, 2017). The Nation has jurisdiction over 29,951 acres of land, a combination of tribally and individually owned federal trust lands spanning over three counties, of which 786 acres is contiguous land (Matlock et al., 2009). However, most of these lands are undeveloped. One indicator of the lack of development is the high poverty level and the unemployment rate among tribal members which is 6.9%, compared to the national unemployment rate of 4.7%. Similarly, 22.3% tribal members live below the poverty level, while the national rate is 12.7%. The median household income is far less for Pawnee tribal members than the rest of the United States (Brian Kirk, 2017).

The number of businesses operating on the reservation providing employment opportunities is very limited. The Pawnee Tribal Development Corporation (PTDC) is the corporate arm of the Nation and is responsible for the Nation's economic development. The businesses under its purview are; three casinos, two restaurants, a construction company, four convenience stores, and a billboard designs company. Together, they employ 155 people, out of which 47 employees are tribe members (Pawnee Nation Annual Report, 2016). Some of these businesses are not owned by Pawnee entrepreneurs, but outside entrepreneurs who

provide rental income to the Nation. They also do not meet many of the basic needs of the local community.

At present, there are only two grocery stores in the Pawnee area, with limited access to fresh food (Brian Kirk, 2017). The consequence is that Pawnee is a food desert, much like the rest of Native American land. About 85% of residents living on tribal reservations receive food assistance from the United States Department of Agriculture (Gurney, Caniglia, Mix, & Baum, 2015). One member of the Pawnee, Crystal Echo-Hawk, points out in a report that Native American communities have faced federal rationing since removal and relocation. Consequently, dependency on federal assistance has changed diets and food patterns, causing adverse health effects (Echo-Hawk, 2015).

There is a food distribution program run by the USDA in Pawnee for eligible tribal members who have low income. Participating members receive food packages to help maintain nutritionally balanced diets with over 100 products to choose from (USDA, 2018). The “Pawnee Nation Food Sovereignty Survey,” revealed that more than 85% of survey respondents wanted to see food and traditional corn grown on the reservation, and more than 65% wanted to know more about traditional foods and ancestral seed preservation efforts (Brian Kirk, 2017). In addition, there is limited food access and limited food retailers, food vendors, and food preparation as well as housing problems and unemployment issues that are all linked to unhealthy lifestyles among tribal communities in Oklahoma.

All this has a cumulative effect on native communities like the Pawnee, causing further depression and difficulties addressing issues (Echo-Hawk, 2015). Although there is a large Pawnee Indian Health Center that sees about 38,000 outpatient visits a year, most of the

employees do not live in the area due to lack of housing and other facilities; instead, they travel from Tulsa or Stillwater. This is evidence of poor housing and lifestyle options.

To improve agriculture, the Pawnee Seed Preservation Project aims to foster food growers amongst the new generation. The project introduces learners to tribal heritage seeds and their value, Pawnee agricultural traditions and techniques, and the value of growing and consuming local foods. Corn harvested from these gardens goes to the elder center. There are about 19 gardens growing corn in Pawnee. Two of these gardens are at Pawnee College and the Pawnee Elder center. They are all operating as science gardens, and the largest one is about 3 acres. Some of the revived corn types include blue speckled corn, red flour corn (rare), Pawnee sweet corn (not grown in decades), blue flour corn, eagle corn, white flour corn, and speckled corn (Informal Interview, 2019).

On January 24, 2019, the Pawnee Nation of Oklahoma released a document codifying the Cannabis Sativa L. (Hemp) Farming Act to authorize hemp production on their lands. “The purpose of the Hemp Act is to enable the Pawnee Nation, and its licensees and affiliated universities, to promote the cultivating and processing of hemp and the commercial sales of hemp products” (Pawnee Nation, 2019, p.1). The Nation is hoping to begin hemp cultivation at some point with USDA approval and the necessary processes.

Native American Entrepreneurship. Native-American entrepreneurship holds the potential to empower native communities to assert their sovereignty and their rights associated with it to build and sustain culturally appropriate businesses that bring about positive social, economic, and environmental changes to the region, thereby making room for further development and growth (Colbourne, 2017). Entrepreneurship is not entirely new for Native American communities. Historians and anthropologists have cited communities in the

United States where private property ownership, inheritance rights, taxes for labor, wealth acquisition, use of capital, natural resource exploitation, and individual incentive have been present before European influence (Peredo, Anderson, Galbraith, Honig, & Dana, 2004). Even before the complete dominion of white settlers on the continent, native people had successfully engaged with the new incoming foreigners in trade and commercial activities, such as the fur trade that thrived in the 16th and 17th centuries (Kunkel, 2008). When considering Native American tribes in Oklahoma, some have done well and have been successful for various reasons, with some credit to entrepreneurship.

For example, the Chickasaw Nation has been very successful entrepreneurially. They operate their businesses under Chickasaw Nation Industries, a federally chartered corporation. They have businesses in water filtration, network services, research and development, testing and evaluation, and even defense-related portfolios (Nimmo, 2019). One of the ways they have done business is by leveraging their preferential treatment status in federal contracting for tribally owned companies under the Small Business Administration (SBA) 8 (a) program (Nimmo, 2018). Under this program, the federal government awards at least 5% of all federal contracting dollars to small businesses owned by socially and economically disadvantaged people and entities (U.S SBA, 2019). Native enterprises are known to receive about 1.5% of total U.S. procurement, which is a significant share of contracting amounting to about \$500 billion (NACA, 2019).

The SBA HUBZone program, is the federal government's initiative to promote business development in historically underutilized business zones. If the business locates itself in a HUBZone area, it gets preferential treatment with government contracting. Cherokee Nation of Oklahoma has utilized this program and the SBA 8(a) program,

partnering with outside businesses to receive preferential contracting status. The result is the emergence of business enterprises in distribution logistics, engineering, manufacturing, hospitality, real estate, and federal solutions. Now Cherokee Nation is the largest tribal government in the United States, with 11,000 employees (Cherokee Nation Business, 2019).

Another tribe in Oklahoma, the Citizen Potawatomi Nation, owns and operates businesses employing more than 2,200 people. These tribal enterprises include Firelake Discount Foods, the largest tribally owned grocery store in the United States, and the largest tribally owned national bank in the United States, First National Bank & Trust Co (Citizen Potawatomi Nation, 2019). In addition, Cherokee, Chickasaw, and Potawatomi all own Casinos that bring additional revenues. Although tribal governments may own many business enterprises, one of the obstacles to a thriving economy is that there is no circulation of money within the community. Most of the money that comes through indigenous communities is generally spent elsewhere, outside of native lands. This “leakage” occurs because there is an absence of small businesses such as grocery stores, restaurants, clothing stores, etc. Studies show that although tribes may own businesses like casinos, most revenue generated spills over to surrounding non-Indian communities and taxes, and does not seem to benefit the tribal community much (Miller, 2012).

Tribal governments tend to influence their communities in a big way, and if individualized entrepreneurship is to thrive among tribal entrepreneurs, it needs to be legitimized by the tribal leadership/government. For example, the Arizona tribe Tohono O’odham and the Apache chose to prioritize funding of individual entrepreneurial ventures over tribal entrepreneurship while other tribes focus on tribal entrepreneurship and community-based enterprises as an economic development strategy (Peredo, Anderson,

Galbraith, Honig, & Dana, 2004). Therefore, a suitable definition for entrepreneurship for indigenous groups is the one by Raymond Kao et al., who define entrepreneurship as “not just a way of conducting business; it is an ideology originating from basic human needs and desires...entails discovering the new, while changing, adapting and persevering the best of the old” (Peredo, Anderson, Galbraith, Honig, & Dana, 2004, p. 14).

The need for native entrepreneurship is evident, as it can be a catalyst for economic and sustainable development in the region. Native American ventures could be land-based, holistic, and relational to align with spiritual and material worldview and to extend native culture, values, and identity. The worldview bases itself on interconnectedness, interrelationships, and interdependencies of people, resources, and the environment (Colbourne, 2017). This ethos of Native American communities resembles the principles of sustainable development and entrepreneurial ecosystems theory.

Literature Gaps

The popularized concept of an entrepreneurial ecosystem is quite broad and often used at the regional level. There does not seem to be an EE model that has been articulated locally for a small rural community. Moreover, the Isenberg model is the modus operandi for large regions and urban settings, and its application to rural communities has not been explored or articulated in the literature. EE literature does not address the sustainable development goals set by the United Nations and does not cite the significance of sustainable entrepreneurship (Volkmann, Fichter, Klofsten, & Audretsch, 2019).

Moreover, EE literature tends to focus on addressing issues of static snapshots taken of EE rather than capturing its systematic evolution that could occur over a span of time, which could provide invaluable data to scholars and practitioners alike. Naturally, this raises

the question of path dependency and variables considered for early-stage EE creation and the probable outcomes. Alvedalen & Boschma (2017) imply that, although the EE literature has attracted much attention, the concept remains relatively nebulous, lacking adequate structure and clear analytical frameworks. They state the importance of envisioning what kind of institutions would emerge to achieve the desired effect and what kind of an impact there could be, when considering the initial components and relationships that went into EE creation at the beginning stages.

In the past, EE literature has used *ecosystem* as an analogy of the biological ecosystem, highlighting that entrepreneurship takes place in a community of interdependent actors (Stam, 2015). However, there does not seem to be an entrepreneurial ecosystem model that is place-based and articulated at a community scale (Adner, 2017). It is imperative to articulate how a place-based EE can be incorporated and realized on the ground practically. Additionally, EE's relevance, applicability, and feasibility to Native American communities is also not addressed since EE is an emerging field of study. Nevertheless, EE is a field of study gaining universal appeal and is considered a conduit to an economic development strategy.

Summary

The SCEED model essentially adds two more components to EE: *sustainability* (articulated in terms of how industrial ecology functions) and *community* (articulated in terms of Maslow's hierarchy). While EE acts as the development framework, sustainability makes the EE more lean, efficient, and livable. This section focuses on the community aspect, articulated by applying Maslow's Hierarchy to the equation. Viewing the EE through the lens of Maslow's Hierarchy' gives the entire EE a purpose and upward mobility for an

underdeveloped community. As we see overlap and complementary relationships between the “Eco-systems” theory and Maslow’s Hierarchy, my research question seems relevant: “Considering Sustainable Community Entrepreneurial Ecosystem Development (SCEED): how would this emerge in an underdeveloped community and what would it look like as it takes shape and discovers its potential to be realized.”

“Stories have the power to frame and create understanding: to create and maintain moral communities: to validate current actions: and to empower, encourage and relieve tellers” (Fortmann 1995, p.1054).

CHAPTER III

METHODOLOGY

This study looked at developing a new model called SCEED: Sustainable Community Entrepreneurial Ecosystem Development. Combining sustainable development ideas and entrepreneurial ecosystems, SCEED is meant to draw a hypothesized roadmap for underdeveloped rural communities. This chapter introduces the research methodology to the reader. A qualitative data gathering approach is adopted to answer research questions. The chapter will discuss the approach and how the study gathered data and includes details about methods, procedures, and analysis.

Research Positionality

The study focuses on the Pawnee Nation in Oklahoma. The study is exploratory, intrinsic, instrumental, and holistic in nature. The term *intrinsic* means that research is undertaken not because Pawnee Nation represents other communities or reveals a pattern or phenomenon, but because the uniqueness of Pawnee Nation makes it of interest. The term “instrumental” is used because it helps give insight into the topic and helps refine theory as it

plays a supportive role (Baxter & Jack, 2008). The study categorization is a constructivist paradigm (Stake, 1995; Yin, 2003). I take a theoretical framework view, which focuses on systems thinking and holism as opposed to separate parts. However, parts make up the system. Therefore, understanding the parts, their interdependencies, and collective interrelationships that make up the whole is essential. One way to do this is to create a visual map of the system. International development efforts are increasingly choosing to adopt this approach (Patton 2015).

A *phenomenon*, or activities and processes that occur within a bounded context, in effect becomes the unit of analysis and defines the study. Results from this research will inform theory building for SCEED. A common thread, whether it be a case, action research, Delphi, or grounded theory, is that each follows a general iterative process. This highlights the importance of “emergent flexible design” in framing inquiry as well as an openness to incorporating changes throughout the process. Emergent research methods are logical conclusions to paradigm shifts for developing theory and new areas of knowledge (Patton, 2015).

I approach this topic from a qualitative research inquiry that is holistic and contextually sensitive. The philosophical root of this inquiry falls under interpretivist *social constructionism*: a socially constructed view of a phenomenon, SCEED, in this case. I observe, interact, and see what emerges, through inductive naturalistic inquiry. My inquiry explores and describes real-world settings of Pawnee. A qualitative study is a suitable methodological approach to gather data through various sources within a specified context. I use strategic case selection, purposeful sampling, and analysis to look for themes and patterns that emerge from the data to develop theory (Patton, 2015).

Researcher Subjectivity. In a qualitative case study, this researcher functions as the primary instrument for data collection and analysis. Hence, it is necessary to address my background and subjectivity for credibility in research design, as it will reflect in the work, along with its advantages, constraints, and bias (Kopy, 2005). As I grew up in a developing country, India, I have witnessed underdevelopment and the problems associated with it first-hand. With work experience in sustainable waste management, I have observed waste patterns of society, that can be reflective of the haves and have-nots, and I have witnessed differences in lifestyles and opportunities available to people based on their surroundings. Therefore, I tend to view things from an optimization point of view, where minimum resources are utilized for maximum benefit. This also motivates me to create and facilitate good environments that bring out the best in people, creating opportunities for people. One possible constraint I need to be aware of is the possibility of getting pigeonholed into certain areas of thinking and viewpoints and forgetting my research objectives. I must keep my objectives, my hypothesis, and final goal in mind.

IRB Procedures. Oklahoma State University's Institutional Review Board (IRB) and Pawnee Nation administration approval was obtained for research (See Appendix A). A recruitment script email was sent when necessary. Participants gave verbal, written, or signature consent to be interviewed and have those interviews transcribed verbatim for use in dissertation and data analysis. Consent forms were sent for review via email prior to the interview (see recruitment script and consent form in Appendix B). In this study, interviews were recorded on Zoom and on iPhone using a recording application. The interviews were done online via Zoom and the TEAMS app. In the focus group interview, a summary of the

interview and what was discussed was sent in an email, asking for any further input from members.

Study Participants. Primary data collection was processed through one-on-one interviews of Pawnee Nation leaders. These one-on-one interviews of community leaders and experts represent each pillar in Isenberg's model: that of policy, finance, culture, support, human capital, and markets. The participants were selected to represent the six pillars in Isenberg's model. They contributed to the study and represented the sustainability and community-development components that were integral to the hypothesis and model. The participants were recruited through Pawnee Nation's Tribal Planner Division Director, my primary contact at Pawnee Nation. Under the aegis of the Division Director, I reached out to key leaders for interviews. In-depth one-on-one interviews were held with seven leaders who held key positions in tribal government. The experience of interviewees was not limited to their area of expertise. They are either members of Pawnee Nation or have worked with and are familiar with Pawnee culture. Interviewees were approached via email or phone, told about the study, and invited to participate in a one-to-one interview lasting between 60 and 90 minutes. Follow up and co-ordination may have been done via phone.

Data Collection

The interviews for this dissertation were unstructured, and questions open-ended. The questions acted only as a template to elicit relevant information beneficial to research question. As the interviewer, I probed beyond answers given to the predetermined standardized questions to elicit further information key to the study (Kopy, 2005). The questionnaire template was based on the background of study and was used for acquiring knowledge to contribute to the goal of study. Question progression followed the trajectory of

who Pawnee was as a tribe: what are their characteristics and their unique identity? Where they are? What do they have? What is lacking? What do they envision as the path to get what is lacking? What challenges and obstacles do they have to overcome, and how do they go about it?

The standardized, open-ended question format followed pre-determined wording and sequence in interviews. Similar questions used across interviews increased response comparability among interviewees while adding flexibility. However, in closed-fixed response interviews, respondents fit their answers to researchers' categories where data was limited (Addington, 2011). In a similar sense, the open-ended questions used to elicit responses from Pawnee leaders (shown in Appendix C) acted only as a template to guide conversation while remaining flexible to conversation dynamic, rapport, and the interviewee's expertise. Initially, questions were asked in an interview-like model, but as the interview progressed, questions were weaved into a fluid conversation switching between interview mode and conversation mode, depending on the interview (Anderson, 2017). As per DiCicco-Bloom, & Crabtree (2006), question alterations occurred as this interviewer learned more about the topic on preliminary data collection and analysis. Each interview was approximately sixty minutes over a single session. Focus group interviews were similar in nature with the same template of questions. The goal was to capture the insight of the leaders interviewed in a succinct manner beneficial to the study (Alanis, 2020).

Transcription. Qualitative research is subjective in nature and necessitates scrupulous methodology for scientific rigor and validity (Easton, McComish & Greenberg, 2000). Transcription is part of qualitative research and is vital to the process of analysis. Transcribing pre-recorded interviews is quite common in qualitative research. Transcription requirements can vary depending on the type of research (MacLean, Meyer & Estable, 2004).

Transcripts lean toward constructed reality when a researcher chooses what parts to preserve, depending on the goals of transcription and the priority of informational content.

Transcription processes vary in accuracy and precision levels and perfection is not required.

They might capture speech slurs, pauses, grammar, intonations, or they might not

(Sandelowski, 1994). Therefore, transcription, as central to the analysis process, reflects

researcher bias which is the norm in most qualitative research (MacLean, Meyer, & Estable,

2004). In this research, I used an iPhone to record interviews. Then, the recorded interviews

were transferred and uploaded to the online transcription service Temi. Even though the

Temi service software did most of the transcription, accuracy and precision of transcribed

interviews required manual listening and corrections.

Coding-Analysis

Yin (2014) and Roessler (2020) suggest having a comprehensive data analysis

strategy. In the data analysis process, I established patterns that align with the research theory

and goals. My method was to transcribe interviews that were analyzed against three sets of

criteria. One criterion was the Sustainable Development Goals (SDGs) outlined by the UN,

particularly the first nine which were most relevant to this study. The UN outlined 17 SDGs:

No poverty, Zero Hunger, Good Health and Well Being, Quality Education, Gender Equality,

Clean Water and Sanitation, Affordable and Clean Energy, Decent Work and Economic

Growth, Industry, Innovation and Infrastructure, Reducing Inequalities, Sustainable Cities

and Communities, Responsible Production and Consumption, Climate Action, Life Below

Water, Life on Land, Peace, Justice and Strong Institutions, Partnerships for the Goals. I

compared this against Maslow's hierarchy of needs at the community level proposed in the

model, with the first nine SDGs embedded in the SCEED model based on relevance, acting

as a second set of criteria. Finally, the third criterion was Isenberg's model and its sub-components.

These three criteria formed the lens through which the interviews were analyzed. I identified these codes and goals while going through the transcribed interviews. As some methodologists recommend I chose a coding method or criteria to harmonize the study's conceptual framework with the analysis that directly answers the research question and goals. Codes capture the datum's primary essence and content, just as the title of a book captures the book's essence and content (Saldana, 2015). I constructed a code to isolate, symbolize, depict or translate data to make interpretations, observe patterns, categorize, and manipulate the data. In the analysis stage, a system of weighting the codes was used as a way of measure. This was based on frequency (number of occurrences) and quality (researcher judgment) as observed in the transcription data. Boeije, van Wesel & Alisic (2011) discuss "weighting the evidence" where frequency and quality is used to weight the strength of the evidence. My proposition development and theory were built on a code scheme shown in figure below:

First 9 SDG's Embedded in MHN Hierarchy

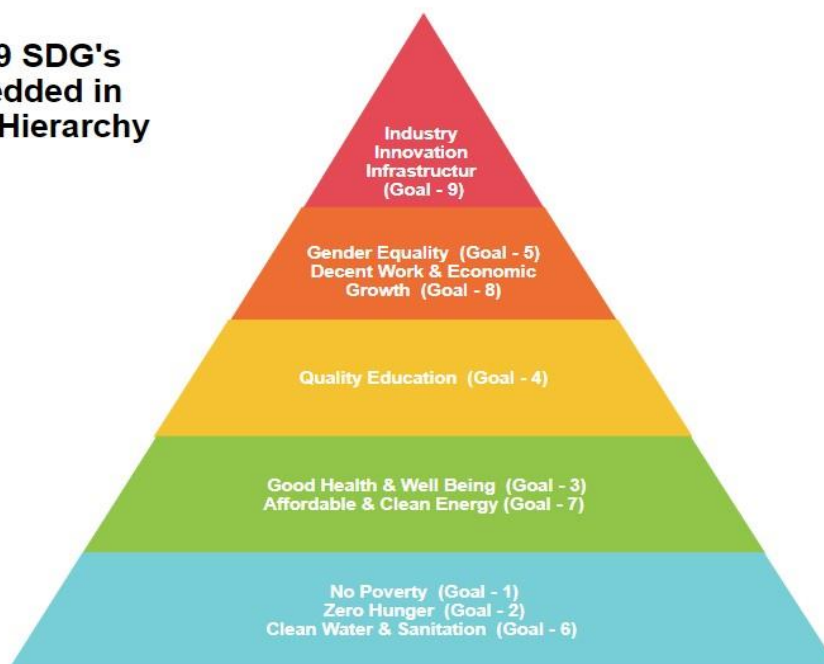


Figure 5. Sustainable Development Goal Indicator Tipi for SCEED.

By using the above figure as a template, I did hypothesis coding. Saldana (2015) talks about various coding methods, including hypothesis coding. “*Hypothesis coding* is the application of a research-generated, predetermined list of codes to a qualitative data specifically to assess a research-generated hypothesis. The codes are developed from a theory of what will be found in the data before they have been collected or analyzed” (p.171). This researcher already has a coding scheme, so I need only to analyze and compare against this schema, looking out for relevant information while going through data. This is what I did with the predetermined coding scheme shown in figure 6, which acts as the hypothesis code for my analysis.

Prior to analysis, I paraphrased individual interview transcripts. This ensured that data was cleaned for pauses, slurs, repetitive words etc., Coding played an important part in the

analysis. A reciprocal relationship existed while developing the coding system and understanding its evolution.

I used a process of zoom-in and zoom-out, to analyze the data and make connections between the micro and macro. This brought out details that connected the larger picture with the finer content and determined the relationship between them. The story of the blind men and elephant is a familiar one, where each man had a different description of what the elephant looked like from their own perspectives. In the same way, analyzing one variable, code, or construct gave different perspectives when zoomed in, and when zoomed out (Weston, Gandell, Beauchamp, McAlpine, Wiseman, & Beauchamp, 2001). Only when all were put together was there an appropriate and holistic perspective.

The analysis was done manually over several rounds. At some point, the codes became so internalized to this researcher, that the codebook became a document to communicate process rather than a frame of reference (Weston, Gandell, Beauchamp, McAlpine, Wiseman & Beauchamp, 2001). Apart from the above coding manual mentioned, anything that stood out as significant, illustrative, or profound was captured. If there were any sentences worthy of direct quote, or if there were words or phrases that could be used to code, they were noted. Also, anything that seemed to reflect the upcoming model, things that surprised or intrigued me, or things that answered the research question in some way, were considered and categorized accordingly. As the analysis progressed over time, an overall theme and related categories emerged.

NVivo Use. NVivo is a qualitative data analysis computer software. Although detailed coding and analysis procedures were available through the software, I found that manual coding and analysis were unmatched. I used the software primarily for its keyword

frequency feature represented as word clouds. This feature highlighted and verified results that I had already arrived at in my manual coding analysis. NVivo word clouds offered comprehensive data descriptions through visualization to better understand the complex phenomenon (Vignato, Inman, Patsais, & Conley, 2021). I uploaded abridged interview transcripts into NVivo's qualitative data analysis software platform. The NVivo word frequency feature produced word clouds that depicted the words most frequently used in the interview in varying sizes and colors represented the overall theme of the interview (Cook, Chen, & Griffin, 2019).

Limitations, Delimitations & Assumptions

The focus of this study is limited to the Pawnee tribe. I chose to begin with tribal leadership opinions for assessing ground-reality and idea development (Alanis, 2020). I sought to answer the research question via an inductive approach rather than a deductive one. Hence, I set a core delimitation at the outset. One assumption is that respondents trust the researcher and provide honest responses given in good faith despite past scenarios where tribal communities have had negative experiences under similar circumstances (Alanis, 2020). Another assumption is that those interviewed are true sources of knowledge with respect to their leadership areas, they contribute toward development of the tribe, and they offer a true and holistic representation of ground-realities. Interviews are only a snapshot of a contextual encounter. They are nuanced-- not a representation of the whole truth, but only a sample (Hallnäs, 2020).

Discovery of greater levels of truth in research requires more resources in time, energy, sustenance, and focus. All of these were limited, and I adjusted my research depth accordingly. Therefore, I had limited scope, research criteria, variables, participants, extent

of analysis and generalization. A flexible and inductive research design puts a high demand on the researcher, as change and decision making are constants every step of the way (Hallnäs, 2020). This causes everything to remain in flux until done or written. Gleanings from data were used to legitimize the hypothesis and answers to research questions to a degree. These were of the researchers' choice and interpretation.

Another limitation is that formal sample size, data collection hours and quantity are limited. Before IRB approval, candidature, and the pandemic, a lot more time was spent in attending meetings, talking to people, making connections, and immersing myself in and around the topic, with numerous trips to Pawnee and hours of discussion spanning 3--4 years. The COVID-19 pandemic required isolation limiting my in-person access to the community. Organizing focus groups and eliciting valid responses via Zoom was particularly difficult.

Summary

This chapter states the purpose of the study and highlights the research needed to see how SCEED emerges as a theory to validate my hypothesis. The research methodology is selected, and its significance and criteria are discussed. The overall research position is stated, and researcher subjectivity is recognized. This chapter details a qualitative approach and its data collection process. In summary, this chapter explains how the research was carried out and the method used, including study participants and how they were selected, the procedures followed as protocol, the data gathered and transcribed, the criteria used for coding, a brief analysis, and any limitations, de-limitations, and assumptions that may exist. The next chapter presents the analysis and results of study.

CHAPTER IV

RESULTS

This study looked at a method to create sustainable development for a Native American community by way of sustainable entrepreneurship. This method was prioritized and ordered around Maslow's needs-based hierarchy to create an entrepreneurial ecosystem. Previous chapters discussed the research question, related topics, literature review, and methodology. This chapter covers the analysis and results and answers the research question: *How would SCEED emerge in a community, what would it look like and, how could it take shape or be realized for an underdeveloped community?*

There are different ways to address this research question and present results. One way is to present them in major and minor themes, with assertions based on findings, while keeping the research question in perspective (Peterson, 2019). Each interview is analyzed for codes and themes. This process includes data review comparisons made at various stages to distill data relevant to the study and arrive at legitimate themes. The analysis and results, including tables, graphics, and explanations, are presented in an interwoven manner.

Individual interviews and their outcomes are presented in order by which they were conducted. Each interview gives insight into specific areas due to the expert nature, position and relevance of the personnel interviewed. The knowledge and insight gained from each interview is tied together in the end, to make sense of SCEED as a model (Williams, & Moser, 2019).

Interviews

The first interview was conducted in person at Pawnee Administration Building, and the rest were virtual. Interviews were recorded, transcribed, cleaned, and paraphrased. Manual coding required reading and re-reading of the transcript. Annotations were made on the margins to capture the essence of individual paragraphs. These translated to keyword codes, were analyzed against schema and put in categories with frequency occurrences in each category, and weighted accordingly. The tables below show a codebook where G stands for Sustainable Development Goal (SDG), with the respective goal number beside it. Codes or aspects that fell outside predetermined categories were again grouped, categorized, and weighted accordingly. The weight for each code category was based on the researcher's judgment. Data was collected, codified, assembled, categorized, thematically sorted, and organized in a way that made sense based on the research goal (Williams & Moser, 2019). NVivo textual analysis of paraphrased individual interview transcripts produced figures 7,8,9,10,11,12, and 13. These are presented in the second section, interview narratives.

Interview – 1.

Table 1

Emerging Theme Categories in Order of Priority (Weightage) – Interview 1

Code Category	Weightage / Points
G8 + G4 (<i>Work, Growth, Education</i>)	11
G9 (<i>Industry, Innovation, Infrastructure</i>)	10
G1, G2 (<i>Poverty, Hunger, Food</i>)	4
Assets	3
Finance	3
Pawnee Pride	2

A major theme emerging from this interview is skills development for tribal members. Set skills development among tribal individuals goes hand in hand with community development. This theme falls under categories of SDG 8, decent work and economic growth; and SDG 4, quality education. Kohl & Hopkins (2019) suggest quality education aligns with SDG4 and advocate for education for sustainable development in indigenous communities. As an integral part of SDG 4, the role of skills development in global transformation is widely acknowledged and conceptualized in a larger context for poverty reduction, growth, and decent work. As per SDG 2030 agenda, vocational education and training is given great importance (McGrath, Alla-Mensah, & Langthaler, 2018). The second theme that emerged with almost equal weight was SDG 9--- industry, innovation, and infrastructure. Some needs of the community include technology, technical education, healthcare, home infrastructure, support and expansion of existing ventures, design and planning for increased foot traffic, a hotel, a store complex, a grocery store, a business

incubator, and related ventures. Infrastructure and affordable housing are a base requirement for vibrant tribal economies. However, many tribal communities face difficult housing and living conditions (National Congress of American Indians [NCAI], 2021).

Some other themes touched upon were food related: the need for agriculture and grocery stores, which falls under SDG 1 & SDG 2 categories (that of no poverty and no hunger). Other things that were highlighted included land as an asset to be utilized, the need for financial sustainability to move forward as a tribe, and Native pride--- the glue that holds the tribe together. Sustainability to this interviewee meant the tribe would have revenue to run things and a department capable of environmental sustainability. Pawnee Nation at present does have a department that oversees environmental sustainability in the community. For big major businesses to move into the area, there must be adequate housing, healthcare infrastructure, utilities, and so on. These facilities or “needs,” once established, will give rise to businesses or attract businesses from outside to come and establish themselves in the area.

Isenberg Pillar Type: Labor & Human Capital. Identified for the community from interview: Partnerships & networks outside the community, Training mechanisms that go hand in hand with other development initiative, Workforce & skills development, Tribal Education Department, Vo-tech School, 4H program, FFA, Tribal Employment Rights Office (TERO), Business Incubator, Pawnee Nation College, Meridian Tech.

Interview – 2.

Table 2

Emerging Theme Categories in Order of Priority (Weightage) – Interview 2

Code Category	Weightage / Points
G8 [Aspirational] – (<i>Work & Economic Growth</i>)	9

Pawnee Pride	8
G8 [Existing] – (<i>Work & Economic Growth</i>)	7
Governance	6
Financial Need / Challenges	5
Food [Aspirational]	5
G4 [Exist + Aspirational] – (<i>Education</i>)	5
G9 [Aspirational] – (<i>Industry, Innovation, Infrastructure</i>)	4
G126 [Existing] – (<i>Food, Water, Sanitation</i>)	2

One major theme and perhaps one that runs through the whole course of the interview is that of Pawnee pride, a common history and culture, and a unified future. The theme at the core of this interview which takes precedence is SDG 8--- decent work and economic growth. All other aspects revolve around this theme. SDG 8 for Pawnee Nation is lacking. There are only a few existing ventures in the community, but economic growth and employment are key. Part of this is entrepreneurship and skills, whether it be the presence or lack of skills needed for economic growth and employment. The role of governance and its important role in shaping and achieving economic growth was discussed. The food sovereignty movement also ties in and gives credence to growing food and prioritizing entrepreneurship-enterprises related to farm-table approaches. Sustainability also requires involving youth in agricultural projects. A charter school project in Pawnee, where kids can learn to grow their own vegetables and where you can instill pride in their culture from a young age, will help.

Isenberg Pillar Type: Culture. Identified for community from the interview: Shared & Common History, Native Skills, Tribal Govt Enterprises, Community Initiatives &

Projects (E.g.: Women Run Seed Project), Youth Involvement, Incentives for Entrepreneurs, Individual Entrepreneurship (Under PTDC), Hybrid Entrepreneurship, Business Incubator (Office space & stipends).

Interview – 3.

Table 3

Emerging Theme Categories in Order of Priority (Weightage) – Interview 3

Code Category	Weightage / Points
G8 [Down / Debt] - (<i>Work & Economic Growth</i>)	9
G8 [Down] - (<i>Work & Economic Growth</i>)	8
G8 [General] - (<i>Work & Economic Growth</i>)	4
G8 [Labor] - (<i>Work & Economic Growth</i>)	5
Governance	9
G9 - (<i>Industry, Innovation, Infrastructure</i>)	7
G9 [Tourism] - (<i>Industry, Innovation, Infrastructure</i>)	4
Land as Asset	2
All	1

What mainly emerged from this interview was categorized under sustainable development goal 8---decent work and economic growth. However, the theme that emerged was not a story of positive economic growth and jobs, but of Pawnee Tribal Development Corporation (PTDC), what it’s up against, and how it got into debt due to bad decisions and improper management. Within the same category, there was mention of how things were declining in general and how there was not much growth in the area. A few include the

shrinking population in Pawnee, and the lack of labor and a skilled workforce in the area, which is essential for economic growth. The second theme that emerged from this interview was the aspect of governance and its influence on economic development for the Pawnee tribe. The third theme is that of sustainable development goal 9---that of industry, innovation, and infrastructure. The interviewee mentioned unsuccessful ventures or bad deals that stopped the development of industry, innovation, and infrastructure. However, learning from these examples could lead to future success in other ventures, such as developing tourism potential in Pawnee. This industry can be developed by the tribe with the right resources and people, keeping in mind that land is an asset that the tribe holds.

Isenberg Pillar Type: Leveraging Land Asset / Instruments. Identified for the community from the interview: Pawnee Business Council (PBC) - Tribal Govt Project & Ventures, Tribal Land Asset Leverage, Trade Zone Land Allotment, Business Move-In Incentives, Federal & State Govt Assistance, Market & Advertise - Open for Business.

Interview – 4.

Table 4

Emerging Theme Categories in Order of Priority (Weightage) – Interview 4

Code Category	Weightage / Points
G6 [water] – (<i>Water & Sanitation</i>)	13
G7 – (<i>Affordable & Clean Energy</i>)	7
G9 [General + Eco-Tourism + Transportation] – (<i>...Infrastructure</i>)	6
G6 [waste] - (<i>Water & Sanitation</i>)	4
Governance	4
G2 [Food] – (<i>Zero Hunger</i>)	3

G8 - (<i>Work & Economic Growth</i>)	2
Pawnee Pride	2
G1 - (<i>No Poverty</i>)	1
Financial	1
All	1

The main point that emerged from this interview is that water quality is very important and essential for sustainability from an environmental standpoint as well as an economic standpoint. Without drinkable and usable quality water supply, there can be no economic or sustainable development for Pawnee Nation. The second theme that emerged from the interview is affordable and clean energy---sustainable development goal number 7. Pawnee is in an energy desert. Energy is expensive, and Pawnee has no leverage or controls to challenge that due to the small population. The community has nothing to bargain with or use as leverage for a better deal on the kilowatt. A third theme emerged in the category of sustainable development goal 9---industry, innovation, and infrastructure. Pawnee has all the challenges of a small town in rural America in addition to being a tribal community with limited opportunities. Tribes across the country such as Pawnee Nation need to be creative in how they establish an economic stronghold. Other categories emerged categorized under Governance, Pawnee Pride, SDG 2 (zero hunger), SDG 8 (decent work & economic growth), SDG 1 (no poverty), quality of life and so on.

Isenberg Pillar Type: Sustainability. Identified for the community from the interview: Water Supply - Ensuring own sustainable source. Energy Independence - Ensuring a renewable energy power supply, wind & solar. Creative Transportation - Rail, water taxi,

ambulance service etc. Wastewater & Solid Waste Management - Wastewater treatment facility, Trash hauling service & recycling center.

Interview – 5.

Table 5

Emerging Theme Categories in Order of Priority (Weightage) – Interview 5

Code Category	Weightage / Points
Governance (Tribal + 8A + Hemp)	8
Market / Food	7
G9 – (<i>Industry, Innovation, Infrastructure</i>)	6
Pawnee Pride / Sovereignty	3
G4 – (<i>Education</i>)	1
Land as Asset	1

Major themes from the interview are governance, food and markets, and SDG 9--- industry, innovation, and infrastructure. These three themes weave together, making it difficult to distinguish or categorize them. Governance could be a precursor to create industry, innovation, and infrastructure. The tribal government could take advantage of the special 8A status to allow for industrial hemp production dynamics on tribal land. Agriculture and food grown on tribal land can be a niche market sold locally and elsewhere for the benefit of people in the community. Pawnee pride and sovereignty was another theme that arose in the form of tribal governance, food sovereignty movement, eco-cultural tourism, growing industrial hemp, 8A status, and others. The interview also discussed land as an asset. Sustainability here meant: *“Agriculture puts food on the table, literally and figuratively, and it also puts the land to productive use”* (Participant 5).

Isenberg Pillar Type: Markets. Identified for the community from the interview: Niche & Heirloom, Surrounding Communities, Schools, Nursing Homes & Hospitals, Internet Network, 8A Contracting, Hotel-Tourism, Regulatory Commission.

Interview – 6.

Table 6

Emerging Theme Categories in Order of Priority (Weightage) – Interview 6

Code Category	Weightage / Points
Financial [Needs-Challenges-Aspirations-Ideas]	9
Federal Funds Related	6
G9 [Aspirational] - (<i>Industry, Innovation, Infrastructure</i>)	4
G3 [Aspirational] – (<i>Health & Well-Being</i>)	3
G8 [Failed Ventures] – (<i>Work & Economic Growth</i>)	3
G1, G2 [Food] – (<i>No Poverty, Zero Hunger</i>)	2
Financial Provision	2
Pawnee Pride	2
Land as Asset [Fractionalized]	1

The highlights of this interview were the funding needs, aspirations, challenges, and ideas relating to the economic development of the Pawnee Nation. These needs and aspirations carried the most weight amongst all other aspects that were discussed. If Pawnee Nation is to become a thriving community, then financial resources are essential, and the Nation must be creative in the way it raises funds for various projects and ventures. At present, federal grants contributed the largest source of revenue for the Pawnee Nation. The

dependence on federal funding emerged as a major point. Sustainability for the interviewee meant food and eventually food sovereignty.

Isenberg Pillar Type: Finance. Identified for the community from the interview: Investment Capital, Grants & Tribal Funding, Micro Loans (477 Program) - Seed Capital, Fundraising & Venture Capital – Hiring Staff, Donations, Federal Grants - Leveraging Full Potential, Market Tax Credits, Investment & Opportunity Zone Credits, Bond Issuance, Clean Audits - Self Governance Status, Casino (PTDC) - In Debt, Federal Funds Compliance, Getting Loans Very Difficult - Trust Land. *Revenue Source:* Federal Grants, Casino, Tax-Revenue (Tags, sales tax, liquor tax etc.) Annual Budget - \$10 -\$12 million.

Interview – 7.

Table 7

Emerging Theme Categories in Order of Priority (Weightage) – Interview 7

Code Category	Weightage / Points
G8 [past + asp + exist] - (<i>Work & Economic Growth</i>)	8
G1, G2 [Food] - (<i>No Poverty, Zero Hunger</i>)	5
G8 [Asp] - (<i>Work & Economic Growth</i>)	6
Environmental Sustainability	6
Pawnee Pride	4
G6 – (<i>Water & Sanitation</i>)	3
Governance	2
All Goals [Asp]	2
G9 - (<i>Industry, Innovation, Infrastructure</i>)	2
G3 - (<i>Health & Well-Being</i>)	2

The main theme that emerged was in the category of SDG 8---decent work and economic growth relating to past tribal history, existing departments in the modern tribal government, and future aspirations for a thriving economic and sustainable community. Much of the interview focused on the Nation's history of being self-sufficient in terms of food supply, the decline of that self-sufficiency, and the need for a food sovereignty movement in the community. These themes also tie in with the SDG 1 and SDG 2. Pawnee is a small rural community, and it is almost a blank slate when it comes to what services and businesses could be available in the community. Therefore, there are needs at all levels that need to be met. However, if the tribe must navigate its way to success, like other tribes have done, supports such as competent legal counsel are needed. The second theme that emerged was environmental sustainability for the Pawnee tribe at a local level and the need for the tribe to partake in wider sustainability discourse in the context of other tribal nations and the UN declaration for the rights of indigenous people. The third theme that emerged in the hierarchy was Pawnee Pride. Governance was highlighted as well as elements of SDG 6 (clean water and sanitation), SDG 9 (innovation, and infrastructure), along with other SDGs as well. Sustainability, first and foremost is the protection of the environment and the permanent homeland. Achieving sustainability involves protecting the environmental integrity of the water supply, air quality, land, and natural resources.

Isenberg Pillar Type: Policy. Identified for the community from the interview: Governance, Tribal Unity, Promise Land Vision, Strategic Planning, Design & Create Economy, Legal Counsel, UN Declaration Rights.

Interview Narratives - Major Themes Presented



Figure 6: NVivo Word Cloud Representation of Interview 1.

Theme – 1: Skills Development & Workforce (SDG 8 + SDG 4). In Pawnee, a program to support entrepreneurship and skills training partnerships with the Tribal Employment Rights Office (TERO) and Meridian Tech will help build a skilled workforce. Vocational training and adult education is linked to economic health of Native communities (Hatch, 1991). What would be unique is to see set skills developed in the community, such as plumbing, HVAC, welding, and so on. This could cause small businesses to sprout and function around this skill pool. People living in the area are always going to have plumbing, roofing, and electrical issues. Also, since there is an oil and gas industry in the wider area, these set-skill workers and small businesses will be able to find

work in this industry. The world's largest tank-farm is just 20 minutes away from Pawnee. It is evident that there is a skills shortage in the area. Therefore, Pawnee Nation should strategize and develop a skilled workforce to create opportunities for new business startups. Vocational and technical training create opportunities for indigenous crafts and skills to be revitalized and make appropriate economic use of the environment. Also, entrepreneurial education creates additional opportunities and bolsters self-determination (Kohl & Hopkins 2019). Additionally, the Nation should develop partnerships and networks outside the community to help with these aspirations, design partnership networks, and training mechanisms to contribute towards that goal. Training mechanisms go hand in hand with development initiatives, where individual development can lead to community development and vice versa.

“It just figuring out a way to create these kinds of businesses. And then we can utilize our colleges and our education department, and then we can develop a workforce and develop the skills and then hire within, or they can go on if they got access to property, they can become home ranchers or they can grow crops and stuff like that.....as long as we build those training mechanisms with it, you know we'll develop not just ourselves, but you know our community” (Participant 1).

Theme – 2: Industry, Innovation & Infrastructure (SDG 9). Traditionally, Pawnees were farmers with land rights and casinos. However, the future could be different, with all kinds of stores selling items from groceries to jewelry. What is essential is a hospital, since the closest one is 30 minutes away. There is a lack of technology and technology-

related services, such as a strong internet connection. According to the 2015 FCC Broadband Report, 85% of rural tribal members lack access to 25 Mbps/3 Mbps broadband (Carlyle, 2016). Access to broadband and internet is essential for businesses to operate in the area. Technical education is also lacking. Native American communities face inadequate infrastructure for water, sewerage, telecommunications, and so on (Mathers, 2012). Infrastructure for small businesses such as a shopping center, a store complex, and restaurants is also needed. There is a lack of housing infrastructure with Native communities. They face severe hardship in terms of housing and living conditions, with limited private investment, low functioning housing markets, and poverty. Among some tribes, 40% of homes do not have running water and fourteen percent of households have no access to electricity, which is ten times higher than national average (NCAI, 2021). Not charging property tax and other financial incentives could attract businesses to set up shop on tribal land. Businesses need to revolve around the needs of the community. Foot traffic can be a good indicator, signifying more people and businesses in the community. Increased foot traffic can also boost morale. Local infrastructure design contributes to this. One benefit Pawnee has is road access to major interstates and highways. Pawnee could be a thriving place, with a hotel, a large grocery store, a business incubator-model store complex, and a greenhouse. With these businesses, revenue generation and resources get recycled within the community with no financial leakage. This is sustainability.

Theme – 3: Food (SDG 1 + SDG 2) & Land as an Asset. Pawnee, a Native American community has a common native history. Native pride is the glue. Its biggest strengths are its land and water, and the tribal status benefits attached to them. However, Pawnee is a food desert; therefore, developing agriculture and livestock, cultivating fruits and

vegetables, using its cattle, processing its beef and food, and building distribution facilities are priorities for the community. This is representative of other Native American communities that tend to be food insecure at twice the national average. One study saw 17 out of 22 reservations lacked a supermarket (Mucioki, Sowerwine & Sarna-Wojcicki, 2018). Feeding elders and low-income families is also a priority. If food was produced and consumed in the community, Pawnee could be a sustainable community. Achieving this requires supporting existing ventures and helping people with individual home garden expansion. There is not much for the youth in the community to do, and so agriculture can be an area where youth activity is fostered. Many youths move away due to lack of opportunities in the community. A 4-H program in the community would be beneficial. 4-H is an agriculture-based educational youth program inspired by canning clubs. As part of Oklahoma Cooperative Extension Service, Oklahoma 4-H activities also include teaching agri-skills and home economics, incorporating experiential learning that teaches valuable life skills in an informal way (Young, Sallee, Ramsey, & Cartmell, 2019). FFA, Future Farmers of America, is similar and can be introduced to the Pawnee youth. Supporting farmers is a general requirement as well. Increasing agri-tourism is another way to encourage sustainable growth.



Figure 7: NVivo Word Cloud Representation of Interview 2.

Theme – 1: Pawnee Pride / Common Culture. The Pawnee Tribe is known to be a warrior society, portrayed as fierce in films. The tribe and its prominent families are well respected among other tribes. They are a resilient people with a lot of humor and are known as a tribe with many songs. The tribal flag depicts “men of men” or “people’s people” or “the human beings” ---a common theme in Pawnee culture. Pawnee veterans have fought in many wars. There is a need to promote a better understanding of tribal people in the wider community and instill a sense of native pride among Pawnee youth within the community.

Theme – 2: Decent Work & Economic Growth (SDG8). Casinos provide an important source of income for tribes in Oklahoma. They also provide many musicians a place to play, and they employ people from the local community. However, tribes need to diversify their workforce. There are people with diverse skills in the community. There used

to be a tire repair shop, but it closed because there was no one to support it. There used to be a lot of shade-tree mechanics. There are those who can cook; do bead work, ribbon work, and leather work; and make moccasins and bustles, fringe, and other native regalia. These products could be sold to stores that are setup on tribal land. There are also many artists in the tribe who can sell their wares and products. The tribe purchased some buildings in Pawnee, and the older generation envisioned that Pawnee could be a marketplace.

Agriculture can be looked at from an enterprise perspective. At present, there is a *seed* project run by a group of young women who dig gardens for people and plant new corn or vegetables. There is talk about starting community gardens in one of the dependent community areas to revive that area, and the city is helping by installing a new waterline. The younger generation is being included in this process as well. The newly elected president has a vision for achieving food sovereignty, something that has not existed for a while. An agricultural division for the Nation is something that may be developed.

“What I would really like to see as that, that we’re providing our own food, that we’re doing the, um, you know, garden to table with all of our own, um, all of our own, uh, enterprises and, and our people too, or that we’re using our people’s gardens, you know, they’ve grown in their gardens” (Participant 2).

Many in the tribe perhaps aspire to be entrepreneurs, but there is a lack of knowledge about entrepreneurship, and how to go about starting a business or attain capital. Funding is difficult to get, so issuing bonds like the United States government could be a solution. Sometimes financial grants from the government have certain conditions that need to be met.

Theme – 3: Governance. Since Pawnee lacks a diversified economy, it would be good to see the tribal government promote entrepreneurship amongst its tribal members by

offering loans and providing necessary training to start their own businesses. Enterprises run by the tribal government may not be the best approach. Therefore, incentives must be put in place to promote individual entrepreneurship among members. One way to encourage individual entrepreneurship is to develop a business incubator for potential entrepreneurs to have office space and adequate support until the business is set up. Once they move out, the space can be offered to someone else. The tribe could provide free training, stipends, and anything else that incentivizes people to get their business up and running. Governance is key for entrepreneurship. The tribal government needs to make laws that provide incentives for entrepreneurship. The most successful kind of entrepreneurship is probably going to come from the people themselves---perhaps hybrid entrepreneurship that brings together tribal entrepreneurship and individual entrepreneurship.

The Pawnee Tribal Development Corporation (PTDC) is supposed to help and put more resources into individual entrepreneurship. The PTDC is the economic arm of Pawnee Nation. This keeps tribal council governance and the business corporation as separate entities to safeguard against any lawsuits, thus protecting tribal land and interests. One of the conditions for receiving funding to build the travel plaza was to form the PTDC to keep interests separate. In the past, waiting for funding or loans from banks took a long time, and there can be many hassles associated with it. The travel plaza was built with the \$14 million that was sitting in the Bank of America intended for the Indian Health Center. The bank loaned money to build the travel plaza, to piggyback over the larger grant for the Indian Health Center. Suppose the tribe was to allocate resources to support and promote individual entrepreneurs in the community; spinoff businesses for casinos such as linen service or paper and printing could form based around needs of the community. Pawnee Nation needs to

develop sustainable programs to complete a strategic plan. The strategic planning process will include Pawnee Nation College, Housing Authority, Tribal Development Corporation, and the Traditional Chiefs Council. The 1975 self-determination act was key in empowering tribal nations to chart out their own paths.

Theme – 4: Education (SDG 4). Receiving education outside Pawnee has been encouraged, and if those students come back to serve the community, that is a great thing. Pawnee Nation College was started in 2004. To create sustainable economic enterprises, curriculum and systems need to align to train youth in the area. Outsiders who come to work within Pawnee could be given a two-week orientation course on tribal history, as the Cherokee tribe did. The former chief of Choctaw Nation believed in hiring the best in a field and pairing them with a tribal member, so when the expert left, a tribal member was already trained and ready to step into that position. Hiring outside experts and training members on the job can be a benefit.



Figure 8: NVivo Word Cloud Representation of Interview 3.

Theme – 1: Decent Work & Economic Growth (SDG 8). The PTDC operates 3 small casinos with about 320 slot machines, a travel plaza with diesel-gasoline, a truck-stop, a convenience-store with gasoline, and a trading post. The convenience stores were bad business deals. In 2016, the tribe went into debt by borrowing money for the expansion of one casino by Cimarron turnpike. The lack of additional revenue generation and the load of debt forced Pawnee Nation to refinance all loans in 2018. The casino began to make money, but just as it found solid footing, the COVID pandemic hit and stopped all gaming operations for two months and 60% of employees were furloughed. Overall revenue was down compared to the previous year, with one casino operating at 80% and other at 42%. The debt

service on bank loans alone was larger than six figures, required from gaming operations. Gaming brings about \$27 million a year, 10% of which is brought into the bottom line (about \$2.7 million to \$3 million). The tribe and the debt service take about \$2.7million, leaving very little wiggle room to do anything else significant at PTDC.

The new president was unaware of this financial situation. Barely able to fund the payroll every two weeks, the president had to find refinance for loans that had defaulted, including a construction loan taken out to expand a casino. Because of these debts, PTDC was not allowed to disburse any money to the tribe for welfare activities. The refinance loan was received from a bank in Chicago, Illinois, which lent \$8.5 million to consolidate all loans.

“The Pawnee city and county as such is not growing because more people are moving out than moving in, and so growth in and around the area is difficult. There is a perception that the PTDC is sitting on a lot of money, however that is not the case- there is no money. There is no capital either to go out and invest in revenue generating or growth-oriented businesses, considering the lack of opportunities and growth in the area.” (Participant 3).

The lack of a skilled workforce is another challenge that must be addressed. The Nation should prioritize creating the right environment for a skilled workforce to thrive as well as encourage people to visit from outside Pawnee. At present, the tribe and tribal corporation combined are the largest employers in the area. The PTDC employs about 160 people, and the tribe employs about 100. The Indian Health Service Hospital is another big employer.

Theme – 2: Governance. Economic development of tribal lands falls under purview of the tribe; the Pawnee Business Council (PBC) is responsible for it. Projects such as buffalo ranching, agricultural projects, industrial hemp production, and other development plans on tribal land rest with the PBC. The PBC is the supreme governing body of the tribe. The PTDC owns very few properties and reports its financials to the PBC. PBC owns most of tribal land and can leverage it for economic opportunities. However, the PBC must put politics aside and have unity. A long time ago, the PTDC and PBC were separated to create a corporate veil, and PTDC was to take care of day-to-day business operations.

“The tribe owns the land. The tribe has the assets...the tribe has the grants, the tribe does the most, has the most interaction with the federal government.” (Participant 3). The PTDC is nothing without the strength of the tribe behind it.

First, there needs to be a commitment toward economic development. The tribe could allot some land to a trade zone and make incentives for businesses to move their operations onto Pawnee tribal land, help them grow, help them get a workforce, and so on. With a new Pawnee tribal government coming in, most tribal citizens and corporations are looking to this new government to lead and move Pawnee ahead.

Theme – 3: Industry Innovation & Infrastructure (SDG 9). Under the aegis of PTDC, a construction company was formed. It was a construction management company that went out and bid for jobs and then put together teams of companies to subcontract to get an 8A classification. The company never owned anything and never made any profit. However, to bid for jobs, the company needed a secured amount of money in the bank. The company

had \$300,000 secured in the bank and bid for jobs up to \$3 million. The 8A jobs were much larger, and the PTDC did not have \$1 million to put in as security to bid for contracts of up to \$10 million. Hence, the company never achieved 8A status. Eventually, the company lost so much money it closed by the end of 2019, and the president of the corporation was voted out. Additionally, the PTDC entered some bad deals by overpaying and acquiring convenience stores in a shrinking market to diversify its portfolio. Another bad deal was to buy and renovate a building into a T-shirt shop. The building was bought for \$90,000 and it was renovated for \$50,000, which added \$150,000 in debt with no additional revenue coming in.

“The customer base never changed to the same people who were coming when it was small and old were the one that were coming, when it was new and big, and the revenue has never changed, even though, there was now \$150,000 a month in debt service added on to, to the corporation.” (Participant 3).

To bring in businesses, the Nation needs to go out and approach viable businesses, advertise, reach out to the state department of economic development, and take advantage of federal programs. What the tribe has to offer is land and opportunity. The opportunity to create tourism in Pawnee as an avenue for economic development exists. Pawnee is home to Dick Tracy as well as an annual rodeo hosted by Pawnee Bill ranch and museum of American Western History. Financial investments to develop tourism and support initiatives could grow. Many tourists may visit the casino, but Pawnee needs a hotel and an expanded restaurant to give people a reason to visit Pawnee. Developing these things takes a lot of

partners to come together and make it happen. The PTDC came into existence in the early 2000s as the business development arm of the tribe. Its mission was to create economic opportunities for tribal members by creating jobs and generating revenue to supplement tribal programs. It has had a stormy history concerning its economic stability. When PTDC was originally formed, one of its aims was to support tribal entrepreneurs. However, the corporation has never had capital in its accounts to be able to do so. People have approached PTDC with ideas about buffalo ranching and so on, but there has been no money to help with those ventures. According to the original articles of incorporation, the hope was that the corporation would make enough money to lend money to tribal citizens. As of now, this is a challenge for the tribe, but it is not impossible. Over a decade ago, there were car dealerships, a movie theater, and many retail buildings in the city of Pawnee. So, what had once existed can always exist again in greater measure. Pawnee is representative of other rural communities in America.

in the community, while recyclables and compostables can help pay for the system in the long run.

Theme – 2: Affordable & Clean Energy (SDG 7). *“The power in this community, uh, we’re dependent upon a grand river dam water supply. Uh, we buy it from a, a water district that buys it from another water district. That’s not good, you know, um, uh, th, uh, you know, I think, we’re on the third leg of the chain on the, on the grid, on the power.”*

(Participant 4)

People do not tend to think about the basic infrastructure for utilities such as electricity, water, wastewater disposal, and so on. But these utilities are essential for economic opportunities. Pawnee Nation is considering implementing sustainable energy. The Nation is taking a progressive approach to look at wind, solar, or a combination of both as a solution to their power needs. Sustainable energy solutions contribute toward quality of life for everyone in the community. Another option is to generate energy from oil and gas activity in the area. In essence, the community could go off-grid and excess energy generated from these solutions and sell to co-ops. However, capital is required to implement this. If Pawnee Nation becomes energy independent and water resource independent, it will allow the Nation to take advantage of business opportunities. Therefore, if the community is to become sustainable, water and energy are a priority.

Theme – 3: Industry, Innovation & Infrastructure (SDG 9). Pawnee Nation is authorized by USDA to implement a program to grow industrial hemp on lands under tribal jurisdiction. The tribe looked at beef operations and a packing plant with a ranching operation to support community needs and an option to go commercial. Pawnee is a food desert, so the tribe is looking at changing how those fundamental needs can be accessed, with

agriculture being one of the primary options. Included in this category are aspirations for innovative transportation and eco-tourism. There is a rail line from Tulsa to Enid that passes through Pawnee, and a spur splits off towards Stillwater. The feasibility of a small rail system was tossed around by Pawnee Nation's transportation and natural resource conservation department a few years ago. Buses that go on roads and rail could be the perfect for operation between Pawnee and Stillwater. Adding water taxis on the Cimarron River was also discussed. In some parts of the United States, small water taxi services operate on rivers, serving both tourists and daily commuters. Eco-tourism is becoming more popular and is something the Nation can build. The Nation could also build a cultural-interpretive center, a heritage center, and a small buffalo herd to bring visitors in to learn the heritage of Pawnee people.

Theme – 4: Other. Plains tribes like the Pawnee were agrarian, but lost touch with that aspect of their culture. Pawnee has all the challenges of a small-town rural America in addition to being a tribal community with limited opportunities. Many tribes across the country like Pawnee Nation need to be creative to establish an economic stronghold. Moreover, Pawnee does not have the population base to establish a strong tax hold for fundamental governmental services. However, culture ties them together, like a small corporation. Pawnee Nation is a small tribe, but it is a progressive tribe. It was one of the first tribes in Oklahoma to have its own court system, one of the first tribes to establish gaming, and one of the first tribes to sell cigarettes. The tribes are resilient and have survived horrendous history brought upon them in the last couple of hundred years. Now they must figure out how to thrive in the 21st century.

land and natural resources. They are not afraid to express sovereignty in ways others have not been able to.

8A. 8A formed under the Small Business Administration (SBA) as a special designation for minority groups, especially for federally recognized tribes. The 8A status gives tribal companies and corporations a special avenue to compete for government contracts from all federal agencies. 5% of federal contracts run into the hundreds of billions of dollars, and over 500 tribes compete for them. These federal contracts span a wide range of industries such as maintenance, janitorial, construction, IT, and so on. Therefore, it cannot be a jobs program, but a contracting program. Contracts may not only be location based, as on tribal land, but anywhere in the country. If tribe members are employed, they may have to travel or relocate. Regardless, profits made from contracts can be brought back to the tribe. Therefore, to take advantage of 8A contracting, the tribe has to take stock of the labor skill set in the community and see what kind of contracts are feasible to go after.

“So, what the tribe needs to do is just create the company, appoint the board, give them startup capital and let them come up with the business plan that makes sense”
(Participant 5).

Industrial Hemp. With encouragement and support from Pawnee Business Council, the Nation established laws and regulations for growing industrial hemp on Pawnee tribal land and tribal member-owned lands. The BIA and the USDA were consulted on this. Pawnee is one of the first tribes in the nation to put forward regulations governing growing industrial hemp subject to USDA approval and authority. The initiative gathered momentum

as farmers, developers, investors, and others were involved in the process. There are different ways the tribal government can go about industrial hemp production. One option is to establish a law that allows it, authorize production within the jurisdiction, make sure to enforce regulatory compliance, tax product, and collect revenue for the regulatory responsibilities and fees associated with it. They can also create a licensing process that requires financial stability from the growers as well as a background check. This process could create economic opportunity and jobs in the area. The tribal government could choose to set aside land for the production and processing of industrial hemp and do business directly to create jobs and economy.

Industrial hemp is grown and processed in various ways, depending on the desired product, and variety of seed. High profit ventures are often high risk. FDA approvals may be required for some, and regulations change based on the product and time. If it is growing hemp, then it may be better to stick to traditional uses and applications such as building materials, rope, cloth, paper and so on. Hemp can also be used to make tents. It would be wise to avoid anything consumable such as gummy candy, health oils, etc. because they will be subject to stricter health regulations. Once the applications of hemp are evident, the industry can bring in a steady income. There are different ways of growing hemp and there are technicalities involved. A higher investment may fund greenhouses where hemp is grown in a controlled environment but requires less land.

Individual landowners are important and need to be included in the decision-making process. This will create entrepreneurship opportunities for local landowners who fit into the overall strategic plan of the tribal government. Many of them grow wheat, and although they may be happy about that, it may not be wise to assume that they are not interested in growing

hemp. These landowners are also part of the wider community, and the project needs to be done in a collaborative way. An industrial hemp cultivation curriculum was included at Pawnee Nation College to foster a skilled workforce for growing hemp.

Theme – 2: Industry, Innovation & Infrastructure (SDG 9). Another important aspect that needs to be looked at is internet services. If entrepreneurship is to thrive in the area, then fiber optics and broadband need to be established. A reliable internet connection is essential for entrepreneurs who are looking to get their ideas off the ground. One way to go about this is to apply for rural USDA grants. The tribe could then go a step further by partnering with a company to start building capacity and eventually become an internet service provider in the area. This could lead to IT and technology services. Radio Frequency Identification (RFID) technology can be used for ranching, oil and gas operations, and other relevant technology services for the hospital and Pawnee Nation college.

“If the tribe was in the position of providing that kind of technology and that service and that bandwidth that allows industry and schools, clinics, hospitals, businesses, individuals, to expand, what they can do at home, it could help entrepreneurship in Pawnee and keep people home” (Participant 5).

If tourism is to develop in the area, a hotel needs to be built. This will give people an opportunity to stay in the area for rodeos, powwows, and weekend excursions. A hotel by the Stonewolf casino would be a good idea. If the tribe itself were to open Pawnee for tourism, then they get to define what they want to share with the world and what they do not, as

opposed to someone from outside the tribe coming in and exploiting Pawnee culture for tourism.

“It’s when somebody else who’s not Pawnee comes in and tries to exploit Pawnee culture for tourism, I think is where you start getting the backlash. Um, there’s a sincerity in the genuine article that can only come from the tribe themselves, of defining what they want to share with the world and what they don’t want to. And each tribe comes to that issue in their own way” (Participant 5).

Theme – 3: Food & Markets. The food sovereignty movement can protect traditional Pawnee corn crop seeds. Right now, there is an heirloom market, but the future market depends on the vision to market to a larger economy. The land available for agriculture is in a prime location. It is close to the City of Pawnee where there is easy access to roads, water, electricity, and so on. Some investment may be needed to clear the land of overgrown brush and some other preliminary steps to get it ready for agriculture. The level of investment is dependent on what will be grown as well as the market, (i.e. who is going to buy and at what price). The produce could be sold to schools, nursing homes, hospitals, clinics, and the like in surrounding communities that are at a drivable distance. Native foods could be a niche market sold at a higher price for a premium product. Again, the tribal leadership needs to decide to what extent they want to take agricultural produce_ keep it small and tight for the immediate community or scale for a wider market.

United States with the Pawnee Nation in 1857 gave \$30,000 a year in perpetuity. Although back then it was a lot of money, at present it comes to about \$8 a piece when it gets distributed.

Theme – 2: Financial Possibilities. A more long-term holistic approach to business development is needed in the area given the challenges faced by a rural community, a diminishing population, low income levels, and inadequate housing. A holistic approach would include uplifting the whole community by creating jobs, bringing money back into the community, and encouraging investment. Raising capital investments through various fundraising methods is something that can be considered, which the president has talked about. However, there is no one on staff who has that kind of fundraising expertise.

Fundraising was done by an individual for the seed preservation project, which received substantial donations. Hiring a staff member to do fundraising or raise capital via venture capital is something that can be done. The financial department is also trying to get another year of clean audits. This would make Pawnee Nation eligible to apply for self-governance, which would give the tribal government more flexibility on what to do with the funds they receive from the Federal government.

At the moment, funds received must be used in a compliant manner as directed by the Federal government. Three years of clean audits are required for self-governance status. Once self-governance status is established, the federal government sends a check or a deposit to use in whatever form the Nation sees fit. At present, some programs have more money than they need, and some have less money than they need, and because of compliance and restrictions on the funds, they are kept separate. Getting loans is very difficult, especially if you are not one of the big tribes with a lot of capital and assets. Trust land is protected, and it

cannot be used as pledge, and therefore money cannot be raised by using the land or a building as an asset or as collateral for the bank.

Theme – 3: SDG 9 (Industry, Innovation & Infrastructure), SDG 8 (Decent Work & Economic Growth) & SDG 3 (Good Health & Well-being). The categories that emerged in the interviews were in line with the SDG 9, SDG 8, and SDG 3. The Nation aspires to develop Agri-tourism, the Tribal 477 Program, utilize its land base, grow, and process food locally, and more. Some of these aspirations also overlap with SDG 1 (that of eliminating poverty) and SDG 2 (ending hunger).

The biggest asset cited is the tribally owned land. Utilizing that land base for agricultural businesses like traditional crops and cattle can be a good way to put the land into productive use. One of the issues that can come up is the fractionalization of the land, as it has been passed down through generations. Agri-tourism---buying local and sourcing beef, bison, and crops locally---could be a potential business opportunity.

However, investment capital is needed to do something like that. It seems like a more long-term holistic approach to business development is needed in the area, given the challenges faced by a rural community including diminishing population, low-income levels and inadequate or appropriate housing. A holistic approach would include uplifting the whole community by creating jobs, bringing money back into the community and encouraging investment. There are plans of building some greenhouses soon to kick off the overall agricultural strategic plan. Pawnee Nation can emulate what some other tribes have done such as build a processing plant for cattle and livestock.

Other plans include building treatment facilities for substance abuse and mental health. Currently the tribe is working on a treatment facility that would have a hospital and

emergency room which can be accessed after-hours and is open to the Native American community and others. There used to be a hospital in Pawnee some years ago, but it is no longer there, and so people must travel to receive healthcare. However, this treatment facility built on tribal land should serve tribal members as well as non-natives in the area. The facility should create some well-paying jobs and bring in a fair bit of revenue once it is up and fully operational.

When talking about entrepreneurship, the Tribal 477 Program could be taken advantage of, but this has not happened. They can give out micro-loans and similar programs to help get seed capital for small businesses. The PTDC is also supposed to help with business development in the area but has not done much beyond gaming. The Tribal 477 Program and the PTDC are supposed to help with entrepreneurship and business startups. People have come with some ideas like starting a mowing business, a food truck, etc., and had to be turned away. In order to take advantage of the 8A status, the Nation bought a majority interest in a construction firm with an aim to win contracts, which was actually a construction management firm, but it eventually shut down.

“We just gotta get started and, you know, and start building in Pawnee, uh, you know, as we got, as we develop a plan, you know, it’s just gonna build momentum as it goes, as we get bigger and grow in... you know, there’s just tremendous opportunities with, uh, with our land base and things like that. That’s just never been” (Participant 6).

Theme – 4: Pawnee Pride & Land Base. Pawnee Nation is in a rural area with a small population base, posing a challenge for economic development, as it can be hard to find a workforce that is needed. The biggest asset is probably the land base, which is the tribally owned land. Utilizing that land base for agricultural businesses like traditional crops and cattle can be a good way to put the land into productive use. One of the issues that can come up is fractionalized land that has been passed down through generations. There is about 700 tribal members who live in the Pawnee area, around 2,000 that live throughout the rest of Oklahoma, and about 1,300 – 1,500, outside of Oklahoma. The tribal government employs about 100 tribal members.

good health, happiness, their own language, living culture, good homes, good education, and good medical care. But the Nation needs to make sure all the various tribal governing bodies are on the same page. The division of planning, the tribal college, the tribal development corporation, and the rest of the government must identify their individual promised lands and see if all members are united and pursuing a common destiny. This is the essence of self-determination: to define the future you would like to live in and develop steps that will take you there. The feedback from tribal members and employees would help develop a common vision that will unite the people, and march toward that common destiny.

Currently, the community lives in a food desert, where forces of colonialism have separated the Pawnee people from its traditional subsistence patterns and created a dependence in the colonial sense, on external sources for food. At present, the people must drive 60 miles round-trip to go to a grocery store. There is one grocery store in Pawnee, but it sells at inflated prices and many of the canned products are beyond their expiration date. This has underscored the need to be self-sufficient in terms of food supply, to produce food within the community, to develop some food cooperatives, and to make sure the elders in the community are fed. As of now, the Nation has relied on casinos which have taken a bad hit over the pandemic. Hence, there is a need to diversify the tribal economy.

Pawnee is a small rural community in Pawnee County. There is no hospital, nor is there a movie theater in this community. It is almost a blank slate, when it comes to what services and businesses could be started in this community. The Pawnee Tribal Development Corporation (PTDC) was established for that very reason: to give thought to what kind of businesses can be established in the community and how the economy can be enhanced and diversified apart from gaming. Gaming is a competitive field in Oklahoma, with around 39

tribes that own about three to five casinos. Tourism is something that the tribe has been looking to create. A buffalo herd, traditional gardens, traditional earth lodges, a museum and cultural center, a restaurant, and a hotel are some of those initiatives that can encourage eco-tourism that may well dovetail with the casino. Efforts in agriculture, cattle operations, and perhaps a meat processing plant are all initiatives that can create that diversified economy.

Among the 550 federally recognized tribes, those Indian Nations that have been successful have always had very competent legal counsel every step of the way to guide them through various business opportunities and help them navigate the increasingly complex world of finance. Therefore, if Pawnee Nation is looking to become successful and navigate through those business opportunities, good legal counsel is needed. Additionally, business expertise and entrepreneurship need to be cultivated among tribal members.

The Nation must also design the economy in such a way as to serve the younger generation. Some research is required to know more about the young tribal members of Pawnee, what motivates them and what will keep them from moving away. An Indian Nation that is aspiring to reach the next level has many needs. There are economic needs, fundraising needs, business, and legal needs, etc. The situation with Pawnee Nation and many Indian Nations is like many Third World countries that aspire to go to the next level.

Theme --2: Environmental Sustainability. Environmental conservation is particularly challenging in Oklahoma due to the oil and gas development and fracking, which poses a threat to the water quality. Pawnee Nation has some comprehensive environmental laws in place. Pawnee Nation is the only tribe in Oklahoma that has water quality protections under federal water quality standards. The Nation has full time rangers who patrol the areas and enforce environmental statutes. The Nation also has a moratorium on oil and gas

fracking with the Bureau of Indian Affairs (BIA) to not approve any oil and gas operations within the Pawnee Nation's jurisdiction unless consulted with the tribal government to develop a policy on fracking that aligns with tribal law.

On a larger scale, there are environmental problems worldwide, with the extinction of species, ocean pollution, air pollution, global warming and so on. Native people have their indigenous understanding of how humans need to comport with the natural world. Almost all indigenous cultures have strong ties to the land and their indigenous habitats, and they know how to comport with the natural world in ways forgotten by the modern industrialized world. The indigenous peoples' value systems are essential for fostering a land ethic that is direly needed by the United States. Without a land and sea ethic, the environmental problems will only get worse since there is no widely shared moral compass on how to deal with plants, animals, land, and water. And so, these are big issues that go beyond Pawnee well-being and sustainability.

The United Nations general assembly approved the UN declaration for the rights of indigenous people in 2007. This document lays out a human rights framework for the world's indigenous peoples. It sets out the proper way for all nations to collaborate with their native peoples through a human rights framework. This declaration has been endorsed by approximately 150 nations across the world, with the United States, Canada, Australia, and New Zealand being among the last nations to do so in 2010. Different countries are at various stages in implementing the declaration into their domestic law and policy.

The declaration draws from international human rights law laid out in UN treaties and international law through the norms of state conduct---human rights that the rest of humanity takes for granted, such as self-determination, the right to speak your own language, the right

to religious freedom, land rights, environmental rights, and a host of others that are defined as inherent human rights. These inherent human rights were put into a declaration for the indigenous people so they also can have the same human rights as the rest of humanity. All the rights that the tribal nations have are not meant to be given by the United States but are inherent human rights that the Pawnee people already possessed but were beyond reach.

“And so, um, uh, that puts everything that we do on a stronger legal footing, because nothing is stronger than a human, right. You can't, no nation can take away a human right without being branded an outlaw rogue nation.” (Participant 7).

The United States has taken this UN declaration and has implemented it into U.S law and policy.

“And I want the Pawnee nation to play a role in that implementation process, to coax the United States government, to begin taking affirmative steps, to implement the provisions of the UN declaration into US law and policy.” (Participant 7)

The Pawnee Nation can play a role in that. The Native American rights fund in Boulder, Colorado and the University of Colorado Law School have started a national project to do just that, and the Pawnee Nation could be part of that process.

“I want to encourage our council to embrace that effort and, uh, enact a law here at our Pawnee nation that aligns our laws with this UN declaration and calls on other

jurisdictions to do the same thing and to work with the national project, to play a role in this national indigenous, uh, human rights movement, to get our nation to fully implement that declaration. So that all of the native rights that we currently see in Federal Indian law today are looked upon through the lens of a human right lens, and that will strengthen and reform our existing body of law. So, I hope to see the Pawnee Nation play a role in that social justice, uh, human rights movement, which could be the work of a generation, depending on how difficult it may be.” (Participant 7).

Theme – 3: Pawnee Pride. Pawnee Nation is one of America’s great plains Indian tribes, indigenous to the central plains of North America. Their origin story tells that they were created in the heavens, by the Great Spirit when the world was young, and were placed on the central plains as children of the stars. The first man and woman were brought to earth on a whirlwind on the west bank of the Missouri river. The Pawnee people were known to have grown corn as indigenous agriculture, had a buffalo culture, and were a horse nation. They also have a strong warrior tradition which continues even to the present day with veterans and the armed forces. Historical writings, books and movies have accentuated the role of the Pawnee as one of the prominent plains’ Indian tribes in American history, highlighting their diverse and beautiful heritage. Pawnee as a Nation has eight or nine treaties between its four bands and with the United States Government. Pawnee Nation is a federally recognized Indian Nation with inherent tribal sovereignty under the U.S. Supreme Court. It is a domestic dependent nation with the power to rule themselves within their own territory. At the foundation of its political sovereignty is its cultural sovereignty, a legacy inherited through ancestry, shaping their ceremonies, language, cosmology, and identity. As the rest of

the country struggles with the COVID-19 pandemic, the Pawnee people have seen pandemics previously with diseases like smallpox and measles that have left the Nation in tatters.

However, the people did survive.

“It’s our, our culture and our political sovereignty that is keeping our people, the glue that holds our Nation together” (Participant 7).

Focus Group Discussion

Based on results shown, a call for a focus group discussion was sent out. Many responded to the call for a focus group meeting on Zoom. However, only four attended, with one dropping out during the session. The meeting began with an introduction and a brief presentation of research goals, followed by a presentation of results from previous interviews, collated and represented in Fig 13, shown in the next chapter. Most of what emerged from discussion reiterated points already discussed in previous interviews. Upon analysis, most of what emerged from the discussion can be categorized under stage 2 in the hierarchy. However, there was mention of market awareness and access to healthy local food. These were categorized under stage 1 in the hierarchy.

Discussion Points: Business Incubator, Skills Workshops, Store-sales & Youth Success. One discussion point was the master gardener program, which had about 15 students in the summer from Pawnee Nation, out of which three were seriously interested in developing business plans to start their own agribusinesses. Langston University is helping them with their business plans. Another point of discussion was about having a local business incubator.

“years back, uh, I want to say maybe 15 years ago, um, we had, uh, the summer youth program kids go downtown Pawnee and, uh, research, a vacant building. And then what they did was they came up with like a project as to, you know, use your imagination. What kind of business do we need? And flesh it out like a science fair project, put, you know, put your posters together and your ideas on the poster. And that actually went to, um, the, the County fair and where they got ribbons” (Interviewee in Group)

The Tribal 477 Program is fully capable of doing something like this with the right resources. Additionally, workshops in the community will go a long way in getting people motivated to pursue relevant interests. For example, classes in moccasin making, pottery, beadwork, sewing, making traditional outfits etc. have generated sufficient interest to gather up to 50 people in the past. Regarding tribal regalia making, there are a lot of indigenous artists, but it is a 45-minute drive from Pawnee to get any kind of supplies for regalia making. A trading post in Pawnee with such supplies can make a difference in encouraging local artists to make products to sell.

“I’m so glad she brought that up because when they first built the trading posts in Pawnee, that’s exactly what the locals thought. Oh, good. We won’t have to go up to Sharps or Skiatook, if we can get it right at our own trading posts, but that trading post was a really more of a casino, but yeah, we do.” (Interviewee in Group)

It is possible for buildings in downtown Pawnee to be used as a potential business incubator, with woodworking facilities and tools, large spaces, and an area for sales. They

could even open a store at the museum downtown to sell items, where locals can have things up for sale (Downtown Walking Businesses). Concerning Youth Access to Success:

“I think we should always have a youth representative or youth worker in the planning department as well. I think that, um, will enhance, um, what actually gets done with, um, their vision and their goals as well, and helps us prepare the next generation.”

(Interviewee in Group)

Investing in Pawnee youth, equipping them with skill sets, introducing them to capital, and inculcating entrepreneurship and native culture go hand in hand. There is a need for youth access to success. Youth representatives or youth workers in the planning department of the Nation will help prepare the next generation and empower youth workers on the ground with financial resources to make a difference.

Summary

This chapter presented the analysis and the results of research. It also connects the results back to the research question based on relevant research schema outlined in previous chapters. Seven prominent figures in tribal government were interviewed to distill relevant data for research criteria based on specialty areas. Interviews were transcribed and analyzed. Manual coding played an important role in identifying major and minor themes. These were presented in order of interviews conducted. NVivo software analysis was presented as word clouds corroborated thematic findings. In addition, interview narratives with direct quotations present snapshots of the larger picture and scenarios on ground reality. The next chapter will make sense of themes as they are grouped, interpreted, and discussed for validity of research.

CHAPTER V

DISCUSSION, RECOMMENDATIONS, AND CONCLUSION

The purpose of this study was to develop an entrepreneurial ecosystem model for rural underdeveloped communities like the Pawnee Nation of Oklahoma, creating a pathway to reach the goal of sustainable development by way of sustainable entrepreneurship. Although EE literature has attracted much attention, the concept remains nebulous, lacking structure and clear analytical frameworks. It is important to consider what kind of institutions may emerge and the impact the EE may have when considering initial stage components and their relationships at early-stage EE creation and envisioning desired effects (Alvedalen & Boschma, 2017). This chapter answers that question with case in study and constraints. This chapter also presents a summary of findings, presents a model based on research data, makes sense of results, and interprets and discusses them in light of research goals and criteria. The chapter continues with research relevance, implications, potential impact, and future direction, followed by conclusion to the dissertation, with closing statements.

Summary of Findings

Research questions:

(1) How would SCEED emerge in a community, (2) what would it look like and, (3) how could it take shape or be realized for an underdeveloped community?

The answers to these pivotal research questions are given below:

Isenberg Model Type for Pawnee Nation. Based on individual interviews of prominent persons, data was gleaned and filtered in view of creating an entrepreneurial ecosystem for promoting sustainable entrepreneurship based on a modified form of Isenberg's model framework. The following pillar components have been formulated accordingly, specified to Pawnee Nation's scenario. However, the template and model framework may be beneficial for other native and rural communities. Below presented are major pillars comprising of their components:

Policy

- Design and Envision Economy
- Promise Land Vision
- Strategic Planning
- Governance
- Tribal Unity
- Legal Counsel
- U.N Declaration Rights

Finance

- Investment Capital
- Grants & Tribal Funding
- Micro Loans (477 Program) - Seed Capital
- Investment & Opportunity Zone Credits
- Leveraging Federal Grants
- Fundraising / Donations
- Venture Capital
- Market Tax Credits
- Bond Issuance
- Clean Audits
- Markets

Sustainability

- Independent Water Supply
- Independent & Renewable Energy
- Wastewater Treatment Facility
- Solid Waste & Recycling Center
- Creative Transportation (Rail – Water)

Culture

- Shared & Common History
- Tribal Government Enterprise
- Community Initiatives & Projects

- Youth Involvement / Native Skills
- Incentives for Entrepreneurs
- Individual Entrepreneurship
- Hybrid Entrepreneurship
- Office Space & Stipends

Land Asset Leverage

- Tribal Government – Project & Ventures (Pawnee Business Council)
- Tribal Land Asset Leverage
- Trade Zone Land Allotment
- Business Move-In Incentives
- Federal & State Government Assistance
- Market & Advertise – Open for Business

Labor & Human Capital

- Partnership & Networks
- Pawnee College
- Training Mechanisms
- Workforce & Skills Development
- Tribal Education Department
- 4H & FFA Programs
- Business Incubator
- Vo-Tech School
- TERO (Tribal Employment Rights Office)

Markets

- Niche & Heirloom
- Surrounding Communities
- Schools, Nursing & Hospitals
- Internet Network
- 8A Contracting.
- Hotel – Tourism
- Regulatory Commission

The tribal entrepreneurial ecosystem graphically articulated in the form of a circular wheel, is comprised of policy, finance, sustainability, culture, land asset leverage, labor-human capital, and markets as major pillars. All these pillars are meant to produce sustainable entrepreneurship in the community. This, alongside Maslow's pyramid, is articulated with Pawnee needs and aspirations from interview data in Tribal Entrepreneurial Ecosystem – Pawnee Initiative (TEEPI) shown in Fig 13 below.

Tribal Entrepreneurial Ecosystem - Pawnee Initiative (TEEPI) from SCEED

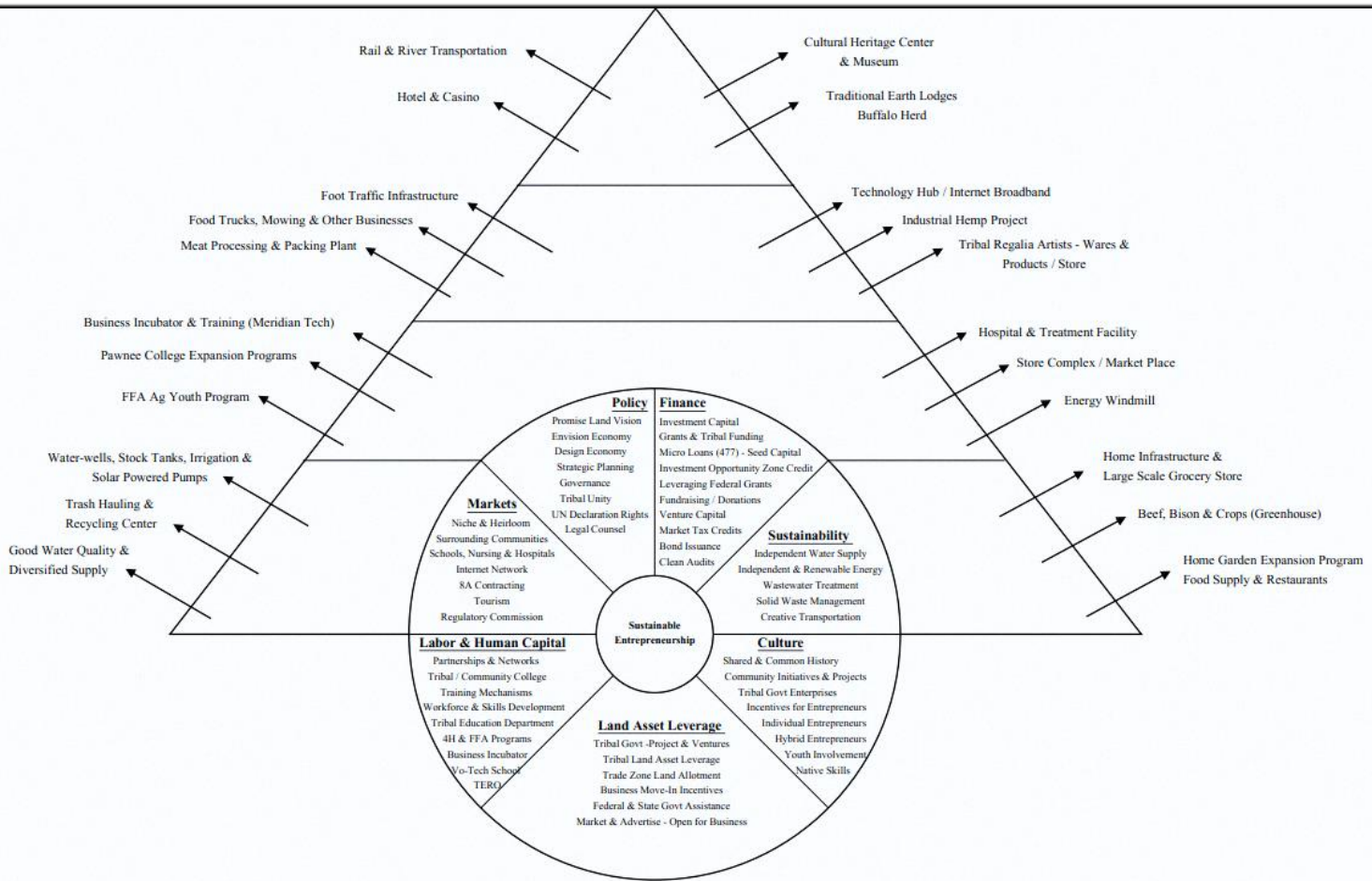


Figure 13: Tribal Entrepreneurial Ecosystem – Pawnee Initiative (TEEPI)

Adner (2017) points out that there is no entrepreneurial ecosystem model that is place-based and articulated at the community scale. The above figure is a graphical representation of what it might look like to have an entrepreneurial ecosystem construct for a local community (Pawnee Nation) with embedded institutional forms and components primed to facilitate future ventures in and for the community. The components in the wheel graphic are the precursor requirement to produce actual ventures on the ground. The items listed on the pyramid graphic are the needs and aspirations of the Pawnee community.

Results Interpretation

The study was conducted with the Pawnee Nation of Oklahoma. Eminent persons from the Pawnee tribal government and leadership were interviewed one-on-one based on research criteria. A qualitative approach was used for purposeful data gathering. Interviews were transcribed and analyzed against the hypothesis. Manual coding and NVivo were used in analysis. Results were interpreted and discussed. Among the sustainable development goals, the findings show that the decent work and economic growth (SDG 8) agenda were given highest priority amongst Pawnee leadership. The next order of priority goes to industry, innovation, and infrastructure (SDG 9), followed by no poverty (SDG 1) and zero hunger (SDG 2), combined as one category. Other goals and variables were represented as well in priority comparison. Data representation graphs depict these priorities among Pawnee leadership in figures' 16, 17, &18.

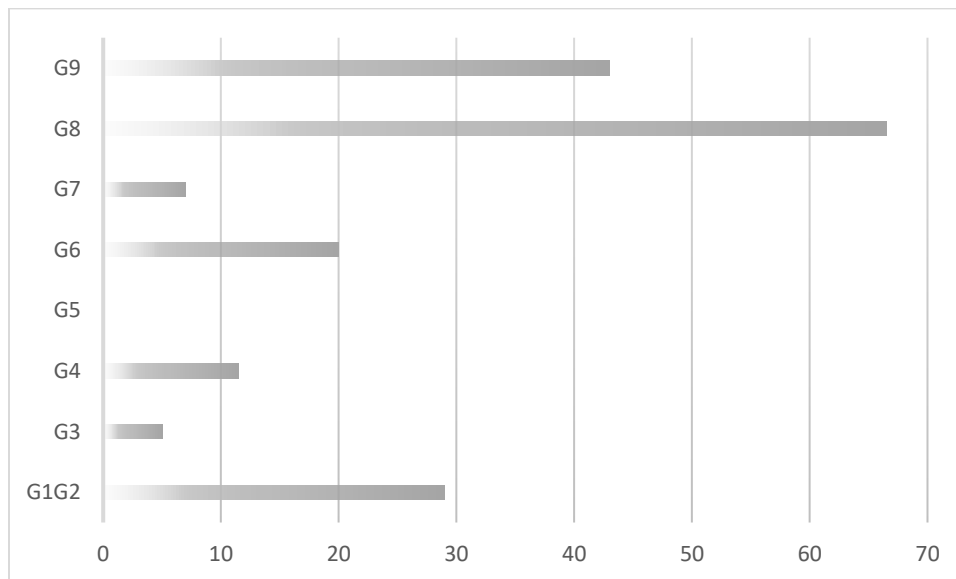


Figure 14: SDG Score Representation and Comparison.

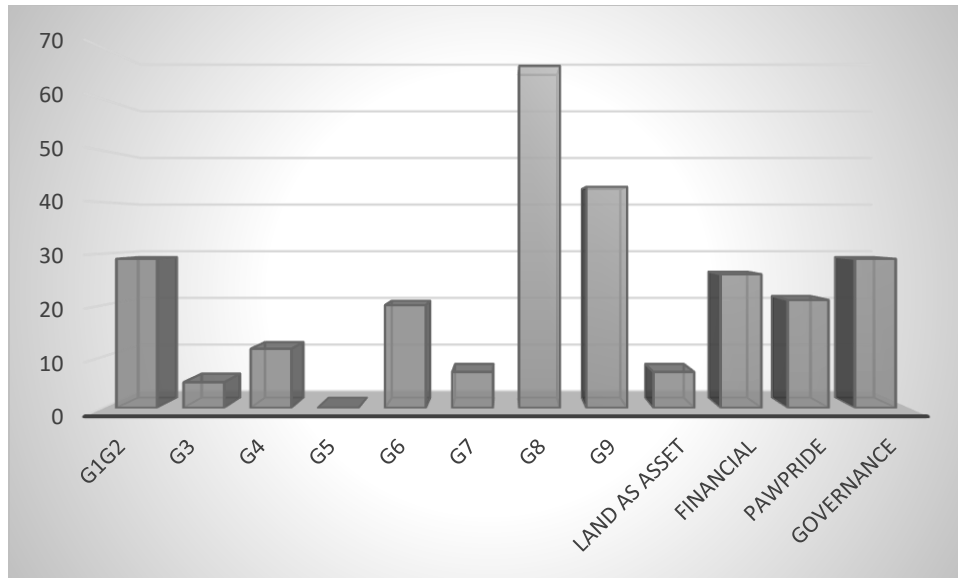
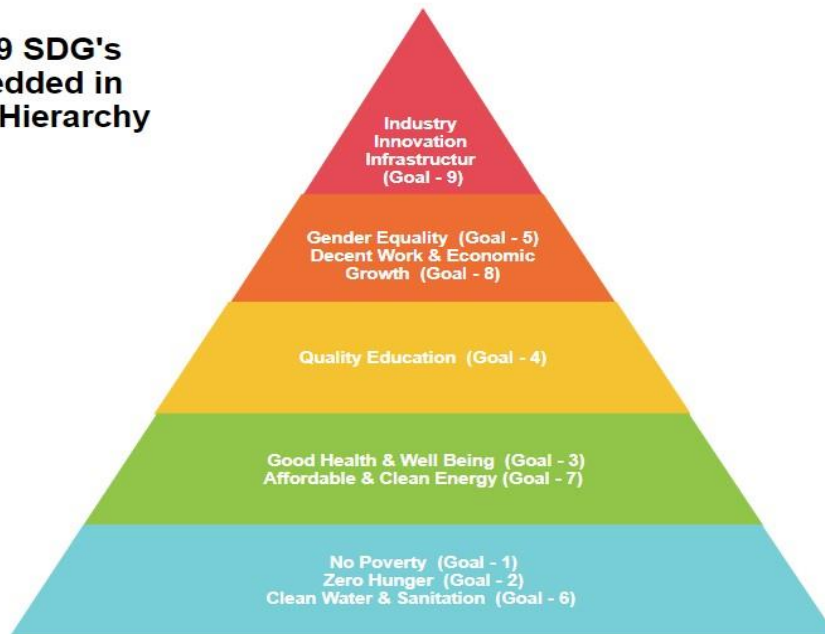


Figure 15: SDG representation and comparison with other variables

What does this mean? From interview data, we can identify what sort of entrepreneurship is needed, and what those ventures may look like to the community. When compared with the initial model template, these have been grouped and prioritized based on the needs of the community, ordered by way of Maslow's needs-based template, and superimposed with sustainable development goals from previously shown Fig 5, shown again below. Additionally, data is compared against the SDG priority score for Pawnee Nation from research data, shown in Fig 17. Gender equality (SDG 5) criteria was not relevant to this research, so it was not coded, identified, or measured. Questions in the interviews did not represent or seek to elicit any information in this regard.

**First 9 SDG's
Embedded in
MHN Hierarchy**



Based on this figure, the order of priority for the sustainable development of an underdeveloped rural community requires a sequence with stages of growth. Hence, the first rung at base of pyramid shows businesses that are essential, meet basic needs of the community, and fulfill SDG 1, 2, and 6 – the first stage:

Home Garden Expansion Program.

Food Supply & Restaurants.

(Stage 1)

Beef, Bison & Crops (Greenhouse).

Basic - Essential

Home Infrastructure & Large Grocery Store.

SDG 1 – 2 – 6

Good Water Quality & Diversified Supply.

Trash Hauling & Recycling Center.

Water-wells, Stock Tanks, & Irrigation.

After the first stage, the second, third and fourth consecutive stage ventures fulfill SDGs.

Hospital & Treatment Facility.

Store Complex / Market Place.

(Stage 2)

Energy Windmill.

Deficient – But - Needed

FFA Ag Youth Program.

SDG 3 – 4 – 7

Pawnee College Expansion Programs.

Business Incubator.

Training Center (Meridian Tech).

Technology Hub / Internet Broadband.

Industrial Hemp Project.

(Stage 3)

Tribal Regalia / Wares & Products Store.

Produce - Esteem

Foot Traffic Infrastructure.

SDG 8

Food Trucks, Mowing & Other Businesses.

Meat Processing & Packaging Plant.



Traditional Earth Lodges & Buffalo Herd.

(Stage 4)

Cultural Heritage Center.

Growth - Expansion

Hotel & Tourism.

SDG 9

Rail & River Transportation.



**First 9 SDG's
Embedded in
MHN Hierarchy**

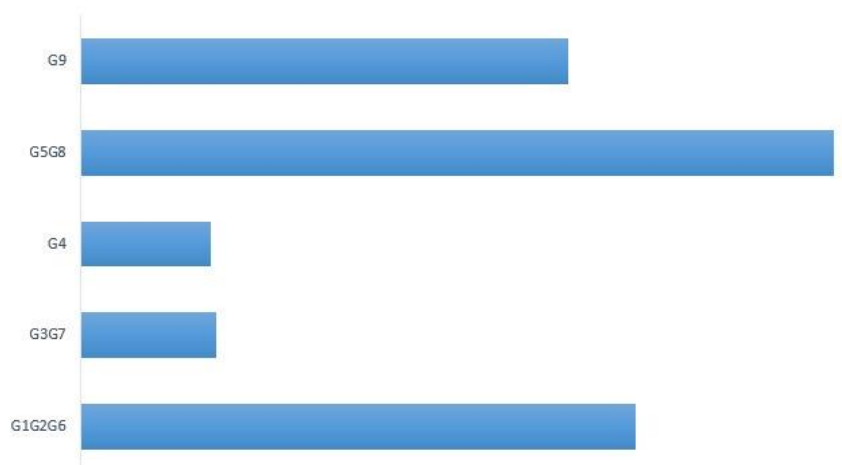
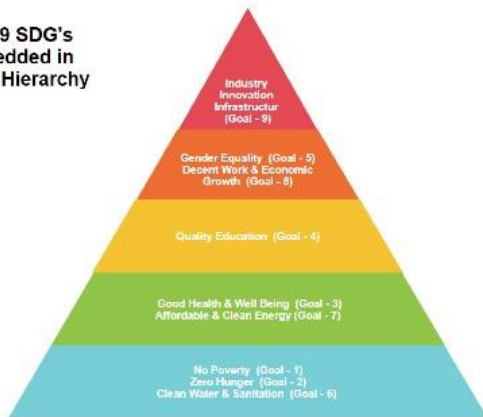


Figure 16: SDG priority score representation for Pawnee against hypothesis model template.

The order of priority for SDGs based on the model template goes from base of pyramid to top, as shown in Fig 17, with SDG 126, SDG 347, SD8 & SDG 9 each

respectively higher in the hierarchy. As per hypothesis ordered by way of Maslow's needs-based template, SDG priorities need to be ordered accordingly for an optimal and sustainable growth trajectory as shown in figures above, stage 1 (SDG 126), stage 2 (SDG 347), stage 3 (SDG 8), and stage 4 (SDG 9). However, based upon the analysis of interview narratives, Pawnee leaders' highest priority is on decent work and economic growth (SDG 8). A combination of no poverty (SDG 1), zero hunger (SDG 2), and clean water and sanitation (SDG 6) is the second priority, with almost equal priority given to industry, innovation, and infrastructure (SDG 9). This is followed by good health and wellbeing (SDG 3), affordable and clean energy (SDG 7), and quality education (SDG 4). It is true that SDGs and their fulfillment of goals are interlinked and interdependent. Griggs et al. (2013) point out inherent weaknesses in viewing each goal as independent of the other. To thrive, SDG 1,2,3, and 6 are all needed. Clustering these goals within a human well-being and livelihoods framework not only addresses conceptualized issues of poverty but goes beyond to address human well-being and a healthy lifestyle (Lim, Jørgensen, & Wyborn, 2018).

As this research reveals priorities of Pawnee leadership, it is also a representation of the larger culture among political leadership---in counties, states, or countries---where priority tends to be given to creating the jobs. Policy makers and leaders in most communities, towns, cities, and countries want development for their respective spheres, and they focus on jobs and economic growth, which is a sustainable development goal 8 (ILO, 2010). Pawnee Nation is not so different in this aspect, as the collated interview data shows they also prioritize SDG 8. In order to achieve this, traditionally what has been done in the globalized economy is connect with an external market that is larger and export or serve that economy, as has happened in past, resulting in a system of dependence. Dependency theory

was explained in the chapter 2 literature (Velasco, 2002). However, as per my hypothesis, priority, focus and resources should be given to lower order needs before moving up as shown in figure 18. This will cause a growth trajectory that is truly sustainable for the long run, creating a self-sustaining, independent community. One example of this, is the country of Angola, which decided to export oil. Consequently, Angola became too dependent on oil and ended up importing more than half of its food. Now Angola is shifting back to agriculture and entrepreneurship because the former strategy was not benefitting the country as a whole (Maylie, 2020). A principle to be drawn from this is “actions aggregate from micro-scales up to the macro-scale, and thus understand their role in the overall move toward sustainability.” (Robèrt, Daly, Hawken, & Holmberg, 1997, p.80).

Measured Fulfillment Index

Although priority is given to SDG126 and SDG58 through narrative aspirations, the ground reality is that there is very little happening in Pawnee. Therefore, the measure of fulfillment for each of these stages is low. However, a comparative study and future research can be done based on the hypothetical construct outlined in this research. Secondary data--- qualitative or quantitative data pulled from various databases---can be used to measure and compare the parameters identified in each of the stages. Other rural communities can be researched this way to see where they are at. This creates a distinct database in this research sphere: *a SCEED measurement fulfillment index.*

Interpretation & Recommendations for Pawnee

Produce to Thrive. At present, the Pawnee Nation is heavily dependent on federal grants for food programs, health services, and others. There is very minimal production of any kind on tribal land or in the community. Instead, whatever production exists is “taking

care facilities.” This only creates more “taking care needs,” enlarging grant budgets, and furthering the reliance on grants (Participant 6, transcript). The Harvard Project on American Indian Economic Development notes that tribal economic development planning is all about grant seeking, and success is measured by how much federal largess is accrued. This system of rent-seeking, bureaucracy, and budget enlargement is perhaps one reason for the lack of economic development in some native communities (Mathers, 2012). Therefore, the community needs to produce to become independent and thrive.

Sustain Entrepreneurship. Another interpretation and theme gleaned from one of the interviews is that Pawnee culture, style, and motivations create a community that is conducive to a non-profit service model as opposed to a for-profit business model (Participant 2, transcript). This may be one of the reasons why so many native communities have not seen entrepreneurship thrive---because entrepreneurship is seen as a for-profit enterprise, and for-profit ideology does not have a good reputation due to historical connotations and its desire to advance the individual and not the community. O'Neill, Gerald, Hershauer & Golden (2009) point out that many Native American tribes’ traditional belief systems align with modern concepts of sustainability and value creation—where entrepreneurship is not just about for-profit value-creation but also extends to include non-monetary value-creation. Therefore, when introducing and promoting entrepreneurship, and entrepreneurship education in Pawnee or other Native communities, it is important to emphasize the communal, environmental good it brings, not just the individual benefits and advancement, although this may be a by-product of the same. This helps with legitimacy as well.

Institute Policy. A third interpretation and recommendation for Pawnee Nation is institute policies and enact systems to foster a culture of entrepreneurship in order to flourish within its jurisdiction. Ko & Liu (2021) highlight how policies, systems, and processes instituted by an organization are potent forces to engage and guide motives and action in a particular pattern or direction. This is where entrepreneurial ecosystems and the SCEED model can be applied in the community and built from the ground up. Formerly, Pawnee Tribal Development Corporation (PTDC) acquired properties in the area for exorbitant prices way above market price. The Nation needs to keep casino operations and entrepreneurship development separate. PTDC was originally set up to foster entrepreneurship among tribal members rather than solely focus on casino operations and rent seeking (Participant 3, transcript). Therefore, it is recommended to institute a policy to build as opposed to acquiring.

Build Ground-up. Fourth, build from the ground up. “For American Indians to have the best environment to cultivate entrepreneurship and economic growth, a bottom-up approach directed by individuals living on reservation lands must replace the current method of top down, state directed, economic development planning. American Indians themselves have the capacity to remedy their current plight by using local knowledge and entrepreneurship” (Mathers, 2012, p.78). Yes, there is a time to go to the state for federal grants, to leverage 8A, and other federal and state resources available to Native American tribes. However, there is a need for ground-up bootstrapping strategies that have cumulative, momentum-building effects over time. One study across nine First Nation reservations found that more businesses and jobs were created on reservations that had Tribal Business Information Centers or equivalent (Deweese & Macleod, 2007). Therefore, Pawnee Nation

should set up a business incubator on tribal land. This will help jump start business activities amongst Pawnee tribal members. Space should be utilized to teach, train, and equip a cohort of students and members for business activities, grant applications, accessing capital, and so on.

Theoretical Contribution

Theoretical Contributions. Let's look again at one of the first definitions for entrepreneurial ecosystems. "...an interconnected group of actors in a local geographic community committed to sustainable development through the support and facilitation of new sustainable ventures" (Alvedalen & Boschma, 2017, p.887; Cohen, 2006, p.3). As stated in the first chapter, although sustainable development is a key term in EE definition, it is not explained much in the EE literature. This and other problems identified early on in the problem statement are addressed in this dissertation. To this extent, theoretical contributions made to the body of entrepreneurial ecosystems literature are four-fold:

1) The inclusion of sustainability as a major pillar and the integration of sustainable entrepreneurship into ecosystem literature. The topic of entrepreneurial ecosystems has become a prominent one in entrepreneurship research. However, the question of how integral sustainable entrepreneurship can be in EE is unknown (Volkman, 2021).

2) A model directional pathway for rural communities to consider while planning for development and a case for moving away from meeting only the basic needs to meeting higher order needs to become a self-sustaining, thriving community. The question of path dependence in the early-stage variables for rural EE creation is answered by the SCEED model sequence from Maslow's hierarchy (Stam, 2015; Brown & Mason, 2017).

3) A new model that incorporates the sustainable development goals into the growth trajectory of an underdeveloped community in a sequential manner. Sustainable development is not given sufficient attention in EE literature. The question of how EE encourages sustainable entrepreneurship leading to sustainable development is not explored or cited in literature (Volkman, Fichter, Klofsten, & Audretsch, 2019). This dissertation addresses these issues and concerns. Research outcomes fall under literature that comes between entrepreneurship and sustainability. This category has existed since the 1990s and was developed in three waves. However, research in entrepreneurial ecosystems to achieve societal and environmental goals may be considered as the fourth wave (Volkman, 2021).

4) The integration of Native American narratives and perspectives that are unique and relevant to indigenous communities. Literature on EE tends to focus on high-growth technology entrepreneurs operating around major institutions such as universities, government agencies etc., that are well connected to commercialization and accelerator programs. In contrast, EE relating to necessity, survival ventures, and others are often disconnected (Neumeyer, Santos, & Morris, 2019).

Apart from answering questions raised in the chapter 1 problem statement, this dissertation goes much further and achieves more. EE's relevance to Native American communities is addressed. The dissertation speaks to Native American development and entrepreneurship literature. There is very little scholarly literature concerning sustainable development and SDGs regarding Native American communities, although there is literature on indigenous communities and sustainable tourism. "Many indigenous communities are searching for meaningful and culturally appropriate ways to understand, measure, teach, and practice sustainable development and sustainable natural resource management" (Dockry,

Hall, Van Lopik, & Caldwell, 2016, p.128). Content from this study is a small lamp of knowledge, and opens a door for further study in this arena.

The SCEED Construct.

In sustainable development literature, the idea of prioritizing SDGs based on Maslow's hierarchy of needs is not new, but it builds on the work of other researchers. Walsh (2011) says in the past decade, researchers used Maslow's hierarchy of needs model to address sustainable development issues. The pyramid model was employed for groundwater management in Israel, where the hierarchy of societal needs was equated to a hierarchy of groundwater management needs (Melloul, & Collin, 2002). Similarly, another study on global sustainable development found that nations could be grouped into categories that fit Maslow's hierarchy of needs, based on societal, technological, and environmental measures. This shows the merit of using Maslow's theory when examining global sustainability paradigms in the same way it's been applied and discussed in management literature for organizational development and organization sustainability (Udo & Jansson, 2009).

In the same way, this study adds a new dimension to this concept. But what is unique in this dissertation is not the data itself, but how data is categorized and layered. The real contribution is the model construct that combines Isenberg's EE and Maslow's pyramid as shown in Fig 14. This construct can be used by any community to chart a strategic growth plan. It is a lens by which to see where a community is and what they have, what is needed, what could be, and where to go. Its applicability can be made transferable and generalizable to include communities, states, regions, and even nations, with the right quantitative data.

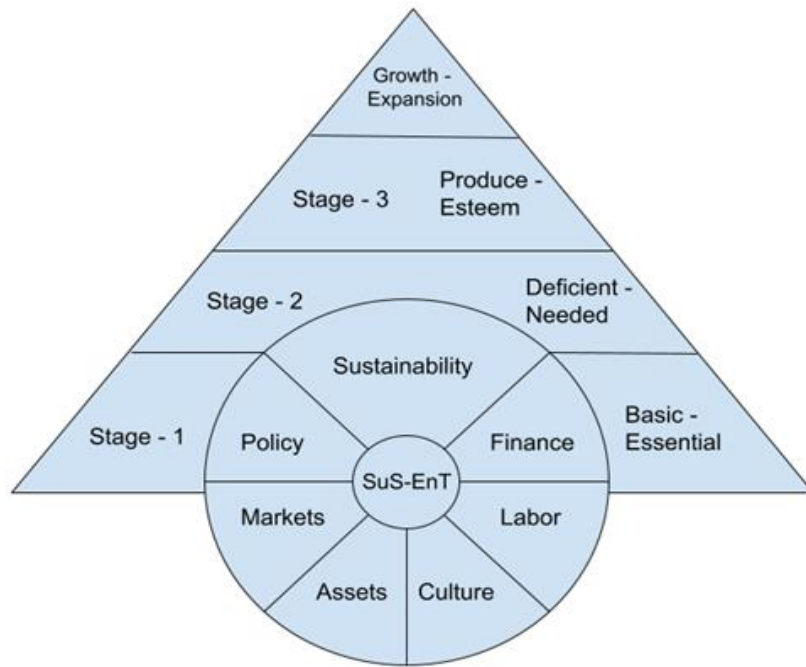


Figure 17: SCEED model – An ecosystem strategy for sustainable development.

Implications

There are two outcomes to this research, for theory and for practice. Both require research findings to be published in associated journals, where the primary audience is the research fraternity. This means presenting scholarly research work to associated journals to introduce new knowledge to the existing body of academic literature (Patton, 2015). The relevance of this new knowledge, and its implications to associated literature spheres is explained below.

To theory. This study brings together various bodies of knowledge-spheres into one cohesive and congruent system., much like an engineered seed, a system of stars that form a distinct constellation, or a solar system. Similarly, just as these spheres of knowledge helped formulate and justify SCEED, the knowledge of this new construct will influence all these

spheres. The research theorizes from the inside-out, as it builds up topical knowledge from core themes and moves outward incorporating wider themes, from individual, enterprise, to societal (Parrish, 2007). See below:

- *Sphere 1* - Utopia, sustainability, entrepreneurship, sustainable entrepreneurship, sustainable development.
- *Sphere 2* - Entrepreneurial ecosystems, Isenberg model, economic development strategy.
- *Sphere 3* - American Indian, Native communities, Native American entrepreneurship, Indigenous development, Pawnee Nation.
- *Sphere 4* - Social community development, sustainable community, rural community.
- *Sphere 5* - regional development, self-sustaining circular economy, industrial ecology, industrial clusters, ecosystem, biomimicry, systems theory.
- *Sphere 6* - Maslow's hierarchy of needs, UN Sustainable development goals, institutional arrangement, institutional design, path dependent-outcomes.
- *Sphere 7* - governance, policy making, food sovereignty, opportunity vs necessity entrepreneurs.
- *Outer-Sphere 8* - extractive-destructive entrepreneurship, destructive entrepreneurial systems, development of underdevelopment.

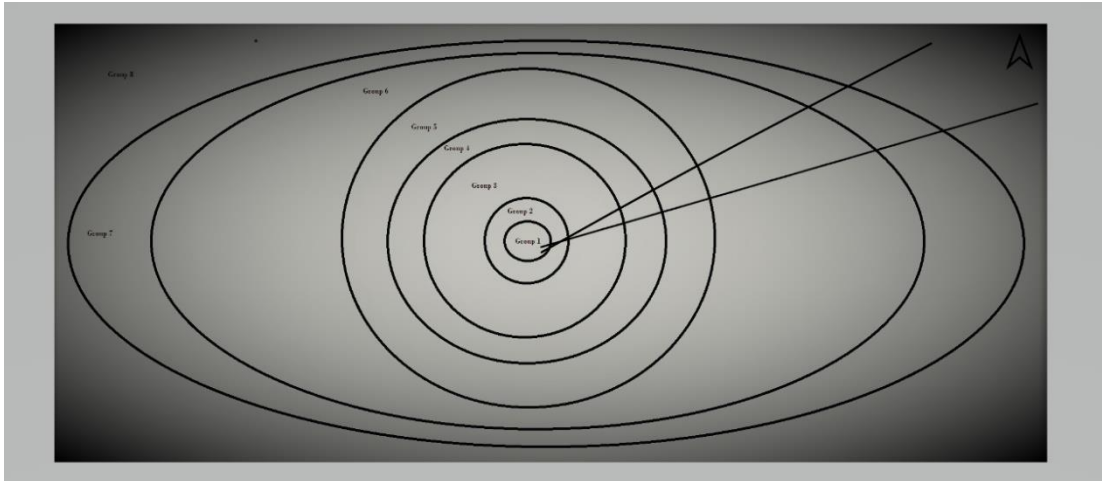


Figure 18: Spheres of knowledge, research domains, encapsulated to a unit / constellation.

This research has implications on all these spheres of knowledge and helps to order, categorize, and make sense of each in relation to the other. It is a knowledge construct, a synecdoche for further use. Moreover, Maslow's hierarchy, and Isenberg's model were subjected to rigorous examination and testing as part of this research. Criticisms of both these constructs have been stated and addressed, and the commonalities under the theoretical framework of GST and benefits have been outlined.

To practice. Just as this research has implications to theory, it has implications to practice. Primarily, the implications pertain to policy makers and the leadership of Pawnee Nation, as findings translate to direct and indirect decision-making outcomes. Secondly, the research relates to other tribal governments and leaders of native communities. Pre-eminence must be given to results that are directly actionable and implementable (Patton, 2015).

Implications to tribal governance as indigenous communities across the globe continue to face challenges such as poverty, poor livelihoods, marginalization, limited access to opportunities, and a bleak economic future (Colbourne, 2017). The research also has implications for tribal education as research covers a wide range of topics and associated

knowledge spheres that are relevant and useful for education purposes. The SCEED model will interest Pawnee Nation College in their leadership and management curriculum (Talahongva, 2015). Similarly, the research is relevant to other tribal colleges that wish to teach entrepreneurship and sustainability in a larger context and incorporate the content and schema presented here.

Research Limitations

This research has its limitations, foremost being the Pygmalion effect or self-fulfilling prophecy. This happens when researchers' expectations influence their work, and interactions with interviewees. Responses from interview subjects tacitly fulfill the researcher's expectations and researcher goal. Consequently, experimenter bias or experimenter expectation bias influence research and outcomes. Laboratory studies by Rosenthal and many others demonstrate this effect (Good, Sterzinger, & Lavigne, 2018). This implies that the research is highly subjective, which is common for qualitative researchers. Moreover, the subjectivity shown here is in itself a personal construct that is magnified and seen in the outcomes of this research. Therefore, the external validity is that the reader experiences this constructed view as a new lens by which to see the developing world, albeit the constructed worldview of this researcher.

Other limitations included low turnout in focus group participation and survey responses. Interviews and communication done online due to COVID restrictions. As a result, the true community element inherent amongst native communities was not captured. Hence, this study was limited in reach and extent in data within a reasonable timeframe. The implication of this limitation is that there was less immersion for field bias to occur, which resulted in a closer adherence to literature. Despite, the small sample size, results proved

worthy and sufficient to fulfill research goals. This also makes this researcher more culpable and responsible for the research outcomes.

Future Research Recommendation Significance to Oklahoma

Historically, Oklahoma was designated as Indian Territory in the 19th century, and Native American tribes present at the time practiced hunting and subsistence agriculture. Oklahoma opened up to white settlers in 1889 with the great 'Land Run' and statehood was earned soon thereafter in 1907. Along with ranching and agriculture, the early 1900s saw a boom in the mining industry, mainly for oil and gas in the state (Warner, 2019). The city of Tulsa was dubbed "the oil capital of the world."

The Osage tribe became known for mineral royalties received from the oil boom. Wealth came so quickly for the tribe that it brought problems of its own from government policy and violence (Strickland, 1995). The Great Depression combined with the Dust Bowl affected Oklahoma, bringing it to its knees in the 30s. This brought in considerable federal assistance and policies to help the state. Oklahoma's transportation facilities got a major upgrade in the 60s and 70s. The McClellan-Kerr Arkansas River Navigation System was completed during this time, providing new water-based transportation and recreation facilities with built-in lakes. The system brought hydroelectric power and saved billions of dollars in flood damage and provided recreation and numerous jobs in related industries (Warner, 2019). This may have brought some benefits and economic impact to the tribes in the region, especially to the Cherokee Nation, one was the construction of Recreation Park in the area (Robinson, Joseph, Muldrow & Wingfield, 2014).

The expanding national economy between 1991 and 2001 characterized by some as a "New Economy," relied on rapid productivity and growth driven by computer-based

technology and related improvements in communications facilitated by growth in world trade (Warner, 2019). Still, Oklahoma is low in economic standing, partly due to poverty and income inequality. The richest 20% of households earn about five times more than the poorest 20% and the poverty rate is above national average, at 15.5% (Cullison, 2019). Also, most of Oklahoma is still rural. Considering these, the outcome from this research is more than apt to benefit Oklahoma. The model presented here in SCEED is designed to foster entrepreneurship and sustainable development in rural areas.

The current COVID-19 pandemic has had a profound effect on lives and business activities in rural areas, as agricultural enterprises, and their associated activities from farm to table are intertwined with socio-economic development of the state (Apostolopoulos, Ratten, Petropoulos, Liargovas, & Anastasopoulou, 2021). Closure of many businesses has caused people to question what constitutes an essential business (Chabon, 2020). In such scenarios, anything food related takes pre-eminence. One expert said, “What the pandemic has underscored is that the world must use its land and water resources sustainably, to grow essential, nutritious food in a more resilient way. One way of doing this is to cut food loss” (Torero, 2020, p.589).

A Study by USDA and EPA estimated up to 31% of food produced in the U.S is wasted, an equivalent of 59 million metric tons with a retail value worth \$161.6 billion (Buzby, Farah-Wells, & Hyman, 2014). Uneaten food and food preparation leftovers from restaurants, cafeterias, food pantries, and university dining services are all part of food waste (Zhang, Mashad, Hartman, Wang, Liu, Choate, & Gamble, 2007). Globally, food waste is estimated to be about one-third of all food produced for human consumption (Buzby et al.,

2014). About quarter of the total freshwater consumed in the U.S is wasted (Morrow, Penzien, & Dubats, 2012).

In this scenario, the SCEED model's Stage -1 / Basic-Essential rung group of businesses finds importance and significance, as it highlights entrepreneurship related to agri-food sector. Apostolopoulos et al. (2021) point out that the COVID-19 crisis is opportune reason to transition towards new models of sustainable agri-food entrepreneurship and shift agri-food sector in direction of UN Sustainable Development Goals.

The role of entrepreneurial ecosystems in rural areas for sustainable development of agri-food systems is an emerging one (Polbitsyn, 2021). Since the SCEED model begins with this stage, zooming in on this sector for future research and the role it plays in agri-food entrepreneurship in Oklahoma seems to be the best way forward in light of current events.

Agripreneurship is the craft of venture creation and entrepreneurship applied to agriculture and related areas. The agripreneur looks for opportunities and gaps to fill through innovation in farming techniques, methods, and processes by providing a service or a product (Carr, & Roulin, 2016). The best way to champion sustainability is by applying to food systems. Additionally, food has a way of bringing communities together and building culture.

The pursuit of community self-sufficiency in terms of food creates an ecosystem of businesses, involving areas of production, distribution, processing, storage, service, and retail (Apostolopoulos et al, 2021). Hence, first step of development for any community is to ensure health, sustainability, and quality of life. Many rural areas are agriculture based with inherent knowledge and skills related to that, conducive to start new ventures out of that base. Therefore, agripreneurs to play an important and crucial role in this model, as is explored further and built upon, based on research findings.

SDGs & Native Communities.

Indigenous and Native people have not been immune to being measured against some development indicators. The UN-SDGs post 2015 were set with extensive and inclusive engagement and negotiations with indigenous populations, to ensure no one is left behind, especially those furthest behind in terms of development (Yap & Watene, 2019).

However, there is very little information out there in terms of UN Development Goal Indicators and Native American communities in the United States. This is an area of future research. This dissertation gives a template and a basis for that research, especially concerning how the first 9 SDGs are embedded in the order priority based on Maslow's Hierarchy of Needs. Miller, Jorgensen, & Stewart, (2019) point out that concerning Native American communities, there is a failure in reporting when it comes to U.S country-level data, masking the true destitute nature in many Native communities.

The first step to further research would be to compile the appropriate statistics and data specific to Native communities pertaining to Sustainable Development Goals and reporting. "The inclusion of tribal communities as a focus for the United States in mapping the SDGs therefore requires thoughtful consideration as a possible mechanism to achieve human rights and suitable development" (Miller, Jorgensen, & Stewart, p.194, 2019).

"Indians walk softly and hurt the landscape hardly more than birds or squirrels" – John Muir.

Indigenous and Native communities have always given sufficient importance to nature and surroundings, if not more. Sustainability is a modern term created for the modern world, by modern people. Ancient wisdom ought to be there, for lasting acceptance. And Native communities have and continue to bring their wisdom to the table. The question is: will they be heard and what do they have to say that can be incorporated into modern

sustainability discourse, and will the curators have the wisdom to put their words in the right context that will bring peace among old rivalries? Will the old wounds heal in this modern world, and can there be lasting peace? point to reflect on at this juncture? In retrospect, perhaps this dissertation has highlighted the juxtaposition of the two worldviews, the ancient and the modern, as a bridging point for modern discourse.

Conclusion

At the outset of this research journey, I set out with the idea of building sustainable communities through sustainable community development to transform underdeveloped rural communities. My exploration led me to create an entrepreneurial ecosystem to foster sustainable entrepreneurs in a rural community. Sustainability, in the truest sense of the word, means--to be self-sustaining and self-generating, with minimum input and setup costs but with long lasting impacts. To use a farming analogy here, sustainability is like seeding a particular crop-fruit for ongoing sustained reproduction, hence the acronym SCEED-- Sustainable Community Entrepreneurial Ecosystem Development. I formulated three pivotal research questions: *(1) How would SCEED emerge in a community, (2) what would it look like, and (3) how could it take shape or be realized for an underdeveloped community?* These are not currently articulated in the literature. To develop this model, I chose to look at Pawnee Nation of Oklahoma, a rural Native American community with very little going on in terms of entrepreneurship.

For the literature review, I explored scholarly and historical literature related to Native American Communities in the United States, Native American entrepreneurship, sustainable communities' model, sustainability, sustainable development, sustainable development goals, entrepreneurship and sustainability, entrepreneurial ecosystems and so

on. Following this review, I developed a framework for an exploratory, theory-generating study of the process of sustainable enterprise design, or SCEED. I elaborated and hypothesized on SCEED and its outcomes, justifying and validating my reasoning with scholarly literature. I answered the question of why sustainability, EE, and community were antecedents? I used systems theory to tie everything together in a cogent manner. SCEED was to follow Maslow's sequence of needs for process and path dependency with outcomes that led to the evolution and institution of SCEED.

To verify, explore, and build a theory for the SCEED hypothesis, I took a qualitative approach to explore the research questions via induction as opposed to deduction. Purposeful sampling was used to select key interview candidates of Pawnee Nation leadership and those whose work and position represented the major pillars of the entrepreneurial ecosystem. This formed the majority of the formal dataset. The unstructured open-ended interviews were then transcribed and analyzed against the first nine SDGs embedded in Maslow's hierarchy sequence. Data from interviews highlighted emerging themes and specific SDGs and their associations as related to Pawnee Nation. Using these the Tribal Entrepreneurial Ecosystem--Pawnee Initiative (TEEPI) was developed. Finally, the SCEED model was derived to be an ecosystem strategy for sustainable development.

Generalizability. As mentioned previously, this construct can be used by any community to chart a strategic growth plan. It is a lens through which to view where a community is, what they have, what is needed, what could be, and where to go. Its applicability is transferable and generalizable in other situations, including other tribes, indigenous and rural communities, states, regions, and even nations.

This research offers direction for indigenous community leaders wondering how to engage with the world, and order their tribe's economic activities (Anderson, Honig, & Peredo, 2006). The same research is applicable to rural community leaders, planners, and policy makers working on community building and development. It is a roadmap and a compass for direction. It is also relevant for EE builders and practitioners, to help them see rural perspectives and understand communities hamstrung for resource network dynamics (Harima, Harima, & Freiling, 2021).

The findings from this research are generalizable to other communities, tribal or rural. Also, individuals interested in creating sustainable value in rural communities will benefit from this study. The model framework may act as a precursor to a business plan (Harris, 2019). The research is also beneficial to social entrepreneurs, sustainability professionals and institution designers, as new institutionalism (sustainability and embedded social enterprise) and systems theory both constitute macro-sociological approaches and deal intensely with organizational and societal links (Chatzichristos, & Nagopoulos, 2019).

This study maybe first of its kind, bridging the newly emergent Entrepreneurial Ecosystems phenomenon and Sustainable Development Goals and embedding them in a rural indigenous community context to advance and develop a community.

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APPENDICES
APPENDIX A



Oklahoma State University Institutional Review Board

Date: 04/24/2019
Application Number: GC-19-2
Proposal Title: Envisioning an Entrepreneurial Ecosystem for the Sustainable Development of a Native

American Community: Pawnee Nation of Oklahoma.

Principal Investigator: Alexander Rohan John
Co-Investigator(s): Alexander Rohan John
Faculty Adviser: Craig Watters
Project Coordinator: Alexander Rohan John
Research Assistant(s): Alexander Rohan John

Processed as: Exempt
Exempt Category:

Status Recommended by Reviewer(s): Approved

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in 45CFR46.

This study meets criteria in the Revised Common Rule, as well as, one or more of the circumstances for which continuing review is not required. As Principal Investigator of this research, you will be required to submit a status report to the IRB triennially.

The final versions of any recruitment, consent and assent documents bearing the IRB approval stamp are available for download from IRBManager. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be approved by the IRB. Protocol modifications requiring approval may include changes to the title, PI, adviser, other research personnel, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any unanticipated and/or adverse events to the IRB Office promptly.
4. Notify the IRB office when your research project is complete or when you are no longer affiliated with Oklahoma State University.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact the IRB Office at 405-744-3377 or irb@okstate.edu.

Sincerely,
Oklahoma State University IRB

APPENDIX B

Recruitment Email

Dear [name],

My name is Alexander Rohan John and I am a graduate student from Oklahoma State University. I'm calling to talk to you about participating in my research study. This is a study about 'Sustainability & Entrepreneurship'. You're eligible to be in this study because you conveyed interest in participating in the study upon initial contact. I obtained your contact information from Brian Kirk, the tribal planner and divisional director.

If you decide to participate in this study, you will answer a few questions regarding the mentioned topic which may take up to 60 minutes or slightly over. I would like to audio record your responses and then I'll use the information in my dissertation that looks at a sustainable development path / approach for Pawnee Nation and towards potentially helping other rural communities.

Remember, this is completely voluntary. You can choose to be in the study or not. If you'd like to participate or have any questions about the study, please email or contact me at rohanjo@oksate.edu

Thank you very much.

Sincerely,



Approved: 04/24/2019
Protocol #: GC-19-2

CONSENT FORM

“Pawnee Nation Development Initiative” Key Informant Interview Consent Form

You are being asked to participate in a key informant interview for a community development assessment project for the PAWNEE NATION. Please take your time to review this consent form and discuss any questions you may have with project staff.

Evaluation Team: PAWNEE NATION is conducting key informant. OSU research student Alexander Rohan John to conduct the key informant interviews. The key informant interviews are under the aegis of Brian Kirk, MPH; Planning Director of Pawnee Nation.

Purpose: To gain an understanding of community attitudes and beliefs about the sustainable development of the community, community development barriers and constraints to new venture initiatives and sustainable entrepreneurship, and any interventions or priorities that should be taken to improve the community’s development program.

Description: This interview should last about 60 minutes. Your feedback will be recorded through note taking and the use of an audio recorder. Your name and identity will not be associated with the information you give. Only project staff will use the recording. Any recordings and transcriptions that contain references to your name, as well as lists of participants will be stored securely by the project team and will not be shared outside of that team.

Risk and Benefits: There is no risk in participating in this interview. The benefit to you by participating will help in community development assessment and eventual program implementation.

Confidentiality: Any information obtained about you as a result of this discussion will be kept confidential. Your identity will not be revealed in any description, publication, or research.

Right to Refuse or to End Participation: Your participation is voluntary. You may refuse to participate, or may discontinue your participation at any time without penalty and without losing benefits to which you would otherwise be entitled.

Questions and Contact Information: You are free to ask any questions that you may have about the key informant interviews. Please contact Brian Kirk at, email: bkirk@pawneenation.org or phone: (918) 762-3621; Ext. 127.

Voluntary Consent:

Do you voluntarily agree to participate in the interview?

YES NO

Do you consent to having the discussion recorded and transcribed?



Approved: 04/24/2019
Protocol #: GC-19-2

APPENDIX C

Unstructured Interview Questions

- What is Pawnee known for, in your opinion?
- What do you think are the strengths of Pawnee?
- What tribal and traditional skills are evidently unique at Pawnee?
- What possible services or businesses, in your opinion, are lacking at Pawnee?
- What do you think the members of Pawnee would like to see happening in their community?
- What kind of aspirations do you feel people in the community have?
- How do you envision the development of the community as a whole?
- What challenges do you perceive?
- What roadblocks or obstacles do you see that could prevent the community from moving forward?
- What kind of services would you like to see at Pawnee in the near future?
- What kind of businesses would you say could do well at Pawnee?
- If you had the opportunity to start a service or business, what would it be? and what kind of help would you need to help you achieve that?

VITA

Alexander Rohan John

Candidate for the Degree of

Doctor of Philosophy

Dissertation: ENVISIONING AN ENTREPRENEURIAL ECOSYSTEM AS PART OF
THE SUSTAINABLE DEVELOPMENT OF A RURAL COMMUNITY:
PAWNEE NATION OF OKLAHOMA

Major Field: Environmental Science

Biographical:

Education:

Completed the requirements for the Doctor of Philosophy in Environmental Science at Oklahoma State University, Stillwater, Oklahoma in December, 2022.

Completed the requirements for the Master of Science in Sustainable Waste Management at University of Leeds, Leeds, United Kingdom in 2009.

Completed the requirements for the Bachelor of Engineering in Mechanical Engineering at Anna University, Tamil Nadu, India in 2006.

Experience:

Graduate Research Assistant – Environmental Science & Entrepreneurship
Graduate Teaching Assistant – Entrepreneurship, Oklahoma State University
Environmental Engineer – Christian Medical College, CMC Vellore